Surface Water Supply of the United States 1956

Part 12. Pacific Slope Basins in Washington and Upper Columbia River Basin

Prepared under the direction of J. V. B. WELLS, *Chief, Surface Water Branch*

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1446

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Thomas B. Nolan, *Director*

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Idaho, Montana, and Washington, and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, succeeded by L. B. Leopold, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Basic Records Section, succeeded by F. J. Flynn.

The data were collected and computed under supervision of district engineers, Surface Water Branch, as follows:

T. R. Newell	Boise, Idaho
Frank Stermitz	Helena, Mont.
F. M. Veatch	Tacoma, Wash.

CALENDAR FOR WATER YEAR 1956

OCTOBER 1955

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER 1955

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER 1955

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JANUARY 1956

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY 1956

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

MARCH 1956

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL 1956

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY 1956

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE 1956

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY 1956

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST 1956

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER 1956

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

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SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN, 1956

SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and contents of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1956. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 13,500 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1956, the Geological Survey and cooperating organizations were maintaining 6,910 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1956 water year. The name of each stream measured at points other than gaging stations is not listed in the index to this report. Only the major river basins in which measurements were made are listed under the item "Discharge measurements" in the index.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Idaho: Idaho Department of Reclamation, M. R. Kulp, State reclamation engineer.

Montana: Office of State Engineer, F. E. Buck; State Water Conservation Board.

Washington: State Department of Conservation and Development, W. A. Galbraith, director, and M. G. Walker, supervisor of the Division of Water Resources; State Department of Fisheries, R. J. Schoettler, director; State Department of Game, J. A. Biggs, director; State Department of Highways, W. A. Bugge, director; cities of Aberdeen, Bellingham, Bremerton, Everett, Olympia, Seattle, and Tacoma, and town of Wilson Creek; Intercounty River Improvement Commission; Chelan County Public Utility District No. 1; Pend Oreille County Public Utility District No. 1; and Snohomish County Public Utility District No. 1; Grant, Skagit, and Whatcom Counties.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 4 gaging stations in Idaho, 2 in Montana, and 13 in Washington.

Assistance was also furnished by the Agricultural Research Service of the United States Department of Agriculture, the United States Department of the Army, the Weather Bureau of the United States Department of Commerce, Bureau of Reclamation and the Office of Indian Affairs of the United States Department of the Interior, and the United States Department of State. Acknowledgment is due to the Forest Service of the United States Department of Agriculture and the Weather Bureau for occupation permits and furnishing special reports of watershed conditions and precipitation records.

On waters adjacent to the international boundary, certain gaging stations are maintained by the United States (or Canada) under agreement with Canada (or the United States) and

the records are obtained and compiled in a manner equally acceptable in both countries. These stations are designated herein as "International gaging stations."

The following organizations aided in collecting records:

Idaho: Washington Water Power Co.

Montana: The Montana Power Co.; Washington Water Power Co.

Washington: Crown Zellerbach Corporation; Puget Sound Power & Light Co.; Rayonier, Inc.; and Washington Water Power Co.

DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

State	District office	Address
Idaho	Boise	914 Jefferson Street.
Montana	Helena	409 Federal Building.
Washington	Tacoma	207 Federal Building.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

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

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

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, a long reach of the channel, or an artificial structure.

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

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

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

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

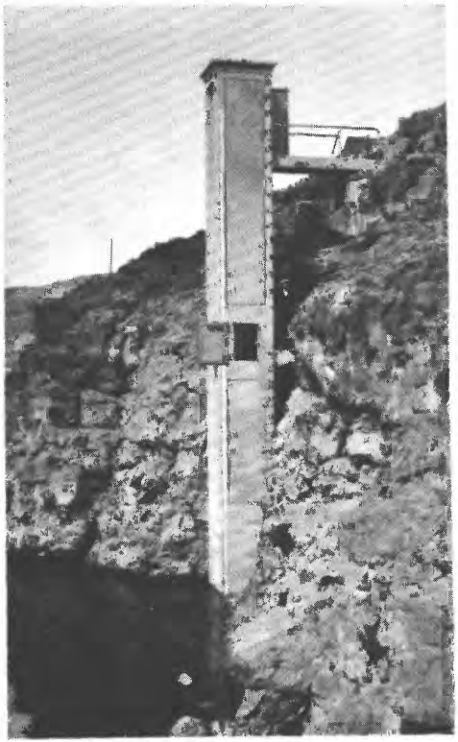
Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

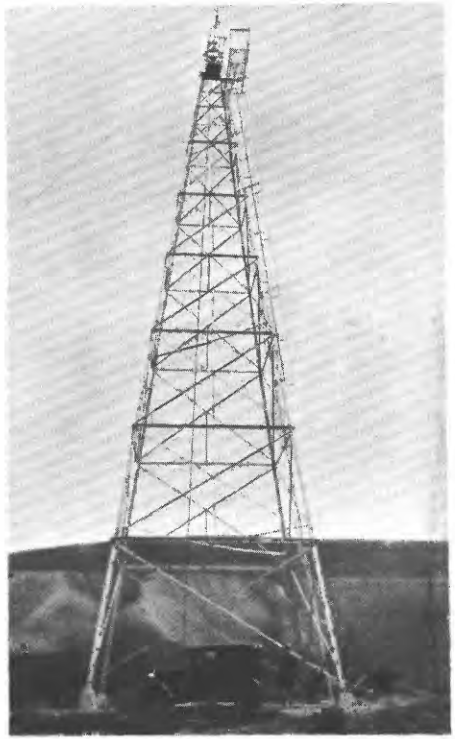
EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

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 determinations of peak discharge (such as slope-area or contracted-opening determinations, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables 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



A, COLUMBIA RIVER AT TRINIDAD, WASH.
Recording-gage shelter and stilling well.



B, COLUMBIA RIVER AT TRINIDAD, WASH.
East cable tower.

FIGURE 1.—GAGING-STATION STRUCTURES.

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 essentially the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite 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. If so, the rate of change in stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during 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 engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1956 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. 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 unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those of the present site. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types of gages, locations, and datums of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five 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 the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable

information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in 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 peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and minimum day for

each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month 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 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 of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

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

Discharge measurements and determinations of peak flows made at points other than gaging stations are listed at the end of each report.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of

cubic feet per second per square mile and runoff in inches are not published unless storage or diversion records are included to indicate the extent of the regulation or diversion, or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
  A, North Atlantic slope basins, Maine to Connecticut.
  B, North Atlantic slope basins, New York to York River.
2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
  A, South Atlantic slope basins, James River to Savannah River.
  B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.
3. Ohio River basin, in two volumes:
  A, Ohio River basin except Cumberland and Tennessee River basins.
  B, Cumberland and Tennessee River basins.
4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
  A, Missouri River basin above Sioux City, Iowa.
  B, Missouri River basin below Sioux City, Iowa.
7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports

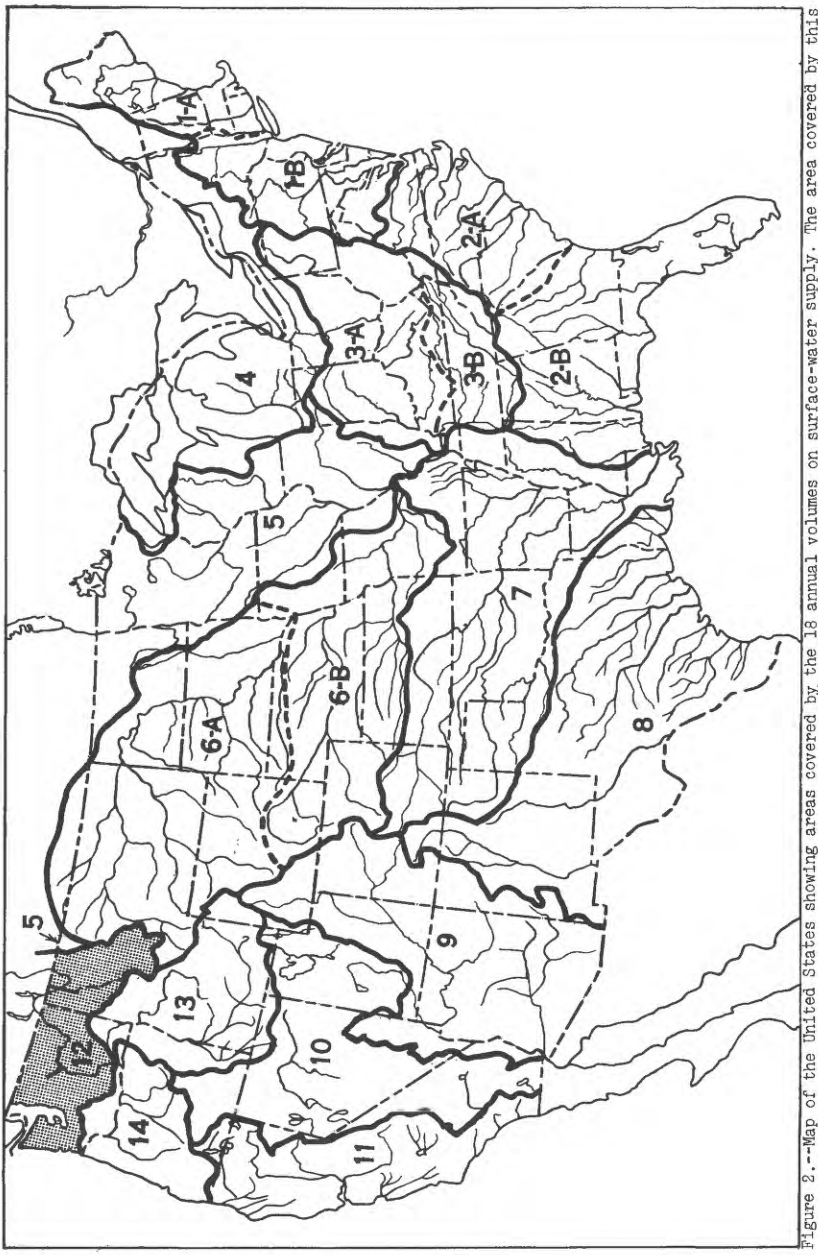


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901 in reports of the Geological Survey

(A = Annual Report; B = Bulletin)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to September 1890.
12th A, pt. 2	....do	1884 to June 30, 1891.
13th A, pt. 3	....do	1884-92.
14th A, pt. 2	Monthly discharge	1888-93.
B 131	Descriptions, measurements, gage heights, and ratings	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
WSP 11	Gage heights	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge	1895-96.
WSP 15	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
WSP 16	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge	1897.
WSP 27	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
WSP 28	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge	1898.
WSP 35 to 39.	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
WSP 47 to 52.	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4.	Monthly discharge	1900.
WSP 65, 66...	Descriptions, measurements, gage heights, and ratings	1901.
WSP 75	Monthly discharge	1901.

Reports on surface water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Pacific slope basins in Washington and upper Columbia River basin, 1899-1956

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	38	1912	332-A	1925	612	1937	832	1949	1152
1900	51	1913	362-A	1926	632	1938	862	1950	1182
1901	66, 75	1914	392	1927	652	1939	882	1951	1216
1902	85	1915	412	1928	672	1940	902	1952	1246
1903	100	1916	442	1929	692	1941	932	1953	1286
1904	135	1917	462	1930	707	1942	962	1954	1346
1905	178	1918	482	1931	722	1943	982	1955	1396
1906	214	1919-20	512	1932	737	1944	1012	1956	1446
1907-8	252	1921	532	1933	752	1945	1042		
1909	272	1922	552	1934	767	1946	1062		
1910	292	1923	572	1935	792	1947	1092		
1911	312	1924	592	1936	812	1948	1122		

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Paper 1316. That report contains a summary of monthly and annual discharges for all previously published records as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

Records of discharge have been published also in State reports. Most of these records are also compiled in Water-Supply Paper 1316; however some of them are not contained in the publications of the Geological Survey. The table on the following page contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Montana.....	1898-1911	5th biennial report.....	Office of the State Engineer.
Do.....	1898-1938	Water resources of Montana, Part 2, Vol. IV.	Montana Agricultural Experiment Station.
Washington....	1878-1953	Bull. 6, Monthly and yearly summaries of hydrographic data.	Department of Conservation and Development.

Note.--In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: Idaho, Montana, Washington.

The reports listed in the foregoing table contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following is a list of these reports:

Report

WSP 771: Floods in the United States, magnitude and frequency.
WSP 847: Maximum discharges at stream-measurement stations through September 1938.
WSP 968-B: Floods of the Puyallup and Chehalis River basins, Washington.
WSP 1080: Floods of May-June 1948 in Columbia River basin.
WSP 1137-I: Summary of floods in the United States during 1950.
Cir. 191: Floods in western Washington, frequency and magnitude in relation to drainage basin characteristics.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1955 to September 1956 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by	Remarks
Lake Whatcom.....	Bellingham, Wash.....	1923-56	City of Bellingham....	Unpublished.
Reservation drain.....	Alfalfa, Wash.....	1912-56	Office of Indian Affairs.	†Unpublished since 1923.
Satus Creek.....	Downstream from Dry Creek, near Toppenish, Wash.	1913-56	....do.....	†Unpublished since 1924.
Do.....	Near Satus, Wash.....	1932-56	....do.....	Unpublished.
Toppenish Creek.....	Near Fort Simcoe, Wash.	1909-56	....do.....	†Unpublished since 1924.
Do.....	Near Alfalfa, Wash.....	1932-56	....do.....	Unpublished.
Yakima River.....	Easton, Wash.....	1904, 1910-15, 1940-56	Bureau of Reclamation.	‡Unpublished since 1953.

† Records for earlier years published in water-supply papers of Geological Survey.
‡ Monthly discharge, prior to 1951, published in WSP 1316; prior to 1954, in Washington State Water-Supply Bulletin No. 6.
Note.--Records of daily discharge for many canals and drains in Washington and Montana for 1955 and earlier years have been collected by the Bureau of Reclamation and the Office of Indian Affairs of the United States Department of the Interior in connection with irrigation and drainage projects. These records have not been published. The Inter-Rocky Mountain Forest and Range Experiment Station collects records of runoff from an area of 950 acres on Benton Creek near Priest River, Idaho.

HYDROLOGIC CONDITIONS

During each month of the 1956 water year, streamflow was excessive in more than half the area covered by this report. Monthly mean discharge was record-high at the gaging station on Chehalis River near Grand Mound, Wash., during October, November, and March; the yearly mean was also the maximum in 27 years of record. The April mean discharge on Spokane River at Spokane, Wash., was record-high for the month. Outstanding floods occurred in western Washington in November, and in eastern Washington in February and March. The water year runoff of Kootenai River at Bonners Ferry, Idaho, was the maximum in 30 years of record. For two key gaging stations in the area, a comparison of the monthly and yearly mean discharges during the 1956 water year with the median discharges for the 25-year period (1921-45) is shown in figure 3 on the following page. For Spokane River at Spokane, Wash., the discharges shown have been adjusted for storage.

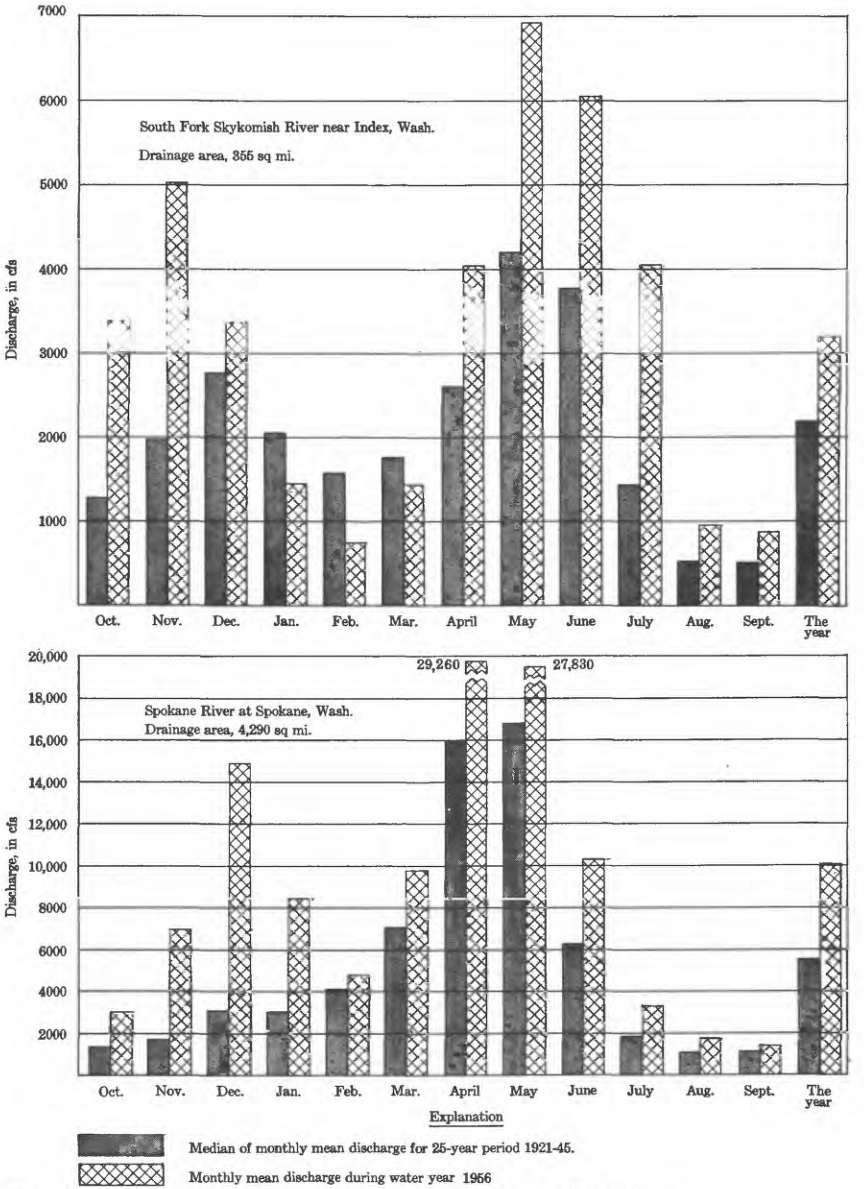


Figure 3. Comparison of discharge at two key gaging stations during 1956 water year with median discharge for 25-year period.

PACIFIC SLOPE BASINS NORTH OF COLUMBIA RIVER

NASELLE RIVER BASIN

Naselle River near Naselle, Wash.

Location.--Lat 46°22'25", long 123°44'45", in SW¼ sec. 1, T. 10 N., R. 9 W., on left bank 150 ft downstream from county bridge, 1½ miles upstream from Salmon Creek, and 3½ miles east of Naselle.

Drainage area.--55.3 sq mi.

Records available.--May 1929 to September 1956.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 24 ft (by barometer).

Average discharge.--27 years, 431 cfs (312,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,990 cfs Dec. 11 (gage height, 11.59 ft); minimum observed, 29 cfs Sept. 8 (gage height, 1.60 ft).
1929-56: Maximum discharge, 11,100 cfs Jan. 22, 1935 (gage height, 15.9 ft, from floodmarks), from rating curve extended above 4,000 cfs on basis of slope-area determination at gage height 15.2 ft; minimum observed, 19 cfs Sept. 12-14, 1949, Sept. 21-24, 1951; minimum gage height observed, that of Sept. 8, 1956.

Remarks.--Records fair. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1930(M), 1932-40(M), 1945-46(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used above 500 cfs Nov. 20 to Apr. 5)

1.6	29	5.0	1,180
1.8	55	6.0	1,780
2.1	105	7.0	2,450
2.5	188	8.0	3,150
3.0	323	9.0	3,950
3.5	490	10.0	4,770
4.0	690		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	865	1,020	430	*278	2,450	945	116	55	100	47	36
2	60	2,140	935	650	250	3,270	775	111	55	96	75	35
3	64	3,410	793	1,380	237	*2,450	634	107	56	92	134	35
4	159	3,010	702	2,380	224	1,710	558	105	68	94	67	34
5	230	1,720	614	2,840	222	1,090	506	105	87	118	58	30
6	144	1,010	698	3,230	224	757	438	101	148	126	54	30
7	140	722	734	2,190	230	1,500	438	98	347	100	52	30
8	522	586	*788	1,140	224	1,520	410	92	458	91	51	29
9	965	530	920	845	210	1,000	369	89	995	84	49	56
10	1,100	734	1,200	726	205	726	350	98	494	82	48	170
11	718	582	4,030	666	566	582	338	107	363	82	45	448
12	650	494	3,190	646	646	498	314	107	287	80	44	152
13	534	430	1,550	638	534	462	293	100	248	75	42	105
14	434	379	905	582	444	430	278	87	276	75	42	89
15	396	341	670	1,090	379	402	259	80	234	72	42	77
16	335	314	542	2,570	344	396	242	77	217	68	42	70
17	270	290	438	1,880	335	402	*224	73	205	67	40	67
18	240	612	498	1,240	302	399	212	70	188	62	40	66
19	227	1,800	658	1,050	344	538	205	70	186	61	40	61
20	205	1,370	1,960	1,060	427	770	195	70	181	56	37	70
21	188	1,010	3,350	890	502	1,920	181	68	165	56	37	77
22	176	762	3,190	845	486	1,980	172	66	157	55	37	87
23	176	816	2,140	850	455	3,170	163	64	148	54	37	72
24	183	1,520	1,740	766	483	2,090	152	*64	140	*54	40	66
25	934	2,150	1,530	674	526	1,440	146	64	132	54	40	75
26	*788	1,920	1,190	582	546	955	138	62	124	51	41	101
27	1,040	2,140	935	498	658	752	134	62	118	51	41	107
28	1,100	1,420	694	455	2,340	694	134	60	113	51	40	82
29	1,550	1,020	586	406	1,930	890	128	58	107	48	40	105
30	1,610	890	502	350	------	1,150	124	56	103	48	*37	144
31	1,110	-----	427	311	------	1,220	------	56	------	47	37	------
Total	16,303	34,987	39,129	33,860	14,551	37,613	9,455	2,543	6,455	2,250	1,476	2,606
Mean	526	1,166	1,262	1,092	502	1,213	315	82.0	215	72.6	47.6	86.9
Cfsm	9.51	21.1	22.8	19.7	9.08	21.9	5.70	1.48	3.89	1.31	0.861	1.57
In.	10.96	23.53	26.31	22.77	9.79	25.30	6.36	1.71	4.34	1.51	0.99	1.75
Ac-ft	32,340	69,400	77,610	67,160	28,860	74,600	18,750	5,040	12,800	4,460	2,930	5,170

Calendar year 1955: Max 4,030 Min 49 Mean 499 Cfsm 9.02 In. 122.44 Ac-ft 361,100
Water year 1955-56: Max 4,030 Min 29 Mean 550 Cfsm 9.95 In. 135.32 Ac-ft 399,100

Peak discharge (base, 4,000 cfs).--Nov. 2 (8:35 p.m.) 4,510 cfs (9.70 ft); Dec. 11 (time unknown) 5,990 cfs (11.59 ft); Dec. 21 (time unknown) 4,650 cfs (10.12 ft); Mar. 2 (time unknown) 4,220 cfs (9.59 ft).

* Discharge measurement made on this day.

Salmon Creek near Naselle, Wash.

Location.--Lat 46°21'20", long 123°45'00", in NE¼ sec. 14, T. 10 N., R. 9 W., on left bank half a mile upstream from last crossing of U. S. Highway 830, 2 miles upstream from mouth, and 3 miles southeast of Naselle.

Drainage area.--16.4 sq mi.

Records available.--June 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 80 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,600 cfs Dec. 21 (gage height, 7.94 ft), from rating curve extended above 560 cfs by logarithmic plotting; minimum, 2.9 cfs Sept. 6 (gage height, 1.09 ft).
1953-56: Maximum discharge, that of Dec. 21, 1955; minimum, 2.4 cfs Sept. 20, 1953 (gage height, 0.90 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Slight regulation from millpond. Possibly some diversion for domestic use.

Revisions (water years).--WSP 1346: 1953(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.1	3.1	3.0	187
1.2	5.5	3.5	287
1.3	8.3	4.0	410
1.5	16	4.5	556
1.7	29	5.0	746
2.0	56	6.0	1,220
2.5	112	7.0	1,850

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	230	301	113	*68	692	292	22	9.3	21	6.3	4.1
2	12.5	879	263	197	63	742	224	21	8.6	21	24	3.8
3	13	872	207	483	58	608	173	20	10.5	21	29	3.6
4	47	668	170	704	55	*550	144	20	11	20	13	3.6
5	52	397	167	781	57	359	118	19.5	17	39	10.5	3.1
6	35	252	192	764	54	244	100	18	39	28	9.6	3.1
7	67	177	189	497	53	776	99	17.5	59	22	8.6	3.1
8	305	138	*302	334	49	569	86	17	129	18.5	8.0	3.1
9	619	129	263	250	45	344	75	15.5	163	17.5	7.7	21
10	420	151	283	192	44	234	68	17.5	104	17	7.4	64
11	272	124	1,280	164	112	173	63	21	80	16	7.1	80
12	240	108	926	139	126	144	58	21	65	15.5	6.8	33
13	175	98	410	132	122	126	54	17.5	60	14.5	6.3	23
14	139	87	252	139	105	110	50	15.5	67	14.5	6.8	19.5
15	116	77	184	305	90	98	48	14.5	56	14	6.5	17
16	98	75	142	550	84	90	44	14	52	13	6.8	15
17	84	70	116	410	81	87	*41	13	47	12	6.3	14
18	72	252	112	342	77	85	40	12.5	42	11	5.8	13
19	69	453	171	336	95	87	37	12	42	10	5.3	12
20	59	327	628	301	164	106	35	12.5	41	9.6	5.0	15
21	52	259	1,250	a310	200	374	34	12	36	9.3	5.0	19.5
22	47	209	1,100	a230	187	397	32	11.5	35	9.0	4.8	15
23	42	228	594	a230	170	853	31	11	32	a8.3	4.8	13
24	90	439	682	a210	198	504	28	*10.5	30	*7.7	6.0	14.5
25	272	597	485	a180	272	334	28	10	28	7.4	7.1	15.5
26	*242	664	344	a150	287	259	26	10.5	26	7.1	6.5	25
27	*307	653	254	a140	375	218	25	10	25	6.8	6.3	25
28	334	405	192	a120	956	196	28	9.3	23	6.8	5.8	26
29	518	265	154	a100	559	224	26	9.0	21	6.5	5.3	30
30	415	240	129	a85	------	352	23	8.3	21	6.3	*5.0	40
31	312	-----	111	a80	-----	372	-----	9.6	------	6.3	4.5	------
Total	5,536.5	9,523	11,853	8,968	4,806	10,307	2,130	453.2	1,379.4	436.6	247.9	577.5
Mean	179	317	382	289	166	332	71.0	14.6	46.0	14.1	8.00	19.2
Cfsm	10.9	19.3	23.3	17.6	10.1	20.2	4.33	0.890	2.80	0.860	0.488	1.17
In.	12.56	21.60	26.88	20.34	10.90	23.37	4.83	1.03	3.13	0.99	0.56	1.31
Ac-ft	10,980	18,890	23,510	17,790	9,530	20,440	4,220	899	2,740	866	492	1,150

Calendar year 1955: Max 1,280 Min 6.8 Mean 137 Cfsm 8.35 In. 113.21 Ac-ft 99,030
Water year 1955-56: Max 1,280 Min 3.1 Mean 154 Cfsm 9.39 In. 127.50 Ac-ft 111,500

Peak discharge (base, 1,300 cfs).--Nov. 2 (5 p.m.) 1,650 cfs (6.71 ft); Dec. 11 (7 p.m.) 1,990 cfs (7.20 ft); Dec. 21 (6:30 p.m.) 2,600 cfs (7.94 ft); Mar. 7 (5:30 p.m.) 1,470 cfs (6.44 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Willapa River at Lebam, Wash.

Location.--Lat 46°33'50", long 123°33'50", in SW¼ sec. 33, T. 13 N., R. 7 W., on left bank half a mile west of Lebam and 1 mile upstream from Walker Creek.

Drainage area.--41.4 sq mi.

Records available.--June 1948 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 154.0 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--8 years, 208 cfs (150,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,850 cfs Dec. 21 (gage height, 12.06 ft); minimum, 6.3 cfs Aug. 18-23 (gage height, 2.48 ft).
1948-56: Maximum discharge, 4,930 cfs Feb. 22, 1949 (gage height, 17.53 ft, from high-water mark in gage house), from rating curve extended above 2,200 cfs; minimum, 1.4 cfs Sept. 22, 1951; minimum gage height, 2.39 ft Aug. 22, 23, 1951, Oct. 27, 1952.

Remarks.--Records good. No regulation. Some diversion for domestic use.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 23				Mar. 24 to Sept. 30			
2.4	5.0	3.5	190	2.4	3.0	3.1	90
2.5	11.0	4.0	315	2.5	9.0	3.5	168
2.7	31	5.0	590	2.6	18	4.0	285
2.9	59	7.0	1,190	2.7	29	5.0	560
3.1	95	10.0	2,120	2.9	57	7.0	1,160

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.8	345	509	288	155	*893	491	63	22	27	7.6	7.6
2	9.8	1,220	521	570	140	1,040	390	62	22	25	13	7.6
3	10.5	1,900	432	1,060	133	1,110	328	57	30	25	41	7.6
4	20	1,930	352	1,350	130	992	288	57	37	25	17	7.6
5	38	873	368	1,640	130	662	254	56	37	29	13	7.6
6	27	524	*440	2,060	128	473	223	54	44	30	11.5	6.9
7	31	370	473	1,030	128	1,070	220	50	95	25	10.5	7.6
8	191	302	618	635	128	1,040	197	48	83	21	10.5	7.6
9	435	262	557	485	118	662	181	48	141	20	9.8	26
10	315	262	470	378	112	467	*181	50	125	20	9.8	42
11	198	238	1,290	332	121	372	175	51	108	*20	9.0	75
12	150	210	1,280	302	162	315	168	48	88	19	7.6	36
13	114	190	710	308	185	285	160	44	75	18	7.6	27
14	97	165	470	305	182	265	151	42	76	18	7.6	21
15	82	158	375	574	160	248	143	41	71	18	8.3	18
16	68	140	305	1,330	150	235	135	37	63	17	8.3	16
17	62	133	255	857	160	228	123	36	60	15	6.9	15
18	58	476	250	632	155	235	119	36	54	14	6.3	14
19	56	1,020	446	614	215	240	116	34	52	12	6.3	13
20	53	659	1,640	554	352	250	118	33	52	12	6.3	14
21	48	491	1,920	476	388	510	119	34	46	11.5	6.3	17
22	44	385	1,710	418	348	692	116	*27	44	10.5	6.3	17
23	43	385	1,110	402	310	1,860	106	27	42	9.0	6.3	14
24	*56	1,150	1,120	432	370	1,040	94	27	38	8.3	6.9	13
25	353	1,420	959	378	449	710	82	27	37	8.3	12	14
26	300	1,120	740	332	452	542	78	27	34	8.3	12	19
27	275	1,060	575	282	502	428	78	28	33	8.3	9.8	22
28	285	680	455	262	1,070	378	80	25	30	7.6	*9.8	17
29	573	479	378	235	797	382	76	22	29	7.6	8.3	18
30	536	435	322	*200	------	536	70	21	28	7.6	8.3	28
31	438	-----	275	178	-----	596	-----	22	------	7.6	7.6	------
Total	4,976.1	18,982	21,325	18,899	7,830	18,756	5,060	1,234	1,696	504.6	311.5	558.1
Mean	161	633	688	610	270	605	169	39.8	56.5	16.3	10.0	18.6
Cfsm	3.89	15.3	16.6	14.7	6.52	14.6	4.08	0.961	1.36	0.394	0.242	0.449
In.	4.47	17.05	19.16	16.98	7.03	16.85	4.55	1.11	1.52	0.45	0.28	0.50
Ac-ft	9,870	37,650	42,300	37,490	15,530	37,200	10,040	2,450	3,360	1,000	618	1,110

Calendar year 1955: Max 1,930 Min 5.6 Mean 230 Cfsm 5.56 In. 75.32 Ac-ft 166,300
Water year 1955-56: Max 2,060 Min 6.3 Mean 274 Cfsm 6.62 In. 89.95 Ac-ft 198,600

Peak discharge (base, 1,800 cfs).--Nov. 4 (1 a.m.) 2,640 cfs (11.46 ft); Nov. 24 (9:30 p.m.) 2,240 cfs (10.32 ft); Dec. 11 (9 p.m.) 2,150 cfs (10.06 ft); Dec. 21 (7 p.m.) 2,850 cfs (12.06 ft); Jan. 6 (6:30 a.m.) 2,600 cfs (11.36 ft); Mar. 7 (6 to 7:30 p.m.) 1,830 cfs (9.14 ft); Mar. 23 (1 to 1:30 p.m.) 2,570 cfs (11.28 ft).
* Discharge measurement made on this day.

Fork Creek near Lebam, Wash.

Location.--Lat 46°33'20", long 123°35'00", in NW¼ sec. 5, T. 12 N., R. 7 W., on right bank three-quarters of a mile upstream from mouth and 1½ miles southwest of Lebam.

Drainage area.--20.4 sq mi.

Records available.--June 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 155 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,270 cfs Mar. 23 (gage height, 6.30 ft), from rating curve extended as explained below; minimum, 6.2 cfs Sept. 4, 5 (gage height, 1.69 ft).

1953-56: Maximum discharge, 2,430 cfs Feb. 19, 1954 (gage height, 6.36 ft), from rating curve extended above 940 cfs on basis of slope-area determination at gage height 7.75 ft for flood of Dec. 9, 1956; minimum, that of Sept. 4, 5, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversion to State fish hatchery with possibly some regulation.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.7	6.6	2.6	146
1.8	12.5	3.0	267
1.9	21	3.5	475
2.1	44	4.0	735
2.3	77	5.5	1,680

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.5	227	352	157	94	1,020	369	52	17.5	25	10.5	6.6
2	14	973	289	330	88	994	278	48	16	24	20	6.6
3	15	1,510	227	713	83	*826	227	47	20	23	32	6.6
4	85	1,390	190	964	81	565	208	44	25	22	16	6.6
5	81	585	193	1,130	81	361	185	44	32	40	14	6.6
6	50	328	*264	1,200	79	257	157	43	79	48	12.5	7.2
7	70	224	260	605	77	736	173	41	136	34	12	7.8
8	333	179	373	369	77	664	154	40	172	28	11.5	8.4
9	636	151	324	289	73	378	a150	39	266	25	11.5	35
10	344	154	286	230	72	260	a150	40	151	23	10.5	53
11	188	134	1,330	224	140	202	*146	41	112	*21	10	75
12	154	116	874	214	170	168	138	40	85	19.5	10	34
13	119	105	417	224	134	151	136	38	75	19.5	9.6	23
14	94	100	271	227	112	134	131	34	79	18.5	9.6	19.5
15	79	90	208	628	94	124	116	31	75	17.5	10	16.8
16	68	79	168	1,230	90	119	105	30	66	17	9.6	16
17	59	77	141	580	88	128	92	29	61	16	9.6	14
18	54	416	138	404	85	160	90	28	54	15	8.4	13.5
19	56	669	215	421	107	190	94	a26	52	14	8.4	12
20	50	412	944	382	157	199	103	a23	52	13.5	8.4	15
21	46	297	1,110	336	173	674	100	a21	46	14	8.4	17.5
22	43	233	1,170	324	160	796	88	*20	43	13.5	7.8	15
23	40	271	691	336	141	1,620	77	21	40	12.5	7.8	12.5
24	90	867	702	282	165	757	72	22	36	12.5	8.4	15
25	*525	928	585	a230	199	495	68	19.5	34	12	12.5	19.5
26	278	802	426	a200	196	378	66	18.5	32	11.5	10.5	29
27	257	735	316	a170	240	282	63	20	30	11.5	9.6	27
28	289	439	240	a150	790	271	61	18.5	28	11.5	*8.4	26
29	692	293	196	a130	550	378	63	17.5	27	11.5	8.4	39
30	448	278	168	a115	------	630	56	17	26	10.5	7.8	52
31	304	------	149	*103	------	530	------	17.5	------	10.5	7.2	------
Total	5,574.5	13,062	13,217	12,897	4,596	14,447	3,916	970.5	1,967.5	595.0	340.9	635.7
Mean	180	435	426	416	158	466	131	31.3	65.6	19.2	11.0	21.2
Cfsm	8.82	21.3	20.9	20.4	7.75	22.8	6.42	1.53	3.22	0.941	0.539	1.04
In.	10.16	23.81	24.10	23.51	8.38	26.34	7.14	1.77	3.59	1.08	0.62	1.16
Ac-ft	11,060	25,910	26,220	25,580	9,120	28,660	7,770	1,920	3,900	1,180	676	1,260

Calendar year 1955: Max 1,510 Min 9.0 Mean 168 Cfsm 8.24 In. 111.97 Ac-ft 121,900
Water year 1955-56: Max 1,620 Min 6.6 Mean 197 Cfsm 9.66 In. 131.66 Ac-ft 143,300

Peak discharge (base, 2,000 cfs).--Nov. 3 (11 p.m.) 2,040 cfs (6.01 ft); Dec. 11 (6 p.m.) 2,200 cfs (6.21 ft); Mar. 23 (10 a.m.) 2,270 cfs (6.30 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

South Fork Willapa River near Raymond, Wash.

Location.--Lat 46°37'45", long 123°42'00", in E½ sec. 8, T. 13 N., R. 8 W., on left bank at downstream side of logging bridge, a quarter of a mile downstream from Rue Creek and 4¼ miles southeast of junction of Highways 101 and 12 at Raymond.

Drainage area.--27.3 sq mi.

Records available.--May 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 155 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,060 cfs Dec. 11 (gage height, 6.92 ft); minimum daily, 22 cfs Aug. 20-23, Sept. 5-8.
1953-56: Maximum discharge, that of Dec. 11, 1955; minimum daily, that of Aug. 20-23, Sept. 5-8, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Some slight diversion for domestic use. No regulation.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 28, Sept. 5-12)

Oct. 1 to Mar. 2				Mar. 3 to Sept. 30			
1.6	23	3.0	325	1.6	22	2.5	170
1.8	46	4.0	710	1.8	43	3.0	300
2.0	74	6.1	1,650	2.0	73	5.0	1,040
2.5	180						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	233	381	263	160	900	351	82	46	50	32	25
2	31	590	392	391	150	1,000	306	78	44	50	40	25
3	31	742	339	546	140	*940	268	76	50	49	65	25
4	62	694	287	782	130	900	250	80	47	49	45	24
5	68	470	275	1,090	130	600	225	76	49	60	35	22
6	47	342	278	1,610	130	500	208	73	59	53	35	22
7	63	269	*275	892	125	1,000	208	71	87	47	35	22
8	134	228	350	590	120	900	192	70	114	47	34	22
9	180	228	322	462	120	600	178	68	158	*44	33	61
10	182	260	311	370	115	400	168	73	111	44	32	98
11	116	220	1,180	325	130	350	*158	73	92	43	31	114
12	104	195	1,190	284	170	*300	148	70	82	43	28	56
13	88	178	668	281	190	268	141	68	76	42	26	42
14	77	165	486	275	180	242	135	65	78	42	26	36
15	70	158	384	398	160	222	129	62	75	42	28	32
16	65	145	322	1,030	150	205	123	60	71	39	28	30
17	62	133	272	754	150	195	120	60	68	39	26	28
18	60	338	254	538	200	185	114	59	65	38	24	26
19	60	490	281	478	300	178	111	57	65	37	23	26
20	58	370	614	458	360	175	107	57	65	36	22	27
21	54	311	861	406	380	311	104	56	63	37	22	29
22	52	272	928	367	320	321	102	54	63	36	22	26
23	51	263	710	360	350	607	98	53	60	36	22	24
24	94	397	880	346	400	468	95	*50	59	36	24	26
25	*272	514	806	308	450	369	93	*49	57	35	36	26
26	205	578	642	275	500	315	92	56	56	35	38	44
27	192	614	526	245	800	273	88	49	54	33	30	33
28	205	474	416	230	950	260	95	47	53	33	*26	32
29	399	381	353	210	800	282	90	46	51	32	26	39
30	353	374	300	190	--	390	85	46	51	32	25	46
31	290	-----	269	*180	-----	408	-----	46	-----	32	25	-----
Total	3,755	10,626	15,552	14,934	8,260	14,064	4,582	1,930	2,069	1,271	944	1,088
Mean	121	354	502	482	285	454	153	62.3	69.0	41.0	30.5	36.3
Cfsm	4.43	13.0	18.4	17.7	10.4	16.6	5.60	2.28	2.53	1.50	1.12	1.33
In.	5.12	14.48	21.19	20.34	11.25	19.16	6.24	2.63	2.82	1.73	1.29	1.48
Ac-ft	7,450	21,080	30,850	29,620	16,380	27,900	9,090	3,830	4,100	2,520	1,870	2,160

Calendar year 1955: Max 1,190 Min 26 Mean 190 Cfsm 6.96 In. 94.26 Ac-ft 137,200
Water year 1955-56: Max 1,610 Min 22 Mean 216 Cfsm 7.91 In. 107.73 Ac-ft 156,800

Peak discharge (base, 1,500 cfs).--Dec. 11 (8:30 p.m.) 2,060 cfs (6.92 ft); Jan. 6 (5 a.m.) 1,840 cfs (6.47 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 31 to Mar. 11, July 30 to Aug. 27, Aug. 29 to Sept. 4; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

North River near Brooklyn, Wash.

Location.--Lat 46°46'55", long 123°28'50", in S½ sec. 18, T. 15 N., R. 6 W., on left bank 1¼ miles upstream from Fall River and 1½ miles northeast of Brooklyn.

Drainage area.--29.8 sq mi.

Records available.--June 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,270 cfs Dec. 11 (gage height, 7.92 ft); minimum, 6.2 cfs Sept. 4-6 (gage height, 0.38 ft).
1953-56: Maximum discharge, that of Dec. 11, 1955; minimum, that of Sept. 4-6, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation. Possibly some small diversion for irrigation and domestic use.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 25 to Nov. 7)

0.3	3.5	1.5	210
.4	7.0	2.0	335
.5	14	2.5	460
.6	24	3.0	585
.7	38	4.0	885
.8	56	5.2	1,240
1.0	95		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	183	318	166	106	450	350	43	21	18	9.8	6.6
2	11	610	308	262	101	*621	250	42	20	17	18	6.6
3	12.5	673	240	450	95	615	200	40	31	17	33	6.6
4	26	492	192	562	95	538	170	42	37	18	17	6.6
5	34	305	173	783	99	375	140	45	35	21	13.5	6.2
6	20	215	183	933	101	272	120	38	43	21	12.5	6.6
7	25	166	*176	538	101	643	115	37	71	18	12	7.7
8	83	161	198	355	95	556	105	34	54	16	11	7.7
9	138	140	180	272	91	358	100	33	71	15	11	14
10	143	159	190	218	89	268	92	35	52	*14	10.5	27
11	81	138	1,240	190	127	222	87	37	43	13.5	10	52
12	67	125	898	168	140	190	*83	37	35	14	9.5	23
13	58	112	448	171	130	175	79	33	31	13.5	9	14
14	45	101	300	159	115	161	75	29	40	14	9	12.5
15	38	96	238	278	110	145	73	27	37	14	9	11
16	34	93	198	600	100	130	69	26	34	13.5	9	11
17	30	83	166	569	95	125	66	24	37	12.5	9	10.5
18	29	219	154	378	95	120	62	23	31	12	8.5	10.5
19	29	480	183	312	140	120	60	23	34	11	8	9.8
20	27	410	620	325	170	115	56	23	31	10.5	7.5	13.5
21	26	295	877	285	200	180	54	22	27	10.5	7	17
22	26	215	830	250	170	250	51	22	26	10.5	7	13.5
23	26	198	548	*245	160	370	51	*22	24	10.5	7	12
24	57	356	545	245	230	470	51	21	23	10.5	7	13.5
25	*300	600	452	215	270	350	49	21	22	9.8	7.5	14
26	272	597	350	188	260	280	49	22	21	9.8	8	21
27	218	594	315	161	350	230	47	22	20	9.8	9	21
28	248	400	255	152	340	210	47	21	19	9.8	8.5	17
29	621	278	215	136	330	240	47	20	18	9.1	*7.7	22
30	378	270	185	120	------	310	45	19	18	9.1	7.0	29
31	250	-----	166	*110	-----	390	-----	20	------	9.8	7.0	------
Total	3,363.5	8,764	11,341	9,796	4,505	9,479	2,843	903	1,006	412.7	319.5	443.4
Mean	108	292	366	316	155	306	94.8	29.1	33.5	13.3	10.3	14.8
Cfsm	3.62	9.80	12.3	10.6	5.20	10.3	3.18	0.977	1.12	0.446	0.346	0.497
In.	4.20	10.94	14.15	12.23	5.62	11.83	3.55	1.13	1.26	0.52	0.40	0.55
Ac-ft	6,670	17,380	22,490	19,430	8,940	18,800	5,640	1,790	2,000	819	634	879

Calendar year 1955: Max 1,240 Min 7.5 Mean 131 Cfsm 4.40 In. 59.55 Ac-ft 94,650
Water year 1955-56: Max 1,240 Min 6.2 Mean 145 Cfsm 4.87 In. 66.38 Ac-ft 105,500

Peak discharge (base, 1,000 cfs).--Oct. 29 (12:45 p.m.) 1,090 cfs (5.48 ft); Nov. 2 (8:15 p.m.) 1,220 cfs (5.90 ft); Dec. 11 (7 p.m.) 2,270 cfs (7.92 ft); Dec. 21 (8 p.m.) 1,190 cfs (5.02 ft); Jan. 6 (8 a.m.) 1,080 cfs (4.64 ft); Mar. 7 (6 p.m.) 1,200 cfs (5.04 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 13 to Mar. 1, Mar. 16 to Apr. 11, Aug. 11-28; discharge estimated on basis of records for stations on nearby streams.

North River near Raymond, Wash.

Location.--Lat 46°48'30", long 123°51'00", in sec. 6, T. 15 N., R. 9 W., on left bank 1¼ miles upstream from Salmon Creek and 10 miles northwest of Raymond.

Drainage area.--219 sq mi.

Records available.--August 1927 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 7.39 ft above mean sea level (Western Washington Electric Light & Power Co. benchmark).

Average discharge.--29 years, 952 cfs (689,200 acre-ft per year).

Extremes.--Maximum discharge during year, 7,940 cfs Dec. 13 (gage height, 8.74 ft); minimum, 42 cfs Sept. 6-8 (gage height, 1.34 ft).
1927-56: Maximum discharge, 35,000 cfs Dec. 10, 1933 (gage height, 15.8 ft, from floodmarks), from rating curve extended above 7,500 cfs; minimum, 21 cfs Aug. 24, 1951 (gage height, 1.01 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diversion for farm and domestic use. No regulation.

Revisions (water years).--WSP 792: 1934. WSP 832: 1935-36. WSP 1286: 1952.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 23 to Sept. 30)

1.2	40	3.0	615
1.3	50	3.5	970
1.5	76	4.0	1,420
1.7	112	5.0	2,580
1.9	156	6.0	3,840
2.1	210	7.0	5,220
2.3	278	8.5	7,540
2.6	400		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	2,580	2,540	1,260	895	3,970	3,400	296	133	149	70	52
2	86	3,900	2,680	1,330	828	*5,480	2,820	285	136	144	86	50
3	84	7,090	2,340	2,280	778	5,900	1,990	271	142	142	193	48
4	108	7,360	1,910	3,970	750	5,520	1,820	278	158	144	210	45
5	140	5,520	1,630	5,210	750	4,590	1,360	315	236	210	142	43
6	210	3,240	1,630	7,000	757	3,150	1,160	308	a300	210	106	*42
7	229	2,120	1,810	6,440	736	4,050	1,080	268	a400	198	88	42
8	505	1,600	2,000	4,270	722	5,850	1,030	250	a570	164	81	43
9	1,240	1,360	2,160	2,690	680	4,950	902	240	a770	142	70	66
10	1,710	1,370	2,020	2,060	648	3,180	820	243	a900	*131	69	128
11	1,300	1,320	4,250	1,680	806	2,340	778	246	a700	125	63	323
12	1,040	1,120	7,200	1,450	1,210	1,850	*722	254	a600	122	65	257
13	880	1,000	7,060	1,340	1,300	1,550	667	246	a500	118	63	181
14	708	895	3,660	1,290	1,190	1,360	622	226	a410	116	62	120
15	555	828	2,300	2,050	1,080	1,190	591	210	a370	112	62	91
16	470	820	1,810	4,560	932	1,080	561	198	339	112	62	78
17	400	820	1,450	5,480	925	1,010	516	190	315	110	60	72
18	355	981	1,230	4,180	910	962	490	181	300	102	63	66
19	323	2,440	1,330	3,150	910	948	465	174	293	97	58	63
20	296	3,580	2,640	3,010	1,080	962	445	171	278	91	58	72
21	282	3,140	5,370	2,720	1,440	1,600	425	171	264	86	58	81
22	260	2,330	7,250	2,400	1,700	2,240	410	166	246	79	57	75
23	243	1,790	6,640	*2,280	1,670	3,440	391	*158	230	78	58	79
24	444	2,030	5,220	2,460	1,700	4,440	373	156	217	76	57	91
25	1,650	3,550	4,860	2,360	2,280	3,360	360	149	198	75	56	135
26	*3,190	4,720	3,930	2,000	2,840	2,510	343	149	190	72	56	151
27	2,680	4,770	3,160	1,660	2,710	2,080	327	147	181	70	56	142
28	2,410	4,300	2,570	1,430	3,500	1,810	323	147	171	70	56	158
29	3,740	3,060	2,030	1,290	3,920	2,050	323	142	166	70	*56	196
30	4,900	2,400	1,630	1,130	------	2,580	315	133	156	70	55	233
31	3,940	-----	1,380	1,000	-----	3,350	------	133	------	70	*55	------
Total	34,469	82,034	97,690	85,430	39,647	89,352	25,429	6,501	9,871	3,555	2,351	3,223
Mean	1,112	2,734	3,151	2,756	1,367	2,882	848	210	329	115	75.8	107
Cfsm	5.08	12.5	14.4	12.6	6.24	13.2	3.87	0.959	1.50	0.525	0.346	0.489
In.	5.85	13.93	16.59	14.51	6.73	15.17	4.32	1.10	1.68	0.60	0.40	0.55
Ac-ft	68,370	162,700	193,800	169,400	78,640	177,200	50,440	12,890	19,580	7,050	4,660	6,390

Calendar year 1955: Max 7,360 Min 58 Mean 1,185 Cfsm 5.41 In. 73.47 Ac-ft 858,200
Water year 1955-56: Max 7,360 Min 42 Mean 1,310 Cfsm 5.98 In. 81.43 Ac-ft 951,100

Peak discharge (base, 4,000 cfs).--Oct. 30 (7:30 p.m.) 4,980 cfs (6.83 ft); Nov. 4 (5:30 a.m.) 7,800 cfs (8.66 ft); Nov. 26 (1 to 6 p.m.) 4,800 cfs (6.70 ft); Dec. 13 (3 a.m.) 7,940 cfs (8.74 ft); Dec. 22 (2:30 p.m.) 7,480 cfs (8.46 ft); Jan. 6 (9:30 a.m.) 7,080 cfs (8.21 ft); Jan. 17 (7:30 a.m.) 5,580 cfs (7.24 ft); Mar. 3 (4:30 a.m.) 6,140 cfs (7.61 ft); Mar. 8 (6 p.m.) 6,060 cfs (7.56 ft); Mar. 24 (1 p.m.) 4,560 cfs (6.53 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

Chehalis River near Doty, Wash.

Location.--Lat 46°37'00", long 123°16'40", in NW¼ sec. 14, T. 13 N., R. 5 W., on right bank 1½ miles upstream from Elk Creek, 1½ miles south of Doty, and 3½ miles north of Pe Ell.

Drainage area.--113 sq mi.

Records available.--October 1939 to September 1956.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Datum of gage is 302.1 ft above mean sea level (river-profile survey).

Average discharge.--17 years, 572 cfs (414,100 acre-ft per year).

Extremes.--Maximum discharge during year, 11,000 cfs Dec. 11 (gage height, 12.70 ft); minimum observed, 26 cfs Sept. 6, 8, 9; minimum gage height, 0.97 ft Sept. 6, 8.

1939-56: Maximum discharge, 18,100 cfs Feb. 7, 1945 (gage height, 17.80 ft), water over gage, discharge based on observer's estimate of maximum gage height; minimum observed, 18 cfs Oct. 14, 1952; minimum gage height, 0.84 ft Aug. 25-27, Sept. 21, 22, 1951.

Revisions.--The maximum observed discharge for the water year 1946 has been revised to momentary maximum discharge of 8,170 cfs Dec. 28, 1945 (gage height, 10.95 ft, from graph based on gage readings), superseding figures published in WSP 1062 and 1316.

Remarks.--Records good except those for period of shifting control, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1943(M).

Rating table, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.9	20	3.0	810
1.0	30	4.0	1,490
1.2	60	5.0	2,260
1.4	100	6.0	3,080
1.7	181	8.0	5,020
2.0	291	10.0	7,360
2.5	530		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	1,170	1,970	756	415	*2,930	1,830	295	92	110	46	31
2	57	2,830	1,670	1,520	385	3,850	1,480	275	92	105	49	30
3	57	6,740	1,330	3,390	353	2,940	1,160	263	107	102	151	30
4	64	6,630	1,130	4,680	335	2,350	986	255	151	100	87	27
5	259	2,850	1,060	5,430	322	1,490	918	259	129	105	68	27
6	175	1,700	*1,190	5,420	322	972	786	259	169	140	58	27
7	175	1,090	1,690	3,030	309	1,470	744	267	480	105	54	27
8	810	822	1,880	2,200	313	1,800	732	244	353	96	50	27
9	2,480	690	1,880	1,390	304	1,240	720	226	540	*92	47	28
10	1,610	679	1,440	1,180	304	918	*792	226	465	87	47	107
11	918	596	5,240	1,090	300	780	924	219	376	83	46	188
12	738	535	6,470	1,110	420	640	912	205	313	79	44	96
13	591	525	2,400	1,220	591	570	937	198	271	77	44	64
14	460	505	1,630	1,060	500	535	912	178	263	79	43	50
15	371	460	1,080	1,960	430	500	762	169	263	75	44	46
16	317	362	894	5,110	371	495	684	169	251	75	44	43
17	263	340	858	3,120	358	555	591	166	233	68	43	40
18	233	816	840	2,310	340	732	515	160	219	62	41	37
19	212	3,770	1,170	2,200	358	1,050	602	148	219	60	41	36
20	201	2,230	4,220	2,300	480	1,060	696	138	226	58	37	38
21	181	1,500	6,230	1,970	540	2,590	750	132	195	58	34	41
22	169	1,200	6,520	1,690	515	3,090	648	*124	181	58	33	38
23	157	1,340	3,580	1,530	455	6,890	540	119	172	55	33	34
24	*172	4,280	3,170	1,360	435	4,160	480	114	163	52	31	34
25	2,130	5,420	2,670	1,130	465	2,690	445	112	151	52	34	36
26	1,520	5,250	2,550	937	545	1,960	420	105	146	50	37	37
27	1,390	3,940	1,910	786	668	1,600	400	105	135	50	*41	50
28	1,470	2,480	1,430	668	1,800	1,460	385	100	129	49	43	49
29	2,300	1,670	1,110	580	1,840	1,620	353	100	124	47	40	57
30	2,530	1,520	930	*520	------	2,070	309	96	119	46	36	70
31	1,530	----	822	470	-----	2,970	------	96	------	47	33	------
Total	23,598	63,940	70,964	62,117	14,773	57,977	22,411	5,522	6,727	2,322	1,479	1,445
Mean	761	2,131	2,289	2,004	509	1,870	747	178	224	74.9	47.7	48.2
Cfsm	6.73	18.9	20.3	17.7	4.50	16.5	6.61	1.58	1.98	0.663	0.422	0.427
In.	7.77	21.04	23.36	20.44	4.86	19.08	7.38	1.82	2.21	0.76	0.49	0.48
Ac-ft	46,810	126,800	140,800	123,200	29,300	115,000	44,450	10,950	13,340	4,610	2,930	2,870

Calendar year 1955: Max 6,740 Min 33 Mean 779 Cfsm 6.89 In. 93.63 Ac-ft 564,200
Water year 1955-56: Max 6,890 Min 27 Mean 911 Cfsm 8.06 In. 109.69 Ac-ft 661,100

Peak discharge (base, 6,800 cfs).--Nov. 4 (time unknown) 9,270 cfs (11.51 ft); Nov. 24 (time unknown) 8,690 cfs (11.06 ft); Dec. 11 (time unknown) 11,000 cfs (12.70 ft); Dec. 21 (time unknown) 10,000 cfs (12.05 ft); Jan. 5 or 6 (time unknown) 6,880 cfs (9.6 ft); Mar. 23 (time unknown) 9,320 cfs (11.88 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Feb. 19 to Apr. 17.

Newaukum River near Chehalis, Wash.

Location.--Lat 46°37'10", long 122°56'40", on line between secs. 9 and 16, T. 13 N., R. 2 W., on left bank at highway bridge 2½ miles southeast of Chehalis and 3½ miles upstream from mouth.

Drainage area.--159 sq mi.

Records available.--March 1929 to September 1931, July 1942 to September 1956.

Gage.--Staff gage and crest-stage indicator; gage read once or twice daily. Altitude of gage is 190 ft (from topographic map). Prior to Oct. 1, 1929, at datum 1.0 ft higher.

Average discharge.--16 years, 504 cfs (364,900 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 6,360 cfs Dec. 12 (gage height, 13.00 ft), from rating curve extended above 3,800 cfs by logarithmic plotting; minimum observed, 30 cfs Sept. 7 (gage height, 0.86 ft).

1929-31, 1942-56: Maximum discharge, 7,400 cfs Dec. 9, 1953 (gage height, 13.62 ft), from rating curve extended above 3,800 cfs by logarithmic plotting; minimum observed, 12 cfs Sept. 13, 14, 1949; minimum gage height, 0.74 ft Sept. 12, 13, 15, 1929 (present datum).

Remarks.--Records good except those for period of shifting control, which are fair. Cities of Chehalis and Centralia divert about 15 cfs for municipal use. No regulation.

Revisions (water years).--WSP 1012: 1943. WSP 1182: 1949(M). WSP 1316: 1929-31(M), 1945-46(M), 1950(M).

Rating tables, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
1.2	62	5.0	1,350	0.8	25	5.0	1,350
2.0	230	8.0	2,920	1.3	83	8.0	2,920
3.0	550	11.5	5,210	2.0	240	11.5	5,210
				3.0	550		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	1,480	2,080	684	508	1,320	1,430	240	120	110	47	38
2	68	2,050	1,820	852	410	1,940	1,120	222	116	104	63	36
3	*65	2,860	1,430	2,400	380	2,150	1,020	218	120	97	118	36
4	88	2,250	1,130	3,320	377	2,350	884	235	116	104	78	34
5	300	1,750	1,110	3,360	407	1,440	800	305	160	108	65	34
6	188	*1,260	1,270	2,780	536	1,160	676	235	180	140	55	31
7	235	928	1,380	2,300	540	1,300	700	212	200	124	52	30
8	550	860	1,640	1,600	606	1,560	620	208	172	102	48	32
9	1,400	712	1,360	1,310	557	1,190	*568	202	210	100	51	37
10	1,700	1,460	1,200	1,150	554	*988	568	218	258	90	51	65
11	920	1,140	3,100	1,010	764	796	578	215	320	86	50	60
12	684	884	5,070	896	1,180	708	540	208	228	*86	47	58
13	522	676	2,380	1,220	1,140	752	518	180	195	82	43	*50
14	363	568	1,560	1,080	924	756	522	170	182	80	42	42
15	315	487	*1,220	2,300	712	720	501	165	200	80	45	40
16	261	462	1,200	2,220	568	704	431	165	215	71	45	40
17	235	445	972	1,820	498	700	389	175	232	68	44	38
18	210	1,420	876	1,520	480	764	368	185	180	65	39	38
19	202	2,620	1,070	1,380	515	868	368	190	272	63	39	45
20	195	1,750	3,680	1,300	700	868	386	172	320	58	33	56
21	195	1,350	3,880	1,250	1,070	1,130	417	*156	260	55	33	53
22	175	1,260	4,160	1,190	1,000	1,380	383	142	222	55	34	43
23	156	1,220	2,880	1,380	812	2,980	341	138	210	53	32	38
24	166	2,100	2,120	2,220	756	2,700	311	133	165	52	37	38
25	860	4,440	1,620	1,320	1,150	2,730	290	129	144	50	38	51
26	1,280	4,060	1,610	1,040	1,130	2,460	275	127	142	51	59	48
27	1,000	4,580	1,800	*860	1,060	1,860	265	138	133	48	60	83
28	996	2,320	1,270	736	1,170	1,600	270	124	124	47	55	82
29	1,700	2,000	1,020	668	1,340	1,680	280	112	116	46	43	80
30	2,220	2,120	1,070	585	------	1,590	255	110	112	46	43	102
31	1,680	------	720	529	------	1,630	------	118	------	46	42	------
Total	19,001	51,512	57,698	46,280	21,844	44,774	16,074	5,547	5,624	2,367	1,531	1,458
Mean	613	1,717	1,861	1,493	753	1,444	536	179	187	76.4	49.4	48.6
Ac-ft	37,690	102,200	114,400	91,800	43,330	88,810	31,880	11,000	11,160	4,690	3,040	2,890

Calendar year 1955: Max 5,070 Min 34 Mean 710 Ac-ft 514,200
Water year 1955-56: Max 5,070 Min 30 Mean 748 Ac-ft 542,900

Peak discharge (base, 4,000 cfs).--Nov. 25 (about 3:30 a.m.) 5,940 cfs (12.48 ft); Dec. 12 (about 4 a.m.) 6,360 cfs (13.00 ft); Dec. 20 (about 7:30 p.m.) 5,550 cfs (11.99 ft); Jan. 4 (about 9 p.m.) 4,030 cfs (9.82 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Apr. 2-17.

Skookumchuck River near Centralia, Wash.

Location.--Lat 46°47'15", long 122°42'45", in SW¼NW¼ sec. 17, T. 15 N., R. 1 E., on left bank half a mile upstream from Bloody Run Creek, 4½ miles upstream from Thompson Creek, and 12 miles northeast of Centralia.

Drainage area.--60.8 sq mi.

Records available.--April 1929 to November 1933, October 1939 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level (river-profile survey). Apr. 1, 1929, to Dec. 6, 1933, staff gage at site a quarter of a mile downstream at different datum. Oct. 9 to Nov. 29, 1939, staff gage at present site and datum.

Average discharge.--21 years, 248 cfs (179,500 acre-ft per year).

Extremes.--Maximum discharge during year, 6,230 cfs Dec. 11 (gage height, 48.19 ft); minimum, 28 cfs Sept. 6, 7 (gage height, 39.35 ft).
1929-33, 1939-56: Maximum discharge, 6,710 cfs Dec. 9, 1953 (gage height, 48.59 ft); minimum, 15.5 cfs Nov. 28, 29, 1952 (gage height, 39.22 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 722: 1929-30. WSP 1246: Drainage area. WSP 1286: 1930, 1945.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
39.7	37	41.5	700	39.3	25	41.0	500
39.9	66	42.0	950	39.4	32	41.5	740
40.1	106	43.0	1,550	39.6	51	42.0	990
40.3	157	44.0	2,250	39.8	83	43.0	1,550
40.6	270	45.0	3,000	40.0	130	44.0	2,250
41.0	450			40.2	188	45.0	3,000
				40.5	290		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	525	850	332	210	850	700	191	85	65	37	31
2	44	851	725	401	194	950	560	179	79	64	48	30
3	45	1,250	590	1,140	188	700	463	176	79	62	64	30
4	144	1,230	465	1,790	185	580	445	185	85	59	42	30
5	195	900	418	1,540	198	500	410	207	94	65	38	29
6	123	625	471	1,320	201	450	368	188	110	70	38	29
7	135	450	590	975	227	510	397	185	122	59	37	29
8	322	369	615	680	234	410	381	185	118	55	35	29
9	1,040	329	615	546	220	350	*364	188	158	54	34	31
10	872	423	520	463	206	*298	381	198	207	52	34	36
11	490	369	2,660	419	253	258	*428	185	198	51	34	38
12	328	310	2,470	393	495	240	432	164	150	*50	34	34
13	238	261	1,010	509	410	223	445	138	*120	49	33	*32
14	195	218	680	500	328	217	454	128	112	49	33	32
15	166	210	505	845	270	227	432	125	112	48	33	31
16	152	185	*414	1,150	230	234	376	144	108	46	33	32
17	135	179	348	980	210	254	320	179	115	43	33	31
18	125	305	301	710	220	298	294	191	105	42	32	31
19	118	930	493	612	290	381	317	182	167	41	32	31
20	111	645	2,540	636	390	406	393	158	179	40	31	32
21	104	495	2,190	565	450	618	450	*127	150	40	31	35
22	98	396	2,170	555	410	918	410	112	125	40	31	32
23	93	446	1,400	612	390	2,270	332	112	115	39	31	31
24	108	1,050	950	593	460	1,670	279	108	103	38	31	31
25	533	2,240	820	486	620	1,600	258	98	92	38	31	33
26	585	1,900	805	410	600	1,260	251	98	85	38	39	36
27	460	1,750	755	*344	580	840	247	98	81	38	34	41
28	460	1,060	588	301	650	656	244	85	76	37	32	34
29	840	795	463	265	700	785	237	83	70	36	31	37
30	895	755	389	244	------	835	207	85	69	36	31	52
31	*675	-----	332	220	-----	880	------	92	------	36	31	------
Total	9,874	21,451	28,142	20,536	10,020	20,668	11,275	4,574	3,469	1,480	1,088	990
Mean	319	715	908	662	346	667	376	148	116	47.7	35.1	33.0
Cfsm	5.25	11.8	14.9	10.9	5.69	11.0	6.18	2.43	1.91	0.785	0.577	0.543
In.	6.04	13.12	17.21	12.56	6.13	12.64	6.90	2.80	2.12	0.91	0.67	0.61
Ac-ft	19,580	42,550	55,820	40,730	19,870	40,990	22,360	9,070	6,880	2,940	2,160	1,960

Calendar year 1955: Max 2,660 Min 32 Mean 347 Cfsm 5.71 In. 77.39 Ac-ft 250,900
Water year 1955-56: Max 2,660 Min 29 Mean 365 Cfsm 6.00 In. 81.71 Ac-ft 264,900

Peak discharge (base, 2,000 cfs).--Nov. 24 (11:30 p.m.) 2,680 cfs (44.60 ft); Dec. 11 (7:45 p.m.) 6,230 cfs (48.19 ft); Dec. 20 (3:45 p.m.) 3,660 cfs (45.73 ft); Jan. 4 (9 p.m.) 2,310 cfs (44.08 ft); Mar. 23 (5 p.m.) 3,010 cfs (45.01 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 15 to Mar. 9; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Chehalis River near Grand Mound, Wash.

Location.--Lat 46°46'35", long 123°02'05", in NE¼ sec. 22, T. 15 N., R. 3 W., on left bank at downstream side of highway bridge at Meadows, 1½ miles southwest of Grand Mound and 6 miles downstream from Skookumchuck River.

Drainage area.--895 sq mi.

Records available.--October 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 123.27 ft above mean sea level, datum of 1929. Prior to Oct. 3, 1934, staff gage at same site at datum 3.0 ft higher.

Average discharge.--28 years, 2,774 cfs (2,008,000 acre-ft per year).

Extremes.--Maximum discharge during year, 35,100 cfs Dec. 22 (gage height, 16.58 ft); minimum, 140 cfs Sept. 7 (gage height, 1.00 ft).
1928-56: Maximum discharge, 48,400 cfs Dec. 29, 1937 (gage height, 18.39 ft); minimum, 90 cfs Aug. 23-26, 1951; minimum gage height, that of Sept. 7, 1956.

Remarks.--Records excellent. Many small diversions for irrigation and domestic use above station, including about 15 cfs for municipal water supply for Centralia and Chehalis. No regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1929-30(M), 1931, 1932-34(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-9				Oct. 10 to Sept. 30			
1.5	255	3.5	1,410	1.0	140	4.0	1,840
1.7	335	4.0	1,840	1.2	190	6.0	4,110
2.0	470	6.0	4,140	1.5	285	8.0	6,900
2.5	730	7.0	5,560	2.0	480	10.0	10,400
3.0	1,040			2.5	730	12.0	14,800
				3.0	1,040	14.0	21,000
				3.5	1,410	16.2	32,400

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	307	7,880	11,300	4,460	2,630	8,530	9,970	1,240	494	476	205	172
2	291	7,120	*11,000	4,890	2,420	11,700	8,140	1,160	494	*453	217	158
3	283	14,700	9,300	9,680	2,260	13,900	6,540	1,080	520	440	334	155
4	323	18,100	7,320	15,300	2,140	15,500	5,440	1,100	670	431	525	155
5	745	19,200	5,960	19,100	2,130	14,200	4,930	1,220	712	431	387	158
6	904	14,200	6,330	21,700	*2,250	10,100	4,290	1,170	694	480	310	145
7	700	9,070	8,780	22,200	2,330	7,770	3,930	1,050	814	507	264	142
8	1,000	6,210	8,840	17,300	2,470	10,800	3,860	1,030	1,050	431	247	145
9	5,070	4,800	9,660	12,000	2,370	9,950	3,510	984	1,020	395	241	148
10	7,080	4,700	8,240	8,620	2,220	7,900	3,360	970	1,270	359	226	180
11	4,810	4,450	9,290	6,700	2,300	6,210	3,470	1,000	1,430	355	223	324
12	3,170	3,740	21,900	5,640	3,430	5,060	3,440	964	1,140	344	217	494
13	2,400	3,120	24,300	5,710	4,500	4,410	3,300	916	940	*341	214	375
14	1,870	2,640	15,400	5,780	4,180	4,120	3,270	844	874	330	211	288
15	1,510	2,200	9,920	9,280	3,610	3,810	3,090	784	940	330	199	254
16	1,240	2,170	7,400	13,800	2,900	3,650	2,790	760	892	324	205	226
17	1,080	1,980	5,830	16,200	2,730	3,590	2,500	760	874	306	205	223
18	970	2,100	4,790	14,000	2,560	3,770	2,250	772	838	288	199	223
19	904	9,180	5,160	11,100	2,580	4,270	2,140	784	832	264	190	211
20	850	13,000	10,300	10,200	3,210	4,500	2,240	742	1,040	254	185	211
21	790	10,600	22,500	9,120	4,550	5,450	2,420	694	964	247	182	223
22	736	7,960	32,000	7,950	5,380	8,310	2,370	640	844	235	175	232
23	682	6,690	31,500	7,550	4,600	11,400	2,080	600	754	238	168	226
24	665	8,190	22,300	9,050	4,490	17,300	1,860	590	694	229	165	214
25	1,540	14,900	17,800	8,510	6,080	17,500	1,690	575	630	220	170	214
26	6,150	19,700	14,800	6,880	7,260	16,000	1,590	561	595	217	188	226
27	5,100	22,400	13,000	5,580	6,870	13,300	1,520	575	561	214	223	247
28	4,890	21,700	10,600	4,600	7,370	10,100	1,460	*561	530	211	232	299
29	5,380	16,200	7,850	4,060	*9,250	*8,800	1,460	512	498	211	205	*285
30	10,800	12,000	6,150	3,540	------	8,750	1,370	489	489	208	188	310
31	*9,430	------	4,960	3,020	-----	10,200	-----	480	------	211	*178	------
Total	81,670	290,900	384,480	303,520	111,050	280,850	100,280	25,607	24,097	9,980	7,078	6,863
Mean	2,635	9,697	12,400	9,791	3,829	9,060	3,343	826	803	322	228	229
Cfsm	2.94	10.8	13.9	10.9	4.28	10.1	3.74	0.923	0.897	0.360	0.255	0.256
In.	3.39	12.09	15.98	12.61	4.61	11.67	4.17	1.06	1.00	0.41	0.29	0.29
Ac-ft	162,000	577,000	762,600	602,000	220,300	557,100	198,900	50,790	47,800	19,800	14,040	13,610

Calendar year 1955: Max 32,000 Min 160 Mean 4,003 Cfsm 4.47 In. 60.71 Ac-ft 2,898,000
Water year 1955-56: Max 32,000 Min 142 Mean 4,444 Cfsm 4.97 In. 67.57 Ac-ft 3,226,000

Peak discharge (base, 13,000 cfs).--Nov. 5 (7 to 8 a.m.) 19,900 cfs (13.69 ft); Nov. 20 (5 a.m.) 13,600 cfs (11.52 ft); Nov. 27 (12 p.m.) 24,000 cfs (14.76 ft); Dec. 12 (12 p.m.) 28,700 cfs (15.64 ft); Dec. 22 (9 p.m.) 35,100 cfs (16.58 ft); Jan 7 (7 a.m.) 23,100 cfs (14.55 ft); Jan. 17 (12 m.) 16,500 cfs (12.60 ft); Mar. 4 (6 to 7 p.m.) 15,900 cfs (12.41 ft); Mar. 24 (7 to 10 p.m.) 18,500 cfs (13.26 ft).
* Discharge measurement made on this day.

Rock Creek at Cedarville, Wash.

Location.--Lat 46°52'05", long 123°18'25", in SW¼SW¼ sec. 15, T. 16 N., R. 5 W., on left bank 0.2 mile downstream from Williams Creek, 1 mile west of Cedarville, and 1¼ miles upstream from mouth.

Drainage area.--24.8 sq mi.

Records available.--July to October 1942, July to October 1943, June 1944 to September 1956. October 1942 monthly discharge only, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). Prior to Aug. 17, 1944, staff gage at railroad bridge three-quarters of a mile downstream at different datum.

Average discharge.--12 years (1944-56), 88.1 cfs (63,780 acre-ft per year).

Extremes.--Maximum discharge during year, 1,220 cfs Dec. 11 (gage height, 12.01 ft); minimum, 1.1 cfs Sept. 6-10 (gage height, 2.28 ft).
1942-56: Maximum discharge, 1,660 cfs Feb. 9, 1951 (gage height, 13.77 ft), from rating curve extended above 860 cfs; minimum, 0.3 cfs Sept. 25, 1946.

Remarks.--Records good. No regulation. Some diversion for irrigation.

Revisions (water years).--WSP 982: 1942. WSP 1092: 1945-46(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 10-12)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
2.3	1.8	3.3	42	2.3	1.2	3.3	44
2.4	3.0	3.6	70	2.4	2.1	3.6	73
2.5	4.5	4.0	116	2.5	3.5	4.0	117
2.6	6.4	5.0	237	2.6	5.4	5.0	237
2.8	12.5	7.0	500	2.8	11	7.0	500
3.0	22	9.3	822	3.0	20	9.2	808

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	193	246	109	67	341	302	24	8.5	6.6	1.8	1.5
2	2.9	418	240	131	62	557	223	24	8.5	6.3	3.6	1.4
3	3.0	817	199	308	58	469	175	22	*11	6.3	14	1.4
4	4.5	695	163	503	56	427	145	22	15.5	6.3	8.8	1.4
5	8.7	386	146	644	57	315	119	22	13.5	6.3	6.0	1.2
6	7.6	241	172	665	57	221	102	22	13.5	6.3	4.6	1.1
7	*7.9	*175	223	427	*59	345	96	21	20	6.3	3.6	1.1
8	32	145	213	263	59	510	83	20	22	6.0	3.4	1.1
9	92	123	192	196	56	323	76	18.5	31	5.6	3.0	1.1
10	99	128	186	155	54	247	71	18.5	26	5.2	2.9	2.8
11	55	112	678	131	80	*202	66	18.5	20	4.8	2.8	12.5
12	49	102	797	112	128	171	61	18.5	17	4.8	2.6	10
13	40	91	370	107	139	148	*58	18	12	4.6	2.4	5.8
14	34	82	238	113	130	131	54	16.5	16.5	4.2	2.4	*4.4
15	29	73	188	282	110	121	51	16	18.5	4.2	2.4	3.8
16	25	70	154	544	96	116	48	14.5	16	4.2	2.4	3.2
17	22	66	*131	458	88	113	46	13.5	15.5	3.6	2.4	3.0
18	19	120	115	301	78	113	43	13.5	14	3.4	2.4	2.9
19	18.5	449	111	254	77	113	41	13	14	3.0	2.1	2.9
20	17.5	436	419	253	92	115	40	13	14	2.9	2.0	2.9
21	15.5	311	744	214	111	149	37	12	12	2.8	1.9	3.4
22	15	220	744	184	134	188	35	11	11	2.6	1.8	3.2
23	14.5	192	469	187	125	439	34	11	10	*2.5	1.7	3.2
24	24	303	414	207	137	406	33	10.5	9.4	2.4	1.7	3.5
25	202	627	367	184	241	255	31	10	8.8	2.1	1.7	4.6
26	263	595	272	158	259	205	30	9.7	8.2	2.1	1.7	6.6
27	184	560	235	130	235	177	29	9.7	7.9	2.1	1.7	8.5
28	192	377	195	116	280	167	29	9.7	7.3	1.9	1.7	9.7
29	450	249	163	98	276	175	28	8.8	6.3	1.9	1.7	9.7
30	430	210	137	84	------	221	26	8.5	6.3	1.9	1.6	16
31	259	------	115	74	------	318	------	8.5	------	1.9	1.6	------
Total	2,618.6	8,566	9,036	7,592	3,401	7,798	2,212	478.4	414.2	125.1	94.4	133.9
Mean	84.5	286	291	245	117	252	73.7	15.4	13.8	4.04	3.05	4.46
Cfsm	3.41	11.5	11.7	9.88	4.72	10.2	2.97	0.621	0.558	0.163	0.123	0.180
In.	3.93	12.85	13.55	11.38	5.10	11.69	3.32	0.72	0.62	0.19	0.14	0.20
Ac-ft	5,190	16,990	17,920	15,060	6,750	15,470	4,390	949	822	248	187	266

Calendar year 1955: Max 817 Min 2.4 Mean 104 Cfsm 4.19 In. 56.93 Ac-ft 75,300
Water year 1955-56: Max 817 Min 1.1 Mean 116 Cfsm 4.68 In. 63.69 Ac-ft 84,240

Peak discharge (base, 800 cfs).--Nov. 3 (1 a.m.) 1,060 cfs (10.90 ft); Dec. 11 (11:30 p.m.) 1,220 cfs (12.01 ft); Dec. 21 (12 p.m.) 964 cfs (10.29 ft).
* Discharge measurement made on this day.

Chehalis River at Porter, Wash.

Location.--Lat 46°56'20", long 123°18'45", on line between secs. 21 and 28, T. 17 N., R. 5 W., in upstream end of right bank pier of Chehalis River bridge at mouth of Porter Creek, 700 ft west of Porter.

Drainage area.--1,300 sq mi, approximately.

Records available.--January 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (from topographic map).

Extremes.--Maximum discharge during year, 30,200 cfs Dec. 23 (gage height, 22.04 ft); minimum, 222 cfs Sept. 8, 9, (gage height, 2.89 ft).
1952-56: Maximum discharge, 31,700 cfs Jan. 7, 1954 (gage height, 22.27 ft); minimum, 164 cfs Oct. 17, 1952 (gage height, 2.25 ft).

Remarks.--Records excellent except those above 15,000 cfs, which are good. Cities of Centralia and Chehalis divert about 15 cfs from Newaukum River, a tributary, for municipal use. Other small diversions for irrigation and domestic use. No regulation.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 4				Nov. 5 to Sept. 30			
3.0	395	8.0	3,670	2.9	225	10.0	5,500
3.5	565	10.0	5,770	3.4	414	13.0	9,300
4.0	775	13.0	9,700	4.0	680	16.0	14,400
5.0	1,310	16.0	14,800	5.0	1,200	19.0	21,000
6.0	1,980	19.0	21,600	6.0	1,850	22.0	30,000
				8.0	3,500		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	436	10,900	16,900	6,880	4,520	12,100	13,700	2,000	880	780	339	256
2	413	10,700	15,800	7,070	4,130	14,100	12,200	1,880	880	765	366	253
3	407	16,300	14,400	10,500	3,860	17,000	9,910	1,790	*1,020	740	502	239
4	425	20,400	11,800	16,700	3,630	18,600	8,100	1,770	1,060	730	628	232
5	530	20,900	9,350	21,200	3,520	19,000	7,010	1,830	1,180	750	656	228
6	1,040	20,800	8,790	23,800	3,570	17,000	6,310	1,880	1,160	770	542	225
7	925	*18,700	10,400	24,600	*3,610	13,700	5,700	1,740	1,320	815	459	225
8	1,060	11,500	12,000	23,900	3,670	14,600	5,400	1,670	1,520	760	414	225
9	3,380	7,710	12,200	20,900	3,610	15,300	5,080	1,610	1,580	680	382	232
10	*7,060	6,600	12,100	15,700	3,460	13,100	4,740	1,580	1,740	633	370	271
11	6,300	6,450	13,400	11,700	3,520	*10,300	4,640	1,590	1,870	605	358	382
12	4,100	5,560	19,600	9,180	4,270	8,160	4,630	1,580	1,790	596	347	542
13	3,160	4,790	23,400	8,130	5,580	6,940	*4,420	1,510	1,490	582	335	610
14	2,550	4,130	24,100	8,270	5,660	6,250	4,260	1,430	1,450	578	331	*494
15	2,100	3,490	20,000	10,300	5,140	5,780	4,120	1,340	1,480	564	327	414
16	1,770	3,160	*13,300	16,200	4,440	5,430	3,830	1,280	1,450	546	324	378
17	1,510	3,000	9,780	19,300	4,030	5,250	3,510	1,250	1,350	529	320	354
18	1,360	3,230	7,660	19,900	3,820	5,290	3,220	1,250	1,320	498	312	343
19	1,240	7,540	6,940	18,000	3,660	5,590	3,030	1,270	1,360	468	293	335
20	1,150	14,800	10,300	15,500	4,120	6,050	3,000	1,250	1,420	451	286	335
21	1,080	15,700	20,300	14,100	5,070	6,600	3,090	1,200	1,450	430	271	339
22	1,010	12,700	25,800	12,600	6,380	9,180	3,140	1,120	1,310	422	264	339
23	945	9,810	29,700	11,500	6,230	13,200	2,920	1,060	1,190	*414	256	347
24	1,020	10,200	28,600	11,900	5,800	17,100	2,700	1,020	1,100	402	253	339
25	1,820	15,100	24,800	12,600	7,010	19,600	2,510	1,000	1,030	386	253	339
26	5,570	19,800	22,300	11,000	9,180	19,900	2,390	995	960	*374	256	354
27	6,570	22,900	19,500	8,860	9,360	18,400	2,300	990	915	362	271	378
28	6,000	24,100	17,000	7,400	9,480	15,700	2,230	985	855	358	305	386
29	7,610	23,500	13,600	6,490	11,100	12,900	2,180	945	825	351	312	447
30	11,300	20,300	10,500	5,710	------	12,200	2,130	895	795	347	278	489
31	12,800	-----	7,990	5,080	-----	12,900	-----	875	------	343	264	------
Total	96,641	374,770	492,310	414,970	151,430	377,220	142,400	42,585	37,750	17,029	10,874	10,330
Mean	3,117	12,490	15,880	13,390	5,222	12,170	4,747	1,374	1,258	549	351	344
Cfsm	2.40	9.61	12.2	10.3	4.02	9.36	3.65	1.06	0.968	0.422	0.270	0.265
In.	2.76	10.72	14.08	11.87	4.33	10.79	4.07	1.22	1.08	0.49	0.31	0.30
Ac-ft	191,700	743,300	976,500	823,100	300,400	748,200	282,400	84,470	74,880	33,780	21,570	20,490

Calendar year 1955: Max 29,700 Min 285 Mean 5,287 Cfsm 4.07 In. 55.20 Ac-ft 3,828,000
Water year 1955-56: Max 29,700 Min 225 Mean 5,924 Cfsm 4.56 In. 62.02 Ac-ft 4,301,000

Peak discharge (base, 20,000 cfs).--Nov. 6 (7 p.m.) 21,200 cfs (19.06 ft); Nov. 28 (12 p.m.) 24,500 cfs (20.28 ft); Dec. 14 (2 a.m.) 25,400 cfs (20.57 ft); Dec. 23 (3 to 6 p.m.) 30,200 cfs (22.04 ft); Jan. 7 (7:30 a.m.) 24,600 cfs (20.32 ft); Jan. 17 (4:40 a.m.) 20,200 cfs (18.67 ft); Mar. 25 (11:30 p.m.) 20,400 cfs (18.75 ft).
* Discharge measurement made on this day.

Cloquallum River at Elma, Wash.

Location.--Lat 47°00'20", long 123°23'10", in S½NW¼ sec. 36, T. 18 N., R. 6 W., on right bank 10 ft downstream from bridge, half a mile east of Elma, and 1.8 miles downstream from Wildcat Creek.

Drainage area.--65.8 sq mi.

Records available.--July 1942 to October 1943 (fragmentary), July 1944 to September 1956. Published as Cloquallum Creek at Elma 1942.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Aug. 7, 1944, staff gage at site 350 ft downstream at datum 0.42 ft lower. Aug. 7, 1944, to Sept. 1, 1953, water-stage recorder at site 200 ft upstream at same datum.

Average discharge.--12 years (1944-56), 264 cfs (191,100 acre-ft per year).

Extremes.--Maximum discharge during year, 3,400 cfs Dec. 11 (gage height, 9.61 ft); minimum, 23 cfs Sept. 5-7; minimum gage height, 1.83 ft Oct. 2.
1942-56: Maximum discharge, 4,470 cfs Feb. 9, 1951 (gage height, 11.04 ft); minimum, 6.8 cfs Sept. 15, 1945 (gage height, 1.43 ft).

Remarks.--Records good. Several small diversions on minor tributaries above station and some regulation by log pond on Wildcat Creek.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.7	13	3.5	405
1.8	24	4.0	555
1.9	36	5.0	900
2.1	64	6.0	1,330
2.3	101	7.0	1,810
2.5	145	8.5	2,660
3.0	270		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	564	*900	414	282	994	766	114	68	61	35	25
2	25	1,260	839	468	262	1,420	615	112	66	58	50	24
3	26	2,610	674	762	*250	1,260	522	107	85	58	77	25
4	64	2,070	558	1,310	242	1,210	465	114	103	58	45	24
5	88	1,230	564	1,530	245	900	396	131	95	80	39	24
6	*52	797	682	1,610	230	692	351	116	105	75	36	23
7	52	*579	643	1,100	218	1,120	366	107	168	62	35	24
8	135	504	688	783	200	1,300	315	101	*152	56	34	24
9	411	474	678	640	190	904	285	97	210	54	32	30
10	338	510	747	534	185	699	268	97	148	52	32	42
11	220	420	2,230	474	268	576	250	97	122	50	32	69
12	250	357	2,420	429	272	507	235	95	105	49	31	*48
13	190	312	1,340	435	255	465	220	95	97	48	31	37
14	150	278	892	417	235	420	210	90	112	49	32	34
15	124	240	699	760	215	*381	200	88	116	48	35	32
16	105	230	594	1,450	195	357	188	86	103	46	34	32
17	93	218	504	1,210	200	342	182	80	95	*45	32	31
18	86	450	444	912	195	338	172	77	88	42	30	31
19	80	956	483	822	210	330	165	78	109	41	30	30
20	75	996	1,040	825	270	357	155	80	95	40	30	31
21	73	738	1,700	710	300	522	150	77	88	40	29	32
22	69	561	2,150	682	330	626	143	73	82	39	28	30
23	66	540	1,700	720	315	1,210	*140	73	78	39	28	29
24	269	812	1,390	758	375	1,050	138	71	75	37	30	35
25	922	1,290	1,070	650	501	769	134	69	73	39	29	45
26	856	1,280	860	558	504	668	129	73	69	37	29	56
27	668	1,210	762	486	543	567	124	73	66	36	28	49
28	748	928	606	435	657	564	122	68	64	36	26	44
29	1,370	748	528	390	626	643	120	66	61	35	26	59
30	1,320	772	468	340	------	794	118	64	61	35	26	73
31	769	-----	417	308	-----	916	-----	86	------	35	25	------
Total	9,719	23,934	29,270	22,922	8,770	22,901	7,644	2,735	2,959	1,480	1,036	1,092
Mean	314	798	944	739	302	739	255	88.2	98.6	47.7	33.4	36.4
Cfsm	4.77	12.1	14.3	11.2	4.59	11.2	3.88	1.34	1.50	0.725	0.508	0.553
In.	5.49	13.53	16.54	12.96	4.96	12.94	4.32	1.55	1.67	0.84	0.59	0.62
Ac-ft	19,280	47,470	58,060	45,470	17,400	45,420	15,160	5,420	5,870	2,940	2,050	2,170

Calendar year 1955: Max 2,610 Min 21 Mean 326 Cfsm 4.95 In. 67.25 Ac-ft 236,000
Water year 1955-56: Max 2,610 Min 23 Mean 367 Cfsm 5.58 In. 76.01 Ac-ft 266,700

Peak discharge (base, 1,500 cfs).--Oct. 29 (6 p.m.) 2,110 cfs (7.56 ft); Nov. 3 (2:15 a.m.) 3,120 cfs (9.21 ft); Dec. 11 (10:30 p.m.) 3,400 cfs (9.61 ft); Dec. 21 (11 p.m.) 2,350 cfs (7.99 ft); Jan. 6 (7:45 a.m.) 1,780 cfs (6.93 ft); Jan. 16 (3:45 p.m.) 1,720 cfs (6.81 ft); Mar. 2 (2 a.m.) 1,700 cfs (6.78 ft); Mar. 7 (8:30 p.m.) 1,820 cfs (7.02 ft).
* Discharge measurement made on this day.

Satsop River near Satsop, Wash.

Location.--Lat 47°00'05", long 123°29'40", in sec. 36, T. 18 N., R. 7 W., in west pier of bridge on U. S. Highway 410, three-quarters of a mile west of Satsop and 2 miles upstream from mouth.

Drainage area.--290 sq mi, approximately.

Records available.--March 1929 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Mar. 19, 1938, staff gage at site 60 ft downstream at datum 20.9 ft higher.

Average discharge.--27 years, 1,963 cfs (1,421,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,800 cfs Nov. 3 (elevation, 35.14 ft); minimum, 236 cfs Sept. 5-9 (elevation, 23.34 ft).
1929-56: Maximum discharge, 46,600 cfs Jan. 22, 1935 (elevation, 38.9 ft, from floodmarks); minimum, 166 cfs Sept. 21, 1938; minimum elevation, 21.66 ft, present datum, Sept. 3-6, 1934.
Flood in November 1909 reached a stage of 37.1 ft at railroad bridge 300 ft downstream from high-water mark.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1930-35(M), 1937(M).

Rating tables, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
23.9	250	25.5	1,870	23.3	221	27.0	4,500
24.1	395	26.0	2,800	23.5	300	28.0	6,500
24.3	550	27.0	4,320	23.8	450	29.0	8,740
24.6	810	28.0	6,370	24.1	640	30.0	11,300
25.0	1,230	29.0	8,740	24.5	950	31.0	14,100
				25.0	1,500	32.5	18,400
				25.5	2,150	35.0	27,200
				26.0	2,850		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	299	3,590	*6,060	2,670	1,960	6,850	5,310	*1,150	640	564	340	251
2	292	6,590	5,450	2,850	1,820	9,880	4,230	1,120	619	540	400	248
3	306	25,400	4,410	3,680	1,700	8,820	3,580	1,070	654	540	534	248
4	502	20,400	3,680	6,230	1,600	6,580	3,290	1,080	726	528	422	244
5	910	9,860	3,410	7,260	1,600	4,900	3,120	1,150	682	654	375	244
6	598	6,420	3,920	9,780	1,500	3,780	2,770	1,150	710	758	360	236
7	558	*4,730	4,690	6,920	*1,410	4,320	2,650	1,120	1,500	640	345	236
8	1,590	3,950	4,840	5,110	1,330	4,670	2,460	1,140	1,490	584	336	236
9	3,910	3,440	4,800	4,230	1,270	3,820	2,300	1,140	3,630	*540	327	259
10	*3,880	3,260	4,610	3,650	1,250	3,230	2,290	1,110	2,390	528	322	340
11	2,450	2,880	10,500	3,490	1,640	2,810	2,540	1,030	1,700	522	322	498
12	2,630	2,600	12,500	3,920	1,880	2,530	2,570	968	1,330	510	318	400
13	2,110	2,320	6,920	3,870	1,800	2,360	2,630	926	*1,150	492	314	327
14	1,590	2,110	4,940	3,580	1,660	2,210	2,740	*878	1,180	486	314	296
15	1,240	1,920	3,970	4,600	1,490	2,110	2,470	886	1,200	480	314	284
16	1,060	1,800	3,410	11,800	1,360	*2,030	2,190	894	1,050	468	309	275
17	940	1,700	2,940	9,010	1,330	2,020	1,970	934	959	450	304	267
18	840	2,190	2,680	7,150	1,260	2,150	1,820	918	894	434	296	263
19	774	4,450	2,820	6,580	1,300	2,540	1,900	910	910	417	288	259
20	711	4,370	4,740	6,420	1,500	2,810	2,100	878	862	406	288	267
21	657	3,830	8,860	5,430	1,710	4,240	2,280	830	806	400	284	284
22	630	3,210	10,700	5,330	1,810	7,690	2,140	782	766	395	280	271
23	606	3,500	8,480	5,270	1,800	11,600	1,890	774	734	390	280	259
24	1,690	5,930	7,130	5,010	1,900	9,260	1,730	750	703	380	280	280
25	8,370	10,900	6,290	4,270	2,220	5,930	1,640	718	668	375	280	841
26	6,550	9,040	6,040	3,680	2,330	5,190	1,590	710	654	365	275	1,440
27	4,920	7,680	5,090	3,210	2,430	4,250	1,530	689	633	360	*275	986
28	6,000	6,420	4,180	2,860	4,080	4,020	1,410	661	605	360	267	782
29	7,960	5,530	3,550	2,580	4,520	5,730	1,300	647	577	355	259	881
30	7,780	5,330	3,150	2,370	-----	7,110	1,210	633	577	350	259	1,700
31	4,840	-----	2,770	2,140	-----	6,900	-----	647	-----	345	255	-----
Total	77,193	175,350	167,530	154,950	53,460	152,340	71,650	28,293	30,999	14,616	9,822	13,402
Mean	2,490	5,845	5,404	4,998	1,843	4,914	2,388	913	1,033	471	317	447
Cfsm	8.59	20.2	18.6	17.2	6.36	16.9	8.23	3.15	3.56	1.62	1.09	1.54
In.	9.90	22.49	21.48	19.87	6.86	19.54	9.19	3.63	3.98	1.87	1.26	1.72
Ac-ft	153,100	347,800	332,300	307,300	106,000	302,200	142,100	56,120	61,490	28,990	19,480	26,580

Calendar year 1955: Max 25,400 Min 271 Mean 2,350 Cfsm 8.10 In. 110.00 Ac-ft 1,701,000
Water year 1955-56: Max 25,400 Min 236 Mean 2,595 Cfsm 8.95 In. 121.79 Ac-ft 1,883,000

Peak discharge (base, 15,500 cfs).--Nov. 3 (10 a.m.) 27,800 cfs (35.14 ft); Dec. 12 (1 to 2 a.m.) 16,400 cfs (31.82 ft); Jan. 16 (4:30 p.m.) 14,000 cfs (30.97 ft); Mar. 23 (7:30 p.m.) 14,300 cfs (31.10 ft).
* Discharge measurement made on this day.

Wynoochee River above Save Creek, near Aberdeen, Wash.

Location.--Lat 47°18', long 123°39', in NW¼ sec. 24, T. 21 N., R. 8 W., on left bank 1 mile upstream from Save Creek, 3 miles downstream from Oxbow, and 22 miles northeast of Aberdeen.

Drainage area.--69.5 sq mi.

Records available.--May 1925 to September 1956. Published as "at Oxbow, near Aberdeen" 1925-52. Records published for both sites October 1951 to October 1952.

Gage.--Water-stage recorder at present site and datum since Oct. 5, 1951. Datum of gage is 401 ft above mean sea level (stadia traverse). Prior to Nov. 7, 1925, staff gage at site 1,200 ft downstream from Oxbow at different datum. Nov. 7, 1925, to Sept. 3, 1947, water-stage recorder at site 1 mile downstream from Oxbow at datum 444.0 ft above mean sea level (levels by city of Aberdeen). Sept. 4, 1947, to Oct. 13, 1952, water-stage recorder at Oxbow at datum 91 ft higher.

Average discharge.--31 years, 792 cfs (573,400 acre-ft per year).

Extremes.--Maximum discharge during year, 22,400 cfs Nov. 3 (gage height, 16.53 ft), from rating curve extended above 9,000 cfs; minimum, 138 cfs Sept. 9 (gage height, 4.18 ft). 1925-56: Maximum discharge, that of Nov. 3, 1955; minimum, 64 cfs Jan. 27, 1949.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1346: 1952.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-24, Mar. 22)

Oct. 1 to Mar. 22				Mar. 23 to Sept. 30			
4.3	177	7.0	2,150	4.1	119	5.5	790
4.6	285	8.0	3,430	4.3	171	6.0	1,210
5.0	471	10.0	6,830	4.5	239	7.0	2,370
5.5	765	13.0	13,400	4.8	370	8.5	4,550
6.0	1,150	16.0	20,800	5.1	525		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	1,070	1,850	786	*547	1,670	1,510	706	790	498	271	157
2	177	4,050	*1,440	850	525	1,840	1,240	685	713	520	301	154
3	180	18,600	1,240	1,010	493	1,850	1,080	650	755	531	288	151
4	434	9,620	1,070	1,370	482	1,170	1,050	650	798	503	259	151
5	430	3,520	1,010	1,790	476	888	990	734	657	998	251	146
6	310	2,300	1,300	2,130	451	706	886	798	720	762	247	143
7	*385	1,730	1,350	1,410	435	706	854	806	1,380	592	243	141
8	1,980	1,450	1,440	1,120	420	640	814	902	*2,480	598	235	141
9	2,230	1,250	1,320	998	410	569	783	974	3,280	644	232	151
10	1,500	*1,180	1,410	902	406	520	878	942	1,820	637	232	174
11	1,060	1,010	3,750	1,320	514	476	1,070	790	1,290	604	221	*247
12	1,110	888	2,780	1,460	552	451	1,120	685	1,040	579	217	228
13	814	814	1,660	1,560	493	430	1,300	618	950	573	214	187
14	652	746	1,300	1,280	461	406	1,490	592	1,080	514	210	174
15	558	700	1,100	1,960	420	401	1,250	657	1,050	455	207	165
16	498	670	990	4,400	406	*396	1,080	886	886	450	200	160
17	451	634	880	2,360	396	420	958	1,080	814	*465	193	154
18	410	830	807	2,300	382	509	934	1,220	776	486	190	151
19	377	1,170	888	1,930	396	640	1,050	1,310	910	498	184	149
20	358	1,220	1,980	1,710	406	646	*1,330	1,120	790	498	184	160
21	340	974	2,440	1,520	420	1,580	1,590	918	685	470	181	163
22	323	858	2,660	1,530	401	3,110	1,390	846	657	425	177	146
23	310	1,030	1,850	1,470	382	4,200	1,160	942	644	400	177	143
24	1,600	2,840	1,570	1,230	386	2,680	1,070	870	598	385	174	217
25	5,180	3,500	1,780	1,040	386	1,900	1,010	790	561	375	174	1,100
26	2,080	2,750	1,780	895	382	1,640	1,020	814	555	351	168	998
27	1,690	2,370	1,390	800	386	1,330	990	734	611	332	168	573
28	1,810	2,200	1,140	732	807	1,500	894	650	630	310	165	486
29	3,210	1,900	982	670	800	2,160	806	685	585	297	160	1,010
30	2,020	1,830	880	616	------	2,580	748	870	537	292	160	934
31	1,380	-----	793	569	-----	1,990	------	982	------	288	157	------
Total	34,037	73,704	46,830	43,718	13,421	40,004	32,345	25,906	29,042	15,330	6,440	9,054
Mean	1,098	2,457	1,511	1,410	463	1,290	1,078	836	968	495	208	302
Cfsm	15.8	35.4	21.7	20.3	6.66	18.6	15.5	12.0	13.9	7.12	2.99	4.35
In.	18.21	39.44	25.06	23.39	7.18	21.41	17.31	13.86	15.54	8.20	3.45	4.84
Ac-ft	67,510	146,200	92,890	86,710	26,620	79,350	64,160	51,380	57,600	30,410	12,770	17,960

Calendar year 1955: Max 18,600 Min 168 Mean 903 Cfsm 13.0 In. 176.32 Ac-ft 653,500
Water year 1955-56: Max 18,600 Min 141 Mean 1,010 Cfsm 14.5 In. 197.89 Ac-ft 733,600

Peak discharge (base, 6,800 cfs).--Oct. 25 (5:30 a.m.) 7,150 cfs (10.16 ft); Nov. 3 (10 a.m.) 22,400 cfs (16.53 ft).
* Discharge measurement made on this day.

Humptulips River near Humptulips, Wash.

Location.--Lat 47°13'40", long 123°56'25", in NE¼ sec. 17, T. 20 N., R. 10 W., on right bank 1 mile southeast of Humptulips, 2.5 miles upstream from Stevens Creek, and 3¾ miles downstream from confluence of East and West Forks.

Drainage area.--130 sq mi.

Records available.--May 1933 to January 1935, July 1942 to September 1956.

Gage.--Staff gage and crest-stage indicator; gage read once or twice daily. Datum of gage is 117.4 ft above mean sea level (river-profile survey). Prior to Jan. 14, 1935, and Mar. 1, 1950, to Jan. 15, 1953, water-stage recorder and July 1, 1942, to Feb. 28, 1950, staff gage, at same site and datum.

Average discharge.--15 years (1933-34, 1942-56), 1,322 cfs (957,100 acre-ft per year).

Extremes.--Maximum discharge during year, 25,000 cfs Nov. 3 (gage height, 11.09 ft); minimum observed, 171 cfs Sept. 7, 8 (gage height, 0.97 ft).
1933-35, 1942-56: Maximum discharge, 33,000 cfs Jan. 22, 1935 (gage height, 12.7 ft, from floodmarks), from rating curve extended above 16,500 cfs; minimum observed, 82 cfs Sept. 11, 1944; minimum gage height, 0.64 ft Sept. 14, 1949 (from graph based on gage readings).

Remarks.--Records fair. No diversion above station. Slight regulation by fish hatchery on West Fork for short periods at low flow.

Revisions (water years).--WSP 1216: 1934-35, 1943-46, 1947(M), 1949(M). WSP 1246: Drainage area. WSP 1396: 1946(M), 1954(P).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 2)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
0.9	188	3.0	2,050	0.9	147	5.0	5,540
1.3	368	4.0	3,670	1.3	295	6.5	9,060
2.0	890	6.0	7,800	2.0	750	8.0	13,400
				3.0	1,890	10.0	20,000
				4.0	3,540		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	203	1,880	3,370	1,270	831	5,500	2,800	777	646	420	255	188
2	214	3,570	2,650	1,450	*759	6,300	2,240	742	598	414	300	178
3	221	19,100	2,020	1,650	726	5,370	1,810	718	569	414	326	178
4	305	12,400	1,660	2,410	710	3,560	1,810	702	622	396	275	174
5	651	5,640	1,570	2,770	777	2,360	1,680	768	622	768	259	174
6	*440	3,480	1,780	5,220	702	1,700	1,440	858	562	702	251	174
7	386	2,510	*2,220	3,220	678	1,900	1,420	822	*1,220	548	244	171
8	2,360	2,200	2,600	2,280	646	2,220	1,300	858	1,150	499	240	171
9	3,280	*1,710	2,380	1,920	622	1,710	1,210	885	3,860	492	236	206
10	2,440	1,970	2,160	1,650	606	1,390	1,250	876	2,280	471	236	267
11	1,470	1,630	7,040	1,830	1,020	1,210	1,490	804	1,490	432	228	438
12	1,580	1,380	6,130	2,240	1,290	1,070	1,500	702	1,130	426	228	*375
13	1,200	1,220	3,260	2,620	1,060	1,000	1,610	638	950	408	225	283
14	935	1,110	2,210	1,930	912	921	1,850	614	1,060	396	225	244
15	809	990	1,760	2,850	813	*876	1,570	638	960	370	225	217
16	699	921	1,540	8,210	726	849	1,350	742	867	*350	221	210
17	643	867	1,320	5,160	726	867	1,180	885	768	350	221	203
18	575	903	1,160	4,550	646	980	1,110	940	718	350	213	195
19	532	1,660	1,370	3,710	726	1,260	*1,220	990	750	350	206	188
20	490	2,160	2,160	3,220	813	1,360	1,430	894	734	345	206	203
21	465	1,660	3,030	2,470	903	2,800	1,680	768	646	331	206	240
22	440	1,380	3,960	2,570	903	5,140	1,490	694	614	322	203	206
23	410	1,820	3,210	2,470	867	7,370	1,270	718	583	313	199	199
24	1,570	3,700	2,700	2,150	903	4,970	1,170	686	548	300	206	287
25	7,750	6,120	3,120	1,790	1,000	3,210	1,100	638	499	295	203	1,500
26	3,960	5,160	3,480	1,570	960	2,800	1,100	638	499	287	199	1,660
27	2,690	3,840	2,700	1,350	940	2,150	1,050	569	499	279	195	1,020
28	3,850	3,280	2,040	1,220	2,680	2,380	950	534	499	271	188	804
29	7,130	2,990	1,660	1,100	2,600	4,430	903	513	478	263	192	804
30	3,960	2,800	1,430	1,060	------	5,440	831	583	432	263	192	1,670
31	2,720	-----	1,220	885	-----	4,170	-----	710	------	255	188	------
Total	54,378	100,051	78,910	78,795	27,545	87,263	42,814	22,904	26,853	12,080	6,991	12,827
Mean	1,754	3,335	2,545	2,542	950	2,815	1,427	739	895	390	226	428
Cfsm	13.5	25.7	19.6	19.6	7.31	21.7	11.0	5.68	6.88	3.00	1.74	3.29
In.	15.56	28.62	22.57	22.54	7.88	24.96	12.25	6.55	7.68	3.46	2.00	3.67
Ac-ft	107,900	198,400	156,500	156,300	54,630	173,100	84,920	45,430	53,260	23,960	13,870	25,440

Calendar year 1955: Max 19,100 Min 195 Mean 1,385 Cfsm 10.7 In. 144.63 Ac-ft 1,003,000
Water year 1955-56: Max 19,100 Min 171 Mean 1,507 Cfsm 11.6 In. 157.74 Ac-ft 1,094,000

Peak discharge (base, 12,000 cfs).--Nov. 3 (time unkown) 25,000 cfs (11.09 ft).
* Discharge measurement made on this day.

Quinault River at Quinault Lake, Wash.

Location.--Lat 47°27'30", long 123°53'30", in sec. 25, T. 23 N., R. 10 W., on left bank at outlet of Quinault Lake, 50 ft downstream from Olympic Highway bridge, U. S. Highway 101, and 4 miles southwest of Quinault.
Drainage area.--264 sq mi.
Records available.--October 1911 to September 1956. Monthly discharge only for some periods, published in WSP 1316.
Gage.--Water-stage recorder. Datum of gage is 184.60 ft above mean sea level (Washington State Highway benchmark). Prior to Jan. 1, 1913, staff gage on south shore of Quinault Lake 3 miles northeast of present site and Jan. 1, 1913, to Sept. 30, 1916, staff gage at mouth of Canoe Creek 4 miles northeast of present site, at datum 1.06 ft higher. Oct. 1, 1916, to May 2, 1935, water-stage recorder at site 300 ft downstream from present site at datum 0.36 ft higher than present datum.
Average discharge.--45 years, 2,761 cfs (1,999,000 acre-ft per year).
Extremes.--Maximum discharge during year, 50,200 cfs Nov. 4 (gage height, 20.51 ft); minimum, 572 cfs Oct. 1 (gage height, 2.51 ft).
1911-22, 1924-56: Maximum discharge, that of Nov. 4, 1955; minimum, 276 cfs Sept. 12, 1944 (gage height, 1.96 ft).
Flood in November 1909 reached a stage of approximately 22 ft, present datum (discharge, 52,600 cfs).
Remarks.--Records good except those for periods of no gage-height record, which are fair. Natural regulation by Quinault Lake. No diversion above station.
Revisions (water years).--WSP 442: Drainage area. WSP 1286: 1915-16(M), 1934, 1936-39(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 27 to May 18)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.5	565	4.0	1,920	2.5	620	6.0	4,950
3.0	940	5.0	3,270	3.0	1,000	8.0	8,980
3.5	1,400	6.0	4,950	3.5	1,460	11.0	16,300
				4.0	2,000	15.0	28,500
				5.0	3,300	19.0	43,900

Note.--Same as following table above 6.0 ft.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	578	5,380	5,660	2,400	1,680	3,000	3,740	2,740	5,300	3,270	1,840	848
2	584	6,500	4,950	2,370	*1,570	3,700	3,150	2,590	4,840	3,200	1,810	808
3	578	36,400	4,130	2,440	1,500	4,100	2,710	2,440	4,590	3,230	1,790	792
4	748	*41,200	3,480	2,700	1,550	3,700	2,620	2,360	4,730	3,230	1,690	753
5	1,030	20,800	3,120	3,200	1,700	3,200	2,250	2,400	4,420	3,810	1,630	725
6	*1,020	11,500	*3,120	4,990	1,600	2,700	2,050	2,530	4,110	4,280	1,590	704
7	1,070	7,930	3,380	4,720	1,500	2,900	1,950	2,660	*4,880	3,870	1,590	676
8	1,960	6,120	3,520	3,870	1,400	2,500	1,900	2,940	6,440	3,710	1,570	669
9	4,930	5,090	3,630	3,260	1,350	2,200	1,850	3,390	11,400	3,920	1,560	704
10	5,210	5,110	3,510	2,850	1,300	1,900	2,100	3,740	10,500	4,220	1,540	792
11	4,240	4,500	5,260	2,750	1,400	1,650	2,500	3,730	8,440	4,350	1,520	1,040
12	3,930	3,840	8,650	3,130	1,700	1,500	2,800	3,390	6,680	4,340	1,490	*1,120
13	3,500	3,290	6,800	3,660	2,100	1,450	3,000	3,020	5,550	4,340	1,470	1,060
14	3,080	2,940	5,090	3,730	1,800	1,350	3,100	2,760	5,210	4,160	1,460	976
15	2,700	2,630	4,000	3,890	1,500	*1,290	3,200	2,740	5,170	3,700	1,450	904
16	2,320	2,410	3,380	7,880	1,400	1,240	3,000	3,090	4,880	*3,420	1,420	848
17	2,080	2,260	2,950	8,390	1,450	1,220	2,750	3,920	4,570	3,320	1,330	800
18	1,860	2,390	2,670	7,100	1,550	1,250	2,600	4,990	4,420	3,340	1,270	760
19	1,710	2,840	2,620	6,000	1,750	1,380	*2,740	6,140	4,720	3,480	1,230	732
20	1,580	3,100	3,120	5,420	2,000	1,540	3,160	6,500	4,950	3,660	1,220	746
21	1,460	2,990	4,630	4,630	1,900	2,010	4,050	5,890	4,540	3,740	1,220	792
22	1,350	2,760	6,300	4,110	1,800	4,090	4,660	5,210	4,180	3,500	1,220	792
23	1,270	2,710	6,420	3,940	1,700	6,440	4,490	5,020	4,000	3,220	1,220	768
24	2,300	3,500	5,510	3,680	1,750	6,800	4,130	5,020	3,730	3,080	1,200	968
25	12,200	6,740	5,740	3,290	2,000	5,430	3,790	4,790	3,440	3,010	1,150	2,040
26	11,800	7,180	6,040	2,890	1,900	4,520	3,600	4,630	3,270	2,780	1,130	3,200
27	8,370	6,840	5,170	2,570	1,800	3,730	3,570	4,420	3,480	2,570	1,070	3,170
28	7,320	6,780	4,180	2,340	2,100	3,340	3,440	4,080	3,760	2,350	1,020	2,710
29	8,560	6,300	3,450	2,140	2,400	3,740	3,190	3,950	3,730	2,180	960	2,830
30	9,380	5,740	2,950	1,960	-----	4,350	2,920	4,280	3,540	2,050	920	3,520
31	7,080	-----	2,620	1,790	-----	4,250	-----	5,170	-----	1,940	880	-----
Total	115,798	227,770	136,050	118,090	49,150	92,470	91,010	120,530	153,470	105,270	42,460	37,247
Mean	3,735	7,592	4,389	3,809	1,695	2,983	3,034	3,888	5,116	3,396	1,370	1,242
Cfsm	14.1	28.8	16.6	14.4	6.42	11.3	11.5	14.7	19.4	12.9	5.19	4.70
In.	16.31	32.09	19.17	16.64	6.92	13.03	12.82	16.98	21.62	14.83	5.98	5.25
Ac-ft	229,700	451,800	269,900	234,200	97,490	183,400	180,500	239,100	304,400	208,800	84,220	73,880

Calendar year 1955: Max 41,200 Min 578 Mean 3,104 Cfsm 11.8 In. 159.60 Ac-ft 2,247,000
Water year 1955-56: Max 41,200 Min 578 Mean 3,523 Cfsm 13.3 In. 181.64 Ac-ft 2,557,000

Peak discharge (base, 12,000 cfs).--Oct. 25 (6 p.m.) 14,900 cfs (10.46 ft); Nov. 4 (12:30 a.m.) 50,200 cfs (20.51 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 3 to Mar. 14, Apr. 5-18; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Hoh River near Spruce, Wash.

Location.--Lat 47°48'20", long 124°06'20", in NE¼ sec. 34, T. 27 N., R. 11 W., on left bank 1 mile downstream from Maple Creek, 2½ miles west of Spruce, and 5 miles downstream from South Fork.

Drainage area.--208 sq mi.

Records available.--August 1926 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 320 ft (from river-profile map).

Average discharge.--30 years, 2,005 cfs (1,452,000 acre-ft per year).

Extremes.--Maximum discharge during year, 33,600 cfs Nov. 3 (gage height, 19.70 ft, from high-water mark in well), from rating curve extended above 13,000 cfs on basis of slope-area determinations at gage heights 16.6 ft and 22.2 ft; minimum, 548 cfs Oct. 1; minimum gage height, 1.12 ft Sept. 5, 6.
1926-56: Maximum discharge, 38,700 cfs Nov. 26, 1949 (gage height, 22.2 ft, from high-water marks), from rating curve extended above 13,000 cfs on basis of slope-area determination of peak flow; minimum, 247 cfs Nov. 14, 15, 1929; minimum gage height, 0.68 ft Oct. 18, 19, 1946.
Maximum stage known since at least 1891, that of Nov. 26, 1949.

Remarks.--Records good except those for period of doubtful gage-height record, which are fair. No artificial regulation or diversion above station. Large diurnal fluctuation during summer months caused by melting glaciers at source.

Revisions (water years).--WSP 1182: 1935(M). WSP 1216: Drainage area. WSP 1286: 1934.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
1.2	530	8.0	7,000	1.2	710	5.0	3,180
2.0	840	10.0	11,000	2.0	1,100	6.0	4,150
3.0	1,350	12.0	15,000	3.0	1,680	8.0	7,000
4.0	2,000	14.0	19,400	4.0	2,360		
5.0	2,850	16.0	24,400				
6.0	4,000	18.0	29,400	Note.--Same as preceding table above 8.0 ft.			
7.0	5,300						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	554	2,680	3,420	1,870	1,360	2,720	2,380	1,650	3,030	2,040	1,310	1,040
2	596	7,010	2,860	1,930	1,320	3,000	2,090	1,560	2,770	2,120	1,370	925
3	612	29,100	2,490	2,010	1,280	3,320	1,860	1,490	2,800	2,180	1,330	832
4	1,050	16,700	2,210	2,220	1,340	d2,600	1,810	1,490	2,830	2,140	1,240	764
5	*1,020	7,960	2,160	3,460	1,400	d2,270	1,690	1,550	2,460	3,390	1,260	714
6	772	5,120	2,340	4,080	1,240	d1,990	1,540	1,610	*2,440	2,910	1,310	719
7	1,010	3,920	*2,360	2,900	1,170	d2,030	1,510	1,730	3,080	2,460	1,310	768
8	2,720	*3,620	2,890	2,400	1,140	d1,890	1,440	2,040	6,060	2,580	1,340	782
9	3,280	3,740	2,750	2,180	1,100	d1,690	1,390	2,330	8,160	2,980	1,380	910
10	2,410	4,110	2,660	2,010	1,140	d1,490	1,560	2,520	5,700	3,130	1,370	1,330
11	1,840	3,180	5,150	2,380	1,480	d1,300	1,900	2,250	4,290	3,070	1,360	1,420
12	2,060	2,680	5,000	2,600	1,670	d1,200	2,120	1,910	3,370	*3,150	1,420	1,160
13	1,670	2,390	3,220	3,080	1,570	d1,120	2,320	1,670	3,000	3,110	1,510	970
14	1,570	2,140	2,750	2,560	1,400	*940	2,610	1,570	3,130	2,750	1,600	905
15	1,390	1,950	2,420	3,760	1,230	890	2,460	1,750	3,200	2,380	1,610	832
16	1,190	1,830	2,260	7,060	1,170	885	2,210	2,380	2,860	2,300	1,460	786
17	1,140	1,720	2,070	4,500	1,240	925	1,960	3,000	2,850	2,280	1,310	773
18	1,080	2,040	1,940	*4,150	1,320	1,100	*1,870	3,500	2,890	2,460	1,260	773
19	1,000	2,490	2,280	3,490	1,580	1,320	2,120	3,790	3,510	2,720	1,340	768
20	916	2,350	3,320	3,050	1,530	1,340	2,670	3,580	3,170	2,940	1,420	1,040
21	840	2,050	4,070	2,750	1,520	2,350	3,270	2,950	2,660	2,860	1,530	1,080
22	792	1,840	4,370	2,660	1,490	4,160	3,130	2,640	2,610	2,540	1,510	818
23	760	1,820	3,410	2,650	1,420	5,340	2,680	2,800	2,600	2,410	1,510	782
24	2,470	3,730	3,260	2,460	1,460	3,860	2,400	2,730	2,280	2,410	1,490	1,980
25	11,500	4,820	4,460	2,230	1,560	3,040	2,260	2,580	2,120	2,240	1,420	3,820
26	5,600	4,080	3,760	2,050	1,530	2,710	2,270	2,560	2,260	1,940	1,290	3,760
27	4,140	4,030	3,020	1,900	1,570	2,280	2,210	2,370	2,800	1,740	1,240	2,330
28	4,240	3,960	2,550	1,790	2,260	2,340	2,050	2,220	2,640	1,570	1,110	2,070
29	6,800	3,500	2,260	1,670	2,300	2,890	1,880	2,360	2,350	1,490	*1,110	3,200
30	4,950	3,380	2,040	1,540	------	3,320	1,740	2,940	2,140	1,460	1,050	2,710
31	3,460	-----	1,840	1,440	-----	2,870	-----	3,460	------	1,390	1,010	------
Total	73,432	139,940	91,590	84,850	41,790	69,180	63,400	72,980	96,040	75,120	41,780	40,761
Mean	2,369	4,665	2,955	2,736	1,441	2,232	2,113	2,354	3,201	2,423	1,348	1,359
Cfsm	11.4	22.4	14.2	13.2	6.93	10.7	10.2	11.3	15.4	11.6	6.48	6.53
In.	13.13	25.02	16.38	15.17	7.47	12.37	11.34	13.05	17.17	13.43	7.47	7.29
Ac-ft	145,700	277,600	181,700	168,300	82,890	137,200	125,800	144,800	190,500	149,000	82,870	80,850

Calendar year 1955: Max 29,100 Min 554 Mean 2,102 Cfsm 10.1 In. 137.18 Ac-ft 1,522,000
Water year 1955-56: Max 29,100 Min 554 Mean 2,434 Cfsm 11.7 In. 159.29 Ac-ft 1,767,000

Peak discharge (base, 10,000 cfs).--Oct. 25 (8:45 a.m.) 15,600 cfs (12.30 ft); Oct. 29 (1:30 p.m.) 11,300 cfs (10.14 ft); Nov. 3 (time unknown) 33,600 cfs (19.70 ft).

* Discharge measurement made on this day.

d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorder graph.

Soleduck River near Fairholm, Wash.

Location.--Lat 48°02'40", long 123°57'35", in lot 4, SW¼ sec. 35, T. 30 N., R. 10 W., on right bank 300 ft downstream from South Fork, 2.5 miles southwest of Fairholm, and 17 miles east of Beaver.

Drainage area.--83.8 sq mi.

Records available.--October 1917 to September 1921, October 1933 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,060 ft (from topographic map). October 1917 to September 1921 water-stage recorder and Oct. 4 to Nov. 4, 1933, staff gage, at same site at datum 1.2 ft higher.

Average discharge.--27 years, 622 cfs (450,300 acre-ft per year).

Extremes.--Maximum discharge during year, 18,000 cfs Nov. 3 (gage height, 14.25 ft); minimum, 97 cfs Oct. 2 (gage height, 1.15 ft).
1917-21, 1933-56: Maximum discharge, 23,500 cfs Nov. 26, 1949 (gage height, 16.42 ft, from high-water mark in well), from rating curve extended above 13,000 cfs on basis of slope-area determination of peak flow; minimum, 51 cfs Sept. 11, 12, 1944; minimum gage height, 0.79 ft Oct. 17-20, 1952.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1918-19, 1920(M), 1921, 1934-39, 1940(M), 1941-42, 1943(M), 1944-46, 1947-48(M). WSP 1216: Drainage area. WSP 1286: 1939, 1949.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
1.1	90	2.5	465	1.2	108	4.0	1,410
1.3	120	3.0	695	1.4	134	5.0	2,440
1.5	158	3.5	1,000	1.7	188	6.0	3,670
1.7	204	4.0	1,410	2.0	260	8.0	6,670
2.1	320			2.5	430	10.0	9,870
				3.0	660	12.0	13,500
				3.5	990		

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	734	1,130	484	316	570	660	650	1,200	650	294	148
2	98	3,170	906	474	316	690	570	615	1,080	702	326	144
3	109	*13,400	726	454	304	738	506	585	1,050	726	322	140
4	260	5,590	640	479	300	538	484	580	983	696	282	136
5	*244	2,250	635	816	294	442	454	595	878	1,020	271	131
6	154	1,520	655	1,010	280	368	418	645	*934	808	271	128
7	206	1,170	630	690	268	422	406	738	1,250	684	268	128
8	744	1,050	857	565	257	390	398	983	2,090	774	260	127
9	924	998	794	484	255	333	390	1,170	2,550	906	257	139
10	685	1,010	801	434	252	294	434	1,210	1,870	899	252	157
11	501	815	1,920	620	257	268	560	962	1,410	885	244	188
12	564	660	1,760	732	280	250	708	780	1,130	*871	239	163
13	420	605	1,060	864	257	244	906	672	1,050	850	239	142
14	354	546	808	708	252	*234	1,090	660	1,070	714	237	133
15	307	528	702	1,210	224	227	1,090	780	1,080	630	234	128
16	264	528	645	2,370	222	227	927	1,130	976	610	224	124
17	241	524	580	1,510	229	227	*780	1,470	976	605	208	121
18	220	565	528	*1,460	229	239	720	1,790	998	640	199	120
19	204	696	605	1,170	232	282	822	1,860	1,150	660	197	119
20	190	645	1,290	998	224	297	1,200	1,640	1,010	666	195	150
21	178	560	1,800	864	220	524	1,650	1,280	850	620	195	166
22	169	502	1,940	836	215	1,120	1,550	1,080	843	556	192	137
23	162	492	1,300	801	206	1,760	1,210	1,210	836	515	186	133
24	618	1,210	1,100	678	208	1,270	1,020	1,170	726	510	182	289
25	3,620	1,810	1,350	600	206	927	969	1,090	666	462	188	755
26	1,400	1,390	1,160	538	201	762	976	1,090	808	410	178	939
27	1,110	1,660	906	470	212	610	934	976	998	383	170	406
28	1,310	1,520	732	438	390	640	836	913	857	350	*164	339
29	2,110	*1,290	635	402	364	850	756	998	732	329	161	739
30	1,460	1,230	565	360	-----	955	678	1,310	660	322	157	748
31	958	-----	506	322	-----	822	-----	1,480	-----	313	152	-----
Total	19,882	48,668	29,666	23,841	7,470	17,520	24,102	32,112	32,711	19,766	6,944	7,417
Mean	641	1,622	957	769	258	565	803	1,036	1,090	638	224	247
Cfsm	7.65	19.4	11.4	9.18	3.08	6.74	9.58	12.4	13.0	7.61	2.67	2.95
In.	8.82	21.60	13.17	10.58	3.32	7.78	10.70	14.25	14.52	8.77	3.08	3.29
Ac-ft	39,440	96,530	58,840	47,290	14,820	34,750	47,810	63,690	64,880	39,210	13,770	14,710

Calendar year 1955: Max 13,400 Min 98 Mean 675 Cfsm 8.05 In. 109.35 Ac-ft 488,700
Water year 1955-56: Max 13,400 Min 98 Mean 738 Cfsm 8.81 In. 119.88 Ac-ft 535,700

Peak discharge (base, 6,000 cfs).--Nov. 3 (8 a.m.) 18,000 cfs (14.25 ft).
* Discharge measurement made on this day.

Lake Mills at Glines Canyon, near Port Angeles, Wash.

Location.--Lat 48°00'05", long 123°36'00", on Elwha River, in SE¼ sec. 17, T. 29 N., R. 7 W., at Glines Canyon Dam 2 miles upstream from Griff Creek, 4 miles south of Elwha, and 11 miles southwest of Port Angeles.

Drainage area.--245 sq mi.

Records available.--April 1927 to September 1956. Prior to October 1950, monthly change in contents published with records for Elwha River at McDonald Bridge, near Port Angeles.

Gage.--Staff gage read twice daily. Datum of gage is 19.67 ft below mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum contents observed during year, 39,080 acre-ft Nov. 3, Apr. 29 (gage height, 611.0 ft); minimum observed, 30,030 acre-ft Apr. 12 (gage height, 589.1 ft).
1927-56: Maximum contents observed, 39,940 acre-ft Dec. 22, 1936 (gage height, 613.0 ft); minimum observed (since reservoir first filled in May 1927), 24,290 acre-ft Nov. 14, 1929 (gage height, 574.4 ft).

Remarks.--Reservoir is formed by concrete dam, completed in 1927; storage began Apr. 1, 1927. Total capacity, 37,790 acre-ft at gage height 608 ft (top of gates). Figures given herein represent total contents. Water is used for power by Crown Zellerbach Corp.

Cooperation.--Gage-height record furnished by Crown Zellerbach Corp.

Month-end gage height and contents, water year October 1955 to September 1956

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	604.2	36,190	-
Oct. 31	609.9	38,610	+2,420
Nov. 30	607.4	37,540	-1,070
Dec. 31	604.5	36,320	-1,220
Calendar year 1955	-	-	-1,810
Jan. 31	604.6	36,360	+40
Feb. 29	605.4	36,700	+340
Mar. 31	606.5	37,160	+460
Apr. 30	610.6	38,910	+1,750
May 31	610.6	38,910	0
June 30	609.4	38,390	-520
July 31	610.4	38,820	+430
Aug. 31	607.4	37,540	-1,280
Sept.30	610.1	38,690	+1,150
Water year 1955-56	-	-	+2,500

† Gage height at 12 p.m. based on twice-daily staff-gage readings.

Elwha River at McDonald Bridge, near Port Angeles, Wash.

Location.--Lat 48°03'20", long 123°34'55", in NE¼NW¼ sec. 33, T. 30 N., R. 7 W., on right bank 300 ft upstream from site of McDonald Bridge (now removed), half a mile upstream from Little River, 7 miles upstream from mouth, and 8 miles southwest of Port Angeles.
Drainage area.--269 sq mi.
Records available.--October 1897 to December 1901, October 1918 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 200.00 ft above mean sea level, datum of 1929. Oct. 1, 1897, to Dec. 31, 1901, wire-weight gage at McDonald Bridge at different datum. Dec. 9, 1918, to May 1, 1936, water-stage recorder under McDonald Bridge at datum 7.4 ft higher.
Average discharge.--42 years, 1,481 cfs (1,072,000 acre-ft per year), adjusted for storage since April 1927.
Extremes.--Maximum discharge during year, 21,400 cfs Nov. 3 (gage height, 20.91 ft); minimum, 150 cfs Oct. 3 (gage height, 7.90 ft); minimum daily, 360 cfs Sept. 3.
1897-1901, 1918-56: Maximum discharge, 41,600 cfs Nov. 18, 1897 (gage height, 14.5 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 3,300 cfs on basis of two determinations of flow over dam at discharges 26,700 cfs and 30,100 cfs, referred to 1897 datum; minimum daily, 10 cfs Oct. 3, 1938.
Remarks.--Records good. Water is diverted through Glines Canyon powerhouse and returned to river above gage. Flow partly regulated by Lake Mills (see preceding page).
Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1898, 1899(M), 1900-1902, 1919, 1920-31(M), 1932, 1933(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
8.5	390	11.0	2,570	8.5	320	12.0	3,520
9.0	680	12.0	3,840	9.0	565	14.0	6,620
10.0	1,500	14.0	6,760	10.0	1,250	17.0	12,300
				11.0	2,250	20.0	19,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	401	1,730	1,640	1,250	849	722	1,410	1,960	4,920	2,550	1,450	982
2	484	*3,880	1,770	1,400	740	905	1,380	1,990	4,300	2,860	1,600	919
3	409	19,100	1,550	1,260	740	1,090	1,380	2,030	4,410	2,940	1,500	360
4	*522	13,300	1,630	1,290	746	1,060	1,370	2,020	4,590	2,740	1,410	620
5	544	5,900	1,590	1,610	746	863	1,170	1,990	*3,760	3,150	1,380	821
6	522	4,280	1,570	2,200	746	782	1,320	1,960	3,080	3,240	1,390	716
7	511	3,550	1,540	1,650	746	884	1,340	2,100	3,380	2,820	1,420	680
8	664	3,380	1,540	1,410	746	954	1,330	2,450	4,540	2,950	1,380	680
9	1,170	2,840	1,470	1,260	912	919	1,330	3,070	6,540	3,420	1,420	680
10	1,220	2,840	1,380	1,240	1,070	788	1,320	3,270	5,860	*3,880	1,420	849
11	1,070	2,490	2,920	1,220	870	680	1,330	2,350	4,230	4,000	1,390	1,180
12	925	1,920	3,700	1,380	686	668	1,340	2,770	3,690	3,830	1,360	940
13	895	1,630	2,230	1,300	776	662	1,360	2,360	3,440	3,580	1,360	746
14	948	1,750	1,810	1,370	884	*650	1,380	2,270	3,440	3,480	1,410	740
15	1,010	1,650	1,370	1,470	704	604	1,420	2,350	3,590	2,950	1,410	734
16	948	1,620	1,690	2,600	698	548	1,480	2,730	3,390	2,800	1,360	734
17	736	1,520	1,770	*2,260	692	560	*1,430	3,860	3,380	2,710	1,320	698
18	680	1,670	1,570	2,120	692	565	1,440	4,830	3,590	2,760	1,250	668
19	701	1,760	1,480	1,990	692	576	1,430	5,590	3,930	2,940	1,140	662
20	722	1,730	2,140	1,820	692	609	1,600	5,650	3,690	2,990	1,140	674
21	701	1,460	2,680	1,720	692	800	2,680	4,320	3,090	3,260	1,190	668
22	680	1,230	3,080	1,720	692	1,140	3,510	4,000	2,940	2,860	1,240	650
23	654	1,360	2,370	1,670	692	1,760	2,800	4,230	3,390	2,410	1,280	592
24	882	1,980	2,250	1,560	686	2,140	2,420	4,580	3,060	2,410	1,200	785
25	6,360	2,260	2,390	1,390	686	1,690	2,070	4,230	2,650	2,430	1,190	1,430
26	2,450	1,920	2,670	1,470	686	1,540	2,130	3,940	2,710	2,120	1,190	1,800
27	2,250	1,820	1,880	1,410	680	1,320	2,310	3,870	3,480	1,920	1,130	1,190
28	1,930	2,060	1,790	1,430	698	1,430	2,270	3,330	3,590	1,820	*1,050	1,010
29	3,420	*2,270	1,670	1,250	686	1,410	2,140	3,550	3,200	1,730	989	1,190
30	2,610	2,290	1,530	1,090	-----	1,400	2,050	4,260	2,770	1,680	989	1,520
31	1,840	-----	1,460	968	-----	1,430	-----	5,400	-----	1,640	982	-----
Total	38,859	97,190	60,130	47,778	21,625	31,149	51,940	103,310	112,610	86,870	39,940	25,918
Mean	1,254	3,240	1,940	1,541	746	1,005	1,731	3,333	3,754	2,802	1,288	864
Ac-ft	77,080	192,800	119,300	94,770	42,890	61,780	103,000	204,900	223,400	172,300	79,220	51,410
(†)	+2,420	-1,070	-1,220	+40	+340	+460	+1,750	0	-520	+430	-1,280	+1,150
Adjusted for change in contents in Lake Mills												
Mean	1,293	3,222	1,921	1,542	752	1,012	1,761	3,333	3,746	2,809	1,268	883
Cfsm	4.81	12.0	7.14	5.73	2.80	3.76	6.55	12.4	13.9	10.4	4.71	3.28
In.	5.54	13.36	8.23	6.61	3.01	4.34	7.30	14.28	15.54	12.04	5.43	3.66
Ac-ft	79,500	191,700	118,100	94,810	43,230	62,240	104,800	204,900	222,900	172,700	77,940	52,560

Observed

Calendar year 1955: Max 19,100 Min 401 Mean 1,599 Ac-ft 1,158,000
Water year 1955-56: Max 19,100 Min 360 Mean 1,960 Ac-ft 1,423,000

Adjusted

Calendar year 1955: Mean 1,597 Cfsm 5.94 In. 80.56 Ac-ft 1,156,000
Water year 1955-56: Mean 1,963 Cfsm 7.30 In. 99.34 Ac-ft 1,425,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Lake Mills; furnished by Crown Zellerbach Corp.

Siebert Creek near Port Angeles, Wash.

Location.--Lat 48°05'35", long 123°17'00", in SE¼ sec. 14, T. 30 N., R. 5 W., on left bank 2¼ miles upstream from mouth and 6½ miles east of Port Angeles.

Drainage area.--17.2 sq mi.

Records available.--June 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 225 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,620 cfs Nov. 3 (gage height, 9.50 ft), from rating curve extended above 260 cfs on basis of computations of peak flow through culvert at gage heights 4.23 and 8.12 ft; minimum, 2.7 cfs Sept. 6, 7; minimum gage height, 2.33 ft Oct. 1-7.
1952-56: Maximum discharge, that of Nov. 3, 1955; minimum, 2.0 cfs Sept. 3-5, 1952; minimum gage height, 1.38 ft Aug. 14-19, Sept. 5-7, 9-12, 14-26, 1953.

Remarks.--Records fair except those for periods of doubtful or no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1346: 1953(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4 to Mar. 23)

Oct. 1 to Mar. 23				Mar. 24 to Sept. 30			
2.3	2.8	3.5	217	2.9	2.0	3.7	53
2.5	11.5	4.0	400	3.0	3.7	4.3	188
2.8	45	5.0	715	3.3	16		
3.1	107	6.4	1,060				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	9.1	47	56	13	26	37	15.5	7.0	7.4	4.2	3.1
2	3.6	*61	37	59	13	32	34	14	7.8	7.0	7.4	2.9
3	3.6	1,050	30	61	14	80	31	13	9.4	6.6	6.3	2.9
4	3.8	1,000	25	65	15	74	29	12.5	*11	6.6	4.8	2.9
5	3.8	691	20	122	17	58	28	12	13	7.0	4.2	2.9
6	3.6	313	19.5	247	20	40	25	12.5	12	6.6	4.2	2.9
7	3.8	33	19.5	142	19	39	23	11.5	12	6.3	3.9	2.9
8	8.0	25	22	76	17	34	22	12.5	11.5	6.0	3.7	2.9
9	19.5	17.5	27	42	15	27	20	13	15.5	6.0	3.7	3.1
10	9.7	14.5	22	33	14	22	22	13.5	32	*6.0	3.7	3.7
11	7.5	11.5	88	29	16	18.5	27	12.5	25	6.0	3.5	*9.0
12	5.6	7.5	155	30	25	16	32	11	18.5	5.7	3.5	6.3
13	5.2	7.0	78	33	22	*16	36	10.5	15	5.4	3.5	4.2
14	4.8	6.7	52	33	18	16	39	10.5	13.5	5.4	3.7	3.7
15	4.8	6.3	39	56	15	14.5	37	10.5	13.5	5.4	3.9	3.5
16	4.5	6.0	32	78	12	14.5	*37	11	13.5	5.4	3.9	3.5
17	4.2	5.7	27	67	13	15	30	11.5	15	5.1	3.7	3.5
18	4.2	6.0	27	56	15	16	26	12.5	14	5.1	3.5	3.3
19	4.5	7.0	29	*47	30	22	26	12	13	4.8	3.3	3.3
20	4.5	7.8	76	45	80	22	30	11.5	12	4.8	3.3	3.5
21	4.2	6.8	153	49	65	25	37	11	11.5	4.5	3.3	3.3
22	4.2	6.0	250	45	48	30	33	10	10.5	4.5	3.1	3.1
23	4.2	15	189	43	38	249	27	9.6	9.8	4.5	3.1	3.1
24	5.6	35	140	34	33	163	22	9.0	9.8	4.5	3.3	3.3
25	25	67	195	29	30	92	22	8.8	9.4	4.2	3.5	3.3
26	15	54	183	25	30	78	21	9.0	9.0	4.2	3.7	4.8
27	8.5	37	137	27	29	56	19	9.4	8.6	4.2	*3.3	4.5
28	6.5	37	102	19.5	35	44	18	8.8	8.2	4.2	3.3	3.9
29	9.7	39	82	17	30	43	17	8.2	7.8	4.2	3.3	5.1
30	14.5	*47	69	16	------	45	16	7.8	7.4	4.2	3.1	6.0
31	11	-----	61	15	------	43	-----	7.3	------	3.9	3.1	------
Total	221.2	3,629.4	2,433.0	1,696.5	741	1,470.5	823	342.4	376.2	165.7	118.0	114.4
Mean	7.14	121	78.5	54.7	25.6	47.4	27.4	11.0	12.5	5.35	3.81	3.81
Cfsm	0.415	7.03	4.56	3.18	1.49	2.76	1.59	0.640	0.727	0.311	0.222	0.222
In.	0.48	7.85	5.26	3.67	1.60	3.18	1.78	0.74	0.81	0.36	0.26	0.25
Ac-ft	439	7,200	4,830	3,360	1,470	2,920	1,630	679	746	329	234	227

Calendar year 1955: Max 1,050 Min 3.6 Mean 30.4 Cfsm 1.77 In. 23.98 Ac-ft 22,000
Water year 1955-56: Max 1,050 Min 2.9 Mean 33.1 Cfsm 1.92 In. 26.24 Ac-ft 24,060

Peak discharge (base, 300 cfs).--Nov. 3 (8:30 p.m.) 1,620 cfs (9.50 ft); Dec. 22 (12:30 p.m.) 313 cfs (6.35 ft); Mar. 23 (1:45 p.m.) 438 cfs (5.61 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 13-24, Jan. 17, 18, Feb. 22 to Mar. 1, May 23 to June 4; doubtful gage-height record Jan. 30 to Feb. 21; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Dungeness River near Sequim, Wash.

Location.--Lat 48°00'55", long 123°07'50", in SW¼SE¼ sec. 12, T. 29 N., R. 4 W., on right bank three-quarters of a mile upstream from Canyon Creek, 4½ miles southwest of Sequim, and 11½ miles upstream from mouth.

Drainage area.--156 sq mi.

Records available.--June 1923 to September 1930, June 1937 to September 1956. July 1897 to July 1898 at site below Canyon Creek, published as "near Sequim," records not equivalent.

Gage.--Water-stage recorder. Datum of gage is 569.3 ft above mean sea level (river-profile survey). June 8, 1923, to Sept. 30, 1930, staff gage just above fish-hatchery diversion half a mile downstream at different datum. June 19 to Aug. 12, 1937, staff gage at present site and datum.

Average discharge.--26 years (1923-30, 1937-56), 366 cfs (265,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,750 cfs Nov. 3 (gage height, 7.28 ft), from rating curve extended as explained below; minimum, 134 cfs Mar. 11 (gage height, 2.59 ft).

1923-30, 1937-56: Maximum discharge, 6,820 cfs Nov. 27, 1949 (gage height, 7.3 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum observed, 77 cfs Sept. 10, 1928.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1924-24(M), 1927(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 24 to Dec. 12, Sept. 1-25)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.9	148	5.0	1,490	2.6	136	4.5	1,280
3.2	230	5.5	2,220	2.9	229	5.0	1,860
3.5	340	6.0	3,170	3.3	396	5.5	2,600
4.0	595	6.5	4,350	3.7	615	6.0	3,500
4.5	970	7.0	5,830	4.1	910		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	*300	*406	345	236	158	222	522	1,440	806	458	276
2	150	730	372	336	248	158	212	489	1,240	814	550	262
3	153	5,060	336	328	215	180	205	463	1,460	838	484	240
4	166	3,260	315	323	209	167	205	452	*1,510	814	437	219
5	163	1,550	298	315	198	167	198	452	1,150	886	427	205
6	150	982	298	599	195	158	195	479	973	894	437	198
7	156	774	278	500	192	158	189	555	910	798	442	198
8	243	687	274	396	189	153	183	667	1,120	886	432	212
9	293	654	270	340	189	153	192	774	1,760	*1,050	432	215
10	227	743	259	310	186	147	233	846	1,760	1,140	427	295
11	184	585	467	310	180	139	323	729	1,380	1,090	411	340
12	195	489	911	302	180	142	411	634	1,130	1,110	422	274
13	206	468	667	368	176	*142	533	561	1,040	1,110	442	233
14	227	447	538	382	173	139	654	555	1,070	982	447	212
15	233	437	495	358	164	*139	694	615	1,140	854	452	202
16	203	422	447	506	164	139	*609	782	1,110	822	427	198
17	206	391	416	511	180	139	528	1,030	1,040	798	377	195
18	209	391	372	452	173	150	495	1,350	1,130	822	358	192
19	206	396	396	*416	170	195	573	1,490	1,330	910	377	192
20	195	368	427	387	164	198	736	1,480	1,170	1,000	391	202
21	181	349	609	363	164	212	1,040	1,240	982	973	401	205
22	170	332	750	345	167	270	1,100	1,130	1,000	862	396	192
23	163	328	674	336	167	524	937	1,150	1,040	830	391	180
24	273	425	555	310	164	516	790	1,140	878	822	377	189
25	934	463	641	282	161	382	701	1,130	806	758	372	248
26	513	396	667	266	158	328	694	1,130	910	660	349	368
27	362	391	544	262	161	278	667	1,050	1,170	603	*340	306
28	324	463	447	259	164	255	628	1,030	1,110	544	310	251
29	421	463	401	233	158	244	579	1,040	937	511	302	270
30	421	*432	372	226	------	244	533	1,200	830	489	298	274
31	344	------	354	205	------	240	------	1,530	------	479	278	------
Total	8,019	23,176	14,256	10,871	5,245	6,614	15,259	27,695	34,526	25,955	12,444	7,043
Mean	259	773	460	351	181	213	509	893	1,151	837	401	235
Cfsm	1.66	4.96	2.95	2.25	1.16	1.37	3.26	5.72	7.38	5.37	2.57	1.51
In.	1.91	5.53	3.40	2.59	1.25	1.58	3.64	6.60	8.23	6.19	2.97	1.68
Ac-ft	15,910	45,970	28,280	21,560	10,400	13,120	30,270	54,930	68,480	51,480	24,680	13,970

Calendar year 1955: Max 5,060 Min 146 Mean 420 Cfsm 2.69 In. 36.58 Ac-ft 304,400
Water year 1955-56: Max 5,060 Min 139 Mean 522 Cfsm 3.35 In. 45.57 Ac-ft 379,000

Peak discharge (base, 1,700 cfs).--Nov. 3 (8 p.m.) 6,750 cfs (7.28 ft); June 3 (8:30 p.m.) 1,820 cfs (4.97 ft); June 10 (1 to 2 a.m.) 1,860 cfs (5.00 ft).

* Discharge measurement made on this day.

Snow Creek near Maynard, Wash.

Location.--Lat 47°56'30", long 122°53'05", in SE¼ sec. 2, T. 28 N., R. 2 W., on left bank 600 ft upstream from Andrews Creek and 3¼ miles south of Maynard.

Drainage area.--13.2 sq mi.

Records available.--May 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 180 ft (from topographic map).

Extremes.--Maximum discharge during year, 216 cfs Jan. 6 (gage height, 2.89 ft); minimum, 2.7 cfs Sept. 6-9 (gage height, 1.47 ft).
1952-56: Maximum discharge not determined, probably occurred during period of doubtful gage-height record Feb. 13-21, 1954; minimum, 1.6 cfs Oct. 20, 1952; minimum gage height, 1.22 ft Sept. 18, 19, Oct. 16-20, 1952.

Remarks.--Records fair except those for periods of ice effect or doubtful or no gage-height record, which are poor. Some small diversion for irrigation. No regulation.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 27 to Dec. 24)

1.5	2.7	2.0	31
1.6	5.4	2.2	55
1.7	9.5	2.4	87
1.8	15	2.7	150

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.1	*5.4	*40	25	19	17	36	25	8.2	12	3.9	3.9
2	3.1	15	35	32	18	25	37	24	8.2	11.5	11	3.6
3	3.1	57	30	36	17	30	35	23	11	11.5	7.7	3.4
4	3.4	52	28	38	17	28	34	23	16.5	10.5	5.8	*3.1
5	3.4	37	26	66	16	24	34	24	17	10	4.8	2.9
6	3.4	25	31	102	16	21	31	24	15	10.5	4.5	2.7
7	3.4	19.5	34	80	16	20	31	27	13.5	10	3.9	2.7
8	8.2	16.5	35	60	16	18	35	29	12	9.0	3.6	2.7
9	10	14.5	33	45	15	17	40	29	12.5	7.2	3.6	2.9
10	5.8	13.5	29	35	14	16	46	36	25	7.2	3.6	3.4
11	4.8	13.5	34	30	14	15	61	30	27	7.2	3.6	6.4
12	4.5	13	41	40	14	14.5	61	26	21	6.8	3.6	6.4
13	4.2	b13	34	55	18	*14.5	64	22	17.5	6.1	3.4	4.2
14	3.9	b12.5	29	50	15	14	67	20	15.5	6.1	3.4	3.9
15	3.9	12	27	60	14	14	64	20	21	6.4	3.6	3.6
16	3.6	12	24	80	14	13.5	56	20	21	6.1	4.2	3.6
17	3.4	12	23	*75	14	13.5	48	21	21	5.1	3.9	3.4
18	3.4	12	20	65	15	14	*47	21	21	4.5	3.6	3.4
19	3.6	12.5	25	55	17	19	50	20	31	*4.5	3.4	3.4
20	3.9	13	59	45	19	20	58	18.5	66	4.8	3.1	3.4
21	3.6	12.5	102	40	21	34	68	16.5	43	4.5	2.9	3.4
22	3.4	12	110	40	20	48	64	14.5	33	4.2	2.9	3.4
23	3.4	20	93	38	19	82	54	13.5	24	3.6	2.9	3.1
24	3.6	b35	87	35	17	77	47	12.5	22	3.4	3.1	3.1
25	8.2	50	145	31	16	62	43	11.5	19.5	3.9	5.8	3.1
26	8.6	48	98	29	16	54	50	11	17.5	3.9	5.4	3.6
27	5.8	41	70	27	15	45	37	11.5	16.5	3.6	4.2	4.5
28	5.4	41	51	25	18	41	34	*11	15	3.6	4.2	3.9
29	6.1	42	36	23	18	43	30	10	14	3.6	3.9	4.2
30	6.4	42	30	21	------	41	27	9.0	12.5	3.6	4.2	4.8
31	5.4	------	25	20	------	42	------	8.6	------	3.6	3.9	------
Total	146.0	724.4	1,484	1,403	478	937.0	1,379	612.1	617.9	198.5	131.6	110.1
Mean	4.71	24.1	47.9	45.3	16.5	30.2	46.0	19.7	20.6	6.40	4.25	3.67
Cfsm	0.357	1.83	3.63	3.43	1.25	2.29	3.48	1.49	1.56	0.485	0.322	0.278
In.	0.41	2.04	4.18	3.95	1.35	2.64	3.89	1.72	1.74	0.56	0.37	0.31
Ac-ft	290	1,440	2,940	2,780	948	1,860	2,740	1,210	1,230	394	261	218

Calendar year 1955 : Max 145 Min 3.1 Mean 19.8 Cfsm 1.50 In. 20.31 Ac-ft 14,300
Water year 1955-56 : Max 145 Min 2.7 Mean 22.5 Cfsm 1.70 In. 23.16 Ac-ft 16,310

Peak discharge (base, 100 cfs).--Dec. 25 (2 p.m.) 180 cfs (2.74 ft); Jan. 6 (1:30 a.m.) 216 cfs (2.89 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Doubtful or no gage-height record Nov. 14-23, Jan. 7-15, Jan. 18 to Mar. 12; discharge estimated on basis of records for nearby stations.

Chimacum Creek near Chimacum, Wash.

Location.--Lat 47°58'25", long 122°46'35", in SW¼ sec. 26, T. 29 N., R. 1 W., on right bank 100 ft downstream from culvert, 3 miles south of Chimacum, and 3¼ miles upstream from mouth of East Fork.

Drainage area.--12.6 sq mi.

Records available.--June 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 140 ft (from topographic map).

Extremes.--Maximum discharge during year, 222 cfs Jan. 6 (gage height, 5.69 ft); minimum, 0.2 cfs July 7; minimum gage height, 1.37 ft Oct. 1-3.
1952-56: Maximum discharge, that of Jan. 6, 1956; minimum, 0.2 cfs Aug. 2, 1953, July 7, 1956; minimum gage height, 1.11 ft Aug. 2, 1953.

Remarks.--Records good except those below 10 cfs, which are fair, and those for periods of indefinite stage-discharge relation or no gage-height record, which are poor. Some regulation and diversions during summer months for irrigation.

Rating tables, water year 1955-56, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 30 to Dec. 17)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30			
1.3	2.7	1.9	18	1.6	1.2	3.0	49
1.4	4.6	2.3	32	1.7	2.6	4.0	100
1.6	9.4	2.9	57	2.0	10.5	5.6	214
				2.5	28		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	*6.4	*25	38	17.5	33	18	6.6	4.0	5.2	2.8	3.1
2	4.0	23	20	85	17	42	18	6.5	3.8	5.2	7.0	3.1
3	4.2	29	16	106	17	100	17	6.4	9.3	5.2	5.4	3.1
4	*4.2	34	13.5	110	18	93	16.5	7.0	*11.5	5.2	4.4	3.1
5	4.2	26	16.5	151	19.5	72	15.5	6.5	13	5.2	3.8	2.6
6	4.2	16	51	211	22	50	15	6.2	11	5.4	3.5	2.8
7	4.4	11.5	44	172	22	45	14.5	6.1	9.3	4.0	3.5	3.1
8	8.0	9.9	55	107	21	44	14	5.8	8.1	3.8	3.3	2.8
9	15	8.6	42	104	19	40	13	5.5	7.2	*4.0	3.3	3.3
10	8.0	7.9	31	93	18	34	12.5	5.9	13	4.2	3.3	3.8
11	6.6	7.6	29	77	18.5	30	11.5	6.3	12.5	4.0	3.3	6.7
12	5.9	6.9	28	64	28	27	11	5.9	9.3	3.5	3.3	5.4
13	5.6	5.3	21	60	24	*29	10.5	5.5	7.5	3.8	3.3	4.2
14	5.4	5.5	16	52	21	28	10	5.1	6.7	4.0	3.3	4.0
15	5.4	5.1	15	68	17	25	10	4.9	7.2	3.8	4.0	4.2
16	5.2	4.9	16	93	14.5	23	*10.5	4.7	7.8	3.5	4.2	4.4
17	5.1	5.1	14.5	65	17	22	11	4.5	6.7	2.6	3.8	4.4
18	5.1	8.5	e16	54	17.5	21	9.6	4.4	6.7	2.3	3.3	4.4
19	5.2	17	e27	*52	58	20	8.8	4.4	9.3	2.5	3.3	4.4
20	5.4	26	128	48	90	19	8.1	4.4	10.5	2.6	3.3	4.9
21	5.2	16.5	166	45	91	34	7.9	4.4	9.0	2.8	3.1	4.4
22	5.2	16.5	165	41	72	33	7.7	4.3	8.1	3.1	3.1	4.4
23	5.2	36	129	42	52	47	7.6	4.3	7.2	3.1	3.1	4.2
24	5.3	44	140	41	42	37	7.5	4.4	7.0	2.6	3.3	4.4
25	9.0	45	181	36	39	34	7.4	4.3	6.7	2.5	3.3	4.4
26	10	54	175	32	40	31	7.0	4.4	6.2	2.3	3.3	5.2
27	8.2	47	123	28	36	26	7.1	4.5	5.9	2.3	*3.5	5.7
28	7.2	33	77	26	42	23	7.2	*4.2	5.9	2.5	3.5	5.7
29	7.6	25	50	25	38	21	7.5	4.0	5.7	2.6	3.1	5.2
30	8.0	22	35	23	------	20	7.0	4.2	5.7	2.8	3.1	4.9
31	7.0	------	25	21	------	19	------	4.0	------	2.8	2.6	------
Total	193.0	603.2	1,890.5	2,170	948.5	1,122	328.9	159.6	241.8	109.4	110.4	126.3
Mean	6.23	20.1	61.0	70.0	32.7	36.2	11.0	5.15	8.06	3.53	3.56	4.21
Cfsm	0.494	1.60	4.84	5.56	2.60	2.87	0.873	0.409	0.640	0.280	0.283	0.334
In.	0.57	1.78	5.58	6.40	2.80	3.31	0.97	0.47	0.71	0.32	0.33	0.37
Ac-ft	383	1,200	3,750	4,300	1,880	2,230	652	317	480	217	219	251

Calendar year 1955: Max 181 Min 2.2 Mean 16.9 Cfsm 1.34 In. 18.17 Ac-ft 12,210
Water year 1955-56: Max 211 Min 2.3 Mean 21.9 Cfsm 1.74 In. 23.61 Ac-ft 15,880

Peak discharge (base, 90 cfs).--Dec. 21 (10:30 p.m.) 180 cfs (5.19 ft); Dec. 25 (12 p.m.) 192 cfs (5.34 ft); Jan. 6 (2 p.m.) 222 cfs (5.69 ft); Jan. 9 (4:30 p.m.) 117 cfs (4.28 ft); Jan 15 (12 p.m.) 104 cfs (4.06 ft); Feb. 20 (10 p.m.) 98 cfs (3.97 ft); Mar. 3 (3 a.m.) 108 cfs (4.13 ft).
* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated.
Note.--No gage-height record Oct. 8-31, Apr. 17 to May 27; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Little Quilcene River near Quilcene, Wash.

Location.--Lat 47°50'15", long 122°53'10", in NE¼ sec. 14, T. 27 N., R. 2 W., on left bank 60 ft downstream from bridge on U. S. Highway 101, 1¼ miles northwest of Quilcene, and 1½ miles upstream from mouth.

Drainage area.--19.6 sq mi.

Records available.--August 1926 to October 1927, July 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 90 ft (from topographic map). Aug. 25, 1926, to Oct. 4, 1927, staff gage at site 120 ft upstream at different datum.

Average discharge.--6 years (1926-27, 1951-56), 55.3 cfs (40,040 acre-ft per year).

Extremes.--Maximum discharge during year, 545 cfs Jan. 5 (gage height, 3.60 ft); minimum, 13 cfs Oct. 7, 23, 24 (gage height, 0.96 ft).
1926-27, 1951-56: Maximum discharge, 820 cfs Feb. 13, 1954; maximum gage height, 4.40 ft Feb. 13, 1954 (backwater from debris); minimum discharge, 4.1 cfs Sept. 1, 1926 (gage height, 0.86 ft, site and datum then in use).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Undetermined amount of inflow at times during summer of 1956 from drainage of Lords Lake during period of construction of dams at the two lake outlets. Some diversion for irrigation. Slight regulation at times from unknown source.

Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1927(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 28 to Sept. 30))

Oct. 1 to Nov. 3		Nov. 4 to Sept. 30	
0.9	9.5	0.9	12
1.2	29	1.3	42
1.8	92	2.0	133
2.5	211	3.1	375

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.5	18	92	84	50	47	84	80	78	65	26	17.5
2	13.5	53	83	95	49	57	80	76	70	65	38	17.5
3	13.5	210	74	101	48	106	76	74	82	63	32	17
4	14.5	216	67	108	47	89	75	73	99	60	29	*16
5	13.5	150	64	229	45	73	73	75	92	60	27	16
6	13.5	106	71	334	45	63	68	80	83	60	27	15.5
7	13.5	87	75	193	45	60	65	95	75	52	26	15.5
8	32	73	85	138	44	56	74	102	74	49	24	15.5
9	34	63	83	116	41	52	76	102	78	47	24	15.5
10	24	56	79	104	40	49	89	112	116	46	24	18.5
11	20	53	89	105	39	45	122	98	123	44	24	22
12	18	a50	96	136	50	44	130	83	101	45	23	21
13	17	a47	84	140	47	*43	142	74	88	44	22	18
14	16	a43	76	128	42	40	157	73	80	42	22	17
15	15.5	a39	71	183	38	40	152	79	98	40	22	17
16	15	a36	64	179	39	39	133	92	95	38	22	16
17	14.5	a38	59	152	39	41	114	104	94	36	22	16
18	14.5	a42	54	a140	38	47	110	112	89	35	21	15.5
19	15	a46	59	a130	43	58	*123	110	95	*34	20	15.5
20	15	49	124	a120	49	62	155	99	179	33	20	15.5
21	14.5	46	203	a110	54	102	197	83	159	32	19.5	15.5
22	13.5	45	230	a105	53	135	178	78	127	31	19.5	15
23	13.5	52	176	a100	49	217	143	78	108	31	18	14.5
24	14.5	101	179	a92	47	195	127	74	94	30	18.5	14.5
25	25	150	356	*a85	45	163	120	70	83	29	27	14.5
26	26	130	271	75	43	138	119	71	78	28	22	17
27	17.5	112	183	70	42	116	110	73	74	28	21	18
28	*15	*108	133	65	49	105	101	*65	70	28	22	17
29	19	105	111	61	49	99	98	67	84	27	20	17
30	24	98	98	56	------	96	89	73	73	26	19.5	17.5
31	21	-----	85	53	------	92	------	74	------	26	18	------
Total	549.5	2,422	3,574	3,787	1,309	2,569	3,380	2,599	2,839	1,274	720.0	498.5
Mean	17.7	80.7	115	122	45.1	82.9	113	83.8	94.6	41.1	23.2	16.6
Cfsm	0.903	4.12	5.87	6.22	2.30	4.23	5.77	4.28	4.83	2.10	1.18	0.847
In.	1.04	4.60	6.78	7.19	2.48	4.87	6.41	4.93	5.39	2.42	1.37	0.95
Ac-ft	1,090	4,800	7,090	7,510	2,600	5,100	6,700	5,160	5,630	2,530	1,430	989

Calendar year 1955: Max 356 Min 13 Mean 52.0 Cfsm 2.65 In. 36.04 Ac-ft 37,680
Water year 1955-56: Max 356 Min 13.5 Mean 69.7 Cfsm 3.56 In. 48.43 Ac-ft 50,630

Peak discharge (base, 500 cfs).--Jan. 5 (11:30 p.m.) 545 cfs (3.60 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

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Duckabush River near Brinnon, Wash.

Location.--Lat 47°41'00", long 123°00'40", in SW¼SW¼ sec. 1, T. 25 N., R. 3 W., on left bank 4½ miles upstream from mouth and 5 miles west of Brinnon.

Drainage area.--66.5 sq mi.

Records available.--August to December 1910 (gage heights only), December 1910 to December 1911, June 1938 to September 1956. Published as "near Duckabush" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 241.49 ft above mean sea level, datum of 1929. Aug. 19, 1910, to Dec. 31, 1911, staff gage at same site at different datum.

Average discharge.--18 years (1938-56), 406 cfs (293,900 acre-ft per year).

Extremes.--Maximum discharge during year, 5,800 cfs Nov. 3 (gage height, 8.39 ft), from rating curve extended above 2,800 cfs on basis of slope-area determination at gage height 10.06 ft; minimum, 87 cfs Oct. 2, 3 (gage height, 1.92 ft).
1910-11, 1938-56: Maximum discharge, 8,960 cfs Nov. 26, 1949 (gage height, 10.06 ft), from rating curve extended above 1,800 cfs on basis of slope-area determination of peak flow; minimum, 45 cfs Oct. 26, 28, 29, 1942; minimum gage height, 1.32 ft Sept. 30, 1939.

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

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
1.8	67	4.0	960	2.0	118	3.5	720
2.0	101	5.0	1,770	2.3	193	4.0	1,050
2.3	168	6.0	2,750	2.6	286	5.0	1,860
2.6	257	7.0	3,900	3.0	450	6.2	3,010
3.0	408	8.0	5,230				
3.5	655						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	356	470	256	190	185	311	585	1,390	672	374	185
2	87	998	387	276	185	238	290	575	1,210	732	400	177
3	86	4,890	338	293	174	308	266	560	1,380	756	387	166
4	107	*2,920	304	349	169	210	260	550	1,420	750	349	*154
5	119	1,300	286	626	164	250	256	565	1,060	868	338	148
6	99	854	308	864	164	210	238	600	903	834	342	141
7	128	660	315	450	158	188	228	714	1,060	738	353	139
8	486	580	349	322	156	185	226	889	1,560	822	345	139
9	628	550	338	283	151	169	234	1,060	2,040	994	342	146
10	437	560	322	256	148	158	330	1,110	1,650	1,080	334	250
11	313	441	733	404	148	144	520	882	1,300	1,020	326	311
12	368	357	938	520	151	139	612	726	1,040	1,020	326	260
13	356	330	590	708	148	130	714	624	866	1,010	330	202
14	352	297	445	495	144	125	854	612	1,070	868	330	177
15	302	276	370	630	130	*125	822	738	1,130	768	330	164
16	254	273	330	1,130	130	123	708	1,040	1,010	750	300	151
17	235	256	300	720	134	134	595	1,380	952	756	273	146
18	222	270	276	702	132	171	575	1,700	1,000	868	260	139
19	198	283	286	590	139	247	*696	1,850	1,150	*882	263	134
20	173	283	720	530	139	253	966	1,680	994	952	266	141
21	160	263	952	480	139	530	1,310	1,340	840	882	270	146
22	150	247	1,040	455	141	726	1,270	1,250	868	750	270	130
23	141	250	720	445	136	896	1,040	1,380	889	702	260	120
24	339	462	606	378	132	666	882	1,310	750	714	253	177
25	1,190	606	1,100	*334	125	510	847	1,190	690	672	256	247
26	590	510	822	308	118	445	868	1,220	774	590	234	270
27	421	575	545	273	118	357	840	1,100	1,000	545	222	213
28	*412	*654	400	253	156	326	744	1,020	973	490	208	188
29	752	600	330	231	161	338	666	1,080	847	450	202	242
30	590	515	297	213	------	365	606	*1,390	720	418	196	260
31	429	-----	270	193	-----	357	-----	1,620	------	404	188	------
Total	10,214	21,416	15,487	13,967	4,280	9,208	18,776	32,340	32,636	23,757	9,127	5,463
Mean	329	714	500	451	148	297	626	1,043	1,088	766	294	182
Cfsm	4.95	10.7	7.52	6.78	2.23	4.47	9.41	15.7	16.4	11.5	4.42	2.74
In.	5.71	11.98	8.66	7.81	2.39	5.15	10.50	18.09	18.25	13.29	5.10	3.06
Ac-ft	20,260	42,480	30,720	27,700	8,490	18,260	37,240	64,150	64,730	47,120	18,100	10,840

Calendar year 1955: Max 4,890 Min 87 Mean 388 Cfsm 5.83 In. 79.18 Ac-ft 280,800
Water year 1955-56: Max 4,890 Min 87 Mean 537 Cfsm 8.08 In. 109.99 Ac-ft 390,100

Peak discharge (base, 2,500 cfs).--Nov. 3 (7:30 p.m.) 5,800 cfs (8.39 ft).
* Discharge measurement made on this day.

Hamma Hamma River near Eldon, Wash.

Location.--Lat 47°35'20", long 123°07'00", in NW¼ sec. 7, T. 24 N., R. 3 W., on left bank a quarter of a mile downstream from Watson Creek, 4½ miles northwest of Eldon, and 6 miles upstream from mouth.

Drainage area.--51.3 sq mi.

Records available.--June 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 510 ft (from topographic map).

Average discharge.--5 years, 384 cfs (278,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,980 cfs Nov. 3 (gage height, 6.58 ft), from rating curve extended above 1,100 cfs; minimum, 75 cfs Oct. 2-4; minimum gage height, 0.63 ft Mar. 15, 16.
1951-56: Maximum discharge, that of Nov. 3, 1955; minimum, 42 cfs Oct. 21-23, Nov. 9, 1952; minimum gage height, that of Mar. 15, 16, 1956.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 6 to Mar. 21)

Oct. 1 to Nov. 2		Nov. 3 to Sept. 30			
0.8	75	0.5	71	2.5	1,070
1.0	124	.7	123	3.0	1,420
1.2	184	1.0	225	4.0	2,250
1.5	295	1.5	455	5.0	3,200
2.0	530	2.0	740	6.0	4,280
2.5	800				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	344	429	233	a160	117	345	570	1,150	582	331	148
2	77	763	364	241	a155	161	308	560	1,000	609	345	142
3	75	3,980	308	253	a150	241	286	548	1,060	632	340	135
4	82	2,780	274	331	a150	206	278	543	1,150	614	308	129
5	89	1,240	253	515	a145	171	278	548	916	704	295	123
6	82	812	261	598	a140	138	265	576	806	698	295	*120
7	89	620	261	383	a140	132	253	662	923	626	291	120
8	315	532	295	291	a135	123	253	788	1,290	668	286	120
9	555	477	278	253	a130	112	257	902	1,660	752	282	117
10	450	455	274	221	a130	101	326	944	1,360	794	278	154
11	331	388	662	313	a125	93	494	830	1,120	788	274	214
12	372	349	752	445	a120	90	592	710	895	794	269	192
13	336	317	510	576	a115	85	668	620	812	788	269	164
14	308	299	393	455	a110	81	758	598	860	710	265	148
15	275	282	340	553	a105	78	746	680	923	626	261	138
16	236	257	299	875	101	78	656	895	854	609	253	129
17	218	241	265	632	98	85	565	1,170	806	609	233	126
18	201	241	249	638	95	109	538	1,440	806	632	221	120
19	187	245	257	576	101	178	*626	1,560	902	*662	218	117
20	175	253	634	494	98	210	824	1,410	830	680	214	117
21	162	229	860	439	101	*424	1,100	1,160	740	656	214	117
22	156	214	895	424	95	674	1,110	1,070	722	592	214	115
23	147	225	656	408	90	794	958	1,150	728	560	206	112
24	239	358	543	364	90	674	842	1,090	656	554	203	109
25	763	532	776	*317	85	532	806	979	598	532	199	138
26	535	466	650	274	83	466	824	979	626	494	188	154
27	*394	494	472	245	81	388	800	902	740	455	181	145
28	390	576	369	221	106	345	722	830	758	419	171	132
29	573	548	313	203	109	364	656	874	698	393	164	148
30	535	*477	274	181	-----	413	604	*1,100	614	374	161	164
31	412	-----	245	168	-----	398	-----	1,290	-----	354	151	-----
Total	8,839	18,994	13,411	12,120	3,343	8,061	17,738	27,978	27,003	18,960	7,580	4,107
Mean	285	633	433	391	115	260	591	903	900	612	245	137
Cfsm	5.56	12.3	8.44	7.62	2.24	5.07	11.5	17.6	17.5	11.9	4.78	2.67
In.	6.41	13.77	9.72	8.79	2.42	5.84	12.86	20.28	19.58	13.75	5.50	2.98
Ac-ft	17,530	37,670	26,600	24,040	6,630	15,990	35,180	55,490	53,560	37,610	15,030	8,150

Calendar year 1955: Max 3,980 Min 75 Mean 314 Cfsm 6.12 In. 83.00 Ac-ft 227,100
Water year 1955-56: Max 3,980 Min 75 Mean 459 Cfsm 8.95 In. 121.90 Ac-ft 333,500

Peak discharge (base, 1,700 cfs).--Nov. 3 (8 p.m.) 4,980 cfs (6.58 ft); June 8 (11:45 p.m.) 1,770 cfs (3.44 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

North Fork Skokomish River below Staircase Rapids, near Hoodsport, Wash.

Location.--Lat 47°30'55", long 123°19'45", in NW¼ sec. 4, T. 23 N., R. 5 W., on left bank 1¼ miles upstream from Lake Cushman, 2 miles upstream from Dry Creek, and 11½ miles northwest of Hoodsport.

Drainage area.--58.1 sq mi.

Records available.--July 1924 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 762.26 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 1, 1934, water-stage recorder and Nov. 1, 1934, to Nov. 10, 1941, staff gages, on right bank at same datum.

Average discharge.--32 years, 485 cfs (351,100 acre-ft per year).

Extremes.--Maximum discharge during year, 13,600 cfs Nov. 3 (gage height, 10.00 ft); minimum, 88 cfs Oct. 3, 4 (gage height, 1.77 ft).
1924-56: Maximum discharge, 27,000 cfs Nov. 5, 1934 (gage height, 14.4 ft, from high-water mark), from rating curve extended above 9,800 cfs on basis of slope-area determination at gage height 12.2 ft; minimum recorded, 16 cfs Sept. 23, 1930 (gage height, 1.12 ft).

Remarks.--Records good except those for period of shifting control, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1932, 1935, 1937(M), 1942(M), 1945(M), 1947(P), 1948(M).

Rating tables, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
1.7	85	3.2	575	1.9	115	4.5	1,700
1.9	122	3.6	820	2.2	199	5.0	2,200
2.2	192	4.0	1,120	2.5	310	6.0	3,500
2.5	280	4.5	1,600	3.0	555	7.0	5,250
2.8	390	5.5	2,780	3.5	860	8.0	7,450
				4.0	1,240	9.0	10,200

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	530	760	355	252	190	386	742	1,540	860	435	180
2	90	1,960	634	337	244	255	337	730	1,360	951	465	165
3	90	*9,980	533	324	237	346	302	706	1,510	972	435	151
4	165	4,250	465	382	230	255	294	718	1,440	944	391	143
5	133	*1,670	445	485	223	237	282	760	1,140	1,360	396	140
6	106	1,130	470	688	216	193	266	832	1,160	1,050	415	*138
7	200	881	460	465	209	187	255	972	1,530	937	415	138
8	1,080	784	460	373	202	184	248	1,210	2,440	1,060	400	132
9	1,250	754	420	332	193	165	255	1,440	2,750	1,250	400	140
10	690	712	445	294	193	151	310	1,460	1,970	1,280	386	320
11	530	594	1,340	485	193	143	460	1,150	1,550	1,210	368	350
12	624	495	1,300	604	199	140	610	937	1,280	1,180	368	237
13	525	475	772	797	193	132	772	811	1,230	1,190	368	184
14	470	435	604	610	187	128	972	825	1,410	986	368	168
15	386	391	506	914	171	125	972	1,010	1,380	867	350	157
16	318	378	455	1,460	171	122	818	1,380	1,200	888	306	148
17	294	364	405	972	168	122	712	1,740	1,160	923	278	143
18	270	378	378	916	165	135	700	2,090	1,190	*993	278	138
19	242	386	430	797	171	*177	832	2,260	1,410	1,040	282	135
20	222	373	993	694	168	196	1,140	2,000	1,180	1,060	282	160
21	208	337	1,240	652	162	442	1,560	1,570	1,030	951	290	154
22	195	310	1,460	658	157	772	1,500	1,480	1,060	818	282	130
23	187	302	986	646	148	965	1,260	1,620	1,050	778	270	122
24	820	661	766	560	143	760	1,120	1,560	916	797	252	225
25	2,650	937	972	480	140	572	*1,070	1,440	846	754	244	439
26	992	778	874	425	135	485	1,100	1,470	951	664	230	425
27	*716	895	652	373	135	415	1,070	1,300	1,180	599	216	263
28	814	1,030	522	346	140	386	937	1,200	1,160	538	199	226
29	1,510	930	455	314	143	445	839	1,400	1,030	506	196	400
30	953	*825	410	286	-----	470	772	*1,700	895	490	190	337
31	666	-----	373	*270	-----	450	-----	1,900	-----	460	184	-----
Total	17,488	33,925	20,985	17,294	5,288	9,745	22,151	40,413	39,948	28,356	9,939	6,188
Mean	564	1,131	677	558	182	314	738	1,304	1,332	915	321	206
Cfsm	9.71	19.5	11.7	9.60	3.13	5.40	12.7	22.4	22.9	15.7	5.52	3.55
In.	11.19	21.72	13.43	11.07	3.38	6.24	14.18	25.87	25.57	18.15	6.36	3.96
Ac-ft	34,690	67,290	41,620	34,300	10,490	19,330	43,940	80,160	79,240	56,240	19,710	12,270

Calendar year 1955: Max 9,980 Min 90 Mean 505 Cfsm 8.69 In. 117.89 Ac-ft 365,300
Water year 1955-56: Max 9,980 Min 90 Mean 688 Cfsm 11.8 In. 161.12 Ac-ft 499,300

Peak discharge (base, 3,000 cfs).--Oct. 25 (5:30 a.m.) 3,520 cfs (6.03 ft); Nov. 3 (6:30 p.m.) 13,600 cfs (10.00 ft); June 8 (5:30 p.m.) 3,470 cfs (5.98 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Nov. 4-24.

North Fork Skokomish River near Hoodsport, Wash.

Location.--Lat 47°25'20", long 123°13'10", in SW¼ sec. 5 T. 22 N., R. 4 W., at city of Tacoma dam, 4 miles northwest of Hoodsport.

Drainage area.--93.7 sq mi.

Records available.--August 1910 to September 1911 (fragmentary) and February 1913 to September 1956 (monthly discharge only) in reports of Geological Survey. October 1911 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Discharge determined from record of power output and Lake Cushman elevations, plus spillway discharge when present. Prior to Sept. 23, 1911, staff gage and February 1913 to September 1923, water-stage recorder, at approximately same site at datum 486.4 ft above mean sea level (levels by city of Tacoma) prior to Sept. 2, 1918, and at datum 5.00 ft higher Sept. 2, 1918, to September 1923. October 1923 to September 1930, water-stage recorder 1 mile downstream at different datum.

Average discharge.--45 years (1911-56), 738 cfs (534,300 acre-ft per year), adjusted for storage.

Extremes.--Not determined since regulation began in Lake Cushman.

Remarks.--Records fair. No diversion of consequence. Flow regulated in Lake Cushman since October 1925 for power by city of Tacoma.

Cooperation.--Records of power output and elevations of Lake Cushman furnished by city of Tacoma.

Revisions.--WSP 1216: Drainage area.

Monthly discharge, water year October 1955 to September 1956

Month	Observed				Change in contents in Lake Cushman (acre-feet)	Adjusted for change in reservoir contents			
	Maximum (cfs)	Minimum (cfs)	Mean (cfs)	Runoff in acre-feet		Mean (cfs)	Per square mile	Runoff in inches	Runoff in acre-feet
October	1,490	128	611	37,540	+14,000	838	8.94	10.31	51,540
November	6,860	318	1,879	111,800	-7,440	1,755	18.7	20.89	104,400
December	2,270	388	1,149	70,670	+800	1,162	12.4	14.30	71,470
Calendar year 1955	6,860	0	740	535,400	-4,480	733	7.82	106.23	530,900
January	2,260	380	1,114	68,510	+240	1,118	11.9	13.76	68,750
February	1,500	255	924	53,130	-32,760	354	3.78	4.08	20,370
March	1,700	0	938	57,650	-11,470	751	8.01	9.24	46,180
April	860	0	426	25,320	+36,470	1,038	11.1	12.36	61,790
May	2,300	0	997	61,290	+33,190	1,537	16.4	18.91	94,480
June	2,350	623	1,551	92,290	+500	1,559	16.6	18.57	92,790
July	1,540	282	951	58,460	+1,090	968	10.3	11.92	59,550
August	800	0	396	24,370	-3,430	341	3.64	4.19	20,940
September	1,580	51	789	46,960	-31,750	256	2.73	3.04	15,210
Water year 1955-56	6,860	0	975	708,000	-560	975	10.4	141.57	707,500

Deer Meadow Creek near Hoodsport, Wash.

Location.--Lat 47°25'00", long 123°13'30", in NW¼ sec. 8, T. 22 N., R. 4 W., on left bank a quarter of a mile upstream from mouth and 4 miles west of Hoodsport.

Records available.--August 1950 to August 1951, October 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 688.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by city of Tacoma). Prior to Oct. 1, 1952, at datum 0.48 ft higher.

Extremes.--Maximum discharge during year, 355 cfs Nov. 3 (gage height, 2.98 ft); minimum daily, 0.6 cfs Oct. 1-3, Sept. 19, 22-24, 26-30; minimum gage height, 0.17 ft Sept. 5. 1950-51, 1952-56: Maximum discharge, that of Nov. 3, 1955; minimum, 0.2 cfs Oct. 8-11, 1952.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Since October 1953, records include large part of flow of McTaggart Creek, from which water is diverted at city of Tacoma diversion dam in N½ sec. 7, T. 22 N., R. 4 W. When flow of McTaggart Creek exceeds about 80 cfs, there is undiverted spill over dam. For discharges of less than about 80 cfs the city allows up to 2 cfs to flow through pipe in dam and continue in McTaggart Creek, not to exceed the natural flow of the stream. No regulation.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3, Sept. 14-30				Nov. 3 to Sept. 14			
0.5	0.5	1.4	28	0.3	0.7	1.3	46
.6	1.0	1.7	53	.4	1.3	1.7	92
.7	2.0	2.0	90	.6	4.0	2.2	171
.9	5.8	2.5	184	.8	10	2.7	282
1.1	12	2.8	265	1.0	20		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	7.4	21	15	12	17	32	2.9	2.1	2.1	1.3	0.8
2	.6	27	18.5	17	11.5	20	24	3.1	1.9	2.1	2.1	.8
3	.6	*211	15.5	21	11	25	20	3.2	2.2	1.9	1.7	.8
4	.8	165	13.5	30	10	20	19	3.1	2.1	1.9	1.5	.8
5	.7	78	12	62	9.4	17	18	3.2	2.0	2.2	1.4	*.8
6	.7	44	16	45	8.9	15	15.5	2.9	2.4	2.1	1.3	.9
7	.8	29	21	35	8.7	16	14.5	2.9	2.6	2.2	1.2	.9
8	1.8	23	23	28	8.5	13	14	2.9	3.2	2.2	1.3	.9
9	3.4	19	24	24	8.4	12	12.5	2.8	2.6	2.1	1.2	1.0
10	3.0	15.5	21	22	8.2	11	12.5	2.5	2.8	2.1	1.2	1.2
11	2.6	13.5	60	21	8.4	9.7	12.5	2.6	2.6	1.8	1.3	1.4
12	2.6	12	40	20	8.0	9.0	13	2.8	2.5	1.9	1.3	1.0
13	2.3	11	30	19	7.8	8.4	13	2.6	2.4	1.1	1.2	.9
14	2.0	10	22	18	7.6	8.0	12.5	2.4	*2.5	1.0	1.2	.8
15	1.8	9.0	18	38	7.4	7.6	12	2.5	2.4	1.3	1.2	.9
16	1.6	8.5	16	54	7.2	7.4	11	2.5	2.2	1.7	1.2	.9
17	1.6	8.0	14	42	7.2	7.3	10.5	2.4	2.2	1.6	1.3	.8
18	1.4	10	13	35	7.2	7.5	9.4	2.2	2.1	*1.7	1.3	.8
19	1.2	14	16	31	7.7	7.7	8.6	1.9	2.1	1.8	1.1	.6
20	1.3	20	40	28	8.4	*8.0	8.6	2.2	2.1	1.6	1.1	.7
21	1.3	15	68	26	8.7	19	8.6	2.2	2.0	1.2	1.2	.7
22	1.3	13	58	28	8.5	51	7.8	2.0	1.9	1.5	1.3	.6
23	1.4	16	47	30	8.4	84	7.2	2.0	1.9	1.5	1.1	.6
24	2.6	30	38	*25	9.0	60	6.5	2.1	2.0	1.3	1.0	.6
25	5.6	60	32	20	9.2	48	*5.9	2.1	1.9	1.4	1.0	.7
26	6.3	44	30	18	9.0	41	5.4	2.2	1.9	1.5	1.0	.6
27	*7.1	34	25	15.5	9.0	29	4.9	1.9	2.0	1.3	1.0	.6
28	7.4	32	22	14	10	26	4.4	2.1	2.0	1.5	1.0	.6
29	14	25	20	13	12	34	3.1	1.9	2.0	1.4	1.0	.6
30	13.5	*23	18	12.5	------	54	3.2	1.9	2.0	1.2	.9	.6
31	10	------	16	12.5	------	47	------	1.9	------	1.3	.9	------
Total	101.9	1,026.9	828.5	819.5	257.3	739.6	350.1	75.9	66.6	51.5	37.8	23.9
Mean	3.29	34.2	26.7	26.4	8.87	23.9	11.7	2.45	2.22	1.66	1.22	0.80
Ac-ft	202	2,040	1,640	1,630	510	1,470	694	151	132	102	75	47

Calendar year 1955: Max 211 Min 0.6 Mean 8.97 Ac-ft 6,500
Water year 1955-56: Max 211 Min 0.6 Mean 12.0 Ac-ft 8,690

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12-24, Dec. 5 to Jan. 24, Feb. 1 to Mar. 19; discharge estimated on basis of records for stations on nearby streams.

North Fork Skokomish River near Potlatch, Wash.

Location.--Lat 47°19'40", long 123°14'30", in NE¼NW¼ sec. 7, T. 21 N., R. 4 W., on left bank 1 mile upstream from mouth, 6 miles southwest of Potlatch, and 7 miles downstream from city of Tacoma's Cushman Dam No. 2.

Drainage area.--117 sq mi, includes 99 sq mi above Cushman Dam No. 2 which is normally noncontributing.

Records available.--March 1944 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 63.49 ft above mean sea level (levels by city of Tacoma). Prior to Nov. 27, 1949 (destroyed by flood of Nov. 27, 1949), and Mar. 18 to May 9, 1950, water-stage recorder at site 200 ft downstream at present datum.

Extremes.--Maximum discharge during year, 7,740 cfs Nov. 4 (gage height, 10.45 ft); minimum, 7.0 cfs Oct. 1, 2, 3 (gage height, 2.30 ft).
1944-56: Maximum discharge, that of Nov. 4, 1955; minimum recorded, 1.3 cfs Sept. 5, 14, 16, 1951 (gage height, 2.02 ft).

Remarks.--Records good except those below 10 cfs, which are fair. Entire flow of river normally diverted at Cushman Dam No. 2 to supply powerplant which discharges directly into sea (Hood Canal). Main portion of McTaggart Creek is diverted into Cushman Reservoir No. 2, and may bypass this station. Flow regulated by Lake Cushman (see p. 43) and by pondage in Cushman Reservoir No. 2, from which spill and releases are infrequent.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.3	7.0	4.5	520	2.7	5.5	4.0	295
2.6	22	5.0	770	2.8	10	4.5	525
3.0	64	6.5	1,810	2.9	17	5.0	830
3.5	164	8.5	3,770	3.0	27	6.0	1,600
4.0	320			3.1	41	7.0	2,550
				3.3	78	8.5	4,410
				3.6	155	10.0	6,880

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	127	230	146	108	264	238	43	25	23	16.5	10.5
2	7.4	494	206	167	100	303	188	43	25	24	22	10.5
3	7.4	3,770	176	238	96	344	161	41	28	22	23	10.5
4	16	*6,630	158	407	93	255	146	41	27	21	17	10
5	18	3,820	155	425	91	196	128	41	26	*26	16.5	10
6	13.5	2,280	199	485	89	155	118	40	31	25	15.5	9.6
7	16.5	1,820	224	319	85	155	115	38	41	23	15.5	*10
8	93	1,320	259	248	82	140	102	37	48	21	15.5	10
9	138	1,140	248	220	78	128	98	37	56	21	15	10.5
10	125	1,100	234	188	78	115	96	35	120	20	15	15
11	96	881	380	199	78	105	89	35	146	20	15	15.5
12	100	158	371	199	78	100	85	34	60	20	15	13.5
13	82	128	255	199	72	96	82	33	41	19	15	12
14	67	118	202	188	68	87	78	33	35	19	16.5	11.5
15	56	118	173	303	66	87	76	31	31	19	16.5	10.5
16	48	131	155	706	64	*87	72	30	30	18	15	10.5
17	42	128	137	398	64	91	68	30	28	17	14	10.5
18	43	161	131	331	66	98	64	28	27	17	13.5	10
19	38	216	137	315	70	108	62	28	28	17	13	9.6
20	34	199	291	287	82	134	58	28	27	16.5	13.5	10.5
21	32	176	514	255	85	280	56	27	26	16.5	18	10
22	30	161	564	241	87	420	55	27	25	16.5	15	9.6
23	28	196	407	*234	85	864	*55	26	25	16.5	13	9.1
24	*64	534	353	224	89	469	56	26	25	16.5	12	10.5
25	257	664	335	199	93	335	55	26	24	16.5	11.5	15
26	205	455	323	176	96	287	53	26	24	16.5	11.5	15.5
27	187	366	263	155	98	216	51	26	25	16.5	11.5	14
28	185	295	202	143	170	216	48	25	43	16.5	12	15
29	269	*244	176	134	170	267	46	*25	44	15.5	12	18
30	232	238	155	120	------	335	46	25	28	15.5	11.5	18
31	162	------	137	115	------	307	------	25	------	15.5	11.5	------
Total	2,699.6	28,068	7,750	7,964	2,581	7,044	2,645	990	1,169	587.0	458.0	355.4
Mean	87.1	936	250	257	89.0	227	88.2	31.9	39.0	18.9	14.8	11.8
Ac-ft	5,350	55,670	15,370	15,800	5,120	13,970	5,250	1,960	2,320	1,160	908	705

Calendar year 1955: Max 6,630 Min 6.4 Mean 154 Ac-ft 111,400
Water year 1955-56: Max 6,630 Min 7.4 Mean 170 Ac-ft 123,600

* Discharge measurement made on this day.

South Fork Skokomish River near Potlatch, Wash.

Location.--Lat 47°23'10", long 123°18'30", in NW¼ sec. 22, T. 22 N., R. 5 W., on right bank at head of canyon, 1 mile upstream from Rock Creek, 3 miles downstream from Brown Creek, and 7½ miles west of Potlatch.

Drainage area.--65.6 sq mi.

Records available.--October 1923 to September 1932, September 1946 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 456 ft (by barometer).

Average discharge.--19 years, 595 cfs (430,800 acre-ft per year).

Extremes.--Maximum discharge during year, 17,800 cfs Nov. 3 (gage height, 16.80 ft), from rating curve extended above 7,800 cfs; minimum, 107 cfs Oct. 1, 2 (gage height, 1.06 ft).
1923-32, 1946-56: Maximum discharge, 19,300 cfs Nov. 26, 1949 (gage height, 17.75 ft), from rating curve extended above 5,600 cfs on basis of logarithmic plotting; minimum, 38 cfs Sept. 15, 1926; minimum gage height, 0.74 ft Sept. 21, 22, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1950(P). WSP 1346: 1952.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4 to Jan. 27)

1.0	100	4.0	1,070
1.2	125	5.0	1,730
1.5	170	6.0	2,580
2.0	265	7.0	3,600
2.5	386	9.0	5,980
3.0	556	11.0	8,750
3.5	785	15.0	14,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	796	1,400	692	454	726	962	775	*900	461	236	125
2	108	2,190	1,170	697	431	1,010	807	770	796	485	252	125
3	108	14,400	986	735	412	1,150	711	740	862	*488	261	120
4	190	6,830	851	1,080	400	807	678	755	868	467	232	120
5	201	2,450	790	1,340	386	619	669	802	706	750	228	*122
6	152	1,560	980	1,790	372	510	606	873	765	632	224	121
7	182	1,260	1,090	1,230	364	492	581	939	1,220	517	210	120
8	1,420	1,080	1,060	974	356	441	552	1,090	1,920	525	205	118
9	1,740	962	974	856	346	398	548	1,220	2,370	540	205	121
10	1,270	878	992	755	349	367	646	1,190	1,480	560	200	163
11	912	796	2,720	1,160	378	349	895	980	1,120	540	190	220
12	939	725	2,300	1,360	400	336	1,050	824	917	513	190	178
13	716	664	1,390	1,480	392	324	1,250	730	846	506	190	148
14	556	610	1,080	1,230	372	310	1,410	721	962	461	190	136
15	457	572	917	1,710	349	301	1,260	834	956	409	185	131
16	395	552	796	3,560	334	294	1,080	1,070	862	392	175	125
17	354	529	716	2,100	327	298	928	1,240	740	398	170	121
18	320	606	669	2,000	322	344	890	1,420	711	412	165	120
19	301	790	692	1,670	332	478	1,050	1,510	796	409	160	118
20	278	920	1,900	*1,510	329	*536	1,340	1,310	711	412	160	121
21	261	800	2,780	1,410	324	1,070	1,650	1,090	632	392	160	124
22	244	700	3,010	1,400	308	1,900	1,360	1,030	606	359	160	120
23	232	720	1,930	1,340	292	2,720	1,300	1,100	593	334	155	116
24	845	1,800	1,460	1,130	294	1,810	1,180	1,020	536	329	150	138
25	*3,600	*2,900	1,560	956	283	1,340	*1,160	928	503	322	150	546
26	1,580	2,080	1,670	824	280	1,180	1,180	944	506	303	145	552
27	1,200	1,870	1,300	716	285	956	1,120	846	540	287	140	367
28	1,290	1,860	1,080	637	375	917	986	765	580	272	140	294
29	1,890	1,610	928	572	400	1,170	895	824	530	257	135	523
30	1,420	1,420	807	517	------	1,300	818	986	485	250	130	548
31	986	-----	721	481	-----	1,200	-----	1,090	------	242	130	------
Total	24,255	54,930	40,719	37,912	10,246	25,653	29,762	30,416	26,019	13,224	5,623	6,001
Mean	782	1,831	1,314	1,223	353	828	992	981	867	427	181	200
Cfsm	11.9	27.9	20.0	18.6	5.38	12.6	15.1	15.0	13.2	6.51	2.76	3.05
In.	13.75	31.14	23.08	21.49	5.81	14.54	16.87	17.24	14.75	7.50	3.19	3.40
Ac-ft	48,110	109,000	80,760	75,200	20,320	50,880	59,030	60,330	51,610	26,230	11,150	11,900

Calendar year 1955: Max 14,400 Min 99 Mean 673 Cfsm 10.3 In. 139.33 Ac-ft 487,500
Water year 1955-56: Max 14,400 Min 108 Mean 833 Cfsm 12.7 In. 172.76 Ac-ft 604,500

Peak discharge (base, 3,800 cfs).--Oct. 25 (5 to 7 a.m.) 4,560 cfs (7.86 ft); Nov. 3 (9 a.m.) 17,800 cfs (16.80 ft); Dec. 11 (8:30 p.m.) 4,220 cfs (7.26 ft); Jan. 16 (9:30 a.m.) 4,070 cfs (7.13 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 20-25, Feb. 26, 27, June 27-29, July 9-11, Aug. 7 to Sept. 4; discharge estimated on basis of records for station near Union.

South Fork Skokomish River near Union, Wash.

Location.--Lat 47°20'30", long 123°16'30", in NE¼ sec. 2, T. 21 N., R. 5 W., on right bank 3½ miles upstream from confluence with North Fork and Vance Creek and 8 miles west of Union.

Drainage area.--79.6 sq mi.

Records available.--August 1931 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 110 ft (by barometer). Prior to Sept. 19, 1931, staff gage at same site at datum 2.32 ft higher.

Average discharge.--25 years, 711 cfs (514,700 acre-ft per year).

Extremes.--Maximum discharge during year, 17,900 cfs Nov. 3 (gage height, 8.76 ft), from rating curve extended above 9,100 cfs; minimum, 111 cfs Sept. 8, 9, 23, 24 (gage height, 2.06 ft).
1931-56: Maximum discharge, 21,600 cfs Jan. 22, 1935, Nov. 26, 1949 (gage height, 11.0 ft), from rating curves extended above 11,000 cfs and 4,400 cfs, respectively; minimum, 62 cfs Sept. 18, 1938; minimum gage height, that of Sept. 8, 9, 23, 24, 1956.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: 1950, drainage area. WSP 1316: 1934(M), 1938(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 5 to Dec. 20)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
2.3	108	3.6	1,140	2.0	90	4.0	1,820
2.5	186	4.0	1,680	2.2	165	4.5	2,650
2.7	293	4.5	2,580	2.5	310	5.0	3,680
3.0	510	5.0	3,670	2.8	500	6.0	6,400
3.3	800	5.5	4,930	3.2	830	7.0	9,920
				3.6	1,270	8.2	15,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	899	1,700	860	528	961	1,250	830	930	493	240	129
2	122	2,470	1,370	880	507	1,350	1,040	812	812	507	265	129
3	122	14,900	1,150	985	486	1,600	910	785	870	507	265	125
4	182	8,080	985	1,440	472	1,050	870	785	890	493	235	125
5	225	3,210	930	1,780	451	767	850	830	731	754	220	*122
6	169	2,080	1,140	2,370	437	618	776	900	777	650	215	118
7	186	1,590	1,300	1,520	424	610	740	952	1,310	535	210	118
8	1,520	1,350	1,300	1,200	406	542	704	1,130	1,910	528	210	114
9	2,100	1,160	1,170	1,040	394	493	686	1,270	2,680	570	210	118
10	1,520	1,060	1,170	930	388	444	785	1,250	1,590	586	206	157
11	987	952	3,070	1,270	430	418	1,060	996	1,150	563	201	*225
12	1,040	860	2,840	1,590	458	388	1,230	830	952	535	196	192
13	780	794	1,640	1,720	444	376	1,450	749	860	528	192	153
14	582	749	1,270	1,440	424	364	1,610	731	996	493	192	137
15	470	704	1,080	2,080	394	346	1,480	840	1,020	437	188	133
16	394	677	963	4,480	382	340	1,230	1,070	850	418	183	125
17	352	659	860	2,490	370	352	1,050	1,280	785	424	174	122
18	326	767	812	2,380	364	400	1,010	1,480	749	424	170	118
19	293	974	830	2,030	382	549	1,150	1,570	830	430	165	114
20	270	1,150	2,210	1,740	376	650	1,490	1,370	749	430	165	125
21	247	974	3,420	1,560	382	1,430	1,850	1,120	659	406	165	129
22	235	860	3,530	1,570	364	2,580	1,720	1,040	634	376	161	118
23	225	880	2,380	1,530	*340	3,700	1,450	1,120	618	*346	161	114
24	795	2,480	1,800	*1,310	352	2,460	*1,320	1,050	570	334	157	137
25	4,060	3,480	1,900	1,080	346	1,730	1,270	952	535	322	157	486
26	*1,960	2,740	2,030	941	328	1,540	1,300	963	535	300	149	535
27	1,420	2,350	1,570	821	340	1,220	1,220	880	586	285	145	364
28	1,530	*2,280	1,280	740	507	1,170	1,060	794	602	265	145	295
29	2,290	1,990	1,100	668	535	1,540	952	840	570	255	141	487
30	1,760	1,740	974	618	------	1,740	880	1,020	514	250	133	549
31	1,160	-----	880	563	-----	1,590	------	*1,130	------	245	133	------
Total	27,444	64,859	48,654	45,626	12,011	33,318	34,393	31,369	27,264	13,689	5,749	5,913
Mean	885	2,162	1,569	1,472	414	1,075	1,146	1,012	909	442	185	197
Cfsm	11.1	27.2	19.7	18.5	5.20	13.5	14.4	12.7	11.4	5.55	2.32	2.47
In.	12.82	30.30	22.73	21.32	5.61	15.57	16.07	14.66	12.74	6.40	2.69	2.76
Ac-ft	54,430	128,600	96,500	90,500	23,820	66,090	68,220	62,220	54,080	27,150	11,400	11,730

Calendar year 1955: Max 14,900 Min 112 Mean 786 Cfsm 9.87 In. 134.13 Ac-ft 569,300
Water year 1955-56: Max 14,900 Min 114 Mean 957 Cfsm 12.0 In. 163.67 Ac-ft 694,700

Peak discharge (base, 6,000 cfs).--Nov. 3 (10:30 a.m.) 17,900 cfs (8.76 ft).
* Discharge measurement made on this day.

Vance Creek near Potlatch, Wash.

Location.--Lat 47°19'45", long 123°18'48", in NE¼NE¼ sec. 9, T. 21 N., R. 5 W., 1 mile downstream from Aristine Creek and 8½ miles southwest of Potlatch.

Drainage area.--15.6 sq mi.

Records available.--March 1955 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,500 cfs Nov. 4 (gage height, 7.00 ft); minimum, 12 cfs Sept. 4-9, 17-20, 21-23; minimum gage height recorded, 2.94 ft Oct. 3.
1955-56: Maximum discharge, that of Nov. 4, 1955; minimum, that of Sept. 4-9, 17-20, 21-23, 1956; minimum gage height, 2.86 ft Sept. 12, 13, 1955.
High water of Nov. 18, 1954, reached a stage of 8.1 ft, from floodmarks (discharge, 3,840 cfs), by slope-area determination.

Remarks.--Records fair except those for periods of doubtful or no gage-height record, which are poor. No regulation or diversion above station.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 16-19, Apr. 25 to May 17)

Oct. 1 to Nov. 3				Nov. 3 to Sept. 30			
2.9	16.5	4.0	275	3.0	10.5	5.0	295
3.2	41	4.8	700	3.3	23	6.0	745
3.6	116	5.6	1,260	3.6	41	7.0	1,500
				4.0	80		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	800	289	50	90	300	550	99	24	29	18	13
2	20	1,000	243	48	80	350	500	93	23	27	23	12.5
3	20	1,200	167	51	75	400	450	89	26	27	20	12.5
4	52	*1,350	130	74	70	450	420	86	24	27	19	12
5	41	982	100	100	70	350	400	86	24	43	18	12
6	34	728	140	229	75	250	450	84	48	36	17.5	12
7	40	718	180	140	80	300	500	81	68	33	17	12
8	90	701	210	98	*70	350	450	81	156	31	17	12
9	250	696	240	76	63	200	420	79	248	29	17	12.5
10	200	679	200	62	64	150	400	75	136	28	16.5	*16
11	150	635	350	67	83	120	380	67	90	27	16	17
12	200	575	445	76	90	90	360	62	72	26	16	15
13	150	437	262	74	85	80	340	58	64	26	15.5	13.5
14	120	354	201	62	76	70	320	54	64	25	15	13.5
15	100	283	150	95	70	66	300	53	62	24	15	13
16	95	243	116	364	67	*66	290	52	58	24	15	12.5
17	90	216	94	300	65	67	280	52	54	23	15	12
18	80	247	78	250	63	79	260	51	51	23	14.5	12
19	80	385	75	270	62	116	250	48	49	22	14	12
20	80	454	161	300	62	150	240	46	44	22	14	14.5
21	75	413	283	270	61	200	230	42	41	22	14	12.5
22	70	373	405	250	58	300	220	40	40	21	14	12
23	70	373	295	240	56	500	210	37	39	20	14	12
24	200	732	189	230	57	700	*200	35	38	*20	13.5	22
25	*1,000	*898	146	210	57	600	180	33	36	19.5	13.5	75
26	1,100	769	144	*200	55	500	169	32	34	19	13.5	74
27	1,000	560	102	170	54	450	150	31	33	18.5	13.5	53
28	900	494	74	150	99	400	133	29	32	18	13.5	47
29	1,000	373	60	130	115	450	115	27	31	18.5	13.5	82
30	1,200	312	54	110	------	500	105	25	30	18	13	81
31	1,000	-----	52	100	-----	600	-----	*25	------	17.5	13	------
Total	9,527	17,980	5,635	4,846	2,072	9,204	9,272	1,752	1,739	764.0	482.0	732.0
Mean	307	599	182	156	71.4	297	309	56.5	58.0	24.6	15.5	24.4
Cfsm	19.7	38.4	11.7	10.0	4.58	19.0	19.8	3.62	3.72	1.58	0.994	1.56
In.	22.71	42.86	13.43	11.55	4.94	21.94	22.10	4.18	4.15	1.82	1.15	1.75
Ac-ft	18,900	35,660	11,180	9,610	4,110	18,260	18,390	3,480	3,450	1,520	956	1,450

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 1,350 Min 12 Mean 175 Cfsm 11.2 In. 152.58 Ac-ft 127,000

Peak discharge (base, 500 cfs).--About Oct. 26 (time and discharge unknown); about Oct. 30 (time and discharge unknown); Nov. 4 (3:30 p.m.) 1,500 cfs (7.00 ft); Dec. 11 (11 p.m.) 652 cfs (5.83 ft); about Mar. 24 (time and discharge unknown); about Apr. 7 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 8-25, Jan. 17 to Feb. 8, Mar. 1-15, Mar. 20 to Apr. 24; doubtful gage-height record Oct. 26 to Nov. 3, Dec. 4-11; discharge estimated on basis of records for stations on nearby streams.

Skokomish River near Potlatch, Wash.

Location.--Lat 47°19'00", long 123°11'05", in NW¼NW¼ sec. 15, T. 21 N., R. 4 W., on left bank half a mile upstream from U. S. Highway 101, 2.8 miles downstream from confluence of North and South Forks, 4.7 miles southwest of Potlatch, and 5.5 miles upstream from mouth. Prior to Mar. 24, 1956, at site 200 ft upstream.

Drainage area.--230 sq mi.

Records available.--July 1943 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 19.35 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 22 to July 23, 1947, staff gage and Oct. 1, 1947, to Mar. 24, 1956, water-stage recorders, at various sites about 200 ft upstream. All gages have been maintained at present datum except during period Oct. 1, 1947, to Apr. 18, 1951, when datum was 2.87 ft lower.

Extremes.--Maximum discharge during year, 22,100 cfs Nov. 3 (gage height, 12.6 ft); minimum, 196 cfs Oct. 1-4; minimum gage height, 0.15 ft Sept. 23.
1943-56: Maximum discharge, that of Nov. 3, 1955; minimum, 125 cfs Sept. 14-17, 1944 (gage height, -0.01 ft).

Remarks.--Records good except those for periods of shifting control, which are fair. Flow partly regulated by Lake Cushman and Cushman Reservoir No. 2. In normal years practically entire flow of North Fork is diverted at dam No. 2 and returned to sea through Cushman powerplant No. 2.

Revisions.--WSP 1216: Drainage area.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	196	1,500	2,420	1,180	998	1,920	2,410	1,220	1,170	677	250	200
2	196	3,370	2,020	1,300	948	2,550	2,030	1,190	1,020	677	285	208
3	196	20,800	1,690	1,580	884	2,820	1,770	1,160	1,070	684	315	204
4	257	*17,000	1,450	2,390	852	2,120	1,650	1,160	1,110	656	265	208
5	370	8,450	1,360	3,020	828	1,640	1,570	1,200	940	900	240	204
6	309	4,940	1,690	3,560	780	1,320	1,470	1,250	948	932	232	*212
7	309	3,540	1,970	2,480	764	1,260	1,390	1,330	1,590	756	232	220
8	1,600	2,810	2,010	1,900	748	1,160	1,340	1,460	2,070	712	224	220
9	2,900	2,470	1,840	1,670	726	1,040	1,270	1,600	3,200	748	224	224
10	2,360	2,340	1,820	1,460	705	948	1,360	1,600	2,280	756	224	245
11	1,590	2,100	4,390	1,980	796	900	1,660	1,390	1,780	748	224	300
12	1,620	1,270	4,330	2,200	820	836	1,860	1,200	1,420	684	220	285
13	1,300	1,080	2,630	2,280	828	796	2,080	1,090	1,280	677	224	260
14	1,020	972	1,980	2,070	788	748	2,280	1,050	1,350	635	224	250
15	841	900	1,670	3,820	719	733	2,150	1,110	1,380	551	228	240
16	728	876	1,420	a7,400	670	726	1,900	1,340	1,210	523	224	228
17	656	844	1,360	a4,000	670	733	1,660	1,550	1,120	502	220	220
18	588	1,050	1,200	a4,000	656	804	1,560	1,710	1,070	516	216	220
19	544	1,480	1,230	a3,500	670	972	1,680	1,820	1,130	523	216	216
20	509	1,640	3,120	a3,000	705	1,160	*2,020	1,670	1,060	*516	212	220
21	475	1,420	4,880	a2,700	705	2,000	2,390	1,420	948	481	208	220
22	455	1,230	5,410	a2,600	691	3,810	2,320	1,300	900	442	204	216
23	448	1,310	3,700	*2,590	*656	6,260	2,010	1,350	868	406	208	208
24	920	3,560	2,900	2,280	670	4,200	1,800	1,310	820	394	208	220
25	5,230	5,550	2,930	1,940	726	3,130	1,710	1,200	756	376	208	555
26	*3,100	4,100	2,930	1,710	698	2,760	1,710	1,200	748	358	204	916
27	2,280	3,400	2,270	1,530	691	2,250	1,660	1,140	796	335	204	656
28	2,400	3,160	1,830	1,370	1,050	2,140	1,500	1,020	828	305	200	488
29	3,220	*2,720	1,560	1,250	1,190	2,700	1,380	*1,040	804	275	204	665
30	2,760	2,460	1,350	1,160	------	3,220	1,280	1,170	726	265	204	1,070
31	1,910	------	1,210	1,070	------	3,040	------	1,320	------	255	204	------
Total	41,287	108,342	72,570	74,990	22,632	60,696	52,870	40,570	36,392	17,265	6,955	9,798
Mean	1,332	3,611	2,341	2,419	780	1,958	1,762	1,309	1,213	557	224	327
Ac-ft	81,890	214,900	143,900	148,700	44,890	120,400	104,900	80,470	72,180	34,240	13,800	19,430

Calendar year 1955: Max 20,800 Min 159 Mean 1,223 Ac-ft 885,200
Water year 1955-56: Max 20,800 Min 196 Mean 1,487 Ac-ft 1,080,000

Peak discharge (base, 8,400 cfs).--Nov. 3 (10 p.m.) 22,100 cfs (12.6 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for nearby stations.
Note.--Shifting-control method used Oct. 26 to Nov. 1, Nov. 6 to Jan. 24, June 9 to Sept. 30.

Purdy Creek near Union, Wash.

Location.--Lat 47°18'05", long 123°10'50", in NW¼NW¼ sec. 22, T. 21 N., R. 4 W., on left bank immediately downstream from county road bridge, 1 mile upstream from Weaver Creek and 5½ miles southwest of Union.

Drainage area.--1.43 sq mi.

Records available.--September 1954 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 28.76 ft above mean sea level (State Fisheries Department reference mark).

Extremes.--Maximum discharge during year, 81 cfs Dec. 22; maximum gage height, 1.83 ft Nov. 2; minimum daily, 13.5 cfs Oct. 20-23, Nov. 17; minimum gage height, 1.19 ft July 25-30.

1954-56: Maximum discharge, that of Dec. 22, 1955; maximum gage height, that of Nov. 2, 1955; minimum discharge, 10.5 cfs Nov. 4, 7, 1954; minimum gage height, 1.10 ft Sept. 13, 14, 1954.

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are fair. Flow affected by springs. No regulation.

Rating tables, water year 1955-56, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 5		Nov. 5 to Sept. 19		Sept. 19-30	
1.3	10.5	1.16	13.5	1.4	13
1.4	15.5	1.4	38	1.5	22
1.5	25	1.7	76		
1.8	64				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	16.5	36	35	42	42	46	31	22	19.5	17.5	16.5
2	14	41	33	36	41	41	46	31	22	19.5	22	16.5
3	14	34	31	42	41	43	44	30	26	19.5	18.5	16.5
4	15.5	45	29	47	41	46	44	32	24	20	17.5	15.5
5	14.5	54	31	55	41	44	42	31	24	22	17.5	14.5
6	14.5	47	34	62	38	42	42	30	26	19.5	17.5	14.5
7	15.5	36	31	58	37	48	42	30	24	19.5	17.5	*14.5
8	21	30	35	53	37	44	41	29	26	19.5	17.5	a14.5
9	19.5	26	33	49	36	43	38	29	24	19.5	17.5	a15
10	16.5	24	36	44	36	42	38	28	24	19.5	17.5	a15
11	16.5	22	50	44	37	42	40	26	22	19.5	17.5	a15.5
12	15.5	19.5	50	42	36	41	38	26	22	19.5	17.5	15.5
13	14.5	18.5	49	42	35	40	37	26	22	19.5	17.5	15.5
14	14	16.5	46	44	35	38	37	26	22	19.5	18.5	15.5
15	14	15.5	42	54	34	37	37	26	22	19.5	19.5	15.5
16	14	14.5	38	56	34	37	37	26	22	19.5	18.5	15.5
17	14	13.5	37	56	34	37	36	26	22	18.5	18.5	15.5
18	14	22	36	58	34	37	36	26	22	19.5	18.5	15.5
19	14	22	37	59	35	36	35	24	22	19.5	18.5	15.5
20	13.5	17.5	48	*55	35	37	a35	24	20	18.5	18.5	15.5
21	13.5	15.5	56	55	35	41	a34	24	20	18.5	18.5	14.5
22	13.5	16.5	71	55	35	43	a33	24	20	18.5	18.5	14.5
23	13.5	22	62	56	35	53	*33	24	20	*18.5	18.5	14.5
24	*22	32	58	55	*36	50	33	24	20	17.5	18.5	15.5
25	30	37	49	53	35	56	33	24	19.5	17.5	18.5	17
26	21	50	44	52	33	52	32	24	20	16.5	18.5	16
27	22	49	41	48	34	48	32	24	20	16.5	18.5	15.5
28	19.5	*43	36	47	36	49	32	24	20	16.5	17.5	15.5
29	30	37	36	46	36	50	32	*24	19.5	16.5	18.5	18
30	21	38	34	44	------	52	31	24	19.5	16.5	18.5	16
31	17	------	33	43	------	48	------	22	------	17.5	17.5	------
Total	526.0	875.0	1,282	1,545	1,054	1,359	1,116	819	658.5	581.5	565.0	465.0
Mean	17.0	29.2	41.4	49.8	36.3	43.8	37.2	26.4	22.0	18.8	18.2	15.5
Ac-ft	1,040	1,740	2,540	3,060	2,090	2,700	2,210	1,620	1,310	1,150	1,120	922

Calendar year 1955: Max 71 Min 13.5 Mean 25.0 Ac-ft 18,090
Water year 1955-56: Max 71 Min 13.5 Mean 29.6 Ac-ft 21,500

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
Note.--Shifting-control method used Nov. 5 to Dec. 12, Sept. 12-19.

Union River near Bremerton, Wash.

Location.--Lat 47°31'45", long 122°47'05", in SW¼NE¼ sec. 34, T. 24 N., R. 1 W., on right bank 400 ft upstream from highway bridge, 1¼ miles upstream from Hazel Creek, and 7 miles west of Bremerton.

Drainage area.--3.16 sq mi.

Records available.--October 1945 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 395 ft (from topographic map). Prior to Jan. 30, 1952, at site 100 ft upstream at datum 398.0 ft above mean sea level (closed stadia traverse).

Average discharge.--11 years, 12.8 cfs (9,270 acre-ft per year).

Extremes.--Maximum discharge during year, 386 cfs Nov. 3 (gage height, 7.50 ft); minimum, 0.4 cfs May 20, June 2.
1945-56: Maximum discharge, 476 cfs Feb. 22, 1949 (gage height, 3.85 ft, site and datum then in use), from rating curve extended above 160 cfs by logarithmic plotting; minimum daily, 0.2 cfs June 2, 1955.

Remarks.--Records poor October to March and fair thereafter. Regulation by dam 1 mile upstream. No diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1948(M), 1949-50.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 25 to Dec. 21)

Oct. 1 to Nov. 2		Nov. 3 to Sept. 30			
2.5	1.4	3.8	0.4	5.0	42
2.6	3.4	3.9	.8	5.5	74
2.8	11	4.1	2.8	6.0	116
3.1	30	4.5	17	7.1	292
3.7	107				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	14	24	32	20	32	23	3.0	1.1	2.6	1.1	0.9
2	2.8	100	*23	38	19	32	20	2.8	1.0	2.4	3.2	.9
3	2.8	*279	20	*53	17	36	19	2.8	2.2	2.4	1.7	.8
4	4.5	200	18	106	16	38	*17.5	2.6	1.8	2.6	1.4	.8
5	4.0	50	17.5	100	15	30	15.5	2.4	1.3	3.4	1.4	.7
6	3.5	35	24	86	14	26	14	2.2	2.2	2.8	1.2	.7
7	4.5	25	32	60	13	26	13.5	2.2	2.6	2.3	*1.3	.8
8	12	21	30	55	11	24	12	2.0	4.4	2.2	1.3	.8
9	13	19	24	50	10	22	11	1.9	5.3	2.0	1.2	.9
10	10	16	22	45	9.5	21	10	1.9	6.2	2.0	1.3	1.0
11	9.0	14	32	45	9.0	19.5	9.2	2.0	5.0	1.9	1.3	1.3
12	8.0	12	31	45	9.0	19.5	8.0	2.0	4.4	1.9	1.2	*1.0
13	7.0	11	24	45	9.0	18.5	7.2	1.8	4.2	1.8	1.2	.8
14	6.5	10	18.5	45	8.5	18	6.8	1.6	3.8	1.9	1.2	.8
15	6.0	9	16.5	60	8.5	18	6.5	1.5	4.0	1.7	1.3	.8
16	5.8	9	14.5	80	8.5	18.5	5.6	1.4	4.2	1.6	1.1	.8
17	5.4	9	13	66	8.5	20	5.3	*1.4	5.0	1.5	1.1	.8
18	*5.1	15	12.5	55	9.0	24	5.0	1.3	*4.6	1.4	1.1	.8
19	5.0	28	14.5	50	9.5	27	4.8	1.2	4.4	*1.4	1.1	.8
20	5.0	27	68	45	10	30	4.6	1.1	4.0	1.4	1.1	.9
21	4.9	20	160	45	10.5	40	4.2	1.4	3.8	1.4	1.0	.8
22	4.8	18	73	50	11	49	4.2	1.3	3.4	1.4	1.1	.8
23	4.7	40	61	45	11.5	97	4.0	1.4	3.4	1.4	1.1	.8
24	10	80	57	50	*11.5	42	3.8	1.3	3.2	1.4	1.1	.8
25	30	*114	53	45	14	35	3.6	1.4	3.2	1.4	1.1	1.3
26	20	69	50	40	16	29	3.6	1.4	3.0	1.3	1.0	1.4
27	15	56	47	35	30	24	3.4	1.4	3.0	1.3	1.1	1.1
28	20	46	41	30	38	22	3.0	1.2	3.0	1.3	1.0	1.4
29	25	36	38	27	32	22	3.2	1.1	2.8	1.2	1.0	1.8
30	20	30	34	25	------	26	3.0	1.1	2.6	1.1	1.0	1.4
31	16	-----	32	23	-----	26	-----	1.1	------	1.2	1.0	------
Total	293.1	1,412	1,125.0	1,576	408.5	912.0	254.5	52.8	103.1	55.6	38.3	28.7
Mean	9.45	47.1	36.3	50.8	14.1	29.4	8.48	1.70	3.44	1.79	1.24	0.96
Cfsm	2.99	14.9	11.5	16.1	4.46	9.30	2.68	0.538	1.09	0.566	0.392	0.304
In.	3.45	16.62	13.24	18.55	4.81	10.73	3.00	0.62	1.21	0.65	0.45	0.34
Ac-ft	581	2,800	2,230	3,130	810	1,810	505	105	204	110	76	57

Calendar year 1955: Max 279 Min 0.2 Mean 13.2 Cfsm 4.18 In. 56.61 Ac-ft 9,540
Water year 1955-56: Max 279 Min 0.7 Mean 17.1 Cfsm 5.41 In. 73.67 Ac-ft 12,420

Peak discharge (base, 120 cfs).--Nov. 3 (3 p.m.) 386 cfs (7.50 ft); probably Nov. 24 (time and discharge unknown); Dec. 21 (11 p.m.) 186 cfs (5.53 ft); probably Jan. 4 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 4-17, Oct. 19 to Nov. 2, Nov. 4-24, Jan. 4 to Mar. 23; discharge estimated on basis of records for nearby stations.

Union River near Belfair, Wash.

Location.--Lat 47°28'20", long 122°49'40", in NE¼ sec. 20, T. 23 N., R. 1 W., on left bank at highway bridge 1½ miles north of Belfair and 2 miles upstream from mouth.

Drainage area.--19.2 sq mi.

Records available.--July 1947 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 45.6 ft above mean sea level (closed stadia traverse).

Average discharge.--9 years, 57.8 cfs (41,850 acre-ft per year).

Extremes.--Maximum discharge during year, 1,040 cfs Nov. 3 (gage height, 6.25 ft); minimum, 18.5 cfs Oct. 1, 2; minimum gage height, 1.61 ft Sept. 5, 6.
1947-56: Maximum discharge, 1,610 cfs Feb. 22, 1949 (gage height, 7.81 ft), from rating curve extended above 700 cfs; minimum, 13 cfs Sept. 29, 1947, Sept. 11, 1953; minimum gage height, 1.06 ft Sept. 5, 6, 1949.

Remarks.--Records good except those for period of no gage-height record, which are fair. City of Bremerton diverts annually about 3,100 acre-ft from a point about 5 miles above station for municipal use. The diversion varies from almost no flow in August and September to as much as 10 cfs during winter months. No regulation.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30			
1.7	14.5	3.0	203	1.6	18.5	3.0	214
1.8	20	4.0	418	2.0	56	4.3	487
2.0	36	6.0	960	2.5	126		
2.4	89						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	65	106	76	70	141	113	43	33	29	24	21
2	19	184	*91	114	68	126	100	42	33	28	32	21
3	19	903	76	203	66	167	89	42	43	28	28	21
4	24	632	65	373	64	165	*80	43	43	28	25	21
5	22	211	59	367	62	123	74	43	37	32	24	20
6	21	132	107	299	60	97	71	42	41	30	24	20
7	28	89	135	209	58	123	73	41	48	29	*24	20
8	62	67	159	148	56	112	68	40	56	28	23	20
9	69	55	143	134	55	96	66	40	58	28	23	21
10	53	48	117	123	54	85	63	41	56	28	24	21
11	44	42	165	*123	54	84	61	40	47	28	24	24
12	43	36	167	112	53	87	58	40	39	27	23	*21
13	36	33	122	124	53	77	57	39	37	26	23	21
14	33	30	94	120	53	74	55	38	37	27	23	21
15	31	28	79	185	54	74	54	*37	37	26	24	21
16	28	28	67	275	54	80	53	37	36	25	23	21
17	28	28	58	196	55	77	52	36	38	24	22	21
18	27	50	48	157	56	87	50	35	35	24	21	21
19	*26	94	48	165	60	96	49	35	36	24	21	21
20	25	91	285	157	75	108	48	35	34	24	21	21
21	25	72	465	136	80	174	48	34	33	24	21	21
22	24	62	422	140	80	220	47	34	32	24	21	21
23	24	108	258	134	80	400	47	34	31	24	21	21
24	48	255	210	150	85	275	47	34	31	24	21	21
25	157	303	173	120	90	198	46	34	30	24	21	23
26	124	193	148	102	100	152	46	39	30	24	21	24
27	96	163	131	91	120	118	45	39	30	24	21	22
28	86	132	106	84	*150	115	44	36	*30	23	21	24
29	122	111	100	80	162	120	43	34	30	23	21	28
30	110	115	91	76	------	153	43	34	29	24	21	28
31	84	------	76	73	------	146	------	34	------	24	21	------
Total	1,557	4,360	4,371	4,846	2,127	4,150	1,790	1,175	1,130	805	707	652
Mean	50.2	145	141	156	73.3	134	59.7	37.9	37.7	26.0	22.8	21.7
Ac-ft	3,090	8,650	8,670	9,610	4,220	8,230	3,550	2,330	2,240	1,600	1,400	1,290

Calendar year 1955: Max 903 Min 16.5 Mean 56.0 Ac-ft 40,540
Water year 1955-56: Max 903 Min 19 Mean 75.6 Ac-ft 54,880

Peak discharge (base, 400 cfs).--Nov. 3 (12:30 p.m.) 1,040 cfs (6.25 ft); Nov. 24 (9:30 p.m.) 450 cfs (4.14 ft); Dec. 21 (9:30 p.m.) 584 cfs (4.69 ft); Jan. 4 (6 p.m.) 438 cfs (4.14 ft); Mar. 23 (3 to 4 p.m.) 526 cfs (4.40 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 31 to Feb. 28; discharge estimated on basis of recorded range in stage and records for nearby stations.

Gold Creek near Bremerton, Wash.

Location.--Lat 47°33'20", long 122°48'35", in NE¼SW¼ sec. 21, T. 24 N., R. 1 W., on right bank 1¼ miles upstream from mouth and 8 miles west of Bremerton.

Drainage area.--1.54 sq mi.

Records available.--October 1945 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 750.9 ft above mean sea level (closed stadia traverse).

Average discharge.--11 years, 6.18 cfs (4,470 acre-ft per year).

Extremes.--Maximum discharge during year, 175 cfs Nov. 3 (gage height, 2.97 ft); minimum, 0.4 cfs Aug. 25 (gage height, 0.80 ft).
1945-56: Maximum discharge, 203 cfs Feb. 22, 1949 (gage height, 3.27 ft); minimum, 0.2 cfs Aug. 14, 1950; minimum gage height, 0.75 ft Oct. 2, 1945, Aug. 14, 1950.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1947-49(M), 1950(P).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
0.8	0.5	1.5	17.0	0.8	0.4	1.9	38
1.0	2.1	1.9	38	1.0	1.9	2.4	87
1.2	6.5			1.2	5.3	2.9	162
				1.5	15.5		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	7.6	12.5	9.6	6.8	14	18	3.1	1.6	1.9	0.8	0.7
2	.6	33	11.5	11.5	6.5	13	14.5	3.1	1.7	1.8	1.4	.7
3	.8	155	10.5	24	6.2	17	12	3.0	2.3	1.8	1.3	.8
4	1.0	74	9.3	51	6.1	22	10.5	3.0	2.7	1.7	1.1	.7
5	.9	25	9.6	45	6.2	17	9.3	3.1	2.0	2.3	1.1	.6
6	.9	16.5	12	35	6.3	15	*8.6	3.0	2.5	1.9	1.0	.5
7	2.0	*11.5	13.5	25	6.5	20	8.2	2.9	3.3	1.7	1.0	.6
8	5.8	9.6	19	18.5	6.0	17	7.3	2.7	4.2	1.8	1.0	.6
9	6.2	7.9	20	15.5	5.4	15	6.8	2.6	4.4	1.7	.9	.6
10	4.3	7.3	16.5	*14	5.0	13	6.5	3.2	4.2	1.6	.8	.7
11	4.1	7.1	19	13.5	4.9	11	6.0	2.9	3.6	1.6	.8	1.0
12	5.0	6.7	19.5	14	4.7	10	5.8	2.7	3.5	1.5	.9	.8
13	3.8	6.4	15.5	14	4.7	9.4	5.5	2.7	3.1	1.6	*1.0	*.7
14	3.2	6.0	12.5	13.5	5.0	9.0	5.1	2.6	3.1	1.4	.9	.8
15	3.0	5.8	10.5	20	4.6	8.4	4.8	2.5	3.0	1.3	.8	.8
16	2.5	6.2	9.6	35	4.5	7.9	4.8	*2.5	3.0	1.4	.8	.8
17	2.4	7.0	10.5	24	4.5	8.9	4.8	2.4	3.1	1.3	.8	.8
18	*2.1	15	8.6	19	4.8	11	4.6	2.3	2.8	1.3	.9	.8
19	2.0	23	9.9	18	5.6	14.5	4.4	2.1	3.1	1.3	.9	.8
20	1.8	17	37	17	9.0	18.5	4.4	2.4	2.8	1.2	.9	.8
21	1.8	11	56	16.5	15	34	4.2	2.3	2.7	1.0	.9	.6
22	1.6	9.5	46	16.5	11	*42	4.2	2.1	2.5	1.0	.8	.6
23	1.6	40	28	17	8.6	70	3.8	2.0	2.4	1.2	.8	.7
24	4.3	60	26	16	9.2	39	3.8	1.9	2.4	1.2	.6	.8
25	18	30	26	13.5	10	26	3.8	1.9	2.4	1.1	.5	1.0
26	15.5	21	19.5	11.5	9.0	22	3.8	2.0	2.3	.9	.5	1.1
27	12	*18	16.5	10.5	8.0	17	3.6	2.0	2.1	.6	.6	1.0
28	10	16	13.5	9.6	12	15	3.5	1.9	*2.0	.6	.6	1.1
29	13.5	14	12	8.9	10	15.5	3.5	1.9	1.9	.7	.7	1.6
30	13	13	10.5	8.0	------	20	3.3	1.8	1.9	.8	.6	1.5
31	10.5	------	9.9	7.5	------	21	------	1.7	------	.8	.7	------
Total	154.9	680.1	550.9	572.6	206.1	593.1	189.4	76.3	82.6	42.2	26.4	24.6
Mean	5.00	22.7	17.8	18.5	7.11	19.1	6.31	2.46	2.75	1.36	0.85	0.82
Cfsm	3.25	14.7	11.6	12.0	4.62	12.4	4.10	1.60	1.79	0.883	0.552	0.532
In.	3.74	16.42	13.30	13.83	4.98	14.32	4.57	1.84	1.99	1.02	0.64	0.59
Ac-ft	307	1,350	1,090	1,140	409	1,180	376	151	164	84	52	49

Calendar year 1955: Max 155 Min 0.5 Mean 6.84 Cfsm 4.44 In. 60.23 Ac-ft 4,950
Water year 1955-56: Max 155 Min 0.5 Mean 8.74 Cfsm 5.68 In. 77.24 Ac-ft 6,350

Peak discharge (base, 100 cfs).--Nov. 3 (8:30 p.m.) 175 cfs (2.97 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12-26, Jan. 30 to Mar. 15, May 7-15; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Tahuya River near Bremerton, Wash.

Location.--Lat 47°33'00", long 122°50'50", in SE¼ sec. 19, T. 24 N., R. 1 W., on right bank 100 ft downstream from bridge, 1½ miles downstream from Tahuya Lake, and 10 miles west of Bremerton.

Drainage area.--6.16 sq mi.

Records available.--May 1945 to October 1956 (discontinued). Published as Tahuyeh Creek near Bremerton, 1945 and as Tahuya Creek near Bremerton, 1946.

Gage.--Water-stage recorder. Altitude of gage is 540 ft (from topographic map). Prior to Sept. 16, 1954, at site a quarter of a mile upstream at datum 539 ft above mean sea level (closed stadia traverse).

Average discharge.--11 years, 22.3 cfs (16,140 acre-ft per year).

Extremes.--Maximum discharge during year, 504 cfs Nov. 3 (gage height, 5.93 ft); minimum, 0.6 cfs Sept. 8, 9 (gage height, 1.44 ft).
1945-56: Maximum discharge, that of Nov. 3, 1955; minimum, 0.1 cfs Sept. 22-26, 1947, Sept. 1-10, 12, 13, 1949, Oct. 4-10, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversions for domestic use.

Rating tables, Oct. 1, 1955, to Oct. 8, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-23)

Oct. 1 to Nov. 2, 1955				Nov. 3, 1955, Oct. 8, 1956			
1.3	1.5	2.7	58	1.4	0.5	3.0	75
1.5	4.0	3.5	126	1.6	3.5	4.0	180
2.0	19.5			2.0	15	6.0	528

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	30	56	36	23	79	65	6.4	2.1	2.9	0.9	0.8
2	1.6	116	49	46	21	76	54	5.9	2.1	*2.9	1.8	.7
3	1.6	448	43	82	19	90	45	5.9	3.5	2.9	1.8	.7
4	1.6	323	38	172	18.5	83	38	5.7	3.9	2.7	1.6	.7
5	1.6	150	38	189	19	64	33	5.9	3.1	3.9	1.3	.7
6	1.6	90	49	162	18	50	*29	5.7	4.3	4.1	1.2	.7
7	1.6	*66	56	121	17.5	48	28	5.5	6.2	3.3	1.2	.7
8	3.5	48	73	87	16	41	24	5.2	9.2	2.9	1.2	.7
9	6.0	39	83	72	15	38	22	4.8	11.5	2.7	1.1	.7
10	8.0	34	73	*59	14.5	30	21	7.3	11.5	2.5	1.1	.8
11	6.0	30	85	56	14.5	27	19	6.2	9.5	2.3	1.1	.9
12	9.0	26	*85	56	14	24	17	5.7	8.0	2.1	1.1	.8
13	7.5	24	70	57	13	24	16	5.0	6.9	3.1	*1.0	*.8
14	6.5	22	50	56	12.5	23	14.5	4.8	5.7	2.5	1.0	.7
15	6.0	20	48	81	11.5	23	14	4.6	7.5	2.3	1.1	.7
16	5.5	20	41	131	11.5	24	13	*8.2	9.2	2.3	1.1	.8
17	5.2	25	39	106	11.5	26	12.5	12	7.5	2.1	1.0	.8
18	*4.9	30	35	87	11.5	33	11.5	7.2	6.2	1.9	1.0	.8
19	4.7	45	42	79	13	44	11	5.7	6.9	1.8	1.0	.8
20	4.4	54	122	73	19.5	58	10.5	4.6	6.4	1.6	1.0	.9
21	4.4	51	232	68	23	104	10.5	4.8	5.2	1.4	.9	.8
22	4.4	46	215	69	23	148	9.5	4.3	4.8	1.4	.9	.7
23	6.6	56	141	69	22	232	9.2	3.9	4.8	1.4	.9	.7
24	15	128	121	67	23	167	8.6	3.7	4.3	1.4	.9	.8
25	51	181	115	56	24	110	8.3	3.5	4.1	1.3	.9	.9
26	54	120	95	52	24	82	7.7	4.1	3.7	1.3	.9	1.0
27	46	*95	79	41	*28	63	7.5	3.5	3.9	1.2	.8	.9
28	40	77	62	36	77	54	7.2	3.5	3.9	1.0	.8	.9
29	52	65	50	32	93	56	6.9	2.7	3.7	1.0	.7	1.3
30	51	60	43	28	------	72	6.7	2.5	3.3	.9	.7	1.3
31	39	------	36	25	------	77	------	2.3	------	.9	.7	------
Total	451.8	2,519	2,364	2,351	651.0	2,070	580.1	161.1	172.9	66.0	32.7	24.5
Mean	14.6	84.0	76.3	75.8	22.4	66.8	19.3	5.20	5.76	2.13	1.05	0.82
Cfsm	2.37	13.6	12.4	12.3	3.64	10.8	3.13	0.844	0.935	0.346	0.170	0.133
In.	2.73	15.21	14.27	14.19	3.93	12.50	3.50	0.97	1.04	0.40	0.20	0.15
Ac-ft	896	5,000	4,690	4,660	1,290	4,110	1,150	320	343	131	65	49

Calendar year 1955: Max 448 Min 1.4 Mean 23.8 Cfsm 3.86 In. 52.51 Ac-ft 17,260
Water year 1955-56: Max 448 Min 0.7 Mean 31.3 Cfsm 5.08 In. 69.09 Ac-ft 22,700

Peak discharge (base, 130 cfs).--Nov. 3 (6 to 7 p.m.) 504 cfs (5.93 ft); Nov. 25 (12:15 a.m.) 214 cfs (4.33 ft); Dec. 21 (9 to 10 p.m.) 251 cfs (4.50 ft); Jan. 4 (6 to 7 p.m.) 201 cfs (4.16 ft); Jan. 16 (10 a.m. to 12 m.) 138 cfs (3.65 ft); Mar. 23 (2 to 3 p.m.) 273 cfs (4.64 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-17, Nov. 5, 6, 13-17, Jan. 31 to Feb. 3; discharge estimated on basis of recorded range in stage and records for nearby stations.

Discharge, in cubic feet per second, 1956

Oct. 1.....	1.1	Oct. 5.....	0.9
2.....	1.1	6.....	.8
3.....	1.0	7.....	.9
4.....	.9	8.....	.9

Tahuya River near Belfair, Wash.

Location.--Lat 47°29'40", long 122°54'20", in SE¼SE¼ sec. 10, T. 23 N., R. 2 W., on left bank 3½ miles downstream from Panther Creek and 5 miles northwest of Belfair.

Drainage area.--16.1 sq mi.

Records available.--May 1945 to October 1956 (discontinued). Published as Tahuyeh Creek near Belfair, 1945 and as Tahuya Creek near Belfair, 1946.

Gage.--Water-stage recorder. Datum of gage is 353 ft above mean sea level (closed stadia traverse).

Average discharge.--11 years, 48.4 cfs (35,040 acre-ft per year).

Extremes.--Maximum discharge during year, 1,210 cfs Nov. 3 (gage height, 8.43 ft); minimum, 0.1 cfs Oct. 1-7; minimum gage height, 2.12 ft Oct. 1-4.
1945-56: Maximum discharge, that of Nov. 3, 1955; no flow at times most years.

Remarks.--Records good except those below 5 cfs and those for period of no gage-height record, which are fair. Small diversions for irrigation and domestic use. No regulation.

Revisions.--WSP 1246: Drainage area.

Rating tables, Oct. 1, 1955, to Oct. 8, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-8, 1955)

Oct. 1 to Nov. 3, 1955				Nov. 4, 1955, to Oct. 8, 1956			
2.0	0.1	3.0	42	2.17	0.2	3.0	38
2.1	.5	4.0	155	2.3	1.0	4.0	155
2.2	1.3	5.0	314	2.4	2.6	5.0	314
2.3	2.9	6.0	520	2.6	9.5	7.3	860
2.4	5.8	8.0	1,070				
2.6	14.5						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	72	122	85	48	172	147	9.5	2.0	3.5	0.7	0.3
2	.1	188	108	105	43	149	117	9.0	1.7	3.2	1.1	.3
3	.1	1,010	92	214	37	192	97	8.6	2.4	2.8	.8	.3
4	.1	845	81	421	35	202	81	8.2	3.8	2.6	.7	.3
5	.1	409	77	455	34	147	69	8.2	4.0	3.0	.7	.3
6	.1	239	99	389	32	112	60	8.2	3.5	3.5	.6	.3
7	.1	169	124	289	31	114	56	7.7	7.2	3.5	.6	.3
8	.4	127	169	206	29	108	50	7.2	12	2.8	.6	.3
9	8.4	105	186	163	27	86	44	6.4	20	2.4	.6	.3
10	18	86	154	137	26	72	*40	6.4	19.5	2.2	.6	.4
11	13	74	188	126	25	65	34	7.7	17	2.0	.6	.5
12	18.5	62	*189	*126	24	60	32	7.7	13	1.8	.6	*.4
13	13.5	55	145	128	23	55	29	6.8	11	1.7	*.6	.4
14	11	a51	115	122	20	52	27	6.0	10	1.5	.5	.4
15	9.0	a47	96	193	19	51	25	5.2	9.5	1.7	.6	.4
16	7.3	a47	82	327	18	53	23	4.9	10.5	1.7	.5	.4
17	6.9	a45	72	242	17	59	22	*7.7	10.5	1.4	.5	.4
18	5.4	a50	67	198	16.5	79	20	10.5	9.0	1.4	.4	.4
19	*5.1	111	73	182	18.5	102	19	7.7	9.5	1.3	.4	.4
20	4.8	140	250	172	27	128	18	5.6	9.5	1.4	.4	.4
21	4.5	122	525	149	37	236	17	4.6	8.2	1.3	.4	.3
22	4.2	108	511	155	43	339	16.5	4.0	6.8	1.1	.3	.4
23	3.9	137	339	147	43	514	15	3.8	6.0	1.0	.4	.3
24	15.5	332	289	154	45	390	14	3.5	5.2	1.0	.4	.3
25	86	459	287	128	53	256	13.5	3.2	*5.2	.9	.4	.3
26	116	291	231	108	55	190	13	3.2	4.6	.8	.4	.3
27	97	226	192	93	59	144	12.5	3.5	4.3	.8	.4	.3
28	91	183	149	80	*182	127	11.5	3.5	3.8	.8	.4	.3
29	120	145	120	70	214	132	10.5	3.0	3.8	.7	.4	.3
30	129	*134	100	61	-----	166	10	2.6	3.8	.7	.4	.4
31	93	-----	88	54	-----	182	-----	2.4	------	.7	.3	------
Total	882.1	6,069	5,320	5,479	1,281.0	4,734	1,143.5	186.5	237.3	55.2	16.3	10.4
Mean	28.5	202	172	177	44.2	153	38.1	6.02	7.91	1.78	0.53	0.35
Cfsm	1.77	12.5	10.7	11.0	2.75	9.50	2.37	0.374	0.491	0.111	0.033	0.022
In.	2.04	14.02	12.29	12.66	2.96	10.94	2.64	0.43	0.55	0.13	0.04	0.02
Ac-ft	1,750	12,040	10,550	10,870	2,540	9,390	2,270	370	471	109	32	21

Calendar year 1955: Max 1,010 Min 0.1 Mean 53.8 Cfsm 3.34 In. 45.39 Ac-ft 38,970
Water year 1955-56: Max 1,010 Min 0.1 Mean 69.4 Cfsm 4.31 In. 58.72 Ac-ft 50,410

Peak discharge (base, 450 cfs).--Nov. 3 (9:30 p.m.) 1,210 cfs (8.43 ft); Nov. 24 (10 p.m.) 595 cfs (6.32 ft); Dec. 21 (9 p.m.) 639 cfs (6.50 ft); Jan. 4 (6 p.m.) 494 cfs (5.88 ft); Mar. 23 (2 p.m.) 616 cfs (6.41 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

Discharge, in cubic feet per second, 1956

Oct. 1.....	0.3	Oct. 5.....	0.2
2.....	.3	6.....	.2
3.....	.2	7.....	.2
4.....	.2	8.....	.2

Dogfish Creek near Poulsbo, Wash.

Location.--Lat 47°45'10", long 122°38'30", in SW¼ sec. 11, T. 26 N., R. 1 E., on left bank half a mile upstream from mouth and 1 mile north of Poulsbo.

Drainage area.--6.77 sq mi.

Records available.--July 1947 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Nov. 2, 1950, at site 200 ft downstream at datum 1.75 ft lower.

Average discharge.--9 years, 8.94 cfs (6,470 acre-ft per year).

Extremes.--Maximum discharge during year, 269 cfs Dec. 20 (gage height, 6.37 ft), from rating curve extended above 60 cfs on basis of contracted-opening determination at gage height 8.07 ft; minimum, 2.9 cfs July 23; minimum gage height, 1.13 ft Oct. 1, 2.
1947-56: Maximum discharge, 333 cfs Feb. 22, 1949 (gage height, 8.07 ft, present datum, from high-water mark on gage house), from rating curve extended above 50 cfs on basis of contracted-opening determination of peak flow; minimum, 1.8 cfs Aug. 13, 1947, July 30, 1951.

Remarks.--Records good. Small diversions for irrigation. Slight regulation at times from unknown source.

Revisions (water years).--WSP 1122: 1947(M). WSP 1346: 1948-50(P), 1953(M). WSP 1396: 1950(P).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30			
1.1	3.1	2.4	59	1.3	3.1	2.2	34
1.2	4.8	3.2	112	1.4	4.4	2.6	59
1.4	10.5	4.1	165	1.5	6.5	3.0	88
1.8	24			1.8	16.0	3.7	138

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	6.1	14	19	7.3	12	13	6.2	4.4	4.7	4.1	4.7
2	3.5	43	11.5	43	7.6	13.5	12	6.2	4.4	*4.6	7.3	4.2
3	3.7	*82	10.5	60	8.2	22	11	6.2	10	4.7	5.1	4.2
4	3.9	32	10	111	9.1	44	11	6.5	12.5	4.7	4.2	4.1
5	4.1	14	11.5	114	9.7	19	10.5	6.5	8.2	4.9	4.2	4.1
6	3.9	10	27	111	10	13	*9.7	6.2	10.5	4.9	3.9	4.1
7	7.9	8.6	16	47	10.5	32	9.7	6.0	10.5	4.7	4.2	4.1
8	21	8.0	29	29	9.4	20	9.4	5.8	11.5	4.4	3.9	3.9
9	11.5	7.1	17	32	9.1	15	8.8	5.5	10.5	4.4	3.9	4.1
10	8.3	8.0	15.5	24	8.2	12	8.5	6.8	13	4.4	3.8	4.4
11	6.4	8.3	18	*25	8.2	10	8.2	6.0	8.8	4.2	3.7	6.5
12	5.6	6.6	14.5	22	7.9	9.7	7.9	6.0	6.8	4.2	3.5	5.1
13	4.8	5.8	11	26	8.2	9.7	7.3	5.8	6.2	4.1	*3.8	*4.6
14	4.6	5.4	9.2	22	7.9	8.8	7.3	5.5	6.0	4.2	4.1	4.6
15	4.4	4.8	9.2	42	6.8	8.2	7.3	5.3	6.5	4.2	4.4	4.6
16	4.1	5.6	9.5	33	6.5	7.6	7.6	*5.1	6.2	4.1	4.6	4.7
17	*4.1	5.8	8.3	20	7.0	7.3	7.0	4.7	6.0	3.9	4.2	4.7
18	4.1	14	7.4	20	7.9	6.8	6.8	4.6	5.8	3.9	4.1	4.7
19	4.4	17.5	14.5	23	13	6.8	6.8	4.4	7.0	3.8	3.8	4.9
20	4.4	13	165	18.5	20	8.2	6.5	4.6	6.2	3.7	3.5	4.9
21	4.4	9.2	135	18	22	23	6.2	4.6	5.8	3.8	3.7	4.9
22	4.6	8.9	96	18.5	14.5	19	6.2	4.4	5.3	3.8	3.7	4.7
23	4.4	17	39	17.5	11	62	6.2	4.6	5.3	3.5	3.7	4.7
24	6.6	56	56	15.5	11	24	6.2	4.7	5.1	3.7	3.9	4.9
25	15	31	44	13	10	21	6.2	4.6	4.9	3.7	4.1	5.1
26	8.6	19	40	11.5	9.1	19	6.0	4.9	4.9	3.7	3.9	8.4
27	7.9	17	32	10.5	*17.5	16.5	6.0	4.9	4.7	3.5	4.1	6.2
28	7.4	14	20	10.5	37	14.5	6.5	4.7	4.9	3.5	4.9	5.5
29	10.5	13	16	9.7	17	15.5	6.8	4.6	4.9	3.8	4.4	5.5
30	7.7	*14	14	9.1	------	26	6.5	4.2	4.7	3.8	4.2	5.3
31	6.9	-----	12	8.2	-----	16	-----	4.2	------	4.1	3.9	------
Total	202.2	504.7	932.6	983.5	331.6	542.1	239.1	164.3	211.5	127.6	128.8	146.4
Mean	6.52	16.8	30.1	31.7	11.4	17.5	7.97	5.30	7.05	4.12	4.15	4.88
Cfsm	0.963	2.48	4.45	4.68	1.68	2.58	1.18	0.783	1.04	0.609	0.613	0.721
In.	1.11	2.77	5.12	5.40	1.82	2.98	1.31	0.90	1.16	0.70	0.71	0.80
Ac-ft	401	1,000	1,850	1,950	658	1,080	474	326	420	253	255	290

Calendar year 1955: Max 165 Min 2.7 Mean 8.90 Cfsm 1.31 In. 17.84 Ac-ft 6,450
Water year 1955-56: Max 165 Min 3.5 Mean 12.3 Cfsm 1.82 In. 24.78 Ac-ft 8,960

Peak discharge (base, 70 cfs).--Nov. 3 (7 a.m.) 102 cfs (3.04 ft); Nov. 24 (5 p.m.) 128 cfs (3.53 ft); Dec. 20 (6 p.m.) 269 cfs (6.37 ft); Dec. 24 (3 p.m.) 82 cfs (2.86 ft); Dec. 26 (8 p.m.) 76 cfs (2.77 ft); Jan. 4 (2 p.m.) 153 cfs (3.89 ft); Mar. 4 (3 p.m.) 75 cfs (2.79 ft); Mar. 23 (8:30 a.m.) 113 cfs (3.30 ft).
* Discharge measurement made on this day.

Huge Creek near Wauna, Wash.

Location.--Lat 47°23'20", long 122°41'50", at north line sec. 20, T. 22 N., R. 1 E., on right bank at downstream side of bridge, an eighth of a mile upstream from mouth and 2½ miles west of Wauna.

Drainage area.--5.51 sq mi.

Records available.--July 1947 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map). Prior to June 26, 1951, at same site at datum 0.86 ft higher.

Average discharge.--9 years, 12.1 cfs (8,760 acre-ft per year).

Extremes.--Maximum discharge during year, 206 cfs Dec. 21 (gage height, 2.19 ft); minimum, 3.8 cfs Sept. 6; minimum gage height, 0.49 ft May 18, 20, 21.
1947-56: Maximum discharge, 391 cfs Feb. 9, 1951 (gage height, 3.64 ft); minimum, 3.2 cfs Sept. 1, 1950; minimum gage height, that of May 18, 20, 21, 1956.

Remarks.--Records fair except those for period of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 21 to Apr. 22, May 15-26)

0.5	3.0	1.2	34
.6	4.9	1.4	54
.8	10.5	1.7	99
1.0	20	2.0	162

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.7	5.5	29	17	15.5	22	a30	10	7.6	6.5	5.5	5.3
2	4.9	21	24	24	15	21	a25	9.6	7.6	6.5	7.6	4.9
3	4.9	53	18	50	13.5	38	a20	9.6	11	6.5	6.8	4.9
4	5.5	62	15.5	100	12.5	58	*18.5	10.5	9.2	6.2	6.0	4.7
5	5.1	32	15	137	12.5	43	18	10.5	7.9	7.4	5.5	4.3
6	4.9	22	26	139	12.5	31	16.5	9.6	8.6	7.1	5.5	4.1
7	5.9	16	25	83	12	43	17.5	8.9	9.6	6.5	*5.3	4.3
8	8.1	13.5	33	52	11.5	46	15.5	8.9	11	6.0	5.3	4.5
9	9.6	11	32	43	11	38	15.5	8.9	13.5	6.0	5.3	4.9
10	6.7	10	30	33	11	30	13.5	9.2	12.5	6.2	5.5	5.5
11	5.3	8.9	74	*31	12	25	14	8.9	9.6	6.2	5.3	6.8
12	5.3	7.9	67	26	11.5	22	13.5	8.9	8.2	6.0	5.1	*5.4
13	4.7	7.4	37	26	11.5	21	13	8.9	7.9	6.0	5.1	5.1
14	4.3	6.8	26	25	11	19.5	12.5	8.6	8.2	6.0	5.3	5.1
15	4.3	6.5	20	51	10.5	18	12.5	*8.0	8.2	6.2	5.8	5.1
16	4.3	6.5	17	59	10.5	17	12	7.6	7.9	5.8	5.5	5.1
17	*4.3	6.5	15	44	10.5	17	11.5	7.6	7.6	5.8	5.3	5.1
18	4.5	11	13.5	40	10.5	16	11.5	7.6	*7.6	5.5	5.3	5.0
19	4.5	18	15	43	11.5	15	11.5	7.9	8.2	*5.5	5.3	4.9
20	4.5	20	74	41	14	24	10.5	8.2	7.6	5.5	5.1	5.3
21	4.5	15	140	36	16.5	a35	10.5	*8.2	7.4	5.5	5.1	5.3
22	4.5	12	155	45	16	a45	10.5	8.2	7.1	5.5	5.1	5.3
23	4.5	18.5	75	42	15	a56	10.5	8.6	6.8	5.3	5.1	4.9
24	7.7	41	48	50	*17	a62	10.5	8.9	6.5	5.3	4.9	5.1
25	12.5	*57	36	41	18	a45	10.5	9.2	6.5	5.5	5.1	6.8
26	7.9	58	32	33	16.5	a35	10	12.5	6.8	5.8	5.5	6.8
27	6.5	50	30	28	*16	a30	10	10.5	6.5	5.8	6.0	6.0
28	5.8	35	23	24	18	a26	10	8.6	6.8	5.8	5.8	6.0
29	10	29	19.5	21	17.5	a30	10	7.9	6.8	5.5	5.3	7.6
30	7.1	28	16.5	18.5	------	a35	10	7.6	6.8	5.3	5.3	7.1
31	6.0	-----	15.5	16.5	-----	a35	-----	7.4	------	5.3	5.3	------
Total	183.3	689.0	1,196.5	1,419.0	391.0	998.5	415.0	275.5	247.5	184.0	169.9	161.2
Mean	5.91	23.0	38.6	45.8	13.5	32.2	13.8	8.89	8.25	5.94	5.48	5.37
Cfsm	1.07	4.17	7.01	8.31	2.45	5.84	2.50	1.61	1.50	1.08	0.995	0.975
In.	1.24	4.65	8.08	9.58	2.64	6.74	2.80	1.86	1.67	1.24	1.15	1.09
Ac-ft	364	1,370	2,370	2,810	776	1,980	823	546	491	365	337	320

Calendar year 1955: Max 155 * Min 4.0 Mean 11.3 Cfsm 2.05 In. 27.98 Ac-ft 8,220
Water year 1955-56: Max 155 Min 4.1 Mean 17.3 Cfsm 3.14 In. 42.74 Ac-ft 12,550

Peak discharge (base, 50 cfs).--Nov. 4 (2:30 a.m.) 79 cfs (1.62 ft); Nov. 26 (5:30 a.m.) 64 cfs (1.54 ft); Dec. 11 (7 p.m.) 114 cfs (1.82 ft); Dec. 21 (6 p.m.) 206 cfs (2.19 ft); Jan. 5 (10:30 a.m.) 164 cfs (1.99 ft); Jan. 16 (10 a.m.) 64 cfs (1.45 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Mason Lake near Union, Wash.

Location.--Lat 47°19'15", long 122°57'15", in SE¼ sec. 8, T. 21 N., R. 2 W., on right shore 7½ miles southeast of Union.

Drainage area.--20.2 sq mi.

Records available.--July 1951 to September 1956 (fragmentary).

Gage.--Staff gage read once daily at various times. Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 3.70 ft Jan. 18; minimum observed, 1.34 ft Oct. 3.
1951-56: Maximum gage height observed, 5.02 ft Feb. 2, 1953; minimum observed, 1.20 ft Oct. 1, 1952.
High water during period Mar. 25 to Apr. 1, 1951, reached a stage of 7.5 ft, from high-water marks.

Remarks.--No diversion above station. Beaver dams at outlet cause some change in lake elevation.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.36	-	-	-	-	-	3.18	-	-	-	-	1.40
2	1.36	2.30	3.46	-	-	-	3.18	-	1.96	1.81	-	1.40
3	1.34	-	-	-	-	-	-	-	1.96	1.86	-	1.38
4	-	-	-	-	2.90	-	-	-	1.98	1.84	1.50	1.38
5	-	-	-	-	-	-	-	2.20	-	-	1.60	-
6	-	-	-	-	-	-	-	2.20	-	-	1.60	-
7	-	-	-	-	-	-	-	2.18	1.98	1.82	1.58	-
8	1.66	-	-	-	-	-	-	-	-	1.82	-	-
9	1.70	-	-	-	-	-	-	-	2.08	1.80	1.58	-
10	1.72	3.12	-	-	-	-	2.79	-	2.10	-	1.56	-
11	-	3.10	-	3.57	2.60	-	-	-	2.12	-	1.52	-
12	-	-	-	-	2.60	-	-	2.10	2.12	-	1.52	1.41
13	-	-	-	3.52	2.58	-	-	2.10	-	-	1.50	-
14	-	-	-	3.52	-	-	2.62	2.08	-	1.72	-	-
15	-	-	-	3.50	-	-	2.60	2.09	-	1.70	-	1.40
16	-	2.60	-	3.48	-	2.82	2.60	-	-	1.68	-	1.38
17	-	-	-	-	-	2.80	-	-	2.06	1.68	-	-
18	-	-	-	3.70	-	2.78	-	-	2.04	-	1.42	-
19	-	2.60	-	-	-	2.76	-	2.04	-	-	-	-
20	-	2.60	-	-	-	-	-	2.00	-	-	-	-
21	-	-	-	-	-	-	-	1.98	-	-	-	-
22	-	-	-	-	2.52	-	-	-	-	1.50	-	1.38
23	-	-	-	-	2.50	-	-	-	-	-	-	1.40
24	1.80	-	-	-	-	-	-	1.98	1.88	-	-	1.40
25	-	-	-	3.51	-	-	2.40	-	1.84	-	1.42	-
26	-	3.48	-	3.51	-	-	-	-	-	1.40	1.42	-
27	-	3.50	-	-	-	-	-	-	-	-	-	-
28	2.28	3.60	3.64	-	2.65	-	-	-	-	-	-	-
29	2.28	-	3.62	-	-	-	-	1.96	-	1.60	-	-
30	2.33	-	3.58	-	-------	-	-	1.96	-	-	-	1.40
31	-	-------	-	-	-------	3.20	-------	-	-------	-	-	-------

Goldsborough Creek near Shelton, Wash.

Location.--Lat 47°12'50", long 123°10'50", in SW¼ sec. 15, T. 20 N., R. 4 W., on right bank 3½ miles west of Shelton and 5½ miles upstream from mouth.

Drainage area.--42 sq mi, approximately.

Records available.--June 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 205 ft (from topographic map).

Average discharge.--5 years, 119 cfs (86,150 acre-ft per year).

Extremes.--Maximum discharge during year, 712 cfs Nov. 3 (gage height, 7.82 ft); minimum daily, 21 cfs Sept. 5-8, 15-20, 22-24.
1951-56: Maximum discharge, 1,090 cfs Jan. 31, 1953 (gage height, 8.33 ft); minimum, 16 cfs Sept. 23, 1951, Sept. 22-25, 1952.

Remarks.--Records fair except those for periods of no gage-height record or indefinite stage-discharge relation, which are poor. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
1.8	20	3.0	126	1.8	21	4.0	255
2.0	35	4.0	200	2.3	72	6.0	485
2.3	63	6.0	337	3.0	147	8.0	735

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	236	323	216	194	317	334	80	47	38	25	23
2	23	280	310	247	184	427	297	78	46	37	33	22
3	24	683	275	320	176	460	265	75	60	37	44	22
4	32	658	230	441	171	469	247	76	60	37	34	22
5	37	470	207	527	170	409	224	85	51	42	32	21
6	30	336	274	558	162	346	204	78	53	43	30	21
7	30	252	322	481	152	352	212	78	74	39	29	21
8	64	182	336	407	144	431	197	72	72	37	29	21
9	131	154	353	362	137	396	175	69	87	36	27	23
10	130	*160	325	326	134	340	162	68	66	36	26	27
11	82	132	467	292	165	288	154	67	63	35	26	*32
12	118	117	615	269	156	252	145	66	59	35	25	27
13	76	105	456	260	141	234	138	64	54	34	25	24
14	60	97	357	250	132	218	132	63	63	34	26	22
15	52	90	301	352	122	203	128	62	65	34	26	21
16	48	87	267	502	115	191	123	60	54	33	26	21
17	44	85	232	503	116	183	117	60	51	32	26	21
18	41	180	199	467	116	178	113	59	53	*31	25	21
19	40	334	221	470	124	175	109	58	65	30	24	21
20	40	343	324	473	149	181	105	58	55	29	23	21
21	38	299	502	426	165	247	102	56	50	29	23	22
22	37	242	671	414	172	292	100	54	47	29	23	21
23	37	285	584	409	155	429	96	53	44	27	23	21
24	139	358	498	*409	*181	495	*94	53	44	27	23	21
25	266	501	451	375	246	418	91	52	43	27	23	22
26	*297	510	391	338	226	366	88	52	42	27	23	25
27	277	482	355	304	230	323	86	52	41	27	23	24
28	267	*407	312	277	260	297	85	50	40	27	23	22
29	289	336	273	254	258	323	84	49	39	26	23	25
30	331	304	242	233	------	347	82	48	39	25	23	35
31	294	-----	219	212	-----	362	-----	*47	------	26	23	------
Total	3,398	8,705	10,892	11,374	4,853	9,949	4,489	1,942	1,623	1,006	814	692
Mean	110	290	351	367	167	321	150	62.6	54.1	32.5	26.3	23.1
Cfsm	2.62	6.90	8.36	8.74	3.98	7.64	3.57	1.49	1.29	0.774	0.626	0.550
In.	3.01	7.71	9.64	10.07	4.30	8.81	3.97	1.72	1.44	0.89	0.72	0.61
Ac-ft	6,740	17,270	21,600	22,560	9,630	19,730	8,900	3,850	3,220	2,000	1,610	1,370

Calendar year 1955 : Max 683 Min 21 Mean 133 Cfsm 3.17 In. 42.92 Ac-ft 96,120
Water year 1955-56 : Max 683 Min 21 Mean 163 Cfsm 3.88 In. 52.89 Ac-ft 118,500

Peak discharge (base, 400 cfs).--Nov. 3 (12 m.) 712 cfs (7.82 ft); Nov. 25 (4:30 p.m.) 523 cfs (6.32 ft); Dec. 12 (3:45 a.m.) 676 cfs (7.55 ft); Dec. 22 (1:30 p.m.) 687 cfs (7.63 ft); Jan. 6 (10 a.m. to 12 m.) 569 cfs (6.70 ft); Jan. 16 (8 to 9 p.m.) 543 cfs (6.48 ft); Mar. 4 (3 to 5 a.m.) 479 cfs (5.95 ft); Mar. 8 (9:30 a.m.) 441 cfs (5.63 ft); Mar. 24 (3 a.m.) 523 cfs (6.23 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 14-18; stage-discharge relation indefinite Sept. 11-30; discharge estimated on basis of records for stations on nearby streams.

Skookum Creek at Kamilche, Wash.

Location.--Lat 47°07'30", long 123°06'50", in NW¼ sec. 19, T. 19 N., R. 3 W., on right bank three-quarters of a mile southwest of Kamilche and 3 miles upstream from mouth.

Drainage area.--17.2 sq mi.

Records available.--June 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 35 ft (from topographic map).

Average discharge.--5 years, 57.2 cfs (41,410 acre-ft per year).

Extremes.--Maximum discharge during year, 621 cfs Dec. 12 (gage height, 10.21 ft); minimum, 1.6 cfs Sept. 9 (gage height, 1.22 ft).
1951-56: Maximum discharge, 795 cfs Jan. 31, 1953; maximum gage height, that of Dec. 12, 1955; minimum discharge, 0.7 cfs Sept. 16, 1951; minimum gage height, that of Sept. 9, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation. Probably some diversion for irrigation and farm use.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 19 to Dec. 11, Sept. 30)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
1.3	2.5	5.0	186	1.2	1.5	5.0	186
1.6	10	7.0	333	1.5	9.4	7.0	333
2.0	23	9.5	560	2.0	27	9.0	505
3.0	67			3.0	70		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	154	*190	84	a66	197	158	19	8.8	6.6	3.1	2.4
2	2.5	238	180	102	a62	273	137	19	7.5	6.6	4.6	2.4
3	2.7	538	155	161	a59	276	116	18	11	6.6	5.7	2.4
4	4.4	411	130	238	59	269	102	18	11	6.3	4.6	2.4
5	5.1	234	117	284	60	206	88	22	10	7.5	4.1	2.2
6	3.3	180	151	312	58	159	78	19	10.5	7.5	3.6	2.2
7	3.5	133	150	239	54	206	78	18	18.5	6.3	3.3	*2.0
8	9.9	111	153	173	51	241	70	16	16	6.0	3.1	2.2
9	49	100	158	147	49	194	62	14.5	22	5.7	3.1	2.2
10	39	101	164	125	50	155	57	14.5	16	5.4	2.8	3.1
11	a18.5	83	386	110	66	131	52	14.5	14	5.4	3.1	3.3
12	a25	72	499	99	68	112	48	14.5	11.5	4.9	3.1	2.8
13	a15	64	273	98	66	98	45	13.5	11.5	4.9	2.8	2.6
14	a11	56	188	101	62	89	43	12	*14	5.2	2.8	2.2
15	a9.5	a53	148	176	57	80	41	11.5	14.5	5.2	3.1	2.2
16	a8.1	a51	126	251	47	74	39	11	12.5	4.9	2.8	2.0
17	a7.2	a50	105	259	47	69	37	10.5	11	4.4	2.8	2.2
18	a6.5	a90	92	208	47	66	35	10	10.5	4.4	2.6	2.2
19	a5.8	219	90	192	52	62	34	9.4	14.5	4.4	2.6	2.4
20	a5.4	253	171	179	62	67	32	9.7	12	4.4	2.4	2.2
21	a5.1	210	229	161	70	*84	30	9.4	11	4.1	2.6	2.2
22	a4.7	158	437	151	74	99	29	9.1	10	4.1	2.6	2.2
23	a4.5	149	354	152	70	176	*27	8.8	8.8	3.8	2.6	2.2
24	*45	186	258	156	88	191	26	8.4	8.4	3.3	2.6	2.2
25	144	276	203	141	110	166	24	8.4	8.1	*3.6	2.6	2.8
26	164	312	169	*125	111	153	23	7.8	7.5	3.6	2.6	3.1
27	148	314	151	108	118	134	22	8.1	7.2	3.6	2.6	2.6
28	148	246	128	98	121	128	22	7.8	7.2	3.3	2.6	2.0
29	240	183	110	88	121	143	21	7.5	6.9	3.1	2.2	3.1
30	319	174	96	78	------	150	20	7.2	6.6	3.1	2.2	4.1
31	215	-----	86	69	-----	170	-----	7.8	------	2.8	2.2	------
Total	1,671.2	5,399	5,917	4,865	2,025	4,618	1,596	384.9	339.0	151.0	93.5	74.1
Mean	53.9	180	191	157	69.8	149	53.2	12.4	11.3	4.87	3.02	2.47
Cfsm	3.13	10.5	11.1	9.13	4.06	8.66	3.09	0.721	0.657	0.283	0.176	0.144
In.	3.61	11.67	12.79	10.52	4.38	9.99	3.45	0.83	0.73	0.33	0.20	0.16
Ac-ft	3,310	10,710	11,740	9,650	4,020	9,160	3,170	763	672	300	185	147

Calendar year 1955: Max 538 Min 1.7 Mean 68.0 Cfsm 3.95 In. 53.65 Ac-ft 49,230
Water year 1955-56: Max 538 Min 2.0 Mean 74.1 Cfsm 4.31 In. 58.66 Ac-ft 53,830

Peak discharge (base, 350 cfs).--Oct. 30 (3 to 4 p.m.) 358 cfs (7.31 ft); Nov. 3 (8 a.m.) 590 cfs (9.78 ft); Dec. 12 (1:30 a.m.) 621 cfs (10.21 ft); Dec. 22 (12 m.) 444 cfs (8.32 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for stations on nearby streams.

Deschutes River near Rainier, Wash.

Location.--Lat 46°51'10", long 122°40'00", in SW¼ sec. 22, T. 16 N., R. 1 E., on right bank 75 ft upstream from county road crossing, half a mile downstream from mouth of outlet from Reichel Lake, and 2½ miles southeast of Rainier.

Drainage area.--89.8 sq mi.

Records available.--June 1949 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map).

Average discharge.--7 years, 293 cfs (212,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,620 cfs Dec. 12 (gage height, 13.06 ft); minimum, 33 cfs Sept. 24-26 (gage height, 2.74 ft).
1949-56: Maximum discharge, that of Dec. 12, 1955; minimum, 21 cfs Sept. 20, 1952; minimum gage height, 2.64 ft Sept. 20, Oct. 17, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. Probably some small diversion for irrigation and domestic use. No regulation.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

2.7	30	5.0	600
2.8	38	5.5	790
3.0	61	6.0	990
3.3	115	7.0	1,430
3.6	178	8.0	1,950
4.0	279	9.0	2,550
4.5	433	11.0	3,850

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	459	930	420	285	614	706	200	117	75	43	35
2	44	*602	762	456	273	1,010	563	180	113	71	49	36
3	44	1,300	614	1,250	259	1,150	476	170	111	66	75	35
4	53	1,360	509	1,910	254	966	433	165	117	64	54	35
5	135	1,050	456	1,850	259	632	404	160	115	*64	47	35
6	94	642	492	1,630	265	466	366	155	115	68	45	34
7	83	463	734	1,240	268	519	379	150	127	63	44	34
8	234	369	686	862	276	686	372	140	127	61	43	35
9	1,040	308	726	678	262	512	354	135	154	60	43	35
10	948	308	586	573	248	404	357	135	169	58	42	38
11	459	282	1,630	522	257	350	407	140	194	57	41	41
12	288	248	3,560	479	411	314	414	135	154	57	41	40
13	218	223	1,170	529	407	296	423	130	133	54	41	37
14	178	199	754	525	344	276	446	120	121	54	*40	35
15	150	171	586	864	291	271	436	120	125	53	40	35
16	131	176	*506	1,280	248	279	379	115	119	52	41	35
17	119	169	430	1,140	246	302	338	115	121	49	40	34
18	109	215	388	882	233	344	302	110	111	48	38	34
19	102	1,180	583	726	233	*446	*308	110	121	48	38	34
20	94	730	2,630	734	254	459	372	110	135	48	37	34
21	89	516	2,830	649	294	605	400	110	125	48	37	35
22	83	404	3,050	600	302	986	340	110	115	47	37	34
23	80	385	2,000	*758	271	2,020	310	110	106	46	36	34
24	83	783	1,200	774	271	1,780	290	110	100	46	37	33
25	316	2,440	1,020	610	305	1,640	280	110	94	45	36	33
26	539	1,850	998	512	302	1,450	250	110	89	44	48	34
27	385	1,910	938	440	288	906	230	110	85	44	47	37
28	360	1,150	706	395	482	678	220	110	82	43	41	36
29	562	870	569	369	686	746	220	*109	78	43	38	35
30	830	802	486	341	------	786	220	111	76	43	37	40
31	604	------	427	311	------	906	------	117	------	43	36	------
Total	8,499	21,564	32,956	24,309	8,774	22,799	10,975	4,012	3,549	1,662	1,312	1,062
Mean	274	719	1,063	784	303	735	366	129	118	53.6	42.3	35.4
Cfsm	3.05	8.01	11.8	8.73	3.37	8.18	4.08	1.44	1.31	0.597	0.471	0.394
In.	3.52	8.93	13.65	10.07	3.63	9.44	4.55	1.66	1.47	0.69	0.54	0.44
Ac-ft	16,860	42,770	65,370	48,220	17,400	45,220	21,770	7,960	7,040	3,300	2,600	2,110

Calendar year 1955: Max 3,560 Min 36 Mean 350 Cfsm 3.90 In. 52.91 Ac-ft 253,400
Water year 1955-56: Max 3,560 Min 33 Mean 387 Cfsm 4.31 In. 58.59 Ac-ft 280,600

Peak discharge (base, 2,000 cfs).--Nov. 25 (10 a.m.) 2,650 cfs (9.16 ft); Dec. 12 (5 a.m.) 5,620 cfs (13.06 ft); Dec. 20 (10 p.m.) 4,030 cfs (11.23 ft); Jan. 5 (1 a.m.) 2,400 cfs (8.75 ft); Mar. 23 (9 p.m.) 2,720 cfs (9.29 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 21 to May 28; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Woodland Creek near Olympia, Wash.

Location.--Lat 47°04'20", long 122°49'00", in SW¼ sec. 4, T. 18 N., R. 1 W., on left bank 1½ miles upstream from mouth and 4.4 miles northeast of Olympia.

Drainage area.--24.3 sq mi.

Records available.--June 1949 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (from topographic map).

Average discharge.--7 years, 30.1 cfs (21,790 acre-ft per year).

Extremes.--Maximum discharge during year, 150 cfs Dec. 21 (gage height, 3.77 ft); minimum, 11 cfs Oct. 6 (gage height, 1.23 ft).
1949-56: Maximum discharge, 204 cfs Feb. 9, 1951 (gage height, 4.46 ft); minimum, 8.0 cfs Dec. 17-21, 1952; minimum gage height, 1.20 ft Aug. 7, 1953.

Remarks.--Records fair prior to Mar. 15, good thereafter. Some diversion for domestic use. No regulation.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 3-19, Feb. 6-24, Feb. 26 to Mar. 14)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
1.2	12	1.9	35	1.3	16.5	2.5	66
1.4	17.5	2.3	52	1.6	27	3.0	93
1.6	24	2.8	80	2.0	43	3.5	128

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12.5	a18	45	72	72	64	69	44	33	28	23	19.5
2	12.5	*a33	45	77	70	65	65	43	33	28	26	19.5
3	12.5	37	43	102	69	75	60	43	35	28	25	19
4	13	32	39	108	69	80	59	43	34	28	24	19
5	12.5	23	41	113	68	73	58	43	33	*29	24	18.5
6	12	19	46	124	67	68	57	43	34	29	23	18.5
7	13.5	17.5	46	111	66	83	57	42	34	28	23	18.5
8	15.5	17.5	49	102	65	84	56	42	34	28	23	18.5
9	17.5	17	47	96	63	79	56	41	35	28	22	19.5
10	15.5	17.5	50	91	63	73	56	41	35	28	22	20
11	14	17.5	79	86	63	70	55	41	34	27	22	20
12	13.5	18.5	79	83	63	67	54	40	33	27	22	19.5
13	13.5	18.5	68	84	63	65	53	40	33	27	22	19.5
14	13.5	18.5	60	84	61	63	52	40	33	27	*22	19.5
15	13	18.5	56	107	58	61	51	39	33	27	22	19.5
16	13	18.5	*56	104	58	60	51	39	33	26	22	19
17	13	18.5	54	96	58	58	50	38	32	26	21	19
18	13	27	53	94	58	58	50	37	32	26	21	18.5
19	13.5	42	55	98	58	*58	*49	37	34	26	21	18.5
20	13	38	90	96	58	58	49	36	32	26	21	18.5
21	13	31	114	93	61	61	48	36	32	26	21	18.5
22	13	28	121	91	59	61	48	36	32	26	20	18.5
23	13	28	112	94	58	74	47	36	31	26	20	18.5
24	15	37	104	96	62	69	46	36	31	26	20	18
25	22	50	93	91	68	72	46	35	30	25	20	18
26	19	51	89	86	63	70	46	36	30	25	20	18.5
27	a17	56	86	*82	62	66	45	35	29	24	20	18.5
28	a16	50	81	81	61	67	45	35	29	24	19.5	18.5
29	a25	44	76	79	59	71	45	*34	29	24	19.5	19.5
30	a20	44	73	75	------	71	44	34	29	24	19.5	17.5
31	a19	-----	71	73	-----	71	-----	34	-------	23	19.5	------
Total	462.0	886.0	2,121	2,869	1,823	2,115	1,567	1,199	971	820	670.0	566.0
Mean	14.9	29.5	68.4	92.5	62.9	68.2	52.2	38.7	32.4	26.5	21.6	18.9
Cfsm	0.613	1.21	2.81	3.81	2.59	2.81	2.15	1.59	1.33	1.09	0.889	0.778
In.	0.71	1.36	3.25	4.39	2.79	3.24	2.40	1.84	1.49	1.25	1.03	0.87
Ac-ft	916	1,760	4,210	5,690	3,620	4,200	3,110	2,380	1,930	1,630	1,330	1,120

Calendar year 1955: Max 121 Min 11.5 Mean 25.2 Cfsm 1.04 In. 14.09 Ac-ft 18,260
Water year 1955-56: Max 124 Min 12 Mean 43.9 Cfsm 1.81 In. 24.62 Ac-ft 31,900

Peak discharge (base, 110 cfs).--Dec. 21 (6 p.m.) 150 cfs (3.77 ft); Jan. 6 (7:30 a.m.) 133 cfs (3.60 ft); Jan. 15 (6 a.m.) 111 cfs (3.33 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

McAllister Springs near Olympia, Wash.

Location.--Lat 47°01'45", long 122°43'25", in SE¼ sec. 19, T. 18 N., R. 1 E., on right side of stilling pool just above city of Olympia control gates, 8 miles east of Olympia.

Records available.--March 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is about mean sea level. Auxiliary water-stage recorder 30 ft downstream from base gage.

Average discharge.--5 years, 25.7 cfs (18,610 acre-ft per year).

Extremes.--Maximum daily discharge during year, 46 cfs Jan. 26; minimum daily, 21 cfs Oct. 1, 6, 7, Sept. 30.
1951-56: Maximum daily discharge, that of Jan. 26, 1956; minimum daily, 17.5 cfs Sept. 21, 1952, Aug. 12, 1953.

Remarks.--Records fair. City of Olympia diverts 2 to 8 cfs for municipal use. Gage pool regulated by low dam and flashboards. Backwater from tides occurs daily.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	24	27	36	41	40	35	34	31	28	26	25
2	22	*25	29	37	40	39	35	33	31	27	26	25
3	22	26	28	38	39	41	34	33	30	27	28	25
4	22	26	27	38	39	38	34	33	30	28	28	25
5	22	25	28	39	39	39	36	34	32	*30	27	*25
6	21	24	29	39	38	39	36	34	31	31	27	25
7	21	24	28	39	39	39	36	34	32	29	27	25
8	22	24	28	38	39	38	36	33	33	29	29	26
9	25	25	26	39	38	38	36	34	33	27	29	25
10	23	25	27	39	39	38	36	35	34	e28	27	25
11	22	24	29	39	40	37	36	37	31	29	27	24
12	22	24	29	41	40	37	36	34	e31	28	25	24
13	22	24	27	41	41	37	38	33	32	28	e26	24
14	22	23	27	42	41	36	36	32	32	29	*27	24
15	22	23	28	41	39	36	36	31	34	30	27	24
16	23	24	*29	42	38	36	34	e31	31	e29	27	23
17	22	24	30	41	40	35	35	30	31	e28	27	23
18	23	25	31	42	39	35	34	30	30	e27	27	23
19	22	25	32	43	39	*34	*34	33	31	e24	27	23
20	22	25	33	43	39	34	35	32	30	24	26	24
21	22	26	33	42	40	35	35	30	30	25	26	24
22	22	24	34	42	41	37	35	30	e30	26	26	23
23	22	25	34	41	41	36	36	29	30	25	26	22
24	23	25	34	42	41	38	36	30	29	24	26	23
25	23	26	34	43	40	40	35	30	30	25	26	e22
26	22	26	34	46	44	39	35	31	26	25	26	22
27	23	26	34	*44	41	39	35	33	27	26	26	22
28	23	26	35	43	41	38	34	32	28	26	26	22
29	25	27	36	43	41	38	34	*27	29	e26	26	22
30	26	27	36	42	------	37	34	27	28	26	26	21
31	24	------	37	41	------	36	------	30	------	25	25	------
Total	698	747	953	1,266	1,157	1,159	1,057	989	917	839	825	710
Mean	22.5	24.9	30.7	40.8	39.9	37.4	35.2	31.9	30.6	27.1	26.6	23.7
Ac-ft	1,380	1,480	1,890	2,510	2,290	2,300	2,100	1,960	1,820	1,660	1,640	1,410

Calendar year 1955: Max 37 Min 18.5 Mean 24.7 Ac-ft 17,840
Water year 1955-56: Max 46 Min 21 Mean 30.9 Ac-ft 22,440

* Discharge measurement made on this day.
e Rating not determined for conditions of backwater other than 6 and 8 boards on rectangular weir; discharge estimated.
Note.--No gage-height record Mar. 6-18, Mar. 28 to Apr. 2, Apr. 6-10, Aug. 14 to Sept. 4; discharge estimated or interpolated.

Nisqually River near National, Wash.

Location.--Lat 46°45'10", long 122°05'00", in SW¼SW¼ sec. 29, T. 15 N., R. 6 E., on right bank 100 ft downstream from railroad bridge, 1 mile west of National, 2½ miles west of Ashford, and 3 miles upstream from Mineral Creek.

Drainage area.--133 sq mi.

Records available.--May 1942 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from river-profile map).

Average discharge.--14 years, 771 cfs (558,200 acre-ft per year).

Extremes.--Maximum discharge during year, 8,280 cfs Dec. 12 (gage height, 9.70 ft); minimum, 229 cfs Mar. 11, 12 (gage height, 3.32 ft).
1942-56: Maximum discharge, 9,560 cfs Dec. 11, 1946 (gage height, 10.34 ft); minimum, 108 cfs Dec. 1, 3, 1952 (gage height, 2.76 ft).

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. Small diversion for domestic use. Slight regulation at low water by powerplant of Mount Rainier National Park on Paradise River.

Revisions (water years).--WSP 1286: 1947(P), 1950(M).

Rating tables, water year 1955-56, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
3.5	325	6.0	2,200	3.5	250	6.0	2,160
4.0	560	7.5	4,130	4.0	460	7.0	3,410
5.0	1,250			4.5	760	8.1	5,120
				5.0	1,160		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	346	1,190	1,360	594	420	329	732	942	2,290	1,010	624	564
2	346	1,200	1,140	588	415	383	660	918	1,850	990	570	455
3	325	*1,910	979	854	401	410	606	918	1,750	1,010	559	410
4	499	3,430	865	1,300	383	361	612	918	1,590	950	476	401
5	528	2,680	813	1,220	374	333	582	958	1,360	1,050	488	430
6	438	1,900	800	1,080	365	309	537	990	1,200	1,210	526	460
7	438	1,480	748	918	361	309	600	1,050	1,170	1,110	588	510
8	637	1,370	742	788	349	297	594	1,230	1,180	1,270	642	520
9	1,920	1,760	*761	666	333	285	594	1,440	1,340	1,510	*678	498
10	2,020	4,090	723	612	333	271	897	1,820	1,640	1,580	642	425
11	1,370	2,160	2,860	576	361	257	862	1,450	1,580	1,560	678	440
12	1,060	a1,600	*5,100	548	420	257	926	1,210	1,300	1,650	704	357
13	917	a1,200	2,280	564	365	257	*1,070	1,010	1,230	1,530	802	349
14	846	a1,050	1,510	548	341	257	1,300	950	1,290	1,250	894	361
15	780	a950	1,160	886	297	*257	1,410	1,030	1,380	1,040	878	396
16	693	a750	982	1,130	285	257	1,280	1,450	1,340	1,030	672	410
17	657	699	838	998	325	271	1,120	2,170	1,410	1,030	588	455
18	639	723	732	966	313	309	1,050	*2,850	1,450	1,160	594	493
19	582	910	767	926	305	374	1,200	3,110	1,950	1,380	648	520
20	534	754	1,050	878	301	374	1,570	2,910	1,760	1,600	690	476
21	492	742	1,850	816	293	510	2,080	2,250	1,430	1,460	718	*374
22	443	711	3,680	802	285	654	2,270	1,970	1,330	1,260	718	317
23	424	711	2,670	830	274	1,090	1,930	2,080	1,330	1,120	697	321
24	598	846	1,800	739	274	1,250	1,580	1,910	1,140	1,100	612	392
25	*a4,000	1,310	1,360	666	271	1,360	1,390	1,640	998	1,030	612	435
26	a1,800	1,780	1,170	*618	264	1,250	1,380	1,680	974	902	537	455
27	a1,200	2,530	974	570	260	966	1,340	1,570	1,250	795	482	374
28	a1,350	2,040	823	548	305	809	1,230	1,340	1,430	704	450	365
29	a2,000	1,630	725	515	313	886	1,110	1,460	*1,280	690	532	435
30	2,500	1,540	666	471	------	886	1,010	1,950	1,090	672	564	476
31	1,660	-----	618	425	-----	838	-----	2,450	------	672	564	------
Total	32,042	45,646	42,546	23,640	9,586	16,656	33,322	49,424	42,312	35,325	19,427	12,874
Mean	1,034	1,522	1,372	763	331	537	1,111	1,594	1,410	1,140	627	429
Cfsm	7.77	11.4	10.3	5.74	2.49	4.04	8.35	12.0	10.6	8.57	4.71	3.23
In.	8.96	12.76	11.90	6.61	2.68	4.66	9.32	13.82	11.83	9.88	5.43	3.60
Ac-ft	63,550	90,540	84,390	46,890	19,010	33,040	66,090	98,030	83,920	70,070	38,530	25,540

Calendar year 1955: Max 5,100 Min 231 Mean 922 Cfsm 6.93 In. 94.12 Ac-ft 667,600
Water year 1955-56: Max 5,100 Min 257 Mean 991 Cfsm 7.45 In. 101.45 Ac-ft 719,600

Peak discharge (base, 2,600 cfs).--Oct. 10 (1 a.m.) 2,650 cfs (6.40 ft); Oct. 25 (time unknown) 6,080 cfs; Oct. 29 (6:20 p.m.) 4,180 cfs (7.53 ft); Nov. 4 (3:40 p.m.) 4,210 cfs (7.55 ft); Nov. 10 (1 a.m.) 6,410 cfs (8.80 ft); Nov. 27 (10 a.m.) 2,660 cfs (6.41 ft); Dec. 12 (12:30 a.m.) 8,280 cfs (9.70 ft); Dec. 22 (3:30 p.m.) 4,120 cfs (7.49 ft); May 20 (2:45 a.m.) 3,200 cfs (6.85 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 2 discharge measurements and records for nearby stations.

Note.--Shifting-control method used Oct. 1-24, Dec. 15 to June 25.

Mineral Creek near Mineral, Wash.

Location.--Lat 46°44'20", long 122°08'40", in SW¼ sec. 35, T. 15 N., R. 5 E., on right bank three-eighths of a mile downstream from railroad bridge, 1 mile upstream from mouth, and 2½ miles northeast of Mineral.

Drainage area.--74.3 sq mi.

Records available.--June 1942 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,340 ft (from topographic map).

Average discharge.--14 years, 380 cfs (275,100 acre-ft per year).

Extremes.--Maximum discharge during year, 7,400 cfs Dec. 11 (gage height, 9.15 ft), from rating curve extended above 3,400 cfs; minimum, 33 cfs Sept. 24; minimum gage height, 2.20 ft Oct. 3.
1942-56: Maximum discharge, 7,600 cfs Dec. 9, 1953 (gage height, 9.02 ft), from rating curve extended above 3,400 cfs; minimum, 19.5 cfs Sept. 22, 23, Oct. 6-10, 13, 14, 1952; minimum gage height, 1.40 ft Sept. 22, 23, 1950.

Remarks.--Records good except those for periods of shifting control, which are fair, and those for period of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
2.2	63	4.0	680	1.9	34	3.6	430
2.4	95	4.5	1,010	2.1	51	4.0	640
2.7	158	5.0	1,430	2.3	72	4.5	980
3.0	239	6.0	2,600	2.5	100	5.0	1,430
3.3	342	7.0	4,050	2.7	136	6.0	2,600
3.6	470			3.0	205	7.0	4,050
				3.3	300		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	947	1,120	336	244	453	664	574	403	155	54	40
2	64	1,440	947	336	235	670	574	541	316	130	62	40
3	63	2,400	794	872	223	585	505	558	312	125	75	40
4	170	2,940	668	1,890	211	403	530	585	293	125	64	40
5	252	2,240	585	1,410	202	300	520	602	286	140	56	40
6	168	1,520	595	1,140	198	250	460	629	290	150	52	38
7	158	1,100	560	900	195	247	552	670	332	135	49	37
8	417	919	570	712	185	244	530	754	328	125	47	36
9	1,480	835	*638	580	180	205	546	823	320	120	*47	38
10	1,280	856	570	495	173	182	652	972	344	115	47	43
11	849	746	3,260	445	190	171	781	795	316	115	46	58
12	638	638	*3,860	421	300	166	802	634	259	110	46	48
13	510	555	1,640	470	235	166	*924	525	211	105	45	43
14	399	466	1,060	465	205	162	1,050	500	250	100	45	41
15	327	399	816	976	180	*171	1,030	563	250	98	44	40
16	285	366	706	1,250	180	180	932	742	244	92	44	40
17	245	320	590	1,040	180	188	823	972	262	85	45	39
18	219	623	500	964	173	241	788	*1,130	247	80	44	37
19	202	1,290	558	924	168	344	908	1,130	312	75	43	36
20	186	870	1,160	948	171	354	1,180	948	286	71	42	38
21	168	728	1,980	830	173	662	1,480	724	253	69	41	42
22	153	600	3,780	809	164	971	1,430	640	238	67	41	39
23	146	620	2,190	858	157	1,710	1,160	634	232	65	41	35
24	192	1,210	1,350	718	153	1,540	980	552	220	63	41	34
25	689	2,470	972	596	149	1,750	872	460	214	61	47	35
26	828	2,710	865	*515	149	1,480	872	455	202	60	65	36
27	692	2,560	712	445	149	1,000	844	403	202	58	52	43
28	*842	1,750	558	398	211	802	730	340	198	57	46	40
29	1,550	1,280	465	340	244	956	676	336	*190	56	44	46
30	1,850	1,180	390	296	------	908	618	412	178	55	42	66
31	1,270	----	336	259	------	823	------	465	------	55	41	------
Total	16,341	36,578	34,795	22,638	5,577	18,284	24,413	20,068	7,988	2,917	1,498	1,228
Mean	527	1,219	1,122	730	192	590	814	647	266	94.1	48.3	40.9
Cfsm	7.09	16.4	15.1	9.83	2.58	7.94	11.0	8.71	3.58	1.27	0.650	0.550
In.	8.18	18.31	17.42	11.33	2.79	9.15	12.22	10.04	4.00	1.46	0.75	0.61
Ac-ft	32,410	72,550	69,010	44,900	11,060	36,270	48,420	39,800	15,840	5,790	2,970	2,440

Calendar year 1955: Max 3,860 Min 43 Mean 515 Cfsm 6.93 In. 94.12 Ac-ft 372,900
Water year 1955-56: Max 3,860 Min 34 Mean 525 Cfsm 7.07 In. 96.26 Ac-ft 381,500

Peak discharge (base, 2,700 cfs).--Nov. 4 (3 p.m.) 3,190 cfs (6.42 ft); Nov. 26 (11:30 p.m.) 2,980 cfs (6.27 ft); Dec. 11 (9:15 p.m.) 7,400 cfs (9.15 ft); Dec. 22 (3 p.m.) 4,370 cfs (7.20 ft).
* Discharge measurement made on this day.
Note.--No gage-height record July 1 to Aug. 8; discharge estimated on basis of records for stations on nearby streams. Shifting-control method used Dec. 2-11, June 16 to Sept. 30.

Alder Reservoir at Alder, Wash.

Location.--Lat 46°48'05", long 122°18'30", in NW¼ sec. 9, T. 15 N., R. 4 E., near left end of Alder Dam on Nisqually River, 1 mile west of Alder and 4½ miles upstream from Mashel River.

Drainage area.--286 sq mi.

Records available.--November 1944 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 7.61 ft below mean sea level, datum of 1929 (levels by city of Tacoma). Prior to July 8, 1946, staff gage at same site and datum.

Extremes.--Maximum contents during year, 231,400 acre-ft July 30 (gage height, 1,206.92 ft); minimum, 138,700 acre-ft Mar. 20 (gage height, 1,171.36 ft).
1944-56: Maximum contents, 232,000 acre-ft Aug. 2, 1955 (gage height, 1,207.06 ft); minimum observed (since reservoir first filled), 93,990 acre-ft Feb. 16, 1949 (gage height, 1,147.61 ft).

Remarks.--Reservoir is formed by concrete arch dam; storage began Nov. 7, 1944; dam completed in 1945. Capacity, 99,170 acre-ft between gage heights 1,114 ft (lower limit of operating range) and 1,177 ft (gage height of spillway). Water can be controlled by spillway gates to gage height 1,207 ft, usable capacity, 179,600 acre-ft. Dead storage, 52,100 acre-ft. Figures given herein represent total contents. Water is used by city of Tacoma for power production.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Prepared by city of Tacoma from project surveys and maps)

1,170	135,800
1,180	158,300
1,190	183,300
1,200	210,800
1,207	231,700

Contents, in acre-feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205,000	222,000	218,100	222,300	214,600	162,000	178,400	205,600	228,600	230,500	228,600	225,300
2	203,300	224,700	218,400	223,800	212,600	163,000	178,700	205,600	226,200	230,500	227,400	225,300
3	201,300	224,700	219,600	224,700	210,600	164,000	178,400	205,600	224,700	230,200	226,200	225,300
4	199,800	224,700	220,200	224,100	208,500	164,000	178,200	205,600	224,400	229,900	226,200	224,400
5	198,400	221,700	220,200	221,100	206,800	163,000	177,600	206,500	224,400	229,900	226,200	223,500
6	196,600	220,800	220,800	220,500	204,400	161,600	176,600	207,600	224,100	230,200	225,900	222,900
7	195,200	220,800	221,100	219,000	202,400	160,100	176,100	208,500	224,700	229,600	226,200	221,400
8	196,300	222,300	221,700	220,500	200,100	158,700	175,900	210,000	225,000	229,600	226,800	221,400
9	205,000	224,400	222,900	220,800	197,800	157,100	175,400	210,800	225,300	230,200	227,100	221,100
10	211,400	227,400	223,500	220,500	195,500	155,200	175,600	212,900	226,200	230,500	227,400	219,900
11	213,700	224,100	227,400	220,500	194,700	153,600	176,900	213,700	227,100	229,300	228,000	219,000
12	214,900	219,000	224,100	220,500	194,200	151,500	177,900	214,000	227,100	229,900	228,600	217,500
13	214,900	216,100	225,000	220,800	192,900	149,900	180,000	213,700	226,800	230,800	229,000	216,400
14	214,600	215,800	223,800	221,100	191,000	147,800	182,200	214,000	226,500	229,600	228,600	214,900
15	214,600	214,600	223,500	224,700	188,700	145,600	181,000	214,900	226,800	229,000	228,000	214,300
16	214,600	213,700	224,700	224,700	186,100	143,700	179,700	216,900	226,500	229,000	227,100	213,200
17	213,700	212,300	225,600	220,800	184,000	141,800	180,500	221,100	226,800	229,300	225,300	212,000
18	212,900	212,900	225,300	220,500	182,500	140,000	181,700	224,400	226,800	229,900	224,700	210,300
19	212,000	216,600	225,600	221,700	181,000	139,600	183,500	225,600	227,700	231,100	224,700	207,900
20	210,600	218,100	225,000	222,900	179,200	138,700	186,800	225,900	228,600	230,200	225,000	205,000
21	209,400	218,100	225,000	223,500	177,100	139,400	191,800	223,800	228,600	229,300	225,300	204,200
22	208,200	217,800	227,400	224,100	175,400	141,800	196,600	222,600	228,300	229,900	225,600	203,600
23	207,400	217,500	222,900	223,200	173,000	148,800	200,100	222,300	227,700	230,800	226,200	203,600
24	206,200	221,400	219,300	223,500	171,000	154,800	202,100	221,700	226,800	231,100	225,900	202,700
25	210,600	226,500	219,600	223,500	169,000	162,300	203,300	221,700	226,800	231,100	226,200	202,400
26	212,900	226,800	221,400	223,200	167,000	167,700	204,400	223,200	227,100	231,100	226,500	201,800
27	214,000	222,600	222,300	222,000	165,000	170,000	205,300	224,100	228,000	230,500	226,200	201,000
28	215,800	221,700	222,600	221,100	164,000	171,500	205,900	224,400	229,300	230,800	225,600	199,800
29	222,300	221,100	221,400	220,200	162,800	173,600	205,900	224,400	230,200	231,100	225,000	198,900
30	223,800	219,600	220,800	218,700	-------	175,600	205,600	226,200	230,500	230,500	225,000	198,600
31	222,300	-------	220,800	216,600	-------	177,400	-------	228,600	-------	229,600	225,000	-------
(†)	1,203.87	1,203.03	1,203.40	1,202.00	1,181.91	1,187.67	1,198.20	1,208.02	1,206.59	1,206.31	1,204.84	1,195.82
(‡)	+15,200	-2,700	+1,200	-4,200	-53,800	+14,600	+28,200	+23,000	+1,900	-900	-4,600	-26,400

Calendar year 1955..... ‡ +300
Water year 1955-56..... ‡ -8,500

† Elevation, in feet, at end of month.
‡ Change in contents in acre-feet.

La Grande Reservoir at La Grande, Wash.

Location.--Lat 46°49'20", long 122°18'10", in SE¼ sec. 33, T. 16 N., R. 4 E., at left end of gate control structure, 1 mile southeast of La Grande and 1½ miles downstream from Alder Dam.

Drainage area.--289 sq mi.

Records available.--January 1945 to September 1956. January 1945 to September 1951 included in combined adjustment to monthly flow of Nisqually River at La Grande. Month-end contents January 1945 to September 1950 published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 7.61 ft below mean sea level, datum of 1929 (levels by city of Tacoma). Prior to June 12, 1947, month-end gage heights furnished by city of Tacoma from temporary gages in pool above dam.

Extremes.--Maximum contents during year, 2,589 acre-ft Mar. 7 (gage height, 933.3 ft); minimum observed, 1,370 acre-ft Aug. 24 (gage height, 900.0 ft).
1947-56: Maximum contents, 2,760 acre-ft May 14, 1950 (gage height, 936.4 ft); minimum observed (since reservoir first filled), that of Aug. 24, 1956.

Remarks.--Reservoir is formed by concrete dam completed in 1944; storage began February 1945. Usable storage, 1,050 acre-ft between gage heights 910 ft (minimum practical head) and 935 ft (normal reservoir level). Dead storage, 1,630 acre-ft. Figures given herein represent total contents. Water used by city of Tacoma for power production.

Month-end gage height and total contents, water year October 1955 to September 1956

Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	927.3	2,284	-
Oct. 31	929.0	2,367	+83
Nov. 30	927.2	2,280	-87
Dec. 31	929.3	2,382	+102
Calendar year 1955	-	-	-76
Jan. 31	928.2	2,328	-54
Feb. 29	921.9	2,045	-283
Mar. 31	928.9	2,362	+317
Apr. 30	926.1	2,228	-134
May 31	926.3	2,237	+9
June 30	931.7	2,504	+267
July 31	927.2	2,280	-224
Aug. 31	931.3	2,484	+204
Sept.30	928.6	2,347	-137
Water year 1955-56	-	-	+63

† Gage height at 12 p.m.

Nisqually River at La Grande, Wash.

Location.--Lat 46°50'30", long 122°19'35", in SE¼ sec. 29, T. 16 N., R. 4 E., on right bank half a mile downstream from city of Tacoma powerplant, half a mile northwest of La Grande, and three-quarters of a mile upstream from Mashel River.

Drainage area.--292 sq mi.

Records available.--September 1906 to October 1911, November and December 1911 (gage heights only), October 1919 to September 1931, October 1943 to September 1956. Monthly discharge only for some periods, published in WSP 1316. Published as "below Little Nisqually River, near La Grande" 1906-10, and as "near La Grande" 1912, 1919-31.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from river-profile map). Sept. 5, 1906, to Sept. 8, 1910, staff gage just below site of diversion dam 4 miles upstream at different datum. January 1910 to December 1911, staff gage at La Grande powerhouse site; datum at mean sea level (levels by city of Tacoma). January 1920 to September 1931 water-stage recorder at approximately same site as that of first staff gage at datum 921.17 ft above mean sea level (levels by city of Tacoma). Dec. 7, 1943, to Feb. 8, 1945, water-stage recorder 600 ft downstream from La Grande powerhouse at different datum.

Average discharge.--30 years (1906-11, 1919-31, 1943-56), 1,375 cfs (995,500 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 19,200 cfs Dec. 12 (gage height, 9.37 ft); minimum, 434 cfs Nov. 18 (gage height, 2.72 ft); minimum daily, 455 cfs Sept. 23.
1906-11, 1919-31, 1943-56: Maximum discharge, 19,500 cfs Dec. 12, 1921 (includes flow in power conduit); practically no flow on many occasions at site near La Grande as result of regulation.

Remarks.--Records good except those for period Dec. 12-21, which are fair. Flow regulated by city of Tacoma powerplant at La Grande since December 1943, by Alder Reservoir (see p. 66) since November 1944, and by La Grande Reservoir (see preceding page) since February 1945. All diversions returned to river above gage.

Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1927-28(M), 1949-50.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,390	3,040	4,670	823	1,920	1,640	1,580	1,810	3,390	1,320	1,200	612
2	1,360	2,890	2,910	1,040	1,870	1,590	1,690	1,850	3,890	*1,290	1,490	534
3	1,510	7,020	1,920	2,790	1,880	1,480	1,750	1,880	3,440	1,370	1,290	492
4	1,660	9,820	1,820	6,430	1,800	1,490	1,730	1,870	2,470	1,290	664	786
5	1,690	8,990	2,040	6,620	1,720	1,720	1,850	1,520	1,960	1,300	516	958
6	1,590	5,030	1,730	4,350	1,800	1,770	1,940	1,470	2,000	1,300	869	834
7	1,500	*3,170	1,730	4,100	1,800	1,730	1,840	1,780	1,660	1,670	583	1,210
8	1,300	2,010	1,860	1,620	1,840	1,750	1,590	1,830	1,950	1,550	*537	708
9	876	1,970	1,600	1,760	1,780	1,760	1,820	2,230	1,960	1,330	514	720
10	1,720	4,250	1,630	1,820	1,740	1,690	1,740	2,230	1,960	1,780	666	1,170
11	1,790	5,520	7,740	1,580	1,340	1,550	1,650	2,230	1,890	2,180	521	984
12	1,690	5,500	*15,000	1,410	1,360	*1,590	*1,670	2,230	1,970	1,600	521	1,060
13	1,740	3,610	5,090	1,530	1,640	1,550	1,750	2,150	1,990	1,240	672	1,070
14	1,750	1,910	4,020	1,540	1,720	1,640	2,070	1,570	2,000	2,040	1,160	904
15	1,360	1,940	2,720	1,130	1,780	1,710	3,940	1,510	2,020	1,620	1,270	678
16	1,200	1,980	1,690	4,310	1,950	1,700	3,640	1,630	2,000	1,270	1,320	1,140
17	1,510	1,860	1,600	5,700	1,760	1,730	2,080	1,670	2,020	1,140	1,480	1,040
18	1,510	1,650	1,600	3,460	1,500	1,730	1,670	3,160	2,070	1,030	1,020	1,230
19	1,470	1,630	1,950	2,020	1,470	1,740	1,610	4,790	2,100	912	820	1,590
20	1,560	1,600	5,900	*2,160	1,580	1,650	1,680	4,740	1,970	2,260	732	1,890
21	1,470	1,860	*7,750	2,130	1,670	1,750	1,960	5,020	1,990	2,210	747	*857
22	1,280	1,830	11,200	2,120	1,570	1,890	1,970	4,030	1,990	1,270	756	574
23	1,130	1,900	11,000	3,350	1,740	1,890	2,050	3,340	1,990	748	798	455
24	1,640	1,400	7,280	1,990	1,680	1,810	2,210	3,390	1,960	1,080	656	760
25	2,180	3,970	3,660	1,790	1,590	1,690	2,210	*2,490	1,450	1,250	683	714
26	2,180	7,550	2,470	1,890	1,560	1,790	2,230	1,790	1,170	1,120	726	755
27	1,850	10,400	2,200	1,880	1,670	1,820	2,230	1,890	1,150	1,140	738	838
28	1,770	6,320	2,150	1,830	1,690	1,700	2,170	1,890	1,090	885	750	942
29	2,000	4,580	2,540	1,740	1,690	1,720	2,240	1,990	1,250	582	724	862
30	5,880	4,800	1,860	1,790	-------	1,830	2,170	1,840	1,250	1,210	654	736
31	5,190	-------	1,540	1,930	-------	1,670	-------	2,050	-------	1,170	582	-------
Total	56,746	120,000	122,870	78,633	49,110	52,770	60,730	73,870	60,000	42,157	25,659	27,103
Mean	1,831	4,000	3,964	2,537	1,693	1,702	2,024	2,383	2,000	1,360	828	903
Ac-ft	112,600	238,000	243,700	156,000	97,410	104,700	120,500	146,500	119,000	83,620	50,890	53,760
(†)	+15,280	-2,790	+1,300	-4,250	-54,080	+14,920	+28,070	+23,010	+2,170	-1,120	-4,400	-26,540

Adjusted for change in reservoir contents

Mean	2,080	3,953	3,985	2,469	753	1,945	2,497	2,757	2,037	1,342	756	457
Cfsm	7.12	13.5	13.6	8.46	2.58	6.66	8.55	9.44	6.98	4.60	2.59	1.57
In.	8.21	15.10	15.73	9.75	2.78	7.68	9.54	10.88	7.78	5.30	2.99	1.75
Ac-ft	127,900	235,200	245,000	151,800	43,330	119,600	148,600	169,500	121,200	82,500	46,490	27,220

Observed

Calendar year 1955: Max 15,000 Min 532 Mean 1,971 Ac-ft 1,427,000
Water year 1955-56: Max 15,000 Min 455 Mean 2,103 Ac-ft 1,527,000

Adjusted

Calendar year 1955: Mean 1,971 Cfsm 6.75 In. 91.62 Ac-ft 1,427,000
Water year 1955-56: Mean 2,092 Cfsm 7.16 In. 97.49 Ac-ft 1,518,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Alder and La Grande Reservoirs.

Mashel River near La Grande, Wash.

Location.--Lat 46°51'25", long 122°18'05", in NW¼SE¼ sec. 21, T. 16 N., R. 4 E., on right bank 50 ft below bridge, 1¾ miles northeast of La Grande, and 3¼ miles upstream from mouth.

Drainage area.--80.7 sq mi.

Records available.--October 1940 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 619.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--16 years, 232 cfs (168,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,760 cfs Dec. 21 (gage height, 7.80 ft); minimum, 15 cfs Sept. 10 (gage height, 2.56 ft).
1940-56: Maximum discharge, 7,980 cfs Dec. 11, 1946 (gage height, 9.30 ft), from rating curve extended above 3,200 cfs; minimum, 4.5 cfs Sept. 24, 1952 (gage height, 1.72 ft).

Remarks.--Records fair except those below 50 cfs, which are poor. Small diversion for city of Eatonville water supply. Some regulation at low water by millpond in Eatonville.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1948.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-8, Dec. 26 to Apr. 21)

Oct. 1 to Dec. 21				Dec. 22 to Sept. 30			
3.0	35	3.8	156	2.5	12	4.0	229
3.2	54	4.0	213	2.7	24	4.3	325
3.4	78	4.3	318	2.9	39	4.6	450
3.6	111	4.6	450	3.1	58	5.0	670
				3.3	82	5.5	1,020
Note.--Same as following table above 4.6 ft.				3.5	114	6.0	1,450
				3.7	154	7.0	2,620

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	533	821	333	148	349	511	221	144	82	23	27
2	40	682	676	349	147	588	423	197	122	77	27	24
3	40	919	538	905	146	646	361	190	125	72	50	21
4	122	1,120	412	1,160	146	460	381	194	144	67	29	21
5	213	926	381	1,080	163	325	377	218	152	70	26	21
6	111	628	417	1,100	172	255	311	221	148	92	24	24
7	86	465	450	793	200	277	385	252	161	76	*24	21
8	177	412	*480	577	202	304	377	249	156	66	23	18
9	1,040	391	506	446	184	241	369	261	163	64	21	17.5
10	1,080	891	422	369	170	200	450	311	216	61	21	17.5
11	522	610	1,550	333	180	170	550	274	287	59	20	42
12	314	417	2,250	290	377	*156	*538	229	197	56	20	38
13	216	322	1,040	318	294	168	594	194	154	52	18.5	29
14	156	235	694	325	224	170	652	175	195	47	18.5	*24
15	126	204	560	730	166	187	599	180	381	42	19.5	23
16	107	198	511	758	148	216	495	229	418	38	18.5	21
17	92	170	436	577	159	249	410	308	446	35	18	19.5
18	82	261	372	500	152	337	393	353	314	33	17.5	19.5
19	78	985	500	*465	141	441	460	341	538	30	17	18
20	75	485	1,670	414	170	418	582	294	550	28	17	18.5
21	68	359	2,270	389	221	658	688	221	373	27	17	23
22	65	288	2,500	357	197	835	622	184	268	27	17	19.5
23	63	280	1,510	511	168	1,660	475	192	207	27	17.5	17.5
24	68	633	1,080	423	156	1,380	373	175	172	26	17.5	18
25	424	1,700	828	353	154	1,730	318	*150	146	25	22	19.5
26	634	1,800	765	284	150	1,240	318	154	127	24	97	22
27	470	1,860	652	249	152	786	304	159	114	24	70	39
28	470	1,100	500	226	377	610	308	133	*109	23	48	28
29	828	863	393	205	405	706	314	124	100	23	38	35
30	1,020	891	325	177	------	688	255	146	92	23	35	48
31	*676	------	284	154	------	634	------	163	------	23	29	------
Total	9,509	20,628	25,793	15,150	5,669	17,084	13,193	6,692	6,719	1,419	860.5	734.0
Mean	307	688	832	489	195	551	440	216	224	45.8	27.8	24.5
Cfsm	3.80	8.53	10.3	6.06	2.42	6.83	5.45	2.68	2.78	0.568	0.344	0.304
In.	4.38	9.51	11.89	6.98	2.61	7.87	6.08	3.08	3.10	0.65	0.40	0.34
Ac-ft	18,860	40,920	51,160	30,050	11,240	33,890	26,170	13,270	13,330	2,810	1,710	1,460

Calendar year 1955: Max 2,500 Min 29 Mean 331 Cfsm 4.10 In. 55.66 Ac-ft 239,600
Water year 1955-56: Max 2,500 Min 17 Mean 337 Cfsm 4.18 In. 56.89 Ac-ft 244,900

Peak discharge (base, 1,500 cfs).--Nov. 19 (4 a.m.) 1,530 cfs (6.08 ft); Nov. 27 (3 a.m.) 2,270 cfs (6.73 ft); Dec. 11 (10:30 p.m.) 3,600 cfs (7.69 ft); Dec. 21 (7 p.m.) 3,760 cfs (7.80 ft); Mar. 23 (7 to 9 p.m.) 1,990 cfs (6.70 ft).
* Discharge measurement made on this day.

Ohop Creek near Eatonville, Wash.

Location.--Lat 46°52'50", long 122°16'45", in SE¼ sec. 10, T. 16 N., R. 4 E., on left bank 400 ft downstream from Lynch Creek, 600 ft downstream from outlet of Ohop Lake, and 1 mile northwest of Eatonville.

Drainage area.--35.5 sq mi.

Records available.--June 1927 to September 1932, September 1941 to September 1956.

Gage.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft above mean sea level (stadia traverse). June 1, 1927, to Sept. 30, 1932, water-stage recorder at same site at datum 2.79 ft higher. Sept. 6, 1941, to Mar. 17, 1942, staff gage at present site and datum.

Average discharge.--20 years, 66.8 cfs (48,360 acre-ft per year).

Extremes.--Maximum discharge during year, 824 cfs Dec. 12 (gage height, 4.29 ft); minimum, 7.5 cfs Aug. 12 (gage height, 1.64 ft).
1927-32, 1941-56: Maximum discharge, 1,740 cfs Dec. 9, 1953; maximum gage height, 5.97 ft Dec. 11, 1946; minimum, 2.3 cfs Aug. 22, 23, 1944; minimum gage height observed, 1.12 ft Sept. 26, 1947.

Remarks.--Records good except those below 6 cfs, which are fair. Possible small diversions for domestic use. Natural regulation in Ohop Lake.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1946.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12-22)

1.6	5.9	2.4	87
1.7	10	2.7	147
1.8	16.5	3.0	225
1.9	24	3.5	400
2.1	44	4.2	720

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19.5	200	283	159	76	136	154	48	18.5	23	7.9	13
2	18	200	266	154	73	217	136	44	16.5	22	9.2	11.5
3	19	211	240	189	68	243	121	42	20	22	12.5	12
4	58	194	194	205	68	200	125	42	25	21	12.5	11.5
5	57	184	174	228	74	164	121	48	27	22	12	10.5
6	43	154	164	280	81	138	111	46	33	26	9.7	10
7	38	132	176	280	91	129	109	46	33	25	8.3	9.7
8	45	117	*184	234	94	*132	109	42	29	23	*8.3	9.7
9	148	107	197	205	89	119	100	40	27	22	7.9	9.7
10	214	138	166	187	84	105	101	42	43	21	7.9	11.5
11	154	119	421	171	85	92	103	42	61	19.5	7.9	19.5
12	119	101	705	164	161	87	98	42	46	18	7.9	18
13	92	87	448	157	140	89	98	40	39	18	7.9	16.5
14	76	73	318	149	121	91	98	36	42	17	7.9	*15
15	67	64	249	205	98	92	92	35	67	16.5	7.9	14.5
16	58	61	222	208	87	96	84	32	81	15	7.9	13
17	49	57	203	189	84	105	76	*31	76	14.5	8.3	12.5
18	46	64	189	179	79	125	74	30	61	14	7.9	12
19	40	193	187	*169	74	140	74	28	112	14	7.9	12
20	36	166	322	149	77	136	79	26	109	13	7.9	11.5
21	31	159	*396	140	84	171	82	26	89	13	7.9	11.5
22	29	147	432	132	87	189	76	29	73	12.5	7.9	11.5
23	26	136	376	166	82	269	*65	30	60	12	7.9	11.5
24	28	142	308	157	77	294	57	26	51	11.5	7.9	10.5
25	106	290	258	143	76	372	54	25	44	10	11	10.5
26	149	494	237	132	79	336	53	25	38	10	31	12.5
27	145	561	222	119	81	249	50	26	34	9.7	24	17
28	140	380	203	111	121	203	53	22	*30	9.2	20	16.5
29	186	318	189	103	136	194	54	21	27	9.2	18	18.5
30	228	290	176	92	------	181	50	20	25	9.2	16	25
31	*222	-----	166	82	-----	171	-----	19.5	------	8.8	14.5	------
Total	2,686.5	5,539	8,271	5,238	2,627	5,265	2,657	1,051.5	1,439.0	501.6	341.7	398.6
Mean	86.7	185	267	169	90.6	170	88.6	33.9	48.0	16.2	11.0	13.3
Cfsm	2.44	5.21	7.52	4.76	2.55	4.79	2.50	0.955	1.35	0.456	0.310	0.375
In.	2.81	5.80	8.66	5.49	2.75	5.52	2.78	1.10	1.51	0.53	0.36	0.42
Ac-ft	5,330	10,990	16,410	10,390	5,210	10,440	5,270	2,090	2,850	995	678	791

Calendar year 1955 : Max 705 Min 4.8 Mean 95.9 Cfsm 2.70 In. 36.68 Ac-ft 69,460
Water year 1955-56 : Max 705 Min 7.9 Mean 98.4 Cfsm 2.77 In. 37.73 Ac-ft 71,440

Peak discharge (base, 270 cfs).--Oct. 10 (12:30 a.m.) 308 cfs (3.26 ft); Nov. 27 (2 a.m., 3:30 a.m.) 645 cfs (4.02 ft); Dec. 12 (12:05 a.m.) 824 cfs (4.29 ft); Dec. 21 (6:20 p.m.) 610 cfs (3.88 ft); Jan. 6 (6 p.m.) 311 cfs (3.22 ft); Mar. 3 (3:30 a.m.) 276 cfs (3.16 ft); Mar. 25 (5:30 p.m.) 404 cfs (3.51 ft).
* Discharge measurement made on this day.

Nisqually River near McKenna, Wash.

Location.--Lat 46°51'20", long 122°27'10", in SE¼ sec. 20, T. 16 N., R. 3 E., on right bank 800 ft downstream from Elbow Creek, three-quarters of a mile upstream from Tanwax Creek, and 7.4 miles southeast of McKenna.

Drainage area.--445 sq mi.

Records available.--August 1941 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 373.6 ft above mean sea level (stadia traverse). Prior to Sept. 30, 1941, staff gage at same site and datum.

Average discharge.--15 years, 1,789 cfs (1,295,000 acre-ft per year).

Extremes.--Maximum discharge during year, 20,800 cfs Dec. 12 (gage height, 12.06 ft); minimum, 480 cfs Sept. 2 (gage height, 3.42 ft); minimum daily, 520 cfs Aug. 12.
1941-56: Maximum discharge, that of Dec. 12, 1955; minimum, 85 cfs Oct. 19, 1945 (gage height, 2.57 ft); minimum daily, 176 cfs Jan. 30, 1945.

Remarks.--Records excellent. No diversion. Yelm Irrigation District Canal, abandoned in 1950, formerly diverted water 3.6 miles above station. Major portion of flow regulated by Alder Reservoir and city of Tacoma powerplant at La Grande.

Revisions (water years).--WSP 1286: 1947.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
4.7	1,180	3.5	520	6.0	2,800
5.0	1,440	4.0	800	7.0	4,450
5.5	1,950	4.5	1,170	8.5	7,850
6.0	2,590	5.0	1,620	10.0	12,300
7.0	4,350	5.5	2,160	12.0	20,500
8.5	7,850				
10.0	12,300				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,510	*3,830	5,720	1,400	2,230	2,290	2,450	2,080	3,180	1,420	1,260	675
2	1,450	3,480	4,210	1,570	2,270	2,620	2,390	2,140	3,740	1,400	1,550	602
3	1,560	6,820	2,870	3,670	2,210	2,670	2,420	2,110	3,420	*1,460	1,440	540
4	1,820	9,520	2,530	6,730	2,140	2,400	2,410	2,140	2,730	1,410	810	794
5	1,980	8,920	2,660	6,950	2,070	2,390	2,500	1,920	2,180	1,410	555	1,030
6	1,820	5,540	2,440	5,490	2,180	2,350	2,410	1,750	2,240	1,450	892	946
7	1,680	3,950	2,510	5,170	2,180	2,290	2,430	2,040	1,890	1,740	603	1,270
8	1,570	2,620	2,640	2,750	2,260	2,390	2,300	2,060	2,160	1,740	570	794
9	2,010	2,460	2,550	2,630	2,210	2,330	2,370	2,560	2,190	1,480	528	792
10	3,220	4,770	2,280	2,550	2,120	2,160	2,410	2,600	2,250	1,760	*677	1,250
11	2,720	5,730	6,900	2,350	1,800	1,970	2,400	2,570	2,290	2,390	526	1,120
12	2,260	5,540	17,000	1,950	2,040	*2,090	2,410	2,500	2,270	1,710	520	1,180
13	2,180	4,040	*7,560	2,100	2,200	1,910	2,500	2,480	2,230	1,310	644	1,220
14	2,100	2,250	5,290	2,170	2,230	2,030	2,670	1,800	2,230	2,010	1,120	1,010
15	1,680	2,210	4,380	2,280	2,190	2,070	4,460	1,730	2,490	1,850	1,400	796
16	1,460	2,210	2,990	4,730	2,330	*2,110	4,070	1,880	2,490	1,390	1,360	1,220
17	1,700	2,180	2,800	5,790	2,200	2,180	2,780	2,030	2,540	1,180	1,550	1,220
18	1,700	1,970	2,660	4,240	1,860	2,260	*2,140	2,960	2,450	1,110	1,100	1,250
19	1,620	2,880	2,990	2,850	1,890	2,450	2,210	4,680	2,740	930	875	1,710
20	1,690	2,390	7,510	2,960	1,960	2,290	2,360	4,520	2,690	2,140	805	2,200
21	1,610	2,410	9,620	2,860	2,110	2,600	2,790	4,740	2,490	2,330	779	1,020
22	1,430	2,320	12,000	2,810	2,020	3,020	2,740	3,970	2,380	1,520	792	680
23	1,250	2,300	10,700	*3,980	2,110	3,800	2,650	3,440	2,300	788	825	535
24	1,690	2,140	7,560	2,830	2,090	3,750	2,690	3,420	2,230	1,070	732	834
25	2,590	5,320	4,800	2,460	1,990	3,840	2,620	2,710	1,730	1,310	708	802
26	3,060	8,460	3,670	2,480	1,970	3,710	2,620	2,010	1,310	1,160	892	838
27	2,630	11,600	3,320	2,420	2,010	3,110	2,620	2,110	1,260	1,220	880	958
28	2,470	8,160	3,020	2,300	2,400	2,740	2,570	*2,080	1,210	928	861	*998
29	2,860	5,700	3,150	2,200	2,440	2,810	2,650	2,170	1,360	657	846	994
30	6,360	5,870	2,550	2,150	------	2,880	2,560	2,040	1,330	1,160	734	905
31	5,710	------	2,230	2,290	------	2,710	------	2,240	------	1,230	644	------
Total	69,390	137,590	153,090	99,110	61,710	80,220	78,600	79,480	68,000	44,663	27,478	30,183
Mean	2,238	4,586	4,938	3,197	2,128	2,588	2,620	2,564	2,267	1,441	886	1,006
Ac-ft	137,600	272,900	303,600	196,600	122,400	159,100	155,900	157,600	134,900	88,590	54,500	59,870

Calendar year 1955: Max 17,000 Min 526 Mean 2,414 Ac-ft 1,748,000
Water year 1955-56: Max 17,000 Min 520 Mean 2,540 Ac-ft 1,844,000

* Discharge measurement made on this day.

Nisqually River at McKenna, Wash.

Location.--Lat 46°56'00", long 122°33'35", in SE¼NW¼ sec. 28, T. 17 N., R. 2 E., on left bank 100 ft downstream from highway bridge at McKenna and 9.0 miles downstream from Tanwax Creek.
Drainage area.--517 sq mi.
Records available.--October 1947 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 275 ft (from topographic map).
Extremes.--Maximum discharge during year, 20,200 cfs Dec. 12 (gage height, 12.38 ft), from rating curve extended above 9,900 cfs; minimum, 51 cfs Sept. 3, 4 (gage height, 1.00 ft). 1947-56: Maximum discharge, that of Dec. 12, 1955; minimum, 42 cfs Sept. 19, 1948 (gage height, 0.98 ft).
Remarks.--Records good. Major portion of flow regulated by Alder Reservoir and city of Tacoma powerplants at Alder Dam and at La Grande. Centralia power canal diverts 4.4 miles above station; water is returned to river at powerplant 4.5 miles below station. Periodic measurements of flow in the power canal made at sites half a mile, three-quarters of a mile, and 1¼ miles, below head, are given in the following table:

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Centralia power canal.	Diverts from left side Nisqually River.	NW¼ sec. 1, T. 16 N., R. 2 E., ½ mile below head and 3½ miles southeast of McKenna.	-	1945-55	Nov. 8	538
					Dec. 21	594
					Jan. 23	595
Do.....	....do.....	SW¼ sec. 36, T. 16 N., R. 2 E., ¾ mile below head and 3¼ miles southeast of McKenna.	-		Mar. 27	608
					Apr. 18	602
					Sept.28	628
Do.....	....do.....	SW¼ sec. 35, T. 16 N., R. 2 E., 1¼ miles below head and 2¼ miles southeast of McKenna.	-		May 29	631
					July 3	608
					Aug. 10	66.3

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
2.7	730	1.1	64	4.0	2,050
3.0	970	1.3	96	4.5	2,670
3.5	1,450	1.5	140	5.0	3,350
4.0	2,000	1.7	201	6.0	4,880
5.0	3,270	2.0	335	8.0	8,570
6.0	4,850	2.5	640	10.0	13,400
7.5	7,550	3.0	1,030	12.0	19,000
9.0	10,900	3.5	1,500		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	978	*3,420	5,410	1,140	1,880	1,890	2,090	1,580	2,380	886	670	115
2	942	2,830	4,100	1,110	1,890	2,210	1,990	1,640	3,090	870	876	128
3	1,040	5,720	2,710	2,870	1,840	2,250	2,000	1,590	2,810	*926	897	75
4	1,290	8,590	2,340	6,010	1,760	2,080	1,950	1,640	2,170	886	356	167
5	1,410	8,230	2,400	7,180	1,700	2,030	2,040	1,440	1,590	910	118	430
6	1,280	5,100	2,170	5,240	1,790	1,970	1,960	1,250	1,650	926	402	424
7	1,200	3,750	2,250	5,090	1,810	1,900	1,980	1,530	1,360	1,090	205	656
8	1,070	2,270	2,330	2,800	1,890	2,010	1,890	1,550	1,540	1,240	546	281
9	1,410	2,070	2,340	2,400	1,820	1,940	1,860	1,990	1,580	908	518	272
10	2,420	3,600	1,940	2,280	1,720	1,780	1,920	2,050	1,650	982	*430	585
11	2,170	5,100	5,380	2,170	1,470	1,590	1,910	2,030	1,740	2,040	98	587
12	1,710	4,880	17,800	1,650	1,640	1,700	1,900	1,970	1,720	1,000	88	628
13	1,660	3,850	*7,980	1,820	1,780	1,470	1,980	1,930	1,680	847	122	648
14	1,560	1,870	4,610	1,870	1,840	1,590	1,970	1,320	1,630	1,150	414	436
15	1,310	1,800	4,070	1,980	1,780	1,620	3,720	1,220	1,890	1,280	810	286
16	1,090	1,780	2,560	4,050	1,890	*1,670	3,570	1,380	1,920	760	725	541
17	1,150	1,810	2,340	5,380	1,800	1,730	2,430	1,480	1,980	594	887	693
18	1,220	1,530	2,160	4,090	1,420	1,810	*1,730	2,110	1,890	526	565	584
19	1,160	2,400	2,290	2,550	1,520	1,970	1,720	3,990	2,110	350	376	1,050
20	1,140	2,030	6,060	*2,630	1,510	1,860	1,860	3,750	2,110	1,290	286	1,530
21	1,160	2,000	9,120	2,570	1,700	2,080	2,260	4,090	1,910	1,550	232	585
22	974	1,920	12,000	2,510	1,650	2,500	2,230	3,320	1,790	990	234	216
23	796	1,870	11,700	3,630	1,710	3,240	2,090	2,820	1,710	292	271	90
24	1,120	1,780	7,810	2,660	1,690	3,330	2,130	2,820	1,620	396	238	264
25	1,910	4,340	4,760	2,220	1,600	3,380	2,070	2,330	1,260	646	153	271
26	2,540	7,610	3,380	2,220	1,560	3,410	2,080	1,500	742	557	324	*300
27	2,150	10,700	3,100	2,140	1,590	2,780	2,060	1,510	732	606	318	392
28	1,910	8,370	2,750	2,010	1,920	2,400	2,060	*1,520	707	387	296	450
29	2,220	5,390	2,830	1,930	2,000	2,440	2,100	1,600	792	186	309	464
30	5,340	5,510	2,240	1,820	-	2,480	2,020	1,450	777	430	230	436
31	5,160		2,010	1,950	-	2,370	------	1,620	------	646	136	------
Total	52,490	122,120	144,940	89,970	50,170	67,480	63,570	62,020	50,530	26,147	12,130	13,584
Mean	1,693	4,071	4,675	2,902	1,730	2,177	2,119	2,001	1,684	843	391	453
Ac-ft	104,100	242,200	287,500	178,500	99,510	133,800	126,100	123,000	100,200	51,860	24,060	26,940

Calendar year 1955: Max 17,800 Min 116 Mean 2,007 Ac-ft 1,453,000
Water year 1955-56: Max 17,800 Min 75 Mean 2,063 Ac-ft 1,498,000

* Discharge measurement made on this day.

Chambers Creek below Leach Creek, near Steilacoom, Wash.

Location.--Lat 47°11'55", long 122°31'40", in NE¼NE¼ sec. 27, T. 20 N., R. 2 E., on left bank a quarter of a mile downstream from Leach Creek, 1½ miles downstream from outlet of Steilacoom Lake, and 4 miles northeast of Steilacoom.

Drainage area.--104 sq mi.

Records available.--December 1937 to September 1940, July 1943 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--15 years (1938-40, 1943-56), 115 cfs (83,260 acre-ft per year).

Extremes.--Maximum discharge during year, 792 cfs Jan. 5 (gage height, 3.58 ft); minimum, 36 cfs Sept. 8; minimum gage height, 1.19 ft Oct. 1.
1937-40, 1943-56: Maximum discharge, that of Jan. 5, 1956; minimum, 31 cfs Oct. 9-12, 1952 (gage height, 0.71 ft).

Remarks.--Records excellent except those for periods of no gage-height record or shifting control, which are fair. Some regulation by gates at outlet of Steilacoom Lake. Some diversions from tributaries for domestic use and for use of Army air base above station.

Rating tables, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 14		Jan. 15 to Sept. 30	
1.2	43	1.3	31
1.4	85	1.6	70
1.6	135	2.0	150
2.0	252	2.5	280
2.5	410	3.0	440
3.2	650	3.5	615

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	59	204	511	337	198	240	160	105	87	62	42
2	59	81	210	535	325	202	235	142	105	85	67	42
3	53	76	210	590	313	218	230	135	107	82	68	42
4	55	74	207	587	301	230	225	140	105	82	67	42
5	55	67	213	640	295	238	225	145	103	85	66	42
6	55	67	231	562	286	235	220	145	103	*82	64	41
7	57	*67	234	562	280	245	220	145	105	82	64	41
8	59	70	234	608	274	248	215	145	107	79	62	40
9	70	67	237	580	265	*253	210	135	111	79	61	47
10	61	67	240	548	256	256	205	130	117	78	61	50
11	57	67	298	562	248	250	205	125	111	76	61	52
12	57	65	311	556	245	245	200	119	109	76	61	51
13	57	65	343	566	238	240	200	115	107	76	60	51
14	55	65	349	573	230	235	195	119	109	74	60	50
15	53	65	372	573	225	230	190	119	109	74	*58	50
16	53	65	359	528	220	225	190	119	107	74	58	50
17	53	65	333	454	218	220	185	115	105	73	56	48
18	53	78	314	444	212	218	185	103	103	72	56	48
19	53	99	302	444	208	215	180	103	105	67	56	48
20	53	85	375	412	208	220	180	117	103	66	56	48
21	53	83	420	444	412	225	175	130	101	66	55	47
22	53	81	474	444	208	230	175	121	99	66	54	46
23	51	87	*499	422	208	240	*172	117	99	64	54	46
24	*63	99	514	440	208	250	170	113	97	60	54	46
25	70	122	508	436	208	250	168	111	97	58	54	48
26	59	138	511	430	205	240	168	113	97	61	55	50
27	57	149	531	*408	200	230	168	109	95	62	54	48
28	57	149	526	405	198	230	168	107	93	62	52	47
29	70	*163	497	398	195	230	165	107	91	62	52	48
30	61	186	511	*370	------	240	162	107	89	62	52	50
31	59	------	508	352	------	240	------	*105	------	62	52	------
Total	1,776	2,671	11,077	15,384	7,026	7,226	5,826	3,816	3,094	2,234	1,812	1,401
Mean	57.3	89.0	357	496	242	233	194	123	103	72.1	58.5	46.7
Ac-ft	3,520	5,300	21,970	30,510	13,940	14,330	11,560	7,570	6,140	4,430	3,590	2,780

Calendar year 1955: Max 531 Min 39 Mean 120 Ac-ft 86,890
Water year 1955-56: Max 640 Min 40 Mean 173 Ac-ft 125,600

* Discharge measurement made on this day.
Note.--No gage-height record Mar. 19 to Apr. 22; discharge estimated on basis of records for stations on nearby streams. Shifting-control method used Jan. 6-14.

Kapowsin Creek near Kapowsin, Wash.

Location.--Lat 46°59'30", long 122°11'30", in NE¼ sec. 5, T. 17 N., R. 5 E., on right bank half a mile downstream from Kapowsin Lake and 1½ miles east of Kapowsin.

Drainage area.--23 sq mi, approximately.

Records available.--June 1927 to October 1932, October 1941 to September 1956.

Gage.--Water-stage recorder and log control. Datum of gage is 561 ft above mean sea level (from stadia traverse). Prior to Oct. 8, 1932, water-stage recorder at same site at datum 3.23 ft higher. Oct. 1, 1941, to Mar. 31, 1942, staff gage at present site and datum.

Average discharge.--20 years, 49.7 cfs (35,980 acre-ft per year).

Extremes.--Maximum discharge during year, 610 cfs Dec. 12 (gage height, 5.37 ft); minimum, 1.9 cfs Aug. 17-19 (gage height, 1.77 ft).
1927-32, 1941-56: Maximum discharge, that of Dec. 12, 1955; maximum gage height, 5.83 ft Dec. 12, 1946 (backwater from debris); minimum discharge, 0.9 cfs Aug. 23-27, 1951 (gage height, 1.72 ft).

Remarks.--Records good. Natural regulation in Kapowsin Lake. No diversion.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
2.0	6.7	1.75	1.9	3.0	106
2.1	11	1.8	2.8	3.5	191
2.3	24	1.9	5.2	4.0	291
		2.0	8.4	4.5	400
Note.--Same as		2.1	12.5	5.0	518
following table		2.3	24	5.5	642
above 2.3 ft.		2.5	42		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10.5	150	224	88	63	81	143	30	16	26	4.4	3.0
2	10.5	143	214	88	59	146	124	30	16	25	*4.7	2.8
3	12	162	191	122	57	187	109	29	16.5	25	4.4	2.6
4	24	143	157	189	54	168	103	29	17	23	4.7	2.4
5	36	130	132	216	54	136	98	29	17.5	23	4.9	2.4
6	35	116	127	234	56	114	88	30	17.5	22	4.9	2.6
7	33	103	133	248	56	104	88	29	18.5	21	4.2	2.8
8	36	98	*125	200	57	*109	83	29	18.5	20	4.2	3.0
9	78	91	132	164	57	111	76	28	18.5	18.5	3.4	3.0
10	162	88	128	141	54	94	70	29	21	18	2.8	3.4
11	133	83	262	124	53	84	*67	29	23	17	3.0	6.4
12	96	74	580	112	76	77	63	28	23	16.5	2.8	5.8
13	74	68	420	109	94	74	60	28	23	16	2.6	5.5
14	62	59	297	104	85	72	57	27	26	15	2.4	*4.7
15	52	54	214	157	73	69	54	26	30	14.5	2.1	4.7
16	46	51	175	173	65	67	53	26	31	13.5	2.1	4.4
17	42	49	148	153	68	64	51	*24	32	13	2.1	4.2
18	38	54	128	148	67	67	49	23	32	12.5	1.9	3.9
19	36	124	124	*141	62	72	46	23	40	12	2.1	4.2
20	36	130	196	130	59	80	44	22	48	11.5	2.4	4.4
21	35	109	264	120	60	97	43	21	47	11.5	2.2	4.4
22	33	96	299	112	62	124	40	20	44	11	2.4	4.2
23	32	90	278	130	60	175	38	20	40	9.9	2.6	3.9
24	36	98	224	133	59	216	36	19.5	36	9.1	2.6	3.9
25	63	200	184	116	59	260	34	18.5	33	8.4	3.4	3.4
26	130	302	166	103	60	274	31	18.5	31	7.7	4.9	5.6
27	127	366	166	91	60	214	30	18.5	30	7.1	4.7	6.7
28	a130	302	138	87	60	177	31	18	*28	5.8	4.2	7.4
29	a160	246	119	84	73	184	31	16.5	26	5.2	3.4	8.8
30	a190	214	104	80	------	171	31	16.5	26	5.2	3.4	9.5
31	*a180	------	94	69	-----	160	-----	16	------	4.7	3.2	------
Total	2,168.0	3,993	6,143	4,166	1,822	4,028	1,871	751.0	826.0	448.6	103.1	134.0
Mean	69.9	133	198	134	62.8	130	62.4	24.2	27.5	14.5	3.33	4.47
Cfsm	3.04	5.78	8.61	5.83	2.73	5.65	2.71	1.05	1.20	0.630	0.145	0.194
In.	3.51	6.46	9.93	6.74	2.95	6.51	3.03	1.21	1.34	0.73	0.17	0.22
Ac-ft	4,300	7,920	12,180	8,260	3,610	7,990	3,710	1,490	1,640	890	204	266

Calendar year 1955: Max 580 Min 5.8 Mean 71.8 Cfsm 3.12 In. 42.37 Ac-ft 51,970
Water year 1955-56: Max 580 Min 1.9 Mean 72.3 Cfsm 3.14 In. 42.80 Ac-ft 52,460

Peak discharge (base, 160 cfs).--Oct. 10 (12 m. to 2:30 p.m.) 171 cfs (3.37 ft); probably Oct. 30 (time unknown) 206 cfs (3.56 ft); Nov. 3 (8 a.m.) 175 cfs (3.39 ft); Nov. 27 (11 a.m.) 377 cfs (4.38 ft); Dec. 12 (6 a.m.) 610 cfs (5.37 ft); Dec. 22 (9:30 a.m., 3 p.m.) 306 cfs (4.07 ft); Jan. 7 (3 a.m.) 260 cfs (3.85 ft); Jan. 15 (8 to 12 p.m.) 180 cfs (3.44 ft); Mar. 3 (1 p.m.) 195 cfs (3.52 ft); Mar. 26 (1 a.m.) 293 cfs (4.01 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Puyallup River near Orting, Wash.

Location.--Lat 47°02'20", long 122°12'25", in SW¼SW¼ sec. 17, T. 18 N., R. 5 E., on right bank 600 ft downstream from highway bridge, 4 miles south of Orting, and 9 miles upstream from Carbon River.

Drainage area.--172 sq mi.

Records available.--September 1931 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 357.5 ft above mean sea level (unadjusted). Prior to Feb. 6, 1946, at site 600 ft upstream at datum 3.93 ft higher. Supplementary water-stage recorder 200 ft upstream at datum 2.1 ft higher than present gage datum used at times during periods in 1942-46.

Average discharge.--25 years, 704 cfs (509,700 acre-ft per year).

Extremes.--Maximum discharge during year, 12,100 cfs Dec. 11 (gage height, 9.12 ft), from rating curve extended above 1,700 cfs; minimum, 195 cfs Oct. 2; minimum gage height, 3.11 ft Sept. 22-24; minimum daily, 243 cfs Sept. 23.
1931-56: Maximum discharge, 12,800 cfs Dec. 10, 1933 (gage height, 11.87 ft, from recorded range in stage), from rating curve extended above 3,300 cfs; minimum, 25 cfs Nov. 28, 1952 (gage height, 2.16 ft); minimum daily, 59 cfs Nov. 29, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Water diverted for Electron powerplant of Puget Sound Power & Light Co., returned to river above gage. Some regulation by Electron powerplant.

Revisions (water years).--WSP 932: 1937-39. WSP 962: 1934. WSP 1246: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-6, Nov. 25 to Dec. 11, May 24 to Sept. 30)

Oct. 1 to Dec. 10				Dec. 11 to Sept. 30			
3.9	272	5.5	1,130	3.1	232	5.0	1,700
4.4	436	6.0	1,670	3.5	400	6.0	3,320
5.0	740	7.0	3,400	4.0	695	7.2	6,010
				4.5	1,110		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	297	1,050	1,340	660	452	709	818	604	1,430	744	463	491
2	289	1,350	1,170	680	463	1,150	716	592	1,180	737	*421	410
3	294	1,790	1,000	1,000	452	1,090	649	573	1,140	716	410	381
4	456	*2,730	881	1,400	442	802	695	592	1,110	709	381	371
5	496	1,830	874	2,000	463	649	675	617	947	795	390	366
6	459	1,400	880	1,800	458	549	586	636	856	*947	410	381
7	410	1,200	*881	1,750	474	*555	629	688	818	832	421	447
8	518	1,170	866	1,400	463	598	617	772	864	904	431	436
9	1,840	1,470	976	1,100	436	538	592	864	1,210	1,050	452	410
10	2,090	2,800	976	900	431	480	636	992	1,530	1,170	452	426
11	1,270	1,420	5,760	850	480	458	*744	880	1,290	1,220	452	491
12	1,050	1,200	4,680	810	702	426	765	795	974	1,230	491	381
13	920	1,000	1,840	800	592	431	840	688	896	1,090	*567	386
14	830	900	1,360	800	520	426	974	623	974	904	662	362
15	760	850	1,200	1,200	447	426	983	655	1,320	795	655	317
16	696	700	1,050	1,700	474	426	880	888	1,230	772	538	334
17	654	560	950	1,400	458	452	765	*1,390	1,360	765	474	362
18	600	450	1,000	*1,220	452	508	702	1,940	1,240	840	497	390
19	550	1,180	1,150	1,060	431	573	802	2,200	2,140	965	567	405
20	500	874	1,370	983	426	598	1,080	2,020	1,850	1,110	610	371
21	460	760	2,080	888	426	765	1,440	1,430	1,310	1,060	636	308
22	430	702	3,710	818	426	1,010	1,470	1,240	1,140	912	636	268
23	400	677	2,420	929	426	1,530	*1,180	1,390	1,060	856	636	243
24	370	721	1,670	825	426	1,610	956	1,220	904	832	561	*300
25	*2,400	1,470	1,400	737	442	1,900	848	1,090	810	788	573	352
26	1,980	2,140	1,250	669	431	1,700	840	1,110	780	669	649	426
27	1,310	2,910	1,250	617	431	*1,200	825	1,050	*983	610	514	410
28	1,380	1,750	950	586	514	1,000	802	856	1,030	561	442	362
29	2,660	1,350	800	555	555	1,110	758	912	904	532	532	436
30	2,020	1,330	720	*508	------	1,010	669	1,250	788	502	497	543
31	1,270	------	660	452	------	938	------	*1,570	------	497	458	------
Total	29,459	39,734	47,114	31,097	13,593	25,617	24,936	32,127	34,068	26,114	15,878	11,566
Mean	950	1,324	1,520	1,003	469	826	831	1,036	1,136	842	512	386
Cfsm	5.52	7.70	8.84	5.83	2.73	4.80	4.83	6.02	6.60	4.90	2.98	2.24
In.	6.37	8.59	10.19	6.72	2.94	5.54	5.39	6.95	7.37	5.65	3.43	2.50
Ac-ft	58,430	78,810	93,450	61,680	26,960	50,810	49,460	63,720	67,570	51,800	31,490	22,940

Calendar year 1955: Max 5,760 Min 251 Mean 847 Cfsm 4.92 In. 66.82 Ac-ft 613,000
Water year 1955-56: Max 5,760 Min 243 Mean 905 Cfsm 5.26 In. 71.64 Ac-ft 657,100

Peak discharge (base, 4,500 cfs).--Oct. 29 (3 p.m.) 4,840 cfs (7.65 ft); Nov. 9 (11:30 p.m.) 4,860 cfs (7.66 ft); Dec. 11 (9 p.m.) 12,100 cfs (9.12 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 18-25, Nov. 12-18, Dec. 6, 15-19, Dec. 25 to Jan. 17; discharge estimated on basis of recorded range in stage and records for nearby stations.

Carbon River near Fairfax, Wash.

Location.--Lat 47°01'40", long 122°01'50", in SW¼SW¼ sec. 22, T. 18 N., R. 6 E., on left bank 1½ miles upstream from highway bridge, 1¼ miles northwest of Fairfax, and 2¼ miles downstream from Evans Creek.

Drainage area.--78.9 sq mi.

Records available.--November 1910 to July 1912, March 1929 to September 1956. Published as "at Fairfax" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 1,212.6 ft above mean sea level (river-profile survey). Prior to July 13, 1912, staff gage at railroad crossing 1.7 miles upstream at different datum.

Average discharge.--27 years (1929-56), 417 cfs (301,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,320 cfs Dec. 11 (gage height, 7.25 ft); minimum, 136 cfs Feb. 23-27 (gage height, 1.03 ft).
1910-12, 1929-56: Maximum discharge, 11,000 cfs Dec. 9, 1933 (gage height, 10.2 ft), from rating curve extended above 4,200 cfs; minimum, 36 cfs Nov. 28, 29, 1952; minimum gage height recorded, 0.75 ft Nov. 20, 1944.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1930, 1931-32(M), 1933-35.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 11 to May 31				June 1 to Sept. 30	
1.3	137	3.0	930	1.0	130	3.0	1,010	1.6	120
1.6	209	3.5	1,380	1.3	196	3.5	1,420	1.8	175
1.9	302	4.0	1,910	1.6	280	4.0	1,920	2.1	300
2.2	424	4.5	2,530	2.0	430	5.0	3,100	2.5	550
2.6	640			2.5	680	6.0	4,450	3.0	950
								3.5	1,410

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	155	761	890	296	244	231	345	401	1,030	529	306	265
2	148	1,180	705	290	242	283	327	380	878	508	*275	218
3	150	2,030	563	416	240	259	310	372	844	522	255	196
4	344	1,920	477	674	230	217	300	372	772	515	238	175
5	355	1,380	429	615	220	191	296	384	644	613	238	169
6	240	1,080	*415	535	212	174	280	409	536	756	250	172
7	223	874	364	485	209	*201	271	475	468	636	260	189
8	274	790	351	444	209	206	265	585	480	684	270	210
9	1,010	1,110	393	396	201	182	256	680	748	788	280	226
10	1,320	2,260	384	361	196	159	*300	740	923	869	285	226
11	754	1,080	3,280	335	206	154	422	658	788	836	290	270
12	698	740	2,790	310	239	146	417	575	592	932	306	206
13	574	620	1,120	300	196	148	466	470	557	923	354	186
14	448	500	752	293	182	144	615	434	613	740	414	169
15	376	410	636	680	154	144	652	470	772	644	432	169
16	313	380	565	722	157	146	570	*704	748	636	336	172
17	282	339	490	*565	163	152	485	1,040	860	592	285	175
18	262	384	430	575	159	174	452	1,350	828	636	290	*189
19	246	684	413	560	154	212	490	1,570	1,260	772	330	196
20	231	503	595	565	154	217	740	1,420	1,190	878	372	210
21	209	448	776	475	150	277	1,000	*1,040	860	812	378	182
22	193	384	1,300	448	148	331	1,030	961	764	716	378	154
23	181	368	947	530	140	413	821	1,070	732	636	390	142
24	298	398	716	470	136	500	674	947	620	628	342	154
25	1,370	775	570	413	138	600	615	856	515	571	354	186
26	*1,070	1,110	515	361	136	570	625	905	*578	494	378	270
27	672	1,720	457	331	136	417	625	884	772	444	285	275
28	946	1,370	392	306	150	365	595	746	812	390	258	255
29	2,290	1,040	353	287	154	388	505	807	716	360	270	394
30	1,800	970	331	265	-----	384	434	1,070	606	342	300	529
31	1,050	-----	310	250	-----	368	-----	1,230	-----	*336	265	-----
Total	18,482	27,608	22,709	13,553	5,255	8,353	15,183	24,005	22,508	19,738	9,644	6,529
Mean	596	920	733	437	181	269	506	774	750	637	311	218
Cfsm	7.55	11.7	9.29	5.54	2.29	3.41	6.41	9.81	9.51	8.07	3.94	2.76
In.	8.71	13.01	10.70	6.39	2.48	3.94	7.16	11.31	10.61	9.30	4.55	3.08
Ac-ft	36,660	54,760	45,040	26,880	10,420	16,570	30,120	47,610	44,640	39,150	19,130	12,950

Calendar year 1955: Max 3,280 Min 112 Mean 524 Cfsm 6.64 In. 90.18 Ac-ft 379,600
Water year 1955-56: Max 3,280 Min 136 Mean 529 Cfsm 6.70 In. 91.24 Ac-ft 383,900

Peak discharge (base, 1,800 cfs).--Oct. 10 (2 a.m.) 1,810 cfs (3.91 ft); Oct. 25 (4:40 p.m.) 2,220 cfs (4.26 ft); Oct. 29 (4:30 p.m.) 4,060 cfs (5.55 ft); Nov. 2 (12 p.m.) 2,620 cfs (4.57 ft); Nov. 10 (2:45 a.m.) 3,370 cfs (5.10 ft); Nov. 27 (1:30 p.m.) 1,920 cfs (4.01 ft); Dec. 11 (11 p.m.) 6,320 cfs (7.25 ft).

* Discharge measurement made on this day.

South Prairie Creek at South Prairie, Wash.

Location.--Lat 47°08'30", long 122°05'30", in NE¼NW¼ sec. 18, T. 19 N., R. 6 E., on right bank 0.3 mile northeast of South Prairie and 5 miles upstream from mouth.

Drainage area.--78.6 sq mi.

Records available.--June 1949 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 430 ft (from topographic map).

Average discharge.--7 years, 255 cfs (184,600 acre-ft per year).

Extremes.--Maximum discharge during year, 6,850 cfs Dec. 11 (gage height, 9.78 ft), from rating curve extended above 3,000 cfs; minimum, 38 cfs Sept. 6-8 (gage height, 1.75 ft), but may have been less during early part of period of no gage-height record in October.
1949-56: Maximum discharge, that of Dec. 11, 1955; minimum, 22 cfs Nov. 29, 1952 (gage height, 1.25 ft).

Remarks.--Records good except those for period of shifting control, which are fair, and those for periods of no gage-height record, which are poor. Small amount of diversion for domestic use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 26				Nov. 27 to Sept. 30			
1.4	41	3.5	505	1.7	33	4.0	655
1.6	62	4.0	725	1.9	54	4.5	930
1.8	87	4.5	985	2.1	80	5.0	1,250
2.1	132	5.0	1,280	2.5	153	6.0	2,040
2.6	228	5.5	1,640	3.0	275	7.1	3,150
3.0	335			3.5	435		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	445	876	293	193	298	424	215	260	134	61	44
2	43	679	722	287	183	578	379	202	222	138	62	43
3	46	974	524	546	181	487	341	193	215	136	73	43
4	120	785	418	1,030	171	390	341	200	220	124	64	41
5	220	613	353	894	176	320	338	232	220	142	58	39
6	170	490	335	722	169	268	302	235	260	230	55	39
7	140	397	*372	665	162	*281	296	281	230	164	52	39
8	250	359	326	556	158	359	293	284	220	160	51	40
9	550	320	515	467	147	305	281	296	255	169	50	41
10	730	460	467	404	145	260	*320	326	323	155	50	48
11	480	341	3,100	372	172	230	396	272	317	140	50	76
12	350	270	3,060	347	278	210	393	258	230	136	50	61
13	280	233	1,120	368	220	200	421	225	212	132	48	50
14	220	198	727	350	190	190	471	210	228	113	47	47
15	190	160	574	761	155	183	447	212	326	103	46	46
16	160	150	499	732	167	181	407	*281	296	99	46	44
17	140	140	439	569	158	188	335	407	447	96	45	*42
18	130	200	382	*582	149	220	311	483	362	94	44	42
19	120	800	390	592	145	293	341	499	585	94	43	42
20	110	475	628	596	142	302	463	421	578	96	42	42
21	105	375	854	515	147	412	600	302	414	90	41	44
22	95	306	1,130	467	138	538	560	284	338	82	41	42
23	90	300	1,010	551	136	771	421	311	293	74	42	41
24	150	356	744	475	140	954	335	260	245	72	44	42
25	740	973	592	407	155	1,030	293	218	210	69	46	46
26	600	1,620	520	356	162	930	287	238	*200	67	99	72
27	*460	1,780	487	314	167	640	278	278	218	64	67	121
28	553	1,140	414	281	183	511	278	208	208	61	54	73
29	930	854	359	258	195	587	278	210	174	56	51	88
30	958	793	326	230	------	542	235	287	169	55	48	153
31	618	----	299	205	------	491	------	323	------	*58	47	------
Total	9,793	16,986	22,562	15,192	4,884	13,149	10,865	8,651	8,475	3,403	1,617	1,631
Mean	316	566	728	490	168	424	362	279	282	110	52.2	54.4
Cfsm	4.02	7.20	9.26	6.23	2.14	5.39	4.61	3.55	3.59	1.40	0.664	0.692
In.	4.63	8.04	10.68	7.19	2.31	6.22	5.14	4.09	4.01	1.61	0.77	0.77
Ac-ft	19,420	33,690	44,750	30,130	9,690	26,080	21,550	17,160	16,810	6,750	3,210	3,240

Calendar year 1955: Max 3,100 Min 43 Mean 320 Cfsm 4.07 In. 55.19 Ac-ft 231,300
Water year 1955-56: Max 3,100 Min 39 Mean 320 Cfsm 4.07 In. 55.46 Ac-ft 232,500

Peak discharge (base, 2,000 cfs).--Dec. 11 (9 p.m.) 6,850 cfs (9.78 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-27, Nov. 15-18; discharge estimated on basis of records for stations on nearby streams. Shifting-control method used May 15 to July 5.

Puyallup River at Alderton, Wash.

Location.--Lat 47°11'05", long 122°13'45", on line between sec. 25, T. 20 N., R. 4 E., and sec. 30, T. 20 N., R. 5 E., on right bank at downstream side of bridge on State Highway 5E, 1 mile north of Alderton, 1 mile south of Sumner, and 2 miles upstream from Stuck River.

Drainage area.--438 sq mi.

Records available.--October 1914 to February 1927, October 1943 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Feb. 2, 1927, staff or chain gages at practically same site at datum 49.77 ft higher prior to Aug. 5, 1918, and at datum 48.77 ft higher after that date. Oct. 1, 1943, to Sept. 30, 1955, at datum 0.23 ft lower.

Average discharge.--25 years (1914-26, 1943-56), 1,614 cfs (1,168,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,300 cfs Dec. 12 (elevation, 56.84 ft); minimum, 555 cfs Oct. 1-3 (elevation, 47.20 ft), but may have been less sometime during a period of doubtful gage-height record in September.
1914-27, 1943-56: Maximum discharge, that of Dec. 12, 1955; minimum daily, 150 cfs Nov. 29, Dec. 1, 1952.
Flood in 1906 reached a stage of 66.3 ft, from floodmarks (discharge not determined).

Remarks.--Records good except those for period July to September, which are fair. Minor diversions for farm and domestic use. Some regulation by Electron powerplant of Puget Sound Power & Light Co.

Revisions (water years.--WSP 870: Drainage area. WSP 1316: 1917(M), 1919-27(M). WSP 1396: 1945(P).

Rating tables, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9)

Oct. 1-9		Oct. 10 to Sept. 30			
47.3	510	47.2	565	50.0	4,400
47.8	910	47.7	1,000	52.0	8,700
48.3	1,420	48.2	1,560	54.2	14,900
49.0	2,310	49.0	2,720		
50.0	3,860				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	592	3,010	4,020	1,890	1,520	1,540	2,460	1,760	3,150	1,770	1,050	970
2	585	3,120	3,580	1,910	1,390	2,720	2,110	1,730	2,670	1,720	950	891
3	578	5,470	3,060	2,620	1,340	2,530	1,900	1,700	2,530	1,730	920	810
4	1,130	5,510	2,590	3,850	1,340	2,110	1,930	1,690	2,560	1,720	.880	780
5	1,720	4,440	2,300	4,020	1,380	1,720	1,930	1,730	2,350	1,860	850	740
6	1,170	3,500	2,280	3,500	1,400	1,500	1,790	1,760	2,110	2,300	850	780
7	982	2,980	*2,360	3,440	1,370	1,500	1,830	1,860	1,960	2,030	860	820
8	1,190	2,780	2,120	3,020	1,310	*1,750	1,910	2,000	1,930	2,040	*873	900
9	3,500	2,670	2,750	2,670	1,240	1,560	1,840	2,220	2,440	2,260	882	910
10	5,460	5,510	2,470	2,400	1,220	1,380	1,860	2,460	3,060	2,400	930	910
11	3,200	3,650	8,400	2,230	1,230	1,280	*2,030	2,410	3,060	2,470	1,000	990
12	2,590	2,740	14,800	2,120	1,750	1,260	2,030	2,220	2,340	2,460	1,100	873
13	2,240	2,200	6,400	2,140	1,500	1,250	2,200	1,830	2,100	2,400	1,210	800
14	1,870	1,870	4,350	2,070	1,330	1,220	2,500	1,700	2,120	2,080	1,330	750
15	1,620	1,690	3,440	3,280	1,260	1,220	2,660	1,720	2,820	1,750	1,430	700
16	1,460	1,540	3,040	3,750	1,210	1,220	2,480	*2,080	2,660	1,700	1,120	720
17	1,340	1,430	2,700	3,180	1,280	1,250	2,080	3,090	3,060	1,620	920	740
18	1,260	1,450	2,400	*2,900	1,250	1,310	1,840	3,870	2,900	1,650	910	770
19	1,140	3,340	2,460	2,830	1,230	1,550	1,940	4,360	3,820	1,960	1,000	*819
20	1,120	2,530	3,680	2,850	1,220	1,620	2,560	4,130	4,080	2,140	1,120	855
21	1,060	2,220	4,920	2,610	1,260	1,980	3,330	3,180	2,980	2,200	1,200	750
22	980	2,000	7,090	2,460	1,210	2,580	3,580	2,720	2,560	1,940	1,210	650
23	900	1,840	5,630	2,580	1,210	3,250	3,100	3,020	2,420	1,770	1,240	600
24	1,010	2,050	4,170	2,560	1,210	3,870	2,620	2,830	2,170	1,720	1,110	750
25	*3,780	3,650	3,340	2,320	1,230	4,010	2,320	2,480	1,930	1,660	1,020	855
26	4,470	5,650	3,020	2,080	1,230	4,080	2,280	2,500	1,820	1,520	1,480	920
27	2,940	6,580	2,900	1,930	1,230	3,100	2,280	2,640	*2,200	1,390	1,070	1,110
28	3,060	5,190	2,500	1,790	1,250	2,580	2,200	2,200	2,360	1,300	910	855
29	5,200	4,150	2,200	1,730	1,330	2,720	2,120	2,140	2,140	1,250	950	920
30	5,880	3,890	2,040	1,650	------	2,700	1,830	2,770	1,890	1,150	1,020	1,600
31	3,890	-----	1,910	1,540	-----	2,660	-----	3,410	------	1,100	950	------
Total	67,917	98,650	118,920	79,920	37,930	65,020	67,540	76,210	76,190	57,060	32,345	25,538
Mean	2,191	3,288	3,836	2,578	1,308	2,097	2,251	2,458	2,540	1,841	1,043	851
Cfsm	5.00	7.51	8.76	5.89	2.99	4.79	5.14	5.61	5.80	4.20	2.38	1.94
In.	5.77	8.38	10.10	6.79	3.22	5.52	5.73	6.47	6.47	4.84	2.75	2.17
Ac-ft	134,700	195,700	235,900	158,500	75,230	129,000	134,000	151,200	151,100	113,200	64,160	50,650

Calendar year 1955: Max 14,800 Min 500 Mean 2,071 Cfsm 4.73 In. 64.19 Ac-ft 1,499,000
Water year 1955-56: Max 14,800 Min 578 Mean 2,195 Cfsm 5.01 In. 68.21 Ac-ft 1,593,000

Peak discharge (base, 6,400 cfs).--Oct. 10 (5:30 a.m.) 6,670 cfs (51.13 ft); Oct. 25 (9 p.m.) 6,780 cfs (51.18 ft); Oct. 29 (8:30 p.m.) 9,430 cfs (52.29 ft); Nov. 10 (5 a.m.) 7,040 cfs (51.30 ft); Nov. 27 (12:30 p.m.) 6,930 cfs (51.25 ft); Dec. 12 (3 a.m.) 23,300 cfs (56.84 ft); Dec. 22 (8 p.m.) 7,680 cfs (51.58 ft).

* Discharge measurement made on this day.

Note.--Doubtful gage-height record July 28 to Aug. 7, Aug. 10-12, Sept. 3-7, 13-18, 21-24; discharge estimated on basis of records for nearby stations.

White River at Greenwater, Wash.

Location.--Lat 47°08'50", long 121°38'50", in SE¼ sec. 10, T. 19 N., R. 9 E., on right bank three-quarters of a mile southeast of Greenwater, three-quarters of a mile upstream from Greenwater River, 18½ miles east of and 25 miles upstream from Buckley.

Drainage area.--216 sq mi.

Records available.--December 1911 to May 1912 (fragmentary), March 1929 to September 1956. Published as "near Enumclaw" 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 1,725 ft (from river-profile map). Prior to May 6, 1912, staff gage at site 2 miles upstream at different datum.

Average discharge.--27 years (1929-56), 840 cfs (608,100 acre-ft per year).

Extremes.--Maximum discharge during year, 11,400 cfs Dec. 12 (gage height, 7.48 ft), from rating curve extended above 4,300 cfs; minimum, 286 cfs Mar. 11 (gage height, 2.08 ft). 1911-12, 1929-56: Maximum discharge, 18,100 cfs Dec. 21, 1933 (gage height, 9.38 ft), from rating curve extended above 3,600 cfs by logarithmic plotting; minimum, 120 cfs Nov. 2, 1935 (gage height, 1.69 ft).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1932-33(M), 1934, 1943(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 26 to Nov. 9, Dec. 12 to Feb. 1)

2.1	290	4.0	1,910
2.3	375	4.5	2,650
2.6	540	5.5	4,700
3.0	830	6.5	7,500
3.5	1,300		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	395	1,240	1,280	766	469	420	560	1,120	3,860	1,780	996	735
2	400	1,480	1,110	750	516	464	522	1,110	3,210	1,720	906	640
3	395	2,740	996	758	504	442	504	1,080	2,990	1,750	847	612
4	458	3,150	898	890	474	415	540	1,060	2,900	1,770	814	579
5	492	2,490	881	881	464	385	522	1,090	2,480	*1,820	838	572
6	430	1,880	838	838	442	366	510	1,190	2,010	1,840	856	566
7	425	1,530	*766	798	436	375	522	1,370	1,780	1,780	881	586
8	508	1,420	728	758	420	370	540	1,610	1,700	1,940	881	612
9	1,030	1,600	698	720	415	370	586	1,840	1,980	2,200	898	619
10	1,150	3,730	698	682	410	348	758	1,940	2,400	2,430	898	626
11	847	2,540	3,800	668	425	330	978	1,750	2,360	2,480	898	758
12	750	1,860	6,650	640	447	322	1,020	1,510	2,050	2,580	933	605
13	720	1,580	2,790	675	415	326	1,280	1,420	1,970	2,300	978	560
14	712	1,330	1,900	647	400	*322	1,610	1,220	1,980	2,190	1,070	534
15	698	1,160	1,540	830	375	314	1,640	1,330	2,040	1,830	1,080	522
16	668	1,130	1,280	933	348	318	1,400	1,790	1,950	1,770	924	516
17	654	1,060	1,120	847	405	326	1,210	2,540	1,920	1,730	*856	528
18	647	1,000	1,000	847	395	339	*1,160	3,540	2,050	1,780	847	546
19	640	1,270	1,010	806	380	380	1,450	4,460	2,510	1,970	890	566
20	619	1,010	1,170	774	375	395	1,980	4,410	2,490	2,150	951	566
21	579	933	1,460	750	366	436	2,600	3,320	2,120	2,060	996	510
22	553	856	2,550	750	348	486	2,790	2,940	1,990	1,870	978	469
23	516	838	2,180	750	344	566	2,280	*3,230	1,950	1,690	996	464
24	715	830	1,650	705	344	640	1,860	3,170	1,840	1,650	942	474
25	1,890	1,090	1,370	668	344	758	1,660	2,840	1,700	1,580	898	492
26	*1,480	1,510	1,240	633	334	798	1,690	2,720	1,680	1,420	942	528
27	1,070	1,990	1,100	605	330	682	1,640	2,420	1,910	1,260	830	522
28	1,170	1,750	969	598	334	633	1,470	2,120	2,190	1,170	758	498
29	2,210	1,430	890	560	334	619	1,320	2,220	2,120	1,110	782	571
30	2,340	1,330	830	516	------	619	1,210	2,890	1,880	1,070	750	682
31	1,580	-----	790	*474	-----	592	-----	3,730	------	1,020	720	------
Total	26,741	47,757	48,182	22,517	11,593	14,156	37,812	68,980	66,010	55,510	27,834	17,058
Mean	863	1,592	1,490	726	400	457	1,260	2,225	2,200	1,791	898	569
Cfsm	4.00	7.37	6.90	3.36	1.85	2.12	5.83	10.3	10.2	8.29	4.16	2.63
In.	4.60	8.22	7.95	3.88	2.00	2.44	6.51	11.88	11.37	9.56	4.79	2.94
Ac-ft	53,040	94,720	91,600	44,660	22,990	28,080	75,000	136,800	130,900	110,100	55,210	33,830

Calendar year 1955: Max 6,650 Min 268 Mean 1,037 Cfsm 4.80 In. 65.14 Ac-ft 750,500
Water year 1955-56: Max 6,650 Min 314 Mean 1,208 Cfsm 5.59 In. 76.14 Ac-ft 876,900

Peak discharge (base, 2,400 cfs).--Oct. 29 (6 p.m.) 3,770 cfs (5.20 ft); Nov. 4 (2:30 p.m.) 3,560 cfs (5.10 ft); Nov. 10 (5:30 a.m.) 4,440 cfs (5.47 ft); Dec. 12 (1:40 a.m.) 11,400 cfs (7.48 ft); Dec. 22 (4 p.m.) 2,870 cfs (4.53 ft); Apr. 22 (1 a.m.) 3,010 cfs (4.71 ft); May 20 (4 a.m.) 5,050 cfs (5.64 ft); June 1 (4 a.m.) 4,320 cfs (5.34 ft); June 10 (9:30, 10:30 p.m.) 2,540 cfs (4.43 ft); June 19 (11:30 p.m.) 2,700 cfs (4.53 ft); July 10 (11:30 p.m.) 2,650 cfs (4.49 ft).

* Discharge measurement made on this day.

Greenwater River at Greenwater, Wash.

Location.--Lat 47°09'15", long 121°38'00", in NW¼NW¼ sec. 11, T. 19 N., R. 9 E., on left bank 1 mile upstream from mouth, 1 mile east of Greenwater, and 19 miles east of Buckley.

Drainage area.--73.9 sq mi.

Records available.--September 1911 to August 1912 (fragmentary), May 1929 to September 1956. Published as "near Enumclaw" 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 1,725 ft (from topographic map). Prior to Aug. 10, 1912, staff gages at approximately same site at different datums. May 1, 1929, to Aug. 14, 1934, water-stage recorder at site 900 ft upstream at different datum.

Average discharge.--27 years (1929-56), 207 cfs (149,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,230 cfs Dec. 12 (gage height, 5.91 ft); minimum, 52 cfs Sept. 25, 26 (gage height, 2.22 ft).
1911-12, 1929-56: Maximum discharge, 4,280 cfs Dec. 11, 1946 (gage height, 7.50 ft), from rating curve extended above 2,000 cfs; minimum, 23 cfs Oct. 7, 1934; minimum gage height, 2.00 ft Nov. 28 to Dec. 2, 1952.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1947(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
2.3	52	3.4	320	2.2	50	3.7	480
2.5	77	3.7	455	2.4	75	4.0	640
2.7	112	4.0	625	2.6	112	4.5	970
2.9	158	4.5	960	2.8	160	5.0	1,360
3.1	215	5.0	1,360	3.1	245	5.5	1,820
				3.4	350		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	360	352	236	168	106	182	445	942	358	126	67
2	56	352	316	224	150	160	172	426	865	343	121	65
3	56	538	278	230	128	155	165	418	802	336	119	64
4	65	685	250	294	124	142	170	410	748	326	117	62
5	78	718	234	304	119	128	168	410	670	*322	112	61
6	70	554	221	280	117	119	160	440	580	322	108	60
7	65	455	*209	259	112	114	165	490	530	308	104	59
8	71	400	200	236	108	114	168	570	495	304	102	59
9	210	469	203	221	106	112	182	670	495	308	98	59
10	272	1,160	203	209	104	106	264	730	550	312	96	60
11	221	897	831	200	110	102	370	670	545	304	94	96
12	180	673	1,690	194	130	98	390	575	515	294	90	74
13	166	554	893	200	121	96	480	510	485	287	89	65
14	151	472	598	197	117	*92	598	470	470	273	87	61
15	136	396	480	239	117	89	598	500	495	256	85	59
16	127	360	410	248	140	89	505	652	500	239	85	58
17	119	309	362	239	150	92	422	949	520	230	*82	57
18	114	297	326	230	130	106	*398	1,260	520	218	78	56
19	106	324	304	224	106	140	480	1,430	575	209	78	54
20	104	286	308	215	102	148	688	1,520	592	197	75	54
21	101	261	326	206	98	160	970	1,250	560	191	74	56
22	95	241	460	197	94	182	1,040	1,090	530	180	72	54
23	91	228	540	197	92	197	872	1,080	495	175	72	53
24	108	218	455	188	92	215	706	1,030	455	168	71	53
25	151	275	394	175	90	252	598	921	418	162	72	52
26	*191	445	358	165	89	276	604	858	394	155	87	53
27	177	589	326	158	87	239	616	802	394	150	78	56
28	275	472	294	155	89	209	570	*718	402	142	72	57
29	558	378	276	148	89	200	520	688	398	138	72	65
30	692	356	259	*140	------	200	475	781	374	130	71	80
31	472	-----	245	142	-----	194	-----	928	------	128	68	------
Total	5,337	13,722	12,601	6,550	3,279	4,632	13,696	23,691	16,314	7,465	2,755	1,829
Mean	172	457	406	211	113	149	457	764	544	241	88.9	61.0
Cfsm	2.33	6.18	5.49	2.86	1.53	2.02	6.18	10.3	7.36	3.26	1.20	0.825
In.	2.69	6.91	6.34	3.30	1.65	2.33	6.89	11.92	8.21	3.76	1.39	0.92
Ac-ft	10,590	27,220	24,990	12,990	6,500	9,190	27,170	46,990	32,360	14,810	5,460	3,630

Calendar year 1955: Max 1,690 Min 56 Mean 272 Cfsm 3.68 In. 49.90 Ac-ft 196,600
Water year 1955-56: Max 1,690 Min 52 Mean 306 Cfsm 4.14 In. 56.31 Ac-ft 221,900

* Discharge measurement made on this day.

Mud Mountain Reservoir near Buckley, Wash.

Location.--Lat 47°08'30", long 121°55'50", in NE¼ sec. 17, T. 19 N., R. 7 E., on left bank of reservoir just upstream from Mud Mountain Dam on White River, 5 miles southeast of Buckley and 6 miles downstream from Clearwater River.

Drainage area.--400 sq mi.

Records available.--October 1943 to September 1956. Month-end contents only October 1943 to September 1944, published in WSP 1316.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents observed during year, 37,300 acre-ft June 20 (elevation, 1,117.1 ft); minimum observed, 43 acre-ft Oct. 1-6, 8, Mar. 14-22, Sept. 8-18 (elevation, 908.0 ft).
1944-56: Maximum contents observed since dam was completed, that of June 20, 1956; no pool at times most years.

Remarks.--Reservoir, for flood control, is formed by earth-fill dam. Embankment completed and storage began on small scale in 1942. Capacity, 106,000 acre-ft between elevations 895 ft (invert of outlet tunnel) and 1,215 ft (spillway crest). Storage is not retained but is dissipated as soon after a flood as is possible without creating damaging flows downstream in order to have the maximum capacity available for any following flood which might develop.

Cooperation.--Records of reservoir elevations and capacity table furnished by Corps of Engineers.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Corps of Engineers)

908	43	970	1,520
910	52	990	2,910
915	77	1,020	6,260
920	107	1,050	11,850
930	191	1,100	29,050
950	641	1,150	55,860

Contents, in acre-feet, at 12:30 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	5,180	1,640	438	1,840	107	62	2,830	32,400	7,350	191	107
2	43	2,380	1,110	389	2,110	107	62	817	33,200	5,970	107	107
3	43	5,300	179	464	674	107	62	148	34,100	4,220	107	107
4	43	8,080	134	491	191	107	62	137	34,600	4,930	107	107
5	43	10,800	134	519	191	107	62	134	33,400	5,000	107	77
6	43	8,750	95	338	191	107	62	191	31,100	4,870	107	77
7	134	6,400	2,290	303	191	107	62	609	28,500	5,560	107	77
8	43	2,910	222	294	191	107	62	1,280	25,300	7,000	107	43
9	366	2,380	95	266	191	107	62	2,380	25,900	9,050	107	43
10	1,900	5,670	134	266	191	107	266	2,140	28,000	9,090	107	43
11	569	6,970	1,880	266	141	107	266	4,440	30,900	9,640	107	43
12	83	3,490	14,200	249	141	107	303	4,160	32,800	9,520	107	43
13	83	2,440	16,300	266	141	107	783	2,510	33,800	9,400	107	43
14	83	2,380	14,800	266	141	43	1,820	1,020	34,200	5,180	107	43
15	83	2,220	15,800	266	191	43	3,120	438	34,900	3,700	107	43
16	83	2,150	16,400	413	1,110	43	3,110	1,330	35,000	1,990	107	43
17	83	2,140	15,500	323	1,620	43	2,010	4,070	35,400	491	107	43
18	366	2,170	8,170	344	1,670	43	641	9,720	35,700	233	107	43
19	1,850	2,570	5,790	344	1,940	43	708	16,400	36,400	641	107	141
20	1,870	2,440	2,160	344	2,680	43	2,290	22,900	37,300	6,560	107	1,780
21	1,840	2,300	1,470	303	519	43	6,110	27,100	36,200	8,100	107	2,080
22	1,850	2,220	3,580	249	107	43	11,000	28,700	34,500	8,290	107	1,820
23	1,860	1,940	7,750	249	107	62	11,300	29,900	31,800	7,600	107	1,820
24	1,870	1,310	7,750	1,240	107	134	16,500	31,300	28,600	6,880	107	1,830
25	2,570	1,760	5,740	233	1,160	134	15,000	31,800	25,000	6,110	107	1,830
26	4,450	5,130	3,000	191	1,940	609	13,400	31,600	21,300	5,110	107	1,870
27	3,230	7,240	1,250	191	2,590	72	12,000	31,300	18,000	4,030	107	1,880
28	2,440	6,040	464	191	107	62	9,840	32,000	15,500	3,170	107	1,850
29	3,510	2,720	464	191	107	62	7,990	30,200	13,300	2,830	107	1,860
30	10,100	1,580	464	191	-------	62	5,250	29,200	10,100	2,670	107	1,910
31	9,230	-------	464	191	-------	62	-------	30,400	-------	1,520	107	-------
(†)	1,025.4	971.5	943.5	951.7	920.0	912.0	1,001.3	1,105.0	1,034.9	950.8	920.0	976.4
(‡)	+7,030	-5,460	-1,160	+247	-591	-45	+3,900	+27,440	-22,710	-8,020	-560	+1,790

Calendar year 1955..... ‡ -2,710
Water year 1955-56..... ‡ +1,860

† Elevation, in feet, at 12 p.m. (estimated) on last day of month.
‡ Change in contents in acre-feet.

White River near Buckley, Wash.

Location.--Lat 47°09'05", long 121°57'00", in SW¼NW¼ sec. 8, T. 19 N., R. 7 E., on right bank 0.7 mile upstream from Red Creek, 1 mile downstream from Mud Mountain Dam, 4 miles east of Buckley, and 8 miles downstream from Clearwater River.
Drainage area.--401 sq mi.
Records available.--October 1928 to November 1933, October 1938 to September 1956.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (Corps of Engineers benchmark). Oct. 26 to Dec. 9, 1928, staff gage and Dec. 9, 1928, to Nov. 30, 1933, water-stage recorder, at site 3 miles upstream at different datum. Nov. 26, 1938, to Feb. 14, 1939, staff gage at present site and datum.
Average discharge.--23 years, 1,417 cfs (1,026,000 acre-ft per year), adjusted for storage since December 1943.
Extremes.--Maximum discharge during year, 13,700 cfs Dec. 12 (elevation, 808.16 ft); minimum daily, 169 cfs Sept. 20.
1928-33, 1938-56: Maximum discharge, 17,000 cfs Feb. 26, 1932 (gage height, 17.5 ft, site and datum then in use), from rating curve extended above 4,000 cfs; minimum, 10 cfs Sept. 26, 1948 (elevation, 796.92 ft); minimum daily, 60 cfs May 17, 1955. Maximum stage known, 23.4 ft in December 1933 from floodmarks, at former site (discharge, 28,000 cfs, from rating curve extended above 3,000 cfs).
Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. Diversion for some community use within basin. Flow regulated by Mud Mountain Reservoir for flood control (see preceding page). Storage is not retained and observed annual runoff closely represents natural runoff of basin.
Cooperation.--Water-stage recorder inspected by employees of Corps of Engineers.
Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56, except periods of shifting control (elevation, in feet, and discharge in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
799.2	364	803.0	2,900	799.3	153	803.0	2,570
800.0	635	804.0	4,250	800.0	360	804.0	3,940
801.0	1,140	805.0	5,970	801.0	840	806.0	7,810
802.0	1,880			802.0	1,540	807.3	11,200

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	541	3,810	2,900	1,470	472	890	1,400	3,070	4,680	3,340	1,360	829
2	538	2,820	2,700	1,410	1,130	1,380	1,300	2,640	4,720	2,790	1,030	741
3	541	3,840	2,440	1,640	1,280	1,230	1,210	2,210	3,440	*2,400	1,000	695
4	742	4,120	1,840	2,360	925	1,070	1,300	2,110	4,770	2,090	961	665
5	880	4,270	1,620	2,450	931	*925	1,290	2,160	4,790	2,590	955	650
6	524	4,190	*1,060	2,090	873	824	1,190	2,280	4,740	2,620	985	635
7	769	3,940	1,610	1,870	851	846	1,240	2,510	4,680	2,050	991	665
8	760	3,260	1,820	1,650	824	890	1,270	*2,760	3,720	1,940	991	695
9	2,110	2,450	1,540	1,510	790	818	1,320	3,020	2,450	2,550	1,010	700
10	2,780	4,220	1,500	1,400	785	746	*1,690	3,230	2,370	2,950	1,000	725
11	2,360	4,460	4,380	1,330	840	670	2,300	3,340	2,340	3,030	997	937
12	1,540	4,040	11,100	1,270	1,070	665	2,380	3,310	2,310	3,030	1,040	741
13	1,340	2,680	4,540	1,380	931	675	2,710	3,160	*2,590	3,340	1,090	660
14	1,210	a2,650	*3,660	1,350	856	650	3,140	2,900	2,320	3,450	1,190	620
15	1,120	a2,650	3,080	1,910	610	645	3,420	2,670	2,770	3,260	1,260	610
16	1,000	a2,650	2,530	2,150	558	670	3,500	2,970	2,760	2,940	1,090	600
17	948	a2,600	3,450	*1,970	595	705	3,410	3,420	2,760	2,450	973	*605
18	*a380	a2,600	3,720	2,040	605	834	3,020	3,910	2,800	2,100	937	630
19	870	2,560	3,450	2,040	585	1,060	3,060	4,180	3,060	1,370	991	420
20	870	2,100	3,080	1,980	a940	1,090	3,520	4,410	3,630	999	1,070	*169
21	825	1,870	2,910	1,820	a900	1,250	4,000	*4,530	3,810	2,370	1,120	684
22	792	1,650	3,240	1,740	a800	1,500	5,020	4,580	4,040	2,440	1,100	522
23	752	1,790	3,600	1,790	a700	1,830	2,650	4,650	4,240	2,400	1,130	499
24	960	1,720	3,630	1,440	535	2,130	2,870	4,670	4,180	2,350	1,050	517
25	2,270	2,000	3,520	1,530	324	2,340	3,810	4,740	4,100	2,300	1,020	540
26	*2,790	2,920	3,260	1,330	336	2,610	3,760	4,720	4,000	2,130	1,160	615
27	2,660	4,200	2,820	1,240	851	2,010	3,690	4,410	3,910	2,020	955	655
28	2,450	4,630	1,920	1,200	1,030	1,670	3,620	3,680	3,840	1,800	856	590
29	2,680	3,960	1,750	1,130	670	1,700	3,510	4,620	3,750	1,570	895	650
30	3,680	2,910	1,640	1,030	-------	1,640	3,330	4,630	3,630	*1,670	868	1,000
31	4,100	-------	1,530	688	-------	1,560	-------	4,650	-------	1,770	834	-------
Total	45,782	93,560	91,840	50,208	22,597	37,523	79,930	110,140	107,200	74,099	31,909	19,264
Mean	1,477	3,119	2,963	1,620	779	1,210	2,664	3,553	3,573	2,390	1,029	642
Ac-ft	90,810	185,600	182,200	99,590	44,820	74,430	158,500	218,500	212,600	147,000	63,290	38,210
(†)	+7,030	-5,460	-1,160	+247	-591	-45	+3,900	+27,440	-22,710	-8,020	-560	+1,790
Adjusted for change in reservoir contents												
Mean	1,591	3,027	2,944	1,624	769	1,210	2,729	3,999	3,191	2,261	1,020	672
Cfsm	3.97	7.55	7.34	4.05	1.92	3.02	6.81	9.97	7.96	5.64	2.54	1.68
In.	4.57	8.42	8.46	4.67	2.07	3.48	7.59	11.50	8.88	6.50	2.93	1.87
Ac-ft	97,840	180,100	181,000	99,840	44,230	74,380	162,400	245,900	189,900	139,000	62,730	40,000

Observed

Calendar year 1955: Max 11,100 Min 60 Mean 1,824 Ac-ft 1,320,000
Water year 1955-56: Max 11,100 Min 169 Mean 2,088 Ac-ft 1,516,000

Adjusted

Calendar year 1955: Mean 1,820 Cfsm 4.54 In. 61.58 Ac-ft 1,317,000
Water year 1955-56: Mean 2,090 Cfsm 5.21 In. 70.94 Ac-ft 1,517,000

* Discharge measurement made on this day.
† Change in contents in Mud Mountain Reservoir, in acre-feet, furnished by Corps of Engineers.
a No gage-height record; discharge estimated on basis of records for Mud Mountain Reservoir.
Note.--Shifting-control method used Dec. 14, Mar. 3-18, May 14 to June 11, Sept. 15-19.

Stuck River near Sumner, Wash.

Location.--Lat 47°14'55", long 122°14'35", in NE¼SW¼ sec. 1, T. 20 N., R. 4 E., on right bank 300 ft downstream from county bridge, 3 miles north of Sumner, and 4½ miles upstream from mouth.

Drainage area.--470 sq mi, excludes that of Lake Tapps.

Records available.--January 1945 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Intercounty River Improvement Commission benchmark).

Average discharge.--11 years, 635 cfs (459,700 acre-ft per year).

Extremes.--Maximum discharge during year, 15,100 cfs Dec. 12 (elevation, 61.40 ft); minimum, 36 cfs Oct. 2, 3; minimum elevation, 51.42 ft Sept. 24.
1945-56: Maximum discharge, that of Dec. 12, 1955; minimum, 32 cfs Nov. 29, 30, 1952; minimum elevation, 48.48 ft Feb. 1, 1945 (channel affected by dredging).

Remarks.--Records good except those for periods of shifting control, which are fair. An average of 600 to 900 cfs diverted from White River (head of Stuck River) above station into Lake Tapps for Dieringer powerplant of Puget Sound Power & Light Co. High flow influenced by regulation in Mud Mountain Reservoir (see p. 81).

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56, except periods of shifting control (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1-29		Oct. 30 to Apr. 30				Apr. 30 to Sept. 30	
51.7	31	52.3	148	55.0	2,180	51.4	80
52.0	61	52.6	235	56.0	3,560	51.8	170
52.4	125	53.0	405	57.0	5,280	52.2	300
52.8	221	53.5	725	59.0	9,440	53.0	680
53.2	355	54.0	1,130	61.0	14,100	54.0	1,440
53.8	655					55.0	2,570
54.5	1,160					56.0	4,120

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	2,650	1,880	427	242	225	375	3,620	2,710	1,900	635	135
2	40	1,840	1,760	422	260	*337	346	3,270	2,720	1,050	1,240	132
3	37	2,800	1,300	770	263	380	306	2,680	1,580	1,290	*854	125
4	54	*2,760	1,230	1,240	270	337	278	2,490	2,680	272	165	120
5	62	3,140	*1,980	1,780	263	282	263	2,080	2,790	559	152	118
6	386	3,230	1,580	1,440	249	256	242	716	2,770	982	152	114
7	348	3,000	1,380	1,170	246	266	263	898	2,720	716	142	112
8	98	2,380	860	740	232	306	222	1,050	2,380	580	138	112
9	317	1,220	559	514	219	302	*213	1,230	525	539	142	114
10	1,030	2,540	449	449	209	266	209	1,460	465	1,510	145	122
11	892	3,280	2,100	438	225	252	319	1,610	455	1,600	142	148
12	247	3,120	*13,400	400	249	232	520	1,630	430	1,650	135	135
13	160	1,510	*5,900	427	232	238	648	1,480	613	1,810	135	116
14	138	824	4,940	370	209	213	936	*1,180	1,410	2,030	145	112
15	117	444	2,240	648	263	200	1,240	849	1,070	1,620	158	110
16	112	266	1,110	*704	164	197	1,290	954	1,010	1,320	150	108
17	108	232	1,860	466	156	203	1,180	1,480	1,020	919	142	110
18	125	270	2,310	454	151	188	872	2,340	1,030	500	135	698
19	608	1,100	2,040	559	148	174	662	2,900	1,320	555	132	606
20	666	606	2,140	816	164	191	1,010	2,920	1,860	565	135	240
21	108	346	2,160	634	213	213	1,430	2,790	2,240	470	138	132
22	86	290	2,120	520	246	194	2,350	2,600	2,340	490	140	128
23	70	274	2,350	655	232	375	2,430	2,610	2,720	505	140	108
24	89	355	2,260	654	324	732	1,170	2,680	2,680	480	140	94
25	*447	770	2,040	618	578	778	3,420	2,700	*2,600	408	138	98
26	*1,110	2,010	1,810	337	613	1,070	3,340	2,720	2,490	324	152	*102
27	972	3,240	1,560	310	472	641	2,250	2,740	2,390	237	148	122
28	685	3,540	944	302	235	400	2,140	1,490	2,290	218	130	98
29	913	3,040	484	286	225	410	2,020	2,670	2,190	176	135	102
30	1,940	2,070	460	270	-------	422	3,240	2,630	2,080	194	140	114
31	2,700	-------	449	282	-------	444	-------	2,670	-------	182	132	-------
Total	14,711	53,147	67,655	19,102	7,552	10,724	35,184	65,137	55,578	25,651	6,707	4,685
Mean	475	1,772	2,182	616	260	346	1,173	2,101	1,853	827	216	156
Ac-ft	29,180	105,400	134,200	37,890	14,980	21,270	69,790	129,200	110,200	50,880	13,300	9,290

Calendar year 1955: Max 13,400 Min 37 Mean 774 Ac-ft 560,200
Water year 1955-56: Max 13,400 Min 37 Mean 1,000 Ac-ft 725,600

* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 6, 7, 9-11, 19, 20, 25-29, Apr. 24-30.

Lake Tapps near Sumner, Wash.

Location.--Lat 47°14'30", long 122°11'30", in NE¼ sec. 8, T. 20 N., R. 5 E., 1½ miles east of Dieringer and 3 miles northeast of Sumner.

Drainage area.--12.5 sq mi.

Records available.--November 1911 to September 1956. Prior to October 1950, change in contents published with records for Puyallup River at Puyallup. Month-end contents only November 1911 to September 1950, published in WSP 1316.

Gage.--Staff gage read hourly. Datum of gage is 0.7 ft above mean sea level (levels by Puget Sound Power & Light Co.).

Extremes.--Maximum contents observed during year, 50,450 acre-ft Jan. 19 (gage height, 541.02 ft); minimum observed, 10,540 acre-ft Mar. 16 (gage height, 518.14 ft).
1934-56: Maximum contents observed, 50,490 acre-ft Nov. 1, 1954 (gage height, 541.04 ft); minimum, 7,620 acre-ft Mar. 21, 1953 (gage height, 515.00 ft).
The Puget Sound Power & Light Co. reports a minimum observed lake gage height of 505.70 ft June 24, 1912.

Remarks.--Reservoir is formed on natural lake into which a great part of the low-water flow of White River is diverted. Usable capacity, 50,400 acre-ft between elevations 505 and 541 ft. Storage used for power.

Cooperation.--Gage-height record and contents curve furnished by Puget Sound Power & Light Co.

Month-end gage height and contents, water year October 1955 to September 1956

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	537.45	42,490	-
Oct. 31	540.92	50,220	+7,730
Nov. 30	540.70	49,710	-510
Dec. 31	540.52	49,300	-410
Calendar year 1955	-	-	+6,960
Jan. 31	537.66	42,950	-6,350
Feb. 29	524.46	17,840	-25,110
Mar. 31	528.85	24,930	+7,090
Apr. 30	538.42	44,620	+19,690
May 31	538.85	45,570	+950
June 30	539.52	47,040	+1,470
July 31	538.33	44,430	-2,610
Aug. 31	538.67	45,170	+740
Sept.30	538.98	45,860	+690
Water year 1955-56	-	-	+3,370

† Gage height at 12 p.m.

Puyallup River at Puyallup, Wash.

Location.--Lat 47°12'30", long 122°19'35", in NW¼ sec. 20, T. 20 N., R. 4 E., on left bank 0.8 mile upstream from bridge at Clark Creek, 1 mile northwest of Puyallup, and 7 miles upstream from mouth.
Drainage area.--948 sq mi.
Records available.--May 1914 to September 1956.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Dec. 3, 1919, at sites 1¼ miles upstream and 900 ft upstream at different datums. Dec. 3, 1919, to Nov. 9, 1935, at site 500 ft upstream at datum 9.61 ft higher than present datum.
Average discharge.--42 years, 3,296 cfs (2,386,000 acre-ft per year), adjusted for storage in Lake Tapps since October 1934, and Mud Mountain Reservoir October 1944 to September 1947.
Extremes.--Maximum discharge during year, 37,600 cfs Dec. 12 (elevation, 25.73 ft); minimum, 386 cfs Oct. 1, 2 (elevation, 8.33 ft); minimum daily, 609 cfs Oct. 2.
1914-56: Maximum discharge, 57,000 cfs Dec. 10, 1933 (elevation, 31.0 ft, present datum); minimum, 306 cfs Sept. 25, 1955 (elevation, 8.23 ft); minimum daily, 400 cfs Nov. 30, 1952.
Remarks.--Records excellent. All diverted water returned to river above gage. Large part of flow of White River diverted into Lake Tapps (see preceding page) returned via Stuck River above station. Flood flow regulated by Mud Mountain Reservoir on White River (see p. 81). Some pondage on tributaries and upper Puyallup River. Diurnal fluctuations caused by powerplants and glacial melts above station.
Revisions.--WSP 832: Drainage area.

Rating table, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

8.6	585	14.0	7,960
9.0	915	15.0	9,900
9.5	1,360	17.0	14,200
10.0	1,870	19.0	19,000
11.0	3,090	21.0	24,200
12.0	4,510	24.0	32,600
13.0	6,150		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	7,600	8,060	3,570	3,500	2,740	3,350	6,360	7,340	5,420	3,280	2,000
2	609	6,740	7,710	3,530	3,390	*4,460	3,770	5,930	7,380	4,840	3,920	1,330
3	1,420	10,300	6,180	5,150	3,120	4,290	3,570	5,260	6,190	4,870	*3,640	942
4	1,940	10,200	5,420	7,010	2,910	3,500	3,510	5,140	6,930	3,950	2,510	1,530
5	2,640	9,560	*5,880	7,780	2,910	3,460	3,530	4,800	6,820	4,400	1,730	1,440
6	2,320	8,410	5,340	6,940	2,990	3,160	3,380	2,900	6,580	5,480	2,300	1,450
7	2,390	7,680	5,160	6,250	3,160	3,200	3,280	3,900	6,350	4,480	2,160	1,450
8	1,890	6,770	4,400	5,130	3,110	3,540	2,380	4,310	6,480	4,320	2,150	1,400
9	3,750	5,270	4,680	4,580	2,990	3,280	*3,170	4,820	5,120	4,400	2,120	1,050
10	7,660	9,700	4,230	4,200	2,540	2,850	3,530	5,340	5,430	5,740	2,190	1,610
11	4,900	8,940	11,400	3,920	2,200	2,660	3,770	5,390	5,550	6,230	1,690	1,920
12	3,230	7,630	*31,900	3,800	2,090	2,690	4,050	5,060	4,810	6,100	1,280	1,790
13	3,110	5,600	15,000	3,960	2,980	2,560	4,310	3,820	4,720	6,130	1,930	1,630
14	3,230	4,150	11,500	3,740	2,810	2,390	4,680	*4,230	5,620	5,940	2,140	1,590
15	2,570	3,790	7,260	5,810	2,690	2,310	4,430	3,910	5,980	5,120	2,240	1,450
16	2,280	3,570	5,620	*6,150	2,450	2,260	5,170	4,380	5,470	4,940	2,050	858
17	2,740	3,410	5,600	5,290	2,370	2,040	4,750	5,980	5,760	4,460	1,860	1,360
18	2,750	3,480	5,540	5,030	1,940	1,560	4,280	8,380	5,770	4,020	1,630	1,970
19	2,990	5,990	5,660	5,200	1,290	2,700	4,090	9,060	7,230	4,570	1,340	*2,070
20	3,200	4,630	7,200	5,400	2,270	3,000	4,970	8,970	8,160	4,680	2,120	1,620
21	2,460	4,360	9,110	4,780	2,370	3,300	6,040	7,670	7,560	4,540	2,630	1,460
22	2,050	3,860	11,100	4,490	2,160	4,050	6,720	7,180	7,140	4,150	2,470	1,260
23	1,020	3,740	10,000	4,940	2,290	5,070	7,270	7,420	7,120	4,120	2,400	816
24	*2,180	3,950	8,040	4,600	2,400	6,130	5,030	7,240	6,770	4,450	2,410	1,280
25	5,480	6,180	6,170	4,240	2,450	6,400	6,880	6,940	*6,580	4,360	2,250	1,370
26	7,130	9,680	6,020	3,730	1,850	6,820	7,070	6,580	6,360	4,080	2,670	1,540
27	5,240	12,600	5,960	3,470	2,670	5,280	5,790	6,630	6,610	3,700	2,280	1,860
28	5,710	11,800	5,030	3,350	2,470	4,470	5,500	5,180	6,730	3,510	2,060	1,480
29	7,500	9,670	4,170	3,310	2,690	4,720	4,890	6,190	6,460	3,150	1,990	1,510
30	9,720	8,480	3,940	3,240	-------	4,550	6,070	6,600	6,060	3,310	2,110	1,910
31	8,320	-------	3,740	3,370	-------	4,410	-------	7,490	-------	2,920	2,020	-------
Total	113,559	207,740	237,020	145,960	75,060	113,850	139,030	183,060	191,080	142,380	69,570	44,946
Mean	3,663	6,925	7,646	4,708	2,588	3,673	4,634	5,905	6,369	4,593	2,244	1,498
Ac-ft	225,200	412,000	470,100	289,500	148,900	225,800	275,800	363,100	379,000	282,400	138,000	89,150
(†)	+7,730	-510	-410	-6,350	-25,110	+7,090	+19,690	+950	+1,470	-2,610	+740	+690

Adjusted for change in contents in Lake Tapps

Mean	3,788	6,915	7,639	4,606	2,152	3,788	4,966	5,920	6,395	4,551	2,256	1,510
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	232,900	411,500	469,700	283,200	123,800	232,900	295,500	364,000	380,500	279,800	138,700	89,840

Observed

Calendar year 1955: Max 31,900 Min 432 Mean 4,240 Ac-ft 3,069,000
Water year 1955-56: Max 31,900 Min 609 Mean 4,544 Ac-ft 3,299,000

Adjusted

Calendar year 1955: Mean 4,249 Cfsm - In. - Ac-ft 3,076,000
Water year 1955-56: Mean 4,549 Cfsm 4.80 In. 65.32 Ac-ft 3,302,000

* Discharge measurement made on this day.
† Change in contents in Lake Tapps, in acre-feet, based on information furnished by Puget Sound Power & Light Co.

Snow Creek near Lester, Wash.

Location.--Lat 47°15'00", long 121°24'00", in NW¼NW¼ sec. 3, T. 20 N., R. 11 E., on right bank at road crossing a quarter of a mile upstream from mouth and 5½ miles northeast of Lester.

Drainage area.--11.9 sq mi.

Records available.--October 1945 to September 1956.

Gage.--Water-stage recorder with concrete and woven-wire control. Altitude of gage is 1,950 ft (from topographic map).

Average discharge.--11 years, 69.1 cfs (50,030 acre-ft per year).

Extremes.--Maximum discharge during year, 1,210 cfs Dec. 11 (gage height, 4.87 ft); minimum, 6.4 cfs Sept. 19, 20 (gage height, 2.08 ft).
1945-56: Maximum discharge, 1,210 cfs Jan. 31, 1953, Dec. 11, 1955 (gage height, 4.87 ft); minimum, 3.0 cfs Nov. 29, 30, 1952 (gage height, 1.99 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
2.1	7.3	3.2	159	2.0	3.4	2.7	60
2.3	19.2	3.7	315	2.1	7.3	3.0	110
2.5	38	4.2	585	2.2	12.2	3.5	242
2.8	77			2.4	27	4.2	585

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.1	111	42	30	16	26	37	160	292	78	17.8	8.2
2	11.9	98	38	28	18	33	35	150	220	83	16.4	7.8
3	11.3	204	36	26	20	27	34	145	220	83	15.7	7.8
4	33	419	32	35	18	23	44	140	201	78	15.1	7.3
5	46	279	30	38	16	22	45	160	181	83	15.1	7.3
6	34	169	30	35	15	19.2	41	200	163	97	13.9	*7.3
7	30	128	28	32	14	19.2	38	250	150	86	13.3	7.3
8	73	115	27	30	14	17.8	38	*300	148	95	12.7	7.3
9	244	268	26	28	13	17.1	44	304	168	100	12.2	7.3
10	193	519	25	26	13	15.7	69	307	198	97	12.2	7.8
11	120	265	435	25	20	14.5	108	226	176	88	12.2	16.5
12	100	152	581	24	30	14.5	118	165	138	83	11.2	9.7
13	86	110	208	30	26	14.5	150	138	133	78	10.7	8.7
14	70	88	125	26	22	13.9	198	143	138	65	10.7	7.8
15	58	70	100	*23	20	13.9	207	190	138	57	10.7	7.3
16	48	60	85	25	*22	13.9	160	292	125	53	10.7	7.3
17	41	50	70	26	22	14.5	133	425	125	50	10.7	7.3
18	*37	45	60	25	20	17.1	136	505	141	49	10.2	6.8
19	34	40	50	25	18	23	184	511	190	49	10.2	6.4
20	30	36	45	23	17	25	285	436	*160	46	10.2	7.3
21	28	34	60	22	16	26	409	307	125	43	9.7	8.7
22	26	*32	120	21	15	29	395	307	114	37	9.7	7.3
23	24	32	100	20	15	*38	285	340	110	34	9.2	6.8
24	42	32	85	19.2	14.5	45	210	277	95	31	9.2	8.2
25	76	58	70	18.5	14.5	54	193	226	85	28	9.7	7.8
26	91	98	60	17.1	13.9	60	213	239	86	27	10.2	7.8
27	94	80	50	17.1	13.3	51	210	204	112	24	9.7	7.3
28	254	61	45	17.1	13.3	44	205	171	125	22	9.2	10.2
29	468	50	40	16.4	13.3	42	200	213	106	21	9.7	26
30	326	46	35	15.1	------	42	180	319	86	19.2	9.2	25
31	169	-----	32	15	-----	40	-----	366	------	*18.5	8.7	------
Total	2,911.3	3,747	2,770	758.5	502.8	855.8	4,604	8,116	4,449	1,802.7	356.1	275.6
Mean	93.9	125	89.4	24.5	17.3	27.6	153	262	148	58.2	11.5	9.19
Cfsm	7.89	10.5	7.51	2.06	1.45	2.32	12.9	22.0	12.4	4.89	0.966	0.772
In.	9.10	11.71	8.66	2.37	1.57	2.67	14.39	25.36	13.90	5.63	1.11	0.86
Ac-ft	5,770	7,430	5,490	1,500	997	1,700	9,130	16,100	8,820	3,580	706	547

Calendar year 1955: Max 601 Min 7.8 Mean 83.5 Cfsm 7.02 In. 95.25 Ac-ft 60,440
Water year 1955-56: Max 581 Min 6.4 Mean 85.1 Cfsm 7.15 In. 97.33 Ac-ft 61,770

Peak discharge (base, 350 cfs).--Oct. 29 (3 p.m.) 692 cfs (4.34 ft); Nov. 4 (12:30 p.m.) 505 cfs (4.08 ft); Nov. 10 (2 a.m.) 684 cfs (4.33 ft); Dec. 11 (9:30 p.m.) 1,210 cfs (4.87 ft); Apr. 21 (10 p.m.) 452 cfs (3.99 ft); May 19 (8 p.m.) 558 cfs (4.16 ft); May 30 (9 to 11 p.m.) 385 cfs (3.86 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 13-21, Dec. 15 to Jan. 14, Jan. 31 to Feb. 15, Feb. 18-23, Apr. 27 to May 7; discharge estimated on basis of recorded range in stage and records for nearby stations.

Friday Creek near Lester, Wash.

Location.--Lat 47°13'10", long 121°27'10", in SE¼NW¼ sec. 18, T. 20 N., R. 11 E., on left bank 0.4 mile upstream from mouth and 2 miles northeast of Lester.

Drainage area.--4.55 sq mi.

Records available.--October 1945 to September 1956.

Gage.--Water-stage recorder. Concrete control since Aug. 9, 1951. Altitude of gage is 1,760 ft (from topographic map).

Average discharge.--11 years, 28.4 cfs (20,560 acre-ft per year).

Extremes.--Maximum discharge during year, 406 cfs Dec. 11 (gage height, 4.31 ft); minimum, 3.3 cfs Sept. 18, 19 (gage height, 2.55 ft).
1945-56: Maximum discharge, 497 cfs Dec. 11, 1946 (gage height, 4.90 ft); minimum, 1.3 cfs Sept. 26-29, Oct. 2, 3, 1949, Nov. 28, 29, 30, 1952; minimum gage height, 2.28 ft Sept. 29, 30, 1946.

Remarks.--Records good. Small diversion for domestic use. No regulation.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

2.5	2.3	3.2	48
2.6	4.5	3.4	80
2.7	7.6	3.6	125
2.8	12.0	3.8	180
2.9	18.0	4.1	300
3.0	26		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	44	22	16.2	8.4	12.4	15.6	51	115	43	*8.8	4.2
2	6.0	44	20	15.6	8.8	20	13.8	50	92	44	8.8	4.2
3	6.0	102	18.8	15.0	9.2	13.2	13.2	47	92	43	8.4	3.9
4	14.8	130	16.8	18.0	7.6	10.0	16.8	44	90	42	8.4	3.9
5	17.4	100	16.2	18.8	7.2	8.8	18.0	47	88	44	8.0	3.7
6	12.0	66	15.0	16.8	6.9	7.6	15.6	54	80	50	7.6	*3.7
7	10.5	50	14.4	15.0	6.6	8.0	15.0	66	73	46	7.2	3.7
8	26	46	13.8	13.8	6.6	8.4	15.6	78	70	47	6.9	3.7
9	84	127	13.2	13.2	6.6	7.6	21	*88	75	48	6.9	3.7
10	68	256	13.2	12.0	6.6	6.9	35	88	86	47	6.6	3.9
11	47	125	159	11.5	8.4	6.6	44	75	78	42	6.6	6.9
12	40	66	203	11.5	14.4	6.3	44	60	68	38	6.3	4.5
13	33	46	80	13.8	11.0	6.3	58	51	63	36	6.0	3.9
14	28	36	50	*13.2	9.6	6.3	72	48	63	32	6.0	3.9
15	24	29	38	12.0	8.0	6.6	70	60	66	28	6.0	3.7
16	20	26	32	12.0	*8.4	7.2	52	88	63	24	6.0	3.7
17	18.0	24	27	12.0	8.4	9.6	44	128	65	24	5.7	3.5
18	*16.2	*22	22	12.6	7.6	12.6	47	150	70	23	5.4	3.5
19	15.0	21	20	13.2	6.3	17.4	68	156	*86	22	5.4	3.5
20	13.2	19.6	20	12.0	6.3	15.0	96	142	80	21	4.8	3.5
21	12.0	18.0	27	11.0	6.0	15.6	130	115	68	19.6	4.8	3.7
22	11.0	*16.8	62	10.5	6.0	*17.4	122	110	62	17.4	4.8	3.7
23	10.5	15.6	50	10.5	6.0	20	88	125	58	16.2	4.5	3.5
24	19.2	16.2	38	10.0	6.0	21	72	105	51	15.0	4.5	3.9
25	29	32	33	9.6	5.7	24	66	88	46	13.8	5.1	3.9
26	32	58	29	8.8	5.7	26	73	90	47	12.6	5.7	3.7
27	39	44	25	8.4	5.7	18.8	70	84	57	12.0	5.1	3.7
28	118	30	22	8.4	5.7	15.6	65	75	60	11.0	4.8	4.5
29	181	24	20	7.6	5.7	16.2	68	80	56	10.5	4.8	8.6
30	128	23	18.8	7.6	------	16.8	57	110	47	9.6	4.5	7.6
31	68	-----	17.4	7.6	-----	16.8	-----	132	-----	9.6	4.2	------
Total	1,153.1	1,657.2	1,156.6	378.2	215.4	405.0	1,585.6	2,685	2,115	891.3	188.6	126.0
Mean	37.2	55.2	37.3	12.2	7.43	13.1	52.9	86.6	70.5	28.8	6.08	4.20
Cfsm	8.18	12.1	8.20	2.68	1.63	2.88	11.6	19.0	15.5	6.33	1.34	0.923
In.	9.43	13.55	9.45	3.09	1.76	3.31	12.96	21.95	17.29	7.29	1.54	1.03
Ac-ft	2,290	3,290	2,290	750	427	803	3,140	5,330	4,200	1,770	374	250

Calendar year 1955: Max 256 Min 4.8 Mean 33.6 Cfsm 7.38 In. 100.15 Ac-ft 24,310
Water year 1955-56: Max 256 Min 3.5 Mean 34.3 Cfsm 7.54 In. 102.65 Ac-ft 24,910

Peak discharge (base, 150 cfs).--Oct. 29 (1:20 p.m.) 291 cfs (4.08 ft); Nov. 4 (2 to 3 p.m.) 150 cfs (3.70 ft); Nov. 10 (3 a.m.) 360 cfs (4.22 ft); Dec. 11 (10 p.m.) 406 cfs (4.31 ft); May 19 (10 p.m.) 165 cfs (3.75 ft).
* Discharge measurement made on this day.

Green River near Lester, Wash.

Location.--Lat 47°12'30", long 121°33'10", in NE¼SE¼ sec. 20, T. 20 N., R. 10 E., on right bank three-eighths of a mile downstream from Champion Creek, 1¼ miles downstream from McCain Creek, and 3 miles west of Lester.

Drainage area.--104 sq mi.

Records available.--October 1945 to September 1956.

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

Average discharge.--11 years, 435 cfs (314,900 acre-ft per year).

Extremes.--Maximum discharge during year, 7,630 cfs Dec. 12 (gage height, 11.3 ft, estimated from mean of surge); minimum, 40 cfs Sept. 19, 20, 23, 24 (gage height, 3.05 ft). 1945-56: Maximum discharge, 10,200 cfs probably Dec. 11, 1946 (gage height, 12.7 ft, from high-water mark in well), from rating curve extended above 4,500 cfs; minimum, 22 cfs Nov. 30, 1952 (gage height, 2.92 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1947(M). WSP 1316: 1948(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
3.5	64	5.5	640	3.0	37	5.0	445
3.7	86	6.0	920	3.2	50	5.5	665
4.0	134	7.0	1,670	3.4	69	6.0	935
4.3	200	8.0	2,670	3.7	105	7.0	1,670
4.6	284	9.0	3,920	4.0	157	8.0	2,670
5.0	420			4.3	227	9.0	3,920
				4.6	309	10.0	5,420

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	854	399	270	130	203	384	941	1,650	412	98	49
2	70	740	368	250	135	412	350	935	1,230	401	96	47
3	68	1,280	326	280	140	331	334	941	1,180	401	95	46
4	108	1,950	297	350	130	277	401	889	1,090	370	90	45
5	186	1,670	278	270	125	232	441	953	947	373	86	44
6	144	1,140	263	250	120	202	387	1,120	855	408	82	*42
7	125	914	251	235	120	195	370	1,360	794	373	*80	42
8	187	800	234	220	116	193	387	*1,670	794	373	77	42
9	816	1,070	223	210	114	179	453	1,880	843	394	74	42
10	848	2,690	218	210	114	161	715	1,920	977	394	72	44
11	590	1,670	2,120	200	127	153	1,060	1,440	918	356	71	92
12	472	1,040	4,600	210	230	141	1,060	1,070	767	331	69	66
13	406	776	1,740	230	197	141	1,340	883	720	315	67	53
14	360	615	1,200	*240	179	135	1,730	866	720	286	66	48
15	310	496	860	248	*145	135	1,680	1,090	720	253	65	46
16	269	420	540	248	140	147	1,240	1,740	695	235	65	44
17	240	350	450	261	135	166	1,010	2,640	705	217	62	42
18	*216	420	370	266	130	224	1,020	3,190	738	207	60	42
19	198	480	330	269	125	312	1,410	3,260	*883	200	58	41
20	181	303	380	245	120	324	2,160	2,880	*849	195	56	42
21	169	281	426	232	120	*337	2,980	2,000	720	181	55	44
22	158	257	872	224	117	380	2,900	1,900	651	168	54	42
23	148	*243	923	224	114	441	2,090	2,130	617	153	53	41
24	204	240	710	207	112	493	1,540	1,830	553	143	53	42
25	349	389	589	190	111	558	1,360	1,420	493	137	55	48
26	472	866	514	181	108	617	1,490	1,410	469	130	70	43
27	544	878	441	170	105	498	1,450	1,220	523	123	61	45
28	1,520	605	387	168	104	426	1,190	1,030	571	116	55	45
29	2,760	468	350	157	106	415	1,130	1,140	531	110	54	70
30	2,370	420	310	147	------	426	1,020	1,690	461	105	53	107
31	1,250	-----	290	140	------	415	-----	2,040	------	*101	49	------
Total	15,812	24,325	21,259	7,002	3,769	9,269	35,082	49,478	23,662	7,961	2,101	1,486
Mean	510	811	686	226	130	299	1,169	1,596	789	257	67.8	49.5
Cfsm	4.90	7.80	6.60	2.17	1.25	2.88	11.2	15.3	7.59	2.47	0.652	0.476
In.	5.65	8.70	7.60	2.50	1.35	3.31	12.55	17.69	8.46	2.85	0.75	0.53
Ac-ft	31,360	48,250	42,170	13,890	7,480	18,380	69,580	98,140	46,930	15,790	4,170	2,950

Calendar year 1955: Max 4,600 Min 57 Mean 515 Cfsm 4.95 In. 67.17 Ac-ft 372,600
Water year 1955-56: Max 4,600 Min 41 Mean 550 Cfsm 5.29 In. 71.94 Ac-ft 399,100

Peak discharge (base, 1,500 cfs).--Oct. 29 (5:20 p.m.) 4,500 cfs (9.41 ft); Nov. 4 (5 p.m.) 2,240 cfs (7.60 ft); Nov. 10 (4:20 a.m.) 3,210 cfs (8.46 ft); Dec. 12 (about 2 a.m.) 7,630 cfs (11.3 ft); Apr. 15 (1 a.m.) 1,890 cfs (7.24 ft); Apr. 22 (12:30 a.m.) 3,270 cfs (8.51 ft); May 10 (4 a.m.) 2,030 cfs (7.39 ft); May 18 (10 p.m.) 3,460 cfs (8.65 ft); May 31 (4:30 a.m.) 2,110 cfs (7.47 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16-19, Dec. 14-20, Dec. 30 to Jan. 5, Jan. 8-13, Jan.31 to Feb. 5, Feb. 15-20; discharge estimated on basis of weather records and records for nearby stations.

Smay Creek near Lester, Wash.

Location.--Lat 47°15'40", long 121°33'50", in SW¼ sec. 32, T. 21 N., R. 10 E., on right bank 3½ miles upstream from mouth and 4½ miles northwest of Lester.

Drainage area.--8.71 sq mi.

Records available.--September 1946 to September 1956.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,900 ft (from topographic map). Prior to Dec. 11, 1946, water-stage recorder at site 200 ft upstream at datum 4.28 ft higher (destroyed by high water of Dec. 11, 1946).

Average discharge.--10 years, 53.0 cfs (38,370 acre-ft per year).

Extremes.--Maximum discharge during year, 478 cfs Dec. 12 (gage height, 4.53 ft); minimum, 8.8 cfs Sept. 19-25 (gage height, 2.62 ft).
1946-56: Maximum discharge not determined, probably occurred Dec. 11, 1946, when recorder was destroyed by high water; minimum, 4.2 cfs Nov. 21 to Dec. 1, 1952.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No regulation or diversion above station.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 10				Nov. 11 to Sept. 30			
2.6	8.4	3.2	59	2.6	8.0	3.4	90
2.7	12.9	3.4	91	2.7	12.4	3.6	131
2.8	18.8	3.6	133	2.8	18.1	3.8	184
2.9	26	3.9	214	2.9	25	4.0	247
3.0	36	4.2	323	3.0	34	4.3	366
				3.2	58		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.9	95	67	43	b21	24	34	105	173	61	18.8	10.9
2	11.4	89	60	41	b20	31	32	100	146	60	18.1	10.9
3	11.9	140	53	41	b21	25	32	94	141	60	17.4	10.9
4	19.5	196	49	50	b20	22	33	94	141	57	16.8	10.4
5	22	173	45	48	b20	20	32	96	136	60	16.8	*10.4
6	21	129	44	45	b19.5	18.8	32	103	136	66	16.2	10.0
7	21	105	41	42	18.8	19.5	31	120	124	61	*15.6	10.0
8	40	91	38	40	18.1	18.1	32	138	118	61	15.6	10.0
9	105	135	36	37	18.1	17.4	32	*156	118	66	15.0	10.0
10	131	315	34	36	17.4	16.2	40	170	127	64	14.4	10.4
11	97	205	174	34	20	15.6	52	151	120	58	14.4	15.1
12	76	136	347	33	24	15.0	61	127	105	53	14.4	10.9
13	64	a96	167	*34	21	14.4	78	109	96	52	13.9	10.0
14	55	a80	113	32	*20	13.9	103	101	96	48	13.9	9.6
15	49	a70	90	34	a19	13.9	113	109	96	41	13.4	9.6
16	43	a65	76	36	a18	13.9	101	146	92	38	12.9	9.2
17	39	*61	67	36	a18	14.4	87	214	90	36	12.9	9.2
18	*36	61	58	36	a17	15.6	82	276	90	35	12.4	9.2
19	34	61	54	35	a17	16.8	92	291	113	34	12.4	8.8
20	30	53	58	33	a16	*18.1	134	261	111	32	11.9	9.2
21	29	49	82	32	16.2	24	202	202	*98	31	11.4	9.2
22	28	45	134	32	15.6	28	208	190	87	29	11.9	8.8
23	26	43	124	30	15.0	35	164	211	83	27	11.9	8.8
24	37	45	100	28	15.0	40	136	190	76	25	11.9	9.2
25	49	72	82	27	15.0	45	124	162	70	24	12.4	8.8
26	62	118	73	26	14.4	48	129	159	67	24	13.4	9.6
27	71	118	62	24	13.9	44	131	148	73	22	11.9	9.2
28	150	90	57	24	13.9	40	129	134	78	22	11.4	10.0
29	208	75	53	24	13.9	40	127	134	75	21	11.4	14.8
30	199	68	49	23	------	38	113	173	66	20	10.9	13.9
31	131	-----	46	b22	------	36	-----	196	------	19.5	10.9	------
Total	1,907.7	3,079	2,533	1,058	516.8	781.6	2,696	4,860	3,142	1,307.5	426.6	307.0
Mean	61.5	103	81.7	34.1	17.8	25.2	89.9	157	105	42.2	13.8	10.2
Cfsm	7.06	11.8	9.38	3.92	2.04	2.89	10.3	18.0	12.1	4.85	1.58	1.17
In.	8.15	13.15	10.82	4.52	2.21	3.34	11.51	20.75	13.42	5.58	1.82	1.31
Ac-ft	3,780	6,110	5,020	2,100	1,030	1,550	5,350	9,640	6,230	2,590	846	609

Calendar year 1955: Max 347 Min 10.4 Mean 62.0 Cfsm 7.12 In. 96.65 Ac-ft 44,890
Water year 1955-56: Max 347 Min 8.8 Mean 61.8 Cfsm 7.10 In. 96.58 Ac-ft 44,860

Peak discharge (base, 200 cfs).--Oct. 29 (8 to 9 p.m.) 265 cfs (4.05 ft); Nov. 4 (4 to 6 p.m.) 211 cfs (3.89 ft); Nov. 10 (9 a.m.) 349 cfs (4.26 ft); Dec. 12 (2 a.m.) 478 cfs (4.53 ft); Apr. 22 (1:30 a.m.) 224 cfs (3.93 ft); May 18, 19 (11 p.m. to 4 a.m.) 295 cfs (4.13 ft); May 31 (5 to 10 a.m.) 202 cfs (3.86 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Bear Creek near Eagle Gorge, Wash.

Location.--Lat 47°17'00", long 121°48'10", in NW¼ sec. 28, T. 21 N., R. 8 E., on left bank a quarter of a mile upstream from mouth and 2½ miles northwest of Eagle Gorge.

Drainage area.--4.25 sq mi.

Records available.--September 1946 to January 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,000 ft (from topographic map). Prior to Sept. 8, 1949, at site 25 ft upstream at same datum.

Average discharge.--9 years (1946-55), 25.7 cfs (18,610 acre-ft per year).

Extremes.--Maximum discharge during period October to January, 1,010 cfs Dec. 11 (gage height, 4.46 ft), from rating curve extended above 82 cfs on basis of slope-area determination at gage height 4.00 ft; minimum, 5.6 cfs Jan. 31; minimum gage height, 0.60 ft Oct. 3.
1946-56: Maximum discharge, that of Dec. 11, 1955; minimum daily, 0.5 cfs Oct. 17, 18, 1946; minimum gage height, 0.41 ft Sept. 16-24, 1951.

Remarks.--Records fair except those for period of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1946-47.

Rating table, Oct. 1, 1955, to Jan. 31, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12 to Jan. 9)

0.5	3.5	1.2	51
.6	6.2	1.5	96
.7	10	2.0	208
.9	22	2.6	373

Discharge, in cubic feet per second, water year October 1955 to January 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	42	109	17.0								
2	6.8	64	70	15.0								
3	6.8	91	59	24								
4	41	86	34	69								
5	33	63	27	55								
6	20	46	26	38								
7	18.9	36	26	30								
8	23	32	25	22								
9	115	34	44	*18.6								
10	113	52	41	15.0								
11	56	46	352	14.0								
12	38	35	*248	19.0								
13	30	25	103	45								
14	25	21	67	34								
15	20	18	52	42								
16	17.6	16	42	49								
17	*15.0	15	36	48								
18	12.5	35	29	59								
19	14.0	80	27	52								
20	12.5	60	63	50								
21	11.5	45	91	42								
22	10.0	35	184	43								
23	9.6	40	115	52								
24	26	50	68	38								
25	123	80	50	28								
26	89	150	43	22								
27	77	100	38	16.3								
28	96	*79	30	14.0								
29	127	66	26	9.6								
30	113	95	22	7.2	------							
31	61	-----	18.9	5.6	-----		-----		------			------
Total	1,370.8	1,637	2,165.9	991.3								
Mean	44.2	54.6	69.9	32.0								
Cfsm	10.4	12.8	16.4	7.53								
In.	12.00	14.32	18.95	8.67								
Ac-ft	2,720	3,250	4,300	1,970								

Calendar year 1955: Max 352 Min 3.1 Mean 33.7 Cfsm 7.93 In. 107.59 Ac-ft 24,380
Water year 1955-56: Max - Min - Mean - Cfsm - In. - Ac-ft -

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12-27; discharge estimated on basis of recorded range in stage and records for nearby stations.

Green River near Palmer, Wash.

Location.--Lat 47°17'40", long 121°49'20", in SW¼NW¼ sec. 20, T. 21 N., R. 8 E., on right bank 1½ miles upstream from diversion dam and intake of Tacoma water-supply system, 2½ miles downstream from North Fork, and 3½ miles southeast of Palmer.

Drainage area.--230 sq mi.

Records available.--October 1931 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 912.6 ft above mean sea level (river-profile survey). Prior to Nov. 18, 1931, staff gage at same site and datum.

Average discharge.--25 years, 1,083 cfs (784,100 acre-ft per year).

Extremes.--Maximum discharge during year, 18,300 cfs Dec. 11 (gage height, 17.71 ft); minimum, 150 cfs Sept. 21 (gage height, 4.14 ft).

1931-56: Maximum discharge, 23,200 cfs Dec. 11, 1946 (gage height, 19.95 ft, from high-water mark in well); minimum, 81 cfs Sept. 4, 5, 1934; minimum gage height, 3.35 ft Sept. 2, 3, 1945.

Flood in December 1917 reached a stage of about 20 ft, from crest head over city of Tacoma diversion dam and gage-height relationship curve (discharge, about 25,000 cfs).

Remarks.--Records excellent except those for period of no gage-height record, which are good. No regulation or diversion above station. Records of suspended sediment loads and water temperatures for the water year 1956 are given in WSP 1453.

Revisions (water years).--WSP 1062: 1932-34, 1935(M), 1938(M). WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
4.4	247	4.1	136	9.0	2,950
5.0	498	5.0	505	10.0	3,980
6.0	937	6.0	1,000	11.5	5,940
7.0	1,460	7.0	1,500	13.0	8,370
8.0	2,120	8.0	2,120	15.0	12,200

Note.--Same as following table above 8.0 ft.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	259	2,310	2,280	960	514	1,080	1,400	2,180	2,880	920	271	178
2	247	2,180	1,970	900	523	1,770	1,270	2,080	2,350	885	271	175
3	255	3,560	1,620	1,000	546	1,360	1,180	2,060	2,210	875	*271	171
4	477	4,330	1,360	1,540	500	1,100	1,400	2,010	2,130	840	263	171
5	604	3,840	1,220	1,490	505	895	1,460	2,070	1,990	880	251	168
6	464	2,800	1,180	1,320	469	765	1,300	2,290	1,900	1,000	*247	*164
7	431	2,260	1,110	1,200	460	780	1,260	2,660	1,830	880	243	160
8	511	1,990	1,050	*1,080	447	825	1,280	3,070	1,770	845	235	160
9	2,040	2,080	1,100	985	425	*720	1,380	3,330	1,820	885	228	164
10	2,490	5,140	1,090	915	425	640	1,860	3,500	2,020	885	228	168
11	1,710	3,760	7,710	865	620	570	2,570	2,890	1,970	820	224	224
12	1,320	2,500	*12,000	855	1,160	536	2,530	2,370	*1,680	755	216	208
13	1,100	1,930	4,580	1,020	890	518	3,000	2,010	*1,550	710	208	178
14	942	1,580	3,890	970	755	487	3,600	1,910	1,540	655	208	171
15	834	a1,250	2,180	1,160	640	487	3,510	2,160	1,550	605	208	168
16	727	a1,100	1,820	1,220	600	505	2,800	2,950	1,520	541	208	160
17	*648	a950	1,560	1,280	600	560	2,360	4,170	1,590	514	204	157
18	587	a1,100	1,340	1,430	575	760	2,290	5,060	1,580	482	201	154
19	562	1,600	1,220	1,420	505	1,010	*2,880	5,220	1,930	464	197	154
20	523	1,200	1,430	1,350	478	1,030	4,020	4,690	1,960	460	193	157
21	490	1,100	1,950	1,210	460	1,260	5,410	3,450	1,670	434	190	157
22	456	992	3,640	1,160	434	1,480	5,280	3,200	1,500	416	186	160
23	431	924	3,210	1,250	416	1,820	4,040	3,460	1,400	381	182	154
24	626	992	2,320	1,110	407	1,910	3,140	3,100	1,270	368	182	164
25	1,410	1,980	1,880	990	407	2,120	2,840	2,600	1,140	359	190	168
26	1,740	4,060	1,690	900	398	2,230	2,980	2,600	1,100	342	216	190
27	1,620	3,780	1,510	815	381	1,780	2,930	2,450	1,140	333	208	186
28	3,670	2,720	1,340	780	390	1,500	2,700	2,110	1,200	312	193	186
29	5,630	*2,150	1,200	705	416	1,530	2,650	2,160	1,140	295	193	251
30	5,670	2,110	1,100	650	------	1,560	2,390	2,800	1,020	287	197	346
31	3,240	------	1,020	550	------	1,540	------	3,230	------	279	186	------
Total	41,714	68,268	72,570	33,080	15,346	35,128	77,710	89,840	50,350	18,707	6,698	5,372
Mean	1,346	2,276	2,341	1,067	529	1,133	2,590	2,898	1,678	603	216	179
Cfsm	5.85	9.90	10.2	4.64	2.30	4.93	11.3	12.6	7.30	2.62	0.939	0.778
In.	6.74	11.04	11.73	5.35	2.48	5.68	12.57	14.53	8.14	3.02	1.08	0.87
Ac-ft	82,740	135,400	143,900	65,610	30,440	69,680	154,100	178,200	99,870	37,100	13,290	10,660

Calendar year 1955: Max 12,000 Min 212 Mean 1,418 Cfsm 6.17 In. 83.70 Ac-ft 1,027,000
Water year 1955-56: Max 12,000 Min 154 Mean 1,407 Cfsm 6.12 In. 83.23 Ac-ft 1,021,000

Peak discharge (base, 6,000 cfs).--Oct. 29 (7:30 p.m.) 8,640 cfs (13.15 ft); Dec. 11 (11:30 p.m.) 18,300 cfs (17.71 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

Newaukum Creek near Black Diamond, Wash.

Location.--Lat 47°16'30", long 122°03'30", in SW¼ sec. 28, T. 21 N., R. 6 E., on right bank three-quarters of a mile upstream from mouth and 3½ miles southwest of Black Diamond.

Drainage area.--25.5 sq mi.

Records available.--July 1944 to November 1950, September 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from topographic map).

Average discharge.--10 years (1944-50, 1952-56), 67.2 cfs (48,650 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs Dec. 11 (gage height, 3.43 ft), from rating curve extended above 600 cfs; minimum, 18 cfs Oct. 2, 3; minimum gage height, 0.77 ft Aug. 22, Sept. 7, 8.
1944-50, 1952-56: Maximum discharge, 1,820 cfs probably Feb. 17, 1949 (gage height, 3.54 ft, from recorded range in stage), from rating curve extended above 600 cfs; minimum, 8.0 cfs Oct. 13, 14, 1952; minimum gage-height, that of Aug. 22, Sept. 7, 8, 1956.

Remarks.--Records good except those above 300 cfs and those for period of no gage-height record, which are fair. Many small diversions above station for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1286: Drainage area. WSP 1396: 1946(M), 1949(P).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
0.8	16	1.8	175	0.7	16	1.8	175
1.0	30	2.1	280	.9	26	2.1	280
1.2	52	2.5	480	1.1	43	2.4	420
1.5	101	3.0	860	1.3	68	2.7	610
				1.5	101		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18.5	80	349	96	71	130	130	46	34	31	23	21
2	18	187	246	114	72	*172	119	45	32	31	24	20
3	21	191	156	358	71	181	105	44	35	31	24	20
4	31	121	121	420	72	151	112	45	38	30	23	21
5	26	93	114	285	83	119	95	47	41	32	23	20
6	21	86	151	327	82	108	86	47	40	32	22	19.5
7	23	77	166	304	76	128	97	46	41	30	22	19.5
8	32	86	155	202	72	138	85	44	40	28	22	19.5
9	86	80	254	164	70	128	*76	43	41	28	22	20
10	103	76	186	143	70	116	76	43	53	28	22	20
11	53	69	799	128	77	103	74	41	53	28	22	25
12	42	65	*572	121	85	97	71	50	43	28	21	21
13	36	60	288	133	76	103	68	43	40	28	21	20
14	35	56	170	162	68	86	66	41	39	27	22	20
15	32	a54	140	288	82	80	65	39	40	27	22	20
16	31	a53	128	164	59	76	64	39	40	26	*22	20
17	29	a52	126	126	60	74	62	38	45	26	21	19.5
18	28	a120	121	148	60	74	59	37	42	26	21	20
19	30	313	123	*159	64	76	56	36	65	25	20	19.5
20	30	133	405	151	74	77	56	36	54	25	20	19.5
21	*28	99	*370	146	93	105	55	36	46	25	20	19.5
22	27	84	380	154	91	114	53	*34	42	25	20	19.5
23	27	97	292	224	88	239	52	34	39	23	20	19.5
24	60	126	208	156	97	205	50	33	37	24	20	19.5
25	*210	324	153	126	119	268	49	33	37	24	20	19.5
26	*155	450	170	110	108	190	48	37	25	24	23	24
27	93	360	184	95	91	138	48	46	*34	23	22	23
28	88	*199	130	91	83	128	50	37	32	23	21	21
29	161	178	119	88	82	162	50	35	32	22	21	21
30	151	265	110	82	-----	148	47	33	32	23	21	22
31	99	----	101	76	-----	159	-----	33	-----	23	20	-----
Total	1,826.5	4,234	6,987	5,341	2,278	4,073	2,126	1,241	1,222	828	667	613.5
Mean	58.9	141	225	172	78.6	131	70.9	40.0	40.7	26.7	21.5	20.4
Cfsm	2.31	5.53	8.82	6.75	3.08	5.14	2.78	1.57	1.60	1.05	0.843	0.800
In.	2.66	6.17	10.19	7.79	3.32	5.94	3.10	1.81	1.78	1.21	0.97	0.89
Ac-ft	3,620	8,400	13,860	10,590	4,520	8,080	4,220	2,460	2,420	1,640	1,320	1,220

Calendar year 1955: Max 799 Min 18 Mean 79.3 Cfsm 3.11 In. 42.21 Ac-ft 57,400
Water year 1955-56: Max 799 Min 18 Mean 85.9 Cfsm 3.37 In. 45.83 Ac-ft 62,350

Peak discharge (base, 350 cfs).--Oct. 25 (4:45 p.m.) 380 cfs (2.32 ft); Nov. 2 (5:30 p.m.) 350 cfs (2.26 ft); Nov. 19 (4 a.m.) 510 cfs (2.55 ft); Nov. 26 (10:30 a.m.) 534 cfs (2.59 ft); Dec. 1 (2:30 p.m.) 456 cfs (2.46 ft); Dec. 11 (6:30 p.m.) 1,320 cfs (3.43 ft); Dec. 20 (7:30 p.m.) 522 cfs (2.57 ft); Jan. 4 (11 a.m.) 468 cfs (2.48 ft); Jan. 15 (7 a.m.) 370 cfs (2.30 ft); Mar. 23 (4 a.m.) 370 cfs (2.30 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

Lake Sawyer near Black Diamond, Wash.

Location.--Lat 47°20'00", long 122°02'15", in SE¼ sec. 4, T. 21 N., R. 6 E., on west shore about three-eighths of a mile south of lake outlet and 2 miles northwest of Black Diamond.

Drainage area.--9.77 sq mi.

Records available.--April 1952 to September 1956.

Gage.--Staff gage read once daily. Datum of gage is 512.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum gage height observed during year, 7.20 ft Dec. 12; minimum observed, 5.26 ft Sept. 25, 26.
1952-56: Maximum gage height observed, that of Dec. 12, 1955; minimum observed, 3.04 ft Dec. 1, 2, 1952.

Remarks.--Lake controlled for elevation by concrete dam at outlet constructed during July and August 1952. No known diversion.

Revisions.--WSP 1396: Drainage area.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.10	6.54	6.90	6.70	6.60	6.56	6.72	6.42	6.36	6.28	6.02	5.60
2	6.10	6.58	6.88	6.68	6.58	6.60	6.70	6.42	6.36	6.28	6.02	5.58
3	6.12	6.62	6.86	6.76	6.56	6.66	6.68	6.40	6.36	6.26	6.02	5.56
4	6.14	6.66	6.84	6.84	6.56	6.66	6.66	6.40	6.38	6.26	6.02	5.54
5	6.14	6.64	6.80	6.94	6.56	6.68	6.64	6.40	6.38	6.30	6.02	5.50
6	6.16	6.62	6.78	6.98	6.56	6.68	6.62	6.40	6.38	6.32	6.00	5.48
7	6.16	6.60	6.76	7.02	6.54	6.68	6.60	6.40	6.38	6.32	6.00	5.46
8	6.24	6.58	7.76	7.00	6.54	6.68	6.60	6.40	6.40	6.30	5.98	5.46
9	6.44	6.56	6.76	6.92	6.52	6.68	6.58	6.40	6.40	6.28	5.96	5.44
10	6.48	6.54	6.76	6.86	6.52	6.66	6.56	6.40	6.42	6.28	5.94	5.42
11	6.44	6.52	6.92	6.76	6.52	6.66	6.56	6.38	6.40	6.26	5.94	5.44
12	6.40	6.50	7.20	6.76	6.52	6.66	6.54	6.40	6.38	6.26	5.92	5.46
13	6.38	6.48	7.16	6.76	6.52	6.62	6.54	6.40	6.38	6.24	5.90	5.44
14	6.36	6.48	7.00	6.76	6.52	6.60	6.52	6.38	6.38	6.24	5.90	5.44
15	6.36	6.46	6.88	6.78	6.52	6.58	6.50	6.38	6.38	6.22	5.88	5.42
16	6.34	6.44	6.84	6.80	6.50	6.56	6.50	6.36	6.38	6.20	5.86	5.40
17	6.32	6.44	6.80	6.76	6.50	6.56	6.48	6.36	6.38	6.20	5.86	5.38
18	6.32	6.46	6.76	6.76	6.50	6.54	6.48	6.36	6.38	6.20	5.84	5.36
19	6.32	6.58	6.78	6.74	6.50	6.54	6.48	6.36	6.40	6.18	5.82	5.34
20	6.32	6.62	6.90	6.76	6.50	6.54	6.46	6.34	6.40	6.18	5.80	5.32
21	6.32	6.60	6.92	6.76	6.50	6.56	6.46	6.34	6.38	6.18	5.78	5.32
22	6.31	6.62	6.92	6.74	6.50	6.56	6.46	6.34	6.36	6.16	5.76	5.30
23	6.30	6.64	6.94	6.74	6.52	6.56	6.46	6.34	6.34	6.16	5.74	5.28
24	6.34	6.64	6.94	6.72	6.50	6.60	6.44	6.34	6.34	6.14	5.72	5.28
25	6.44	6.70	6.90	6.72	6.52	6.66	6.44	6.34	6.32	6.14	5.70	5.26
26	6.50	6.84	6.88	6.70	6.52	6.70	6.44	6.34	6.30	6.12	5.70	5.26
27	6.50	6.98	6.86	6.68	6.52	6.70	6.44	6.36	6.30	6.10	5.70	5.28
28	6.48	6.94	6.80	6.68	6.54	6.70	6.42	6.36	6.30	6.08	5.68	5.30
29	6.54	6.92	6.78	6.66	6.54	6.70	6.42	6.36	6.28	6.06	5.66	5.30
30	6.54	6.92	6.76	6.66	-------	6.72	6.42	6.36	6.28	6.04	5.64	5.32
31	6.56	-------	6.72	6.60	-------	6.72	-------	6.36	-------	6.04	5.62	-------

Note.--Gage read once daily between 9:30 and 11 a.m.

Covington Creek near Black Diamond, Wash.

Location.--Lat 47°20'10", long 122°02'40", in NE¼SE¼ sec. 4, T. 21 N., R. 6 E., on left bank 1,000 ft east of outlet of Lake Sawyer, 3 miles northwest of Black Diamond, and 5 miles upstream from Big Soos Creek.

Drainage area.--9.77 sq mi.

Records available.--January 1953 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 526.5 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 210 cfs Dec. 12 (gage height, 4.04 ft); no flow Oct. 1-7, July 22 to Sept. 30.
1953-56: Maximum discharge, that of Dec. 12, 1955; no flow at times each year.

Remarks.--Records good except those below 2 cfs, which are fair. Natural regulation by Lake Sawyer. Probably some small diversions for domestic use.

Rating table, water year 1955-56, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 28 to Dec. 10)

0.3	0	1.1	8.4
.4	.2	1.5	22
.5	.5	2.0	46
.6	1.0	2.5	77
.7	1.6	3.0	114
.9	4.1	4.0	206

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	32	127	78	53	*49	73	21	8.1	4.6		
2	0	38	139	76	50	56	70	21	8.4	4.4		
3	0	47	132	90	48	66	67	21	10	4.3		
4	0	*47	116	112	48	71	64	21	11	4.4		
5	0	42	*101	132	49	71	59	23	11	6.0		
6	0	40	98	143	48	68	56	21	11	7.4		
7	0	38	92	152	46	68	56	20	11.5	6.7		
8	1.4	38	89	146	43	70	53	19	11.5	6.0		
9	12	40	92	131	42	69	48	18	13.5	5.2		
10	22	38	91	116	41	68	46	18.5	16.5	4.4		
11	17	38	126	105	42	63	44	17	17	4.0		
12	11	34	198	92	42	59	42	18.5	14.5	3.6		
13	8.4	28	*190	91	40	58	39	17.5	11.5	3.2		
14	6.7	26	152	86	39	55	38	16.5	11.5	2.9		
15	5.4	24	125	98	37	51	36	15.5	12	2.5	(*)	
16	4.4	21	110	97	36	51	34	14.5	11	2.2		
17	4.0	22	101	93	40	46	33	14.5	11	1.8		
18	3.5	30	92	91	38	44	32	*13.5	10	1.4		
19	3.8	51	84	89	36	42	*30	12.5	13	1.0		
20	3.5	55	96	87	36	42	29	12.5	13	.6		
21	*3.0	54	123	85	36	44	28	12	11	.2		
22	2.9	52	149	85	36	44	28	11.5	11	0		
23	2.5	53	159	89	36	52	27	11	10	0		
24	7.6	59	151	89	39	56	25	10.5	9.1	0		
25	19.5	71	132	84	40	65	25	10	7.6	0		
26	28	94	120	79	42	71	24	12	6.9	0		
27	27	133	116	73	42	70	23	17	6.4	0		
28	26	140	105	71	42	70	23	14.5	5.8	0		
29	32	127	94	68	43	73	23	11.5	*5.2	0		
30	36	118	88	63	------	75	22	8.8	4.6	0		
31	36	------	80	*57	------	76	------	8.6	------	0		------
Total	323.6	1,630	3,668	2,946	1,210	1,863	1,197	483.4	314.6	76.8	0	0
Mean	10.4	54.3	118	95.0	41.7	60.1	39.9	15.6	10.5	2.48	0	0
Ac-ft	642	3,230	7,280	5,840	2,400	3,700	2,370	959	624	152	0	0

Calendar year 1955: Max 198 Min 0 Mean 34.2 Ac-ft 24,730
Water year 1955-56: Max 198 Min 0 Mean 37.5 Ac-ft 27,200

* Discharge measurement or observation of no flow made on this day.
Note.--Indefinite stage-discharge relation Oct. 1-7, July 17 to Aug. 10; discharge estimated on basis of stage records for Lake Sawyer.

Big Soos Creek near Auburn, Wash.

Location.--Lat 47°19'00", long 122°08'40", in SE¼ sec. 10, T. 21 N., R. 5 E., on right bank three-quarters of a mile downstream from Covington Creek, 2 miles upstream from mouth, and 4 miles east of Auburn.

Drainage area.--49.4 sq mi (excludes 3.95 sq mi in vicinity of Youngs Lake, flow from which has been diverted to Cedar River basin since about 1935).

Records available.--August 1944 to February 1951, August 1951 to April 1956 (discontinued).

Gage.--Staff gage read once daily. Altitude of gage is 170 ft (from topographic map). Aug. 26, 1944, to Feb. 10, 1951, water-stage recorder at site 700 ft upstream at different datum (gage destroyed by flood of Feb. 10, 1951). Aug. 14, 1951, to Dec. 22, 1955, water-stage recorder at same site and datum.

Average discharge.--10 years (1944-50, 1951-55), 117 cfs (84,700 acre-ft per year).

Extremes.--Maximum discharge observed during period October to April, 932 cfs Jan. 7 (gage height, 5.26 ft); minimum discharge, 34 cfs Oct. 1-3 (gage height, 2.34 ft).
1944-56: Maximum discharge observed, 1,570 cfs Feb. 10, 1951 (gage height, 5.57 ft); minimum discharge, 20 cfs July 23, 24, Sept. 19 to Oct. 12, 1952.

Remarks.--Records fair. Several small diversions for farm use above station. City of Seattle diverts between 2 and 5 cfs from Youngs Lake into Little Soos Creek, a tributary, except during periods of high flow.

Revisions.--WSP 1246: Drainage area.

Discharge, in cubic feet per second, water year October 1955 to April 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	88	*439	268	196	167	310					
2	34	98	475	279	185	170	282					
3	34	233	431	439	185	252	268					
4	42	218	371	676	180	310	-					
5	47	190	332	784	193	276	-					
6	38	164	335	862	185	276	-					
7	41	154	339	932	190	268	-					
8	58	154	321	766	172	367	-					
9	101	150	363	595	160	304	-					
10	107	147	343	459	160	276	-					
11	71	143	471	427	160	268	-					
12	60	138	784	339	157	236	-					
13	54	127	*652	375	154	227	-					
14	51	120	508	318	136	199	-					
15	48	116	431	508	134	180	-					
16	44	111	391	518	122	*172	-					
17	42	109	367	455	127	167	-					
18	42	127	339	395	131	157	-					
19	42	239	310	*363	136	147	-					
20	42	230	383	335	136	147	-					
21	*41	207	531	318	147	172	-					
22	40	188	575	335	143	180	-					
23	40	182	*630	415	134	239	-					
24	60	204	508	403	147	268	-					
25	94	262	447	371	154	304	-					
26	101	335	383	321	154	347	-					
27	85	458	407	282	164	296	-					
28	83	467	363	249	160	296	-					
29	96	427	328	262	154	318	-					
30	111	399	300	230	------	339	-					
31	98	-----	268	207	------	347	------		------			------
Total	1,881	6,185	13,125	13,486	4,556	7,672	-					
Mean	60.7	206	423	435	157	247	-					
Cfsm	1.23	4.17	8.56	8.81	3.18	5.00	-					
In.	1.42	4.66	9.88	10.15	3.43	5.78	-					
Ac-ft	3,730	12,270	26,030	26,750	9,040	15,220	-					

Calendar year 1955: Max 784 Min 31 Mean 140 Cfsm 2.83 In. 38.53 Ac-ft 101,500
Water year 1955-56: Max - Min - Mean - Cfsm - In. - Ac-ft -

Peak discharge (base, 400 cfs).--Dec. 2 (5:45 a.m.) 495 cfs (4.50 ft); Dec. 12 (12 m.) 841 cfs (5.15 ft); Dec. 23 (6 p.m.) 630 cfs (5.16 ft); Jan. 7 (11 a.m.) 932 cfs (5.26 ft); Jan. 16 (5 p.m.) 518 cfs (4.55 ft); Jan. 23 (12 m.) 415 cfs (4.30 ft).
* Discharge measurement made on this day

Green River near Auburn, Wash.

Location.--Lat 47°18'15", long 122°12'10", in lot 3, sec. 17, T. 21 N., R. 5 E., on left bank 1½ miles east of Auburn and 2 miles downstream from Big Soos Creek.

Drainage area.--382 sq mi (excludes 4 sq mi in the vicinity of Youngs Lake, flow from which has been diverted to Cedar River basin since about 1935).

Records available.--August 1936 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Oct. 19, 1936, staff gage at same site and datum.

Average discharge.--20 years, 1,317 cfs (953,500 acre-ft per year).

Extremes.--Maximum discharge during year, 20,300 cfs Dec. 12 (elevation, 67.73 ft); minimum, 142 cfs Sept. 20 (elevation, 54.22 ft).
1936-56: Maximum discharge, 22,000 cfs Dec. 11, 1946 (elevation, 68.16 ft); minimum, 81 cfs Sept. 23, 1952; minimum elevation, 54.21 ft Sept. 1-3, 1945.

Remarks.--Records excellent. City of Tacoma diverts about 110 cfs from river near Palmer, several miles above station, for municipal use. Minor regulation on Little Soos Creek, a tributary.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 12				Dec. 13 to Sept. 30			
54.6	250	59.0	4,520	54.2	135	56.5	1,700
55.0	465	60.0	5,750	54.5	250	57.0	2,200
55.5	830	61.0	7,100	54.7	345	58.0	3,320
56.0	1,280	63.0	10,100	55.0	505	59.0	4,520
56.5	1,780	65.0	13,600	55.5	830	60.0	5,750
57.0	2,300	67.0	18,100	56.0	1,240	61.0	7,100
58.0	3,400						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	2,760	*3,600	1,760	1,130	1,090	2,060	2,460	3,070	1,010	345	190
2	270	2,590	3,300	1,740	1,090	2,340	1,900	2,300	2,530	958	350	186
3	255	4,090	2,770	2,160	1,110	2,080	1,760	2,270	2,270	934	350	178
4	361	4,620	2,340	2,880	1,070	1,770	1,790	2,200	2,200	902	335	170
5	621	4,480	2,110	3,070	1,090	1,510	*1,990	2,230	2,070	902	315	163
6	551	3,430	2,070	2,920	1,070	1,350	1,830	2,410	1,990	1,050	300	156
7	491	2,770	2,080	2,790	1,040	1,310	1,770	2,720	1,900	966	295	152
8	530	2,440	1,920	2,430	998	1,480	1,730	3,130	1,840	902	282	149
9	1,530	2,210	2,120	2,180	958	1,350	1,750	3,480	1,830	894	268	152
10	2,830	4,750	1,980	1,990	926	1,230	2,030	3,730	2,010	902	264	160
11	2,010	4,390	5,150	1,850	966	1,130	2,840	3,360	2,130	886	259	202
12	1,520	3,090	*16,400	1,740	1,520	1,080	2,840	2,770	1,820	823	250	259
13	1,250	2,390	7,040	1,870	1,390	1,050	3,140	2,320	1,620	781	246	222
14	1,070	1,980	4,520	1,860	1,210	998	3,730	2,100	1,580	746	242	194
15	946	1,670	3,550	2,310	1,110	958	3,850	2,200	1,600	711	242	178
16	830	1,490	2,980	*2,290	1,010	942	3,210	2,830	1,560	644	*242	166
17	750	1,350	2,640	2,280	1,050	950	2,730	3,980	1,620	619	238	163
18	670	1,390	2,320	2,320	998	1,050	2,500	*4,920	1,600	583	226	160
19	649	2,380	2,130	2,390	966	1,250	2,880	5,200	1,910	565	214	156
20	*628	1,920	2,710	2,310	934	1,350	3,850	5,000	2,070	553	*210	149
21	586	1,660	3,400	2,110	958	1,510	5,130	3,910	1,820	523	206	146
22	530	1,510	4,960	2,060	934	1,790	5,460	3,300	1,600	505	198	146
23	510	1,430	5,120	2,300	910	2,260	4,510	3,550	1,470	488	194	146
24	600	1,500	3,910	2,110	918	2,610	3,640	3,390	1,360	461	194	146
25	1,470	2,450	3,190	1,900	934	2,720	3,140	2,820	1,230	439	194	186
26	2,180	4,870	2,880	1,700	942	3,000	3,190	2,700	1,150	428	218	290
27	1,830	5,240	2,720	1,560	910	2,450	3,250	2,710	*1,130	406	246	250
28	*3,540	4,070	2,390	1,490	886	2,140	2,990	2,290	1,200	390	226	206
29	4,930	3,310	2,120	1,430	*902	2,140	2,960	2,150	1,170	380	210	210
30	6,710	3,110	1,980	1,310	------	2,190	2,700	2,620	1,090	365	210	360
31	3,910	------	1,830	1,200	------	2,230	------	3,250	------	350	202	------
Total	44,858	85,340	108,230	64,310	29,930	51,308	87,150	94,300	52,440	21,066	7,771	5,591
Mean	1,447	2,845	3,491	2,075	1,032	1,655	2,905	3,042	1,748	680	251	186
Ac-ft	88,970	169,300	214,700	127,600	59,370	101,800	172,900	187,000	104,000	41,780	15,410	11,090

Calendar year 1955: Max 16,400 Min 210 Mean 1,798 Ac-ft 1,302,000
Water year 1955-56: Max 16,400 Min 146 Mean 1,782 Ac-ft 1,294,000

Peak discharge (base, 6,000 cfs).--Oct. 30 (2 a.m.) 8,600 cfs (62.03 ft); Dec. 12 (8 a.m.) 20,300 cfs (67.73 ft).

* Discharge measurement made on this day.

North Fork Cedar River near Lester, Wash.

Location.--Lat 47°19'00", long 121°30'00", in SW¼ sec. 11, T. 21 N., R. 10 E., on right bank 120 ft downstream from falls, 1 mile upstream from confluence with South Fork, and 7½ miles north of Lester.
Drainage area.--8.81 sq mi.
Records available.--October 1944 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 2,320 ft (from topographic map). Prior to Nov. 30, 1951, at site 100 ft upstream and Nov. 30, 1951, to Sept. 23, 1953, at site 70 ft upstream at datum 2 ft higher than present datum.
Average discharge.--12 years, 72.0 cfs (52,130 acre-ft per year).
Extremes.--Maximum discharge during year, 1,280 cfs Dec. 11 (gage height, 4.20 ft), from rating curve extended above 490 cfs on basis of slope-area determination at gage height 4.95 ft; minimum, 11.0 cfs Sept. 22; minimum gage height, 0.40 ft Oct. 3, Sept. 22.
1944-56: Maximum discharge, that of Dec. 11, 1955; maximum gage height, 8.9 ft, site and datum then in use, probably Jan. 31, 1953 (from high-water mark, backwater from logjam); minimum daily discharge, 5.4 cfs Nov. 27-30, 1952.
Revisions.--Figures of maximum discharge for the water years 1954 and 1955 have been revised to 858 cfs Dec. 9, 1953 (gage height, 3.67 ft) and 754 cfs June 9, 1955 (gage height, 3.63 ft); maximum gage height, 3.65 ft June 9, 1955 (drift on control), superseding those published in WSP 1346 and 1396, respectively.
Remarks.--Records good. No regulation or diversion above station.
Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1945-47. Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1954 and 1955, superseding those published in WSP 1346 and 1396, are given herewith:

1953		1955		1955-Con.	
Dec. 9	524	June 7	246	June 11	578
10	280	8	349	12	486
11	283	9	528	13	345
12	426	10	646		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
December 1953	4,081	524	49	132	15.0	17.23	8,090
Calendar year 1953	-	700	7.5	76.4	8.67	117.68	55,290
Water year 1953-54	-	524	11.5	80.0	9.08	123.21	57,890
June 1955	7,967	646	109	266	30.2	33.63	15,800
Water year 1954-55	-	646	11.8	71.6	8.13	110.34	51,860

Revised peak discharge.--1953-54: Dec. 9 (2 p.m.) 858 cfs (3.67 ft); Dec. 11 (11:30 p.m.) 810 cfs (3.64 ft).
1954-55: Feb. 8 (1:30 a.m.) 465 cfs (3.18 ft); June 9 (10:30 p.m.) 754 cfs (3.63 ft); June 21 (9 p.m.) 460 cfs (3.17 ft).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17.2	103	37	36	b14.5	16.2	22	93	321	134	34	13.5
2	16.2	98	34	33	b14	17.4	21	88	246	149	33	13.2
3	16.6	220	32	31	b15	15.9	21	86	256	146	31	13.2
4	52	469	30	31	b15	14.7	24	86	227	136	30	13.2
5	60	234	30	28	15.0	13.5	23	88	188	154	29	13.2
6	48	152	28	28	14.4	12.9	21	103	171	179	28	13.2
7	44	118	26	26	14.1	13.5	21	138	166	155	26	13.2
8	84	113	*25	24	13.5	13.2	21	187	171	196	26	13.2
9	231	272	24	23	13.8	12.6	24	213	200	215	24	13.2
10	194	360	24	22	13.8	12.0	35	221	233	196	*24	13.5
11	126	188	406	22	18.0	11.8	*41	176	205	172	23	22
12	127	125	517	22	19.4	11.6	51	132	166	174	22	*14.1
13	113	96	176	23	16.8	11.6	66	109	162	167	21	12.9
14	88	79	107	21	16.2	11.4	95	102	171	136	21	12.3
15	72	66	79	21	16.2	13.4	112	122	176	119	20	12.0
16	58	60	66	21	b15	11.4	97	200	171	115	19.4	11.6
17	51	52	56	21	b15	11.6	80	341	179	113	18.6	11.4
18	45	47	b50	21	b15	12.6	78	*486	198	119	18.2	11.2
19	42	44	b45	*19.8	b14	14.1	99	519	260	126	17.8	11.2
20	*39	40	41	19.0	b14	14.1	171	435	213	119	17.4	11.4
21	36	39	50	18.6	14.1	17.1	256	268	172	104	17.1	11.6
22	33	36	172	18.2	*13.5	19.0	256	273	164	87	16.5	11.4
23	30	34	129	18.2	13.5	26	192	*321	162	75	16.2	11.2
24	50	36	91	17.4	13.5	28	151	276	136	68	15.9	11.8
25	108	49	70	17.1	13.2	31	134	221	122	62	17.1	11.6
26	94	64	61	17.1	12.9	33	144	229	*138	54	17.8	11.6
27	84	54	55	16.8	12.6	29	143	209	196	48	17.1	11.6
28	195	46	48	16.8	12.6	26	130	179	196	44	15.6	12.9
29	402	42	44	16.2	12.6	27	116	213	167	41	15.6	21
30	266	40	41	15.6	------	26	103	341	140	39	15.0	30
31	143	-----	37	b15	-----	24	-----	*440	------	36	14.1	------
Total	2,965.0	3,376	2,631	679.8	421.2	549.6	2,748	6,895	5,673	3,678	661.4	407.4
Mean	95.6	113	84.9	21.9	14.5	17.7	91.6	222	189	119	21.3	13.6
Cfsm	10.9	12.8	9.64	2.49	1.65	2.01	10.4	25.2	21.5	13.5	2.42	1.54
In.	12.52	14.25	11.11	2.87	1.78	2.32	11.60	29.11	23.95	15.53	2.79	1.72
Ac-ft	5,880	6,700	5,220	1,350	835	1,090	5,450	13,680	11,250	7,300	1,310	808

Calendar year 1955: Max 646 Min 11.8 Mean 85.5 Cfsm 9.70 In. 131.73 Ac-ft 61,910
Water year 1955-56: Max 519 Min 11.2 Mean 83.8 Cfsm 9.51 In. 129.55 Ac-ft 60,870

Peak discharge (base, 400 cfs).--Oct. 29 (3 p.m.) 738 cfs (3.61 ft); Nov. 4 (12 m.) 653 cfs (3.49 ft); Nov. 9 (8 p.m.) 778 cfs (3.66 ft); Dec. 11 (10 p.m.) 1,280 cfs (4.20 ft); May 20 (12:30 a.m.) 584 cfs (3.39 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

South Fork Cedar River near Lester, Wash.

Location.--Lat 47°18'30", long 121°31'00", in SW¼NE¼ sec. 15, T. 21 N., R. 10 E., on left bank about half a mile upstream from confluence with North Fork and 7 miles northwest of Lester.

Drainage area.--6.00 sq mi.

Records available.--October 1944 to September 1956.

Gage.--Water-stage recorder. Concrete control since Aug. 31, 1951. Altitude of gage is 2,300 ft (from topographic map).

Average discharge.--12 years, 41.3 cfs (29,900 acre-ft per year).

Extremes.--Maximum discharge during year, 511 cfs Dec. 11 (gage height, 5.92 ft); minimum, 4.5 cfs Aug. 31 to Sept. 9, Sept. 23, 24 (gage height, 2.94 ft).

1944-56: Maximum discharge, 878 cfs Jan. 7, 1945 (gage height, 4.86 ft), from rating curve extended above 125 cfs; maximum gage height, 6.38 ft Feb. 17, 1949 (backwater from ice and debris); minimum discharge, 1.9 cfs Nov. 27, 28, 1952; minimum gage height, 1.25 ft Oct. 17-19, 1946.

Revisions.--Figures of maximum discharge for the water years 1953 and 1954 have been revised to 520 cfs Jan. 31, 1953 (gage height, 5.95 ft) and 596 cfs Dec. 9, 1953 (gage height, 6.19 ft), superseding those published in WSP 1286 and 1346.

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1953 and 1954, superseding those published in WSP 1286 and 1346, are given herewith:

1953		1953-Con.	
Jan. 22	75	Feb. 1	240
23	306	Dec. 9	376
31	366	12	252

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
January 1953	2,876.8	366	3.0	92.8	15.5	17.83	5,710
February	1,554.6	240	13.8	55.5	9.25	9.64	3,080
Water year 1952-53.	-	366	2.0	32.3	5.38	72.97	23,360
December 1953	2,885	376	35	93.1	15.5	17.88	5,720
Calendar year 1953.	-	376	3.0	43.3	7.22	97.91	31,330
Water year 1953-54.	-	376	4.8	45.6	7.60	103.21	33,020

Revised peak discharge.--1952-53: Jan. 23 (10:15 a.m.) 380 cfs (5.48 ft); Jan. 31 (3:30 p.m.) 520 cfs (5.95 ft).
1953-54: Dec. 9 (12 m.) 596 cfs (6.19 ft); Dec. 11 (9:30 p.m.) 370 cfs (5.44 ft); May 18, 19 (10:30 p.m. to 1 a.m.) 225 cfs (4.80 ft).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.9	69	26	22	b8.5	10.1	14.4	63	*185	60	15.0	4.5
2	7.6	58	23	21	b8.2	9.3	13.9	60	147	62	14.5	4.5
3	7.9	94	22	19.1	b8	7.9	12.9	59	151	63	13.0	4.5
4	19.7	187	21	19.1	b7.8	7.6	14.4	58	141	58	12.2	4.5
5	27	153	19.7	17.3	b7.6	7.3	14.8	60	128	62	11.0	4.5
6	23	98	19.1	16.3	7.6	7.0	13.9	66	118	*73	10.6	4.5
7	21	74	17.3	15.3	7.6	7.6	13.9	83	108	68	10.2	4.5
8	34	66	16.3	14.8	7.3	7.3	13.9	106	107	73	9.4	4.5
9	122	89	*15.8	14.4	7.0	6.7	14.8	126	120	81	*9.1	4.5
10	118	237	15.3	13.9	6.7	6.4	19.1	138	138	78	8.8	4.8
11	78	136	188	13.4	8.5	6.4	*24	112	127	68	8.4	7.4
12	64	88	267	12.9	10.4	6.1	30	87	101	65	8.0	*5.0
13	55	66	110	12.9	8.5	6.1	41	72	94	64	7.7	5.0
14	46	52	70	12.9	8.5	6.1	61	69	96	56	7.4	5.0
15	38	43	55	12.9	b8.4	5.8	71	78	95	48	7.4	5.0
16	33	37	44	13.4	b8.2	5.8	65	124	88	45	7.2	5.0
17	29	32	38	12.9	b8	5.8	58	211	90	44	6.8	5.0
18	25	30	34	11.2	b7.8	6.4	56	*277	98	45	6.6	4.8
19	23	28	30	*11.2	7.6	7.3	61	290	130	46	6.2	4.8
20	*21	25	28	10.8	7.3	7.0	94	251	115	46	6.0	4.8
21	19.7	23	34	10.8	7.0	7.6	154	181	95	42	6.0	4.8
22	18.5	21	83	10.4	*7.0	8.9	161	174	86	36	5.8	4.8
23	16.8	19.7	81	10.4	7.0	12.0	118	201	83	33	5.8	4.5
24	24	21	60	9.7	7.3	13.9	90	174	73	30	5.5	5.0
25	44	31	49	9.3	7.0	16.8	79	144	65	27	6.0	4.8
26	54	40	42	9.3	7.0	17.9	81	146	*66	24	6.2	4.8
27	54	40	36	b9.3	6.7	16.8	81	132	81	22	5.5	4.8
28	137	34	31	9.3	6.7	15.8	76	110	88	19.5	5.2	5.5
29	205	30	28	9.3	6.7	15.8	72	127	79	18.3	5.0	10.1
30	180	27	26	b9	------	15.8	69	195	67	17.1	5.0	11.0
31	100	-----	24	b9	-----	14.8	-----	227	------	16.0	4.8	------
Total	1,653.1	1,948.7	1,553.5	403.5	221.9	296.1	1,688.0	4,201	3,160	1,489.9	246.3	157.2
Mean	53.3	65.0	50.1	13.0	7.65	9.55	56.3	136	105	48.1	7.95	5.24
Cfsm	8.88	10.8	8.35	2.17	1.28	1.59	9.38	22.7	17.5	8.02	1.32	0.873
In.	10.25	12.08	9.63	2.50	1.38	1.84	10.46	26.04	19.59	9.23	1.53	0.97
Ac-ft	3,280	3,870	3,080	800	440	587	3,350	8,330	6,270	2,960	489	312

Calendar year 1955: Max 319 Min 5.3 Mean 47.7 Cfsm 7.95 In. 108.03 Ac-ft 34,570
Water year 1955-56: Max 290 Min 4.5 Mean 46.5 Cfsm 7.75 In. 105.50 Ac-ft 33,770

Peak discharge (base, 200 cfs).--Oct. 29 (3:30 p.m.) 295 cfs (5.14 ft); Nov. 4 (4 to 6 p.m.) 237 cfs (4.86 ft); Nov. 10 (6 a.m.) 279 cfs (5.07 ft); Dec. 11 (10 p.m.) 511 cfs (5.92 ft); May 18 (9 to 11 p.m.) 305 cfs (5.18 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Cedar River below Bear Creek, near Cedar Falls, Wash.

Location.--Lat 47°20'40", long 121°33'00", in SE¼SE¼ sec. 32, T. 22 N., R. 10 E., on right bank 500 ft downstream from Bear Creek and 12 miles southeast of Cedar Falls.

Drainage area.--25.4 sq mi.

Records available.--October 1945 to September 1956.

Average discharge.--11 years, 184 cfs (133,200 acre-ft per year).

Gage.--Water-stage recorder. Altitude of gage is 1,880 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,000 cfs Dec. 12 (gage height, 6.47 ft); minimum, 22 cfs Sept. 18-20, 22-24; minimum gage height, 2.76 ft Sept. 23, 24.
1945-56: Maximum discharge, that of Dec. 12, 1955; minimum, 12.5 cfs Nov. 27, 1952; minimum gage height, 2.59 ft Oct. 17-19, 1946.

Remarks.--Records good except those for periods of ice effect and those for periods Oct. 10 to Dec. 10, Mar. 25 to Apr. 30, which are fair. No regulation or diversion above station.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet and discharge, in cubic feet per second)

2.7	18	4.0	252
2.9	32	5.0	720
3.1	53	6.0	1,510
3.5	117		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	300	123	106	b42	58	113	315	792	266	66	28
2	35	263	113	100	b45	70	104	308	632	288	62	28
3	36	540	104	98	b47	61	100	300	638	288	60	27
4	94	938	96	108	b46	56	117	300	580	259	56	26
5	117	632	93	102	45	49	117	311	515	292	54	25
6	91	424	88	98	43	46	108	348	476	365	53	25
7	86	315	83	93	42	49	108	438	452	308	51	25
8	152	281	80	88	41	46	115	545	452	361	49	25
9	545	484	*78	86	39	45	128	626	510	400	*48	25
10	505	804	75	84	39	41	157	660	580	382	48	25
11	335	496	761	81	52	40	184	535	545	327	45	44
12	296	323	1,110	81	66	39	*198	419	438	319	44	*28
13	252	239	516	88	56	38	245	361	414	311	42	26
14	201	184	327	84	b51	36	340	344	424	245	42	25
15	165	157	239	84	b48	36	378	*392	424	204	41	25
16	140	138	189	88	b45	35	331	570	405	195	40	24
17	123	125	167	88	b46	36	288	854	410	189	39	23
18	111	119	152	90	b46	43	281	1,050	448	198	37	22
19	104	115	140	*88	43	50	340	1,100	585	207	36	22
20	*96	104	136	83	43	51	520	1,010	510	201	35	24
21	90	98	194	80	42	65	768	798	414	178	34	24
22	83	91	530	78	*40	78	792	774	387	155	33	23
23	76	88	400	78	39	117	616	847	374	138	32	22
24	119	102	281	72	39	121	476	756	315	130	32	25
25	236	182	216	68	39	138	424	632	*277	117	34	25
26	239	263	186	63	38	143	443	643	292	106	38	25
27	239	201	162	62	37	128	433	575	400	95	34	24
28	565	150	148	58	36	113	414	496	414	86	32	28
29	889	132	136	54	37	123	400	555	361	80	32	50
30	746	123	125	b50	------	125	361	792	288	74	31	56
31	443	-----	115	b45	-----	123	-----	917	------	69	29	------
Total	7,246	8,411	7,163	2,526	1,272	2,199	9,399	18,571	13,752	6,833	1,309	824
Mean	234	280	231	81.5	43.9	70.9	313	599	458	220	42.2	27.5
Cfsm	9.21	11.0	9.09	3.21	1.73	2.79	12.3	23.6	18.0	8.66	1.66	1.08
In.	10.61	12.32	10.49	3.70	1.86	3.22	13.76	27.19	20.14	10.00	1.92	1.21
Ac-ft	14,370	16,680	14,210	5,010	2,520	4,360	18,640	36,840	27,280	13,550	2,600	1,630

Calendar year 1955: Max 1,160 Min 28 Mean 211 Cfsm 8.31 In. 112.76 Ac-ft 152,800
Water year 1955-56: Max 1,110 Min 22 Mean 217 Cfsm 8.54 In. 116.42 Ac-ft 157,700

Peak discharge (base, 1,000 cfs).--Oct. 29 (2 p.m.) 1,270 cfs (5.69 ft); Nov. 4 (10 a.m. to 1:30 p.m.) 1,110 cfs (5.56 ft); Nov. 9 (8:20 p.m.) 1,080 cfs (5.53 ft); Dec. 12 (12:30 a.m.) 2,000 cfs (6.47 ft); May 19 (8:30 p.m.) 1,130 cfs (5.59 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Cedar River near Cedar Falls, Wash.

Location.--Lat 47°22'20", long 121°37'30", in SE¼SW¼ sec. 23, T. 22 N., R. 9 E., on right bank 2 miles upstream from Cedar Lake and 8 miles southeast of Cedar Falls.

Drainage area.--41.8 sq mi.

Records available.--October 1945 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,560 ft (from topographic map).

Average discharge.--11 years, 285 cfs (206,300 acre-ft per year).

Extremes.--Maximum discharge during year, 5,590 cfs Dec. 11 (gage height, 9.80 ft in well), from rating curve extended above 2,000 cfs on basis of slope-area determination at gage height 10.16 ft in well, 11.44 ft from outside high-water marks for flood of Dec. 10, 1956; minimum, 35 cfs Sept. 23, 24 (gage height, 2.07 ft).
1945-56: Maximum discharge, that of Dec. 11, 1955; maximum gage height, 11.4 ft Feb. 11, 1951 (backwater from Cedar Lake); minimum discharge, 20 cfs Nov. 30 to Dec. 1, 1952; minimum gage height, that of Sept. 23, 24, 1956.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1946-48, 1951-52.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 1-10. Backwater from Cedar Lake Dec. 12-18, 22-28, May 17 to June 15, June 19-26, 28, 29, July 1, 7-10)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
2.3	54	2.0	29	5.0	970
3.0	175	2.5	87	6.0	1,600
4.0	485	3.0	192	7.5	2,890
5.0	950	4.0	520		
6.0	1,600				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	517	325	190	80	140	208	476	1,090	378	104	44
2	59	507	*280	177	84	195	187	456	930	396	101	43
3	59	820	242	192	89	162	177	448	900	396	98	42
4	156	1,430	210	250	87	134	200	452	860	368	89	41
5	223	930	193	230	90	114	206	462	802	*396	86	39
6	171	641	189	211	82	102	184	500	752	473	81	38
7	157	529	173	192	81	106	187	588	734	414	80	38
8	239	482	164	172	78	110	190	698	712	448	*76	38
9	790	636	160	158	75	99	206	784	726	496	75	38
10	750	1,090	157	149	76	90	*276	835	802	484	72	40
11	529	731	1,770	144	103	84	364	698	793	417	71	72
12	450	541	2,580	146	156	80	375	584	680	392	68	*49
13	387	443	880	174	125	80	438	520	632	378	67	43
14	325	366	592	160	114	75	548	500	628	320	66	40
15	271	312	508	174	97	75	576	*552	584	279	64	39
16	228	259	428	187	94	75	516	750	496	267	63	38
17	203	239	364	190	97	80	445	1,160	496	259	60	37
18	182	234	273	*197	96	104	431	1,520	496	262	57	37
19	*171	256	259	190	87	129	516	1,640	616	270	55	36
20	155	213	282	172	84	129	725	1,500	667	267	54	36
21	143	198	434	160	82	167	1,090	1,150	572	241	52	37
22	131	182	1,090	158	78	211	1,090	*1,060	516	219	51	36
23	120	171	840	162	*78	317	811	1,150	496	197	51	35
24	189	224	644	149	78	317	649	1,040	459	184	51	40
25	403	431	536	134	76	330	596	905	414	170	53	41
26	426	618	473	121	75	324	620	890	400	158	64	44
27	408	517	403	114	74	256	608	855	500	144	55	44
28	795	408	327	112	81	222	588	762	540	131	51	45
29	1,320	332	276	106	81	230	568	752	480	123	49	79
30	1,170	325	225	97	------	239	528	*980	406	117	48	110
31	682	-----	203	81	-----	233	-----	1,190	------	110	45	------
Total	11,354	14,582	15,480	5,049	2,578	5,009	14,103	25,857	19,179	9,154	2,055	1,339
Mean	366	486	499	163	88.9	162	470	834	639	295	66.3	44.6
Cfsm	8.76	11.6	11.9	3.90	2.13	3.88	11.2	20.0	15.3	7.06	1.59	1.07
In.	10.10	12.97	13.77	4.49	2.29	4.46	12.55	23.01	17.06	8.14	1.83	1.19
Ac-ft	22,520	28,920	30,700	10,010	5,110	9,940	27,970	51,290	38,040	18,160	4,080	2,660

Calendar year 1955: Max 2,580 Min 47 Mean 339 Cfsm 8.11 In. 110.03 Ac-ft 245,300
Water year 1955-56: Max 2,580 Min 35 Mean 344 Cfsm 8.23 In. 111.86 Ac-ft 249,400

Peak discharge (base, 1,000 cfs).--Oct. 29 (5 p.m.) 2,070 cfs (6.60 ft); Nov. 4 (1:30 p.m.) 1,770 cfs (6.22 ft); Nov. 9 (10:30 a.m.) 1,330 cfs (5.61 ft); Dec. 11 (11 p.m.) 5,590 cfs (9.80 ft); Dec. 22 (1 p.m.) 1,210 cfs (5.65 ft); Apr. 21 (10 p.m.) 1,220 cfs (5.44 ft); May 19 (11 to 12 p.m.) 1,720 cfs (7.32 ft, 4 to 7 a.m., May 20); May 31 (11 to 12 p.m.) 1,190 cfs (6.40 ft, 12 to 4 a.m., June 1).
* Discharge measurement made on this day.

Rex River near Cedar Falls, Wash.

Location.--Lat 47°21'10", long 121°39'50", in NE¼NW¼ sec. 33, T. 22 N., R. 9 E., on right bank 2½ miles upstream from mouth and Cedar Lake and 7 miles southeast of Cedar Falls.
Drainage area.--13.0 sq mi.
Records available.--October 1945 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 1,600 ft (from topographic map).
Average discharge.--11 years, 106 cfs (76,740 acre-ft per year).
Extremes.--Maximum discharge during year, 2,160 cfs Dec. 11 (gage height, 6.80 ft), from rating curve extended above 1,050 cfs; minimum, 7.6 cfs Sept. 19, 20, 23 (gage height, 2.58 ft).
1945-56: Maximum discharge, that of Dec. 11, 1955; minimum, 4.3 cfs Nov. 29, 1952 (gage height, 2.43 ft).
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
1062,1286,1316	1946	Dec. 28, 1945	1,580	6.20
1216,1286	1951	Feb. 11, 1951	1,660	6.27
1286	1953	Jan. 23, 1953	1,640	6.27
1346	1954	Dec. 9, 1953	1,870	6.55
1396	1955	Feb. 8, 1955	1,570	6.24

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.
Revisions (water years).--WSP 1286: 1946, 1948(P), 1949(M), 1950(P). Revised figures of discharge, in cubic feet per second, for high-water period and supplemental peak discharges in water year 1951, superseding those published in WSP 1216 and 1286, are given herewith:

1951	
Feb. 9	1,420
10	840
11	1,090

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
February 1951	5,866	1,420	38	210	16.2	16.78	11,640
Water year 1950-51.	-	1,420	6.0	108	8.31	112.67	78,130
Calendar year 1951.	-	1,420	6.0	88.8	6.83	92.70	64,280

Revised peak discharge.--1950-51: Oct. 10 (8:30 a.m.) 1,110 cfs (5.43 ft); Dec. 23 (11:30 a.m.) 840 cfs (5.22 ft); Feb. 11 (7 a.m.) 1,660 cfs (6.27 ft).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	151	*201	50	33	48	68	153	282	114	23	10.5
2	24	189	151	46	35	58	59	148	234	124	22	9.8
3	26	311	117	54	36	46	54	143	244	117	22	9.8
4	133	443	98	121	35	38	70	151	227	110	20	9.5
5	108	276	85	102	36	32	70	169	227	160	19.4	9.1
6	75	204	80	82	34	28	62	181	217	181	18.8	8.8
7	76	151	72	70	34	32	59	211	241	140	17.7	8.8
8	118	138	69	59	33	32	58	255	241	167	17.2	8.5
9	388	258	67	52	32	30	65	276	262	178	16.7	8.8
10	324	428	67	49	32	26	102	298	283	161	*15.7	9.5
11	208	254	986	46	40	25	156	241	262	130	15.2	*21
12	169	164	756	46	60	24	161	192	204	128	14.7	11.3
13	131	126	276	54	45	22	192	161	195	117	14.3	9.5
14	108	100	178	49	42	21	234	*151	198	94	13.8	9.1
15	87	96	133	74	35	20	217	183	192	83	13.4	8.8
16	74	72	108	91	31	20	*178	258	183	79	12.9	8.2
17	63	64	89	91	31	22	148	375	192	76	12.5	8.2
18	55	77	72	*98	32	26	151	470	198	79	11.7	7.9
19	*58	138	72	82	28	32	201	480	286	83	11.3	7.9
20	50	98	182	72	26	35	294	395	244	78	10.9	8.8
21	46	87	318	66	*25	56	400	294	195	65	10.5	9.1
22	42	77	661	69	25	81	362	294	181	53	9.8	8.5
23	39	69	330	72	24	138	280	*326	167	48	9.8	7.9
24	98	96	201	63	24	130	217	276	140	44	10.2	15.9
25	258	232	143	55	23	158	201	234	124	38	13.9	11.7
26	224	306	117	49	22	143	211	255	135	36	17.2	21
27	244	303	94	44	21	100	201	238	*175	32	13.4	14.3
28	402	230	77	43	22	78	198	198	169	29	11.7	24
29	546	184	67	40	22	83	198	230	143	28	12.9	65
30	380	195	60	36	------	83	175	330	119	26	11.7	43
31	220	-----	55	33	-----	79	-----	357	------	24	10.9	------
Total	4,799	5,517	5,982	1,958	918	1,746	5,042	7,923	6,161	2,822	455.2	414.2
Mean	155	184	193	63.2	31.7	56.3	168	256	205	91.0	14.7	13.8
Cfsm	11.9	14.2	14.8	4.86	2.44	4.33	12.9	19.7	15.8	7.00	1.13	1.06
In.	13.73	15.78	17.11	5.60	2.63	4.99	14.42	22.67	17.63	8.07	1.30	1.18
Ac-ft	9,520	10,940	11,870	3,880	1,820	3,460	10,000	15,720	12,220	5,600	903	822

Calendar year 1955: Max 986 Min 14 Mean 126 Cfsm 9.69 In. 131.14 Ac-ft 90,910
Water year 1955-56: Max 986 Min 7.9 Mean 120 Cfsm 9.23 In. 125.11 Ac-ft 86,760

Peak discharge (base, 700 cfs).--Oct. 29 (12 m.) 991 cfs (5.43 ft); Dec. 11 (9 p.m.) 2,160 cfs (6.80 ft); Dec. 22 (11 a.m.) 757 cfs (5.07 ft). * Discharge measurement made on this day.
Note.--No gage-height record Jan. 30 to Feb. 8, Feb. 11-21; discharge estimated on basis of weather records and records for stations on nearby streams.

Cedar River at Cedar Falls, Wash.

Location.--Lat 47°25'10", long 121°47'20", in SE¼ sec. 4, T. 22 N., R. 8 E., on right bank three-quarters of a mile downstream from Seattle municipal powerplant at Cedar Falls and 3 miles downstream from Cedar Lake.

Drainage area.--84.2 sq mi.

Records available.--April 1914 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 910 ft (from river-profile map).

Average discharge.--42 years, 303 cfs (219,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,760 cfs May 20 (gage height, 8.57 ft); minimum, 22 cfs Sept. 23 (gage height, 4.99 ft); minimum daily, 52 cfs Aug. 24-26.
1914-56: Maximum discharge, 6,440 cfs Dec. 22, 1933 (gage height, 11.5 ft); no flow part of each day Nov. 25, 1917, Aug. 18, 1923; minimum daily, 2 cfs Sept. 20, 1922.

Remarks.--Records excellent except those for period May to September, which are good, and those for periods of no gage-height record, which are fair. All artificially diverted water returned to river above station. Some regulation by Cedar Lake for power.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 722: 1930. WSP 1286: 1934(M), drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

5.2	41	6.5	370
5.5	83	7.0	610
6.0	200	8.5	1,680

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	378	569	370	540	249	487	481	*1,070	197	92	718
2	350	386	536	225	540	291	517	497	1,280	380	182	682
3	354	402	118	503	520	125	501	408	888	360	219	665
4	358	410	192	582	350	66	461	290	*997	180	88	677
5	320	494	570	511	300	228	446	386	918	365	88	166
6	278	361	552	565	400	192	378	87	890	452	85	179
7	274	578	513	541	505	439	486	489	899	189	85	178
8	274	380	665	455	493	*421	329	255	1,070	224	85	247
9	354	488	*748	538	524	163	451	453	780	574	83	227
10	386	666	623	523	517	123	344	509	823	663	83	211
11	378	316	470	528	201	79	*415	560	1,120	605	83	220
12	374	283	937	550	313	*412	275	291	788	553	81	268
13	370	470	1,100	521	425	286	289	118	710	562	161	255
14	294	675	1,080	457	366	185	265	502	692	101	80	250
15	362	569	942	348	261	134	271	482	903	99	67	200
16	362	563	818	554	390	144	426	619	619	222	59	188
17	358	730	721	532	420	291	518	721	614	274	57	266
18	358	647	694	546	260	330	527	976	814	*213	56	250
19	358	531	600	542	390	370	693	1,010	742	107	56	238
20	358	101	569	529	370	250	508	1,520	925	97	110	205
21	354	530	604	304	340	320	479	1,530	890	97	56	226
22	354	579	840	500	220	380	176	1,410	812	96	54	248
23	354	596	1,030	540	250	460	562	1,430	672	390	*53	234
24	358	356	1,090	540	270	500	542	1,420	374	94	52	284
25	386	594	876	530	220	350	548	1,330	641	94	52	251
26	394	437	837	540	59	490	498	1,030	542	94	52	227
27	*380	519	781	*450	381	500	409	811	486	92	87	218
28	390	596	674	149	404	500	291	1,010	476	186	131	215
29	410	567	644	75	187	510	386	931	648	178	266	212
30	400	611	576	492	- - -	520	502	754	221	90	382	216
31	390	- - - -	478	529	- - - - -	520	- - - - -	1,040	- - - -	92	472	- - - - -
Total	10,926	14,813	21,447	14,569	10,416	9,828	12,980	23,350	23,306	7,920	3,557	8,623
Mean	352	494	692	470	359	317	433	753	777	255	115	287
Ac-ft	21,670	29,380	42,540	28,900	20,660	19,490	25,750	46,310	46,230	15,710	7,060	17,100

Calendar year 1955: Max 1,100 Min 36 Mean 397 Ac-ft 287,200
Water year 1955-56: Max 1,530 Min 52 Mean 442 Ac-ft 320,800

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 27-30, Jan 22-27, Feb. 1-6, 16-25, Mar. 18-31; discharge estimated on basis of recorded range in stage and records for nearby stations.

Cedar River near Landsburg, Wash.

Location.--Lat 47°23'35", long 121°56'50", in NE¼SW¼ sec. 17, T. 22 N., R. 7 E., on left bank 2 miles upstream from Landsburg and intake of Seattle water-supply system, 4¾ miles east of Maple Valley, 5 miles downstream from Taylor Creek, and 12 miles downstream from Cedar Lake.

Drainage area.--125 sq mi, excludes that of Rock Creek.

Records available.--July 1895 to September 1956 (prior to October 1948, flow of Rock Creek included). Monthly discharge only for some periods, published in WSP 1316. Published as "near Seattle" 1895-98, "near Maple Valley" 1902, and as "near Ravensdale" 1898-1901, 1903-12.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from river-profile map). Prior to Oct. 1, 1898, staff gage at site 2¼ miles downstream at different datum. Mar. 24, 1901, to May 15, 1913, staff gage at site 2 miles downstream at datum 535.84 ft above mean sea level (levels by city of Seattle). Apr. 30, 1914, to Oct. 22, 1928, water-stage recorder a quarter of a mile downstream at different datum.

Average discharge.--61 years, 690 cfs (499,500 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 3,280 cfs Dec. 11 (gage height, 4.77 ft); minimum, 288 cfs Sept. 22, 23 (gage height, 1.10 ft).

1895-98, 1901-56: Maximum discharge, 14,200 cfs Nov. 19, 1911 (gage height, 10.0 ft, from graph based on gage readings, site and datum then in use), from computation of peak flow over dam, peak caused by failure of flashboards at Cedar Lake; minimum observed, 83 cfs Sept. 19, 1898.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. All diversions except Rock Creek returned to river above station. Rock Creek which entered naturally just above station prior to 1932, has been diverted to enter river at a point about 2 miles downstream from Seattle municipal water-supply intake. Some regulation by Cedar Lake.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 313: 1895-98, 1902-9. WSP 1246: Drainage area. WSP 1286: 1912. WSP 1316: 1896-98(M), 1902-11(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.1	288	3.0	1,480
1.5	460	3.5	1,930
2.0	750	4.0	2,430
2.5	1,100		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	526	862	1,460	918	1,000	794	1,020	850	1,400	510	a380	974
2	631	946	1,330	818	1,010	900	1,050	871	1,610	686	444	936
3	637	1,090	870	1,060	978	684	1,000	862	1,260	661	487	918
4	698	1,060	832	1,320	832	595	971	616	*1,330	485	366	972
5	667	1,040	1,100	1,230	820	694	952	816	1,240	664	362	492
6	577	922	1,170	1,240	854	642	896	485	1,210	718	362	a320
7	577	1,050	1,110	1,180	954	844	922	800	1,250	530	357	a300
8	595	888	1,240	1,100	936	938	858	650	1,370	521	357	a310
9	904	918	*1,370	1,100	962	700	904	849	1,160	802	357	a360
10	960	1,200	1,290	1,100	940	570	898	909	1,170	938	353	a330
11	813	754	1,790	1,080	733	516	*944	924	1,460	902	353	a340
12	750	818	2,270	1,100	860	*774	816	773	1,180	853	349	354
13	724	814	2,030	1,140	840	739	812	483	1,080	822	408	526
14	630	1,100	1,870	1,020	895	592	803	838	1,050	500	374	512
15	692	990	1,670	1,050	688	543	772	762	1,250	405	345	447
16	679	951	1,500	1,160	832	546	907	984	1,000	490	324	462
17	673	1,140	1,330	1,160	851	662	904	1,120	984	578	324	480
18	667	1,120	1,350	1,200	682	645	960	1,380	1,130	470	320	518
19	667	1,190	1,170	1,190	872	740	1,160	a1,500	1,180	424	320	485
20	667	702	1,330	1,200	760	622	978	a1,700	1,280	388	334	460
21	655	968	1,450	909	712	704	1,040	a1,900	1,250	388	352	486
22	649	1,020	1,850	1,130	470	801	700	1,800	1,210	383	320	473
23	649	1,100	1,980	1,200	510	942	984	1,780	1,080	*646	*316	489
24	685	959	1,830	1,140	546	1,000	994	1,770	714	388	316	521
25	904	1,350	1,600	1,130	460	860	988	1,730	1,000	379	316	510
26	918	1,460	1,510	1,130	451	1,050	944	1,390	872	374	320	490
27	*841	1,440	1,400	*1,050	717	1,040	874	1,180	805	a440	352	475
28	960	1,370	1,290	742	786	1,050	720	1,370	796	a520	388	460
29	1,040	1,320	1,220	595	643	1,070	794	1,270	889	a450	477	480
30	1,040	1,370	1,120	901	---	1,090	906	1,080	610	a400	631	475
31	946	---	1,030	1,000	---	1,060	-----	1,370	------	a370	675	----
Total	23,021	31,912	44,362	33,293	22,594	24,407	27,471	34,812	33,780	17,085	11,739	15,355
Mean	743	1,064	1,431	1,074	779	787	916	1,123	1,126	551	379	512
Ac-ft	45,660	63,300	87,990	66,040	44,810	48,410	54,490	69,050	67,000	33,890	23,280	30,460

Calendar year 1955: Max 2,270 Min 317 Mean 839 Ac-ft 607,300
Water year 1955-56: Max 2,270 Min 300 Mean 874 Ac-ft 634,400

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations at Cedar Falls and at Renton.

Rock Creek near Maple Valley, Wash.

Location.--Lat 47°22'50", long 122°01'10", in NE¼ sec. 22, T. 22 N., R. 6 E., on left bank 650 ft upstream from mouth and 2 miles southeast of Maple Valley.

Drainage area.--14.0 sq mi.

Records available.--June 1945 to September 1956.

Gage.--Water-stage recorder and woodbox culvert control. Altitude of gage is 425 ft (from topographic map). Prior to Mar. 16, 1953, at site 50 ft downstream at datum 0.82 ft higher.

Average discharge.--11 years, 22.3 cfs (16,140 acre-ft per year).

Extremes.--Maximum discharge during year, 146 cfs Dec. 12 (gage height, 2.72 ft); minimum, 6.2 cfs Oct. 1-3, Sept. 3, 5, 6, 17, 21, 25, 26, 28; minimum gage height, 1.36 ft Sept. 17, 21, 25, 26, 28.

1945-56: Maximum discharge, 165 cfs Feb. 11, 1951 (gage height, 4.26 ft, datum then in use, from recorded range in stage); minimum, 2.7 cfs Dec. 23, 24, 1952; minimum gage height, 0.19 ft, Oct. 9-12, 14, 15, 1952, datum then in use.

Remarks.--Records good. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.4	5.2
1.7	20
2.0	45
2.7	142

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	16	62	68	54	33	48	23	12	11	8.2	6.6
2	6.2	17.5	72	67	52	*35	48	23	12	10.5	8.6	6.6
3	6.2	20	75	71	50	38	47	22	12	*10.5	8.6	6.6
4	7.4	21	70	94	49	43	47	22	11	10.5	8.2	6.6
5	7.4	22	*65	98	48	45	46	21	11	10.5	8.2	6.6
6	7.0	23	61	112	47	45	45	20	11	10.5	8.2	6.6
7	7.8	23	59	122	45	46	44	20	11	9.9	8.2	6.6
8	8.2	23	58	122	44	47	42	20	11	9.9	8.2	6.6
9	11	23	57	114	43	47	*41	19	11	9.9	8.2	7.0
10	10.5	23	56	104	42	47	40	18.5	11	9.9	8.2	7.0
11	9.9	23	68	97	40	47	38	18.5	15	9.4	7.8	7.4
12	9.4	22	128	90	39	46	37	18.5	13	9.4	7.8	7.0
13	9.0	21	137	87	38	45	36	17.5	12.5	9.4	7.8	7.0
14	9.0	21	114	81	37	43	36	17.5	13.5	9.4	7.8	7.0
15	9.0	21	96	83	36	42	35	17	12.5	9.4	*7.8	7.0
16	8.6	21	88	80	36	41	34	16.5	12.5	9.0	7.4	7.0
17	8.6	21	81	80	36	40	33	16.5	12	9.0	7.4	7.0
18	8.6	22	76	77	35	38	32	16	12	8.6	7.8	7.0
19	8.6	23	71	75	34	37	32	16	12.5	8.6	7.4	6.6
20	8.6	24	76	*74	33	36	32	15	12	8.6	7.4	6.6
21	8.6	25	86	71	33	36	31	15	11	8.6	7.4	6.6
22	8.6	25	98	70	32	36	30	*15	11	8.6	7.4	6.6
23	8.6	26	109	70	32	36	29	14.5	11	8.6	7.4	6.6
24	9.9	27	106	70	32	36	28	14.5	11	8.6	7.4	6.6
25	*11	32	98	70	32	38	28	14	11	8.6	7.4	6.6
26	11	40	94	67	32	41	27	14.5	11	8.6	7.4	7.4
27	12	49	90	66	32	44	26	13.5	11	8.6	7.0	7.0
28	12.5	56	86	63	32	45	25	13.5	11	8.6	7.0	7.0
29	14.5	58	81	61	32	46	25	13	11	8.6	7.0	7.4
30	16	58	77	59	------	47	24	13	11	8.6	7.0	7.0
31	16	-----	72	57	------	48	------	12.5	------	8.2	7.0	------
Total	295.9	826.5	2,567	2,510	1,127	1,294	1,066	530.5	350.5	288.1	238.6	205.2
Mean	9.55	27.6	82.8	81.0	38.9	41.7	35.5	17.1	11.7	9.29	7.70	6.84
Cfsm	0.682	1.97	5.91	5.79	2.78	2.98	2.54	1.22	0.836	0.664	0.550	0.489
In.	0.79	2.20	6.82	6.67	2.99	3.44	2.83	1.41	0.93	0.77	0.63	0.55
Ac-ft	587	1,640	5,090	4,980	2,240	2,570	2,110	1,050	695	571	473	407

Calendar year 1955: Max 137 Min 6.2 Mean 24.9 Cfsm 1.78 In. 24.16 Ac-ft 18,030
Water year 1955-56: Max 137 Min 6.2 Mean 30.9 Cfsm 2.21 In. 30.03 Ac-ft 22,410

* Discharge measurement made on this day.

Cedar River at Renton, Wash.

Location.--Lat 47°28'50", long 122°12'10", in NW¼ sec. 17, T. 23 N., R. 5 E., on left bank 125 ft downstream from bridge on U. S. Highway 10 at Renton and 2 miles upstream from mouth.

Drainage area.--197 sq mi (includes 4 sq mi in vicinity of Youngs Lake in Big Soos Creek basin).

Records available.--March 1901 to July 1903 (fragmentary), September 1906 to December 1907 (monthly discharge only), August 1945 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 15.20 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 1, 1908, staff gages within 1 mile of present site, at datum 10.67 ft below mean sea level (unadjusted). Aug. 7, 1945, to Aug. 15, 1947, water-stage recorder at site 700 ft upstream at datum 20.13 ft above mean sea level and Aug. 16, 1947, to Dec. 7, 1950, at datum 19.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--11 years (1945-56), 732 cfs (529,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,640 cfs Dec. 11 (gage height, 7.37 ft); minimum, 95 cfs Aug. 24 (gage height, 2.88 ft).
1901-3, 1906-7, 1945-56: Maximum discharge not determined, probably occurred Feb. 11, 1951, during period of no gage-height record (discharge measurement of 6,640 cfs, gage height, 9.48 ft, made Feb. 10, 1951; minumum, 49 cfs Nov. 20, 21, 28, 30, 1952.

Remarks.--Records good. Flow partly regulated by Cedar Lake for operation of powerplant. More than 250 cfs is diverted at Landsburg at times by the city of Seattle for municipal use.

Revisions (water years).--WSP 1246: Drainage area. WSP 1316: 1901-2.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 5 to Dec. 31)

Oct. 1 to Jan. 25				Jan. 26 to Sept. 30			
3.8	403	5.5	1,600	2.9	100	4.5	800
4.1	550	6.0	2,110	3.2	181	5.0	1,150
4.5	775	7.0	3,290	3.5	283	5.5	1,600
5.0	1,140			4.0	510	6.0	2,110

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	820	1,820	950	1,070	686	1,160	788	1,220	421	152	731
2	508	866	1,700	902	1,060	1,030	1,140	784	1,280	503	155	768
3	519	1,440	1,270	1,230	1,030	898	1,080	888	1,240	524	241	766
4	578	1,280	977	1,800	905	814	1,020	678	1,150	392	246	806
5	610	1,070	1,040	1,910	922	774	1,010	727	*1,080	476	158	486
6	493	920	1,260	1,890	854	724	942	602	1,010	481	149	310
7	493	836	1,330	1,800	988	*836	959	554	1,100	488	147	302
8	545	786	1,430	1,590	984	1,080	944	688	1,120	353	144	312
9	918	750	1,510	1,460	982	930	846	584	1,260	436	138	334
10	1,160	*1,040	1,430	1,380	969	653	922	774	1,120	743	133	352
11	868	750	1,800	1,310	798	614	906	797	1,390	736	130	337
12	733	754	3,040	1,270	817	641	845	780	1,320	686	130	368
13	693	624	2,840	1,290	766	825	772	460	1,080	650	128	373
14	628	910	2,580	1,150	894	656	774	564	952	528	195	366
15	602	824	2,230	1,300	696	567	744	679	1,150	272	141	340
16	616	780	1,900	1,450	716	538	802	734	1,110	264	122	309
17	605	938	1,600	1,400	808	554	*870	912	926	370	115	334
18	594	964	1,570	1,400	726	626	923	1,150	928	326	110	378
19	588	1,420	1,110	1,390	721	718	1,130	1,300	1,200	318	108	367
20	588	1,090	1,550	1,400	722	662	957	1,630	1,170	219	105	382
21	572	862	2,060	1,150	720	682	1,010	2,000	1,240	215	140	395
22	545	970	2,500	1,340	566	810	832	1,750	1,170	212	105	397
23	545	1,040	2,780	1,510	464	1,050	830	1,670	994	310	102	406
24	610	994	2,540	1,440	505	1,240	956	1,580	771	*336	105	454
25	888	1,340	2,130	1,380	481	1,250	943	1,620	769	200	105	474
26	1,090	1,990	1,850	*1,350	430	1,230	874	1,300	824	175	120	435
27	794	2,060	1,760	1,260	534	1,240	828	1,070	728	164	120	435
28	896	1,850	*1,540	990	736	1,190	710	1,170	664	161	*208	402
29	1,040	1,590	1,370	800	726	1,190	668	1,080	652	228	292	416
30	1,280	1,540	1,230	846	-------	1,230	823	856	658	216	459	435
31	1,040	-------	1,090	1,090	-------	1,220	-------	1,070	-------	158	469	-------
Total	22,051	33,098	54,837	41,428	22,590	27,158	27,220	31,239	31,276	11,581	5,172	12,970
Mean	711	1,103	1,769	1,336	779	876	907	1,008	1,043	373	167	432
Ac-ft	43,740	65,650	108,800	82,170	44,810	53,870	53,990	61,960	62,040	22,930	10,260	25,730

Calendar year 1955: Max 3,040 Min 136 Mean 834 Ac-ft 603,900
Water year 1955-56: Max 3,040 Min 102 Mean 876 Ac-ft 636,000

* Discharge measurement made on this day.

May Creek near Renton, Wash.

Location (revised).--Lat 47°31'25", long 122°11'45", in SW¼SE¼ sec. 32, T. 24 N., R. 5 E., 1 mile upstream from mouth and 2½ miles north of Renton.
Drainage area.--12.5 sq mi (revised).
Records available.--June 1945 to October 1950, June 1955 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 60 ft (from topographic map). Prior to June 1955 at different datum.
Average discharge.--6 years, 22.9 cfs (16,580 acre-ft per year).
Extremes.--1955: Maximum discharge during period June to September, 5.4 cfs July 1 (gage height, 1.14 ft); minimum, 2.0 cfs Sept. 4 (gage height, 0.98 ft).
1955-56: Maximum discharge during water year, 240 cfs Dec. 21 (gage height, 2.90 ft); minimum, 2.3 cfs Oct. 1, 2, Aug. 18, 19; minimum gage height, 0.96 ft Aug. 18, 19.
1945-50, 1955-56: Maximum discharge, 401 cfs Feb. 17, 1949 (gage height, 3.98 ft, datum then in use); minimum, 1.9 cfs July 30, 1945, July 10, Sept. 3, 5, 1947.
Remarks.--Records good except those for period of no gage-height record, which are fair.
Some small diversions for irrigation and domestic use. No regulation.
Revisions (water years).--WSP 1316: 1947(M).

Rating tables, June 16, 1955, to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

June 16 to Dec. 21, 1955				Dec. 22, 1955, to Sept. 30, 1956			
1.0	2.3	1.8	52	0.97	2.5	1.8	70
1.1	4.5	2.0	75	1.1	6.3	2.0	97
1.2	8.0	2.3	117	1.2	11	2.2	126
1.4	18	2.6	171	1.3	16.5	2.4	157
1.6	33	2.9	240	1.4	24	2.7	206
				1.6	45		

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	5.1	4.8	2.6	11	-	3.5	2.4	2.4	21	3.5	2.4	2.4	*2.4
2	-	4.2	4.0	2.4	12	-	3.2	2.4	2.3	22	3.5	2.4	2.6	2.4
3	-	4.0	3.5	2.4	13	-	3.0	2.4	3.0	23	4.0	2.4	2.8	2.4
4	-	4.2	3.2	2.4	14	-	2.8	2.4	3.2	24	3.8	2.4	2.8	2.3
5	-	4.0	*3.0	2.4	15	-	*2.8	2.4	3.0	25	3.8	2.4	2.8	2.3
6	-	3.8	2.8	2.4	16	*4.0	3.0	2.4	3.0	26	4.0	3.5	2.6	2.4
7	-	3.5	2.8	2.4	17	4.0	2.8	2.4	3.0	27	4.2	3.8	2.6	2.8
8	-	3.2	2.6	*2.6	18	4.2	2.6	2.4	2.8	28	4.8	3.5	2.4	3.0
9	-	3.5	2.6	2.4	19	4.0	2.4	2.4	2.6	29	4.5	3.5	2.4	2.6
10	-	3.8	2.6	2.4	20	3.8	2.4	2.6	2.6	30	4.5	3.5	2.4	2.4
										31	-	5.1	2.6	-
Total											-	102.7	84.5	77.3
Mean											-	3.31	2.73	2.58
Cubic feet per second per square mile											-	0.265	0.218	0.206
Runoff in inches											-	0.31	0.25	0.23
Runoff in acre-feet											-	204	168	153

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	16	92	47	25	28	50	7.9	4.2	3.6	2.7	2.9
2	2.3	27	105	52	22	29	*44	7.9	3.9	3.4	3.4	2.9
3	2.4	*60	87	91	20	47	41	7.5	4.8	3.4	*3.4	2.9
4	2.8	70	68	149	23	55	35	7.5	5.2	3.4	3.1	2.7
5	2.8	54	58	168	25	51	31	7.5	4.5	3.6	3.1	2.7
6	*2.6	40	*58	170	25	45	28	7.5	4.8	3.4	2.9	2.7
7	3.8	30	55	157	24	55	31	7.1	5.6	3.1	2.9	2.7
8	6.4	27	56	122	23	69	26	7.1	5.9	2.9	2.7	2.9
9	15.5	23	65	97	21	61	23	6.7	7.5	2.9	2.7	2.9
10	13	*21	63	79	20	51	22	7.1	8.9	2.9	2.7	*2.9
11	*7.6	22	96	70	21	44	20	7.1	7.5	2.9	2.9	4.2
12	5.7	19.5	167	60	22	37	18.5	7.5	6.3	2.9	2.9	3.6
13	4.8	16.5	111	*53	21	34	17	7.1	5.9	2.9	2.7	3.1
14	4.2	15.5	76	49	20	30	16.5	*6.7	5.6	2.9	2.7	3.1
15	3.8	15.5	60	75	18	27	15.5	6.7	5.6	2.9	2.7	3.1
16	3.5	13	51	93	17	24	14.5	6.3	5.2	2.7	2.7	3.1
17	3.5	12	48	80	16	22	13.5	6.3	5.2	2.7	2.7	3.1
18	3.5	20	41	*73	17	21	13	5.9	5.2	2.7	2.5	3.1
19	3.5	50	40	65	18	19.5	12.5	5.6	5.9	2.9	2.5	3.1
20	3.5	52	108	61	19	19.5	12	5.2	5.2	2.9	2.7	3.1
21	3.5	47	*225	56	*20	23	11	5.2	4.5	2.9	2.7	2.9
22	3.2	39	206	58	18.5	27	10.5	4.8	4.2	2.7	2.7	2.9
23	3.0	37	163	73	18.5	41	9.9	4.8	4.2	3.4	2.7	3.1
24	7.2	44	118	73	22	44	9.9	4.8	4.2	2.9	2.7	3.4
25	19.5	68	86	62	22	53	9.4	4.5	4.2	2.9	2.9	3.6
26	*22	95	75	53	22	58	8.9	4.5	*3.9	2.7	3.6	6.3
27	18.5	116	83	47	23	52	8.4	4.5	3.9	2.7	3.6	5.6
28	16.5	101	74	45	25	47	8.4	4.2	3.9	2.5	3.1	4.5
29	22	84	62	41	26	53	8.4	4.2	3.6	2.5	3.1	5.2
30	23	78	55	35	------	55	8.4	4.2	3.6	2.5	2.9	5.2
31	19.5	-----	49	30	-----	55	-----	4.2	------	2.7	2.9	------
Total	255.4	1,313.0	2,699	2,384	614.0	1,277.0	577.2	188.1	153.1	91.4	89.5	103.5
Mean	8.24	43.8	87.1	76.9	21.2	41.2	19.2	6.07	5.10	2.95	2.89	3.45
Cfsm	0.659	3.50	6.97	6.15	1.70	3.30	1.54	0.486	0.408	0.236	0.231	0.276
In.	0.76	3.91	8.03	7.09	1.83	3.80	1.72	0.56	0.46	0.27	0.27	0.31
Ac-ft	507	2,600	5,350	4,730	1,220	2,530	1,140	373	304	181	178	205

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 225 Min 2.3 Mean 26.6 Cfsm 2.13 In. 29.01 Ac-ft 19,320

Peak discharge (base, 130 cfs).--Dec. 12 (6:30 a.m.) 184 cfs (2.66 ft); Dec. 21 (4 p.m.) 240 cfs (2.90 ft); Jan. 6 (7 to 9 p.m.) 184 cfs (2.57 ft). * Discharge measurement made on this day.
Note.--No gage-height record Jan. 30 to Feb. 21; discharge estimated on basis of records for stations on nearby streams.

Mercer Creek near Bellevue, Wash.

Location (revised).--Lat 47°36'10", long 122°10'55", in NW¼NW¼ sec. 4, T. 24 N., R. 5 E., on right bank 50 ft downstream from State Highway 2-A road crossing, 1 mile southeast of Bellevue, and 1½ miles upstream from mouth.
Drainage area.--12.0 sq mi (revised).
Records available.--June to October 1945, June 1955 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to June 1955, at different datum.
Extremes.--1955: Maximum discharge during period June to September, 16 cfs July 1 (gage height, 2.12 ft); minimum, 2.2 cfs Aug. 30 (gage height, 1.49 ft).
1955-56: Maximum discharge during water year, 242 cfs Dec. 20 (gage height, 5.08 ft); minimum, 4.2 cfs Sept. 5, 6 (gage height, 1.58 ft).
1945, 1955-56: Maximum discharge, that of Dec. 20, 1955; minimum, that of Aug. 30, 1955.
Remarks.--Records good. Many small diversions for irrigation and domestic use. No regulation.

Rating tables, June 21, 1955, to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 21-30, 1955)

June 21 to Dec. 20, 1955				Dec. 21, 1955, to Sept. 30, 1956			
1.5	2.4	2.3	26	1.59	4.4	2.6	40
1.6	4.1	2.6	37	1.7	7.0	3.0	56
1.7	6.1	3.0	53	1.9	13	3.5	81
1.9	11.5	3.5	80	2.1	20	4.0	116
2.1	18.5	4.2	135	2.3	28	4.6	179

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	11	8.0	4.3	11	-	6.1	4.1	4.5	21	3.5	3.2	3.9	*5.1
2	-	6.6	5.5	3.9	12	-	5.1	4.1	4.3	22	3.9	3.2	4.1	5.1
3	-	6.8	4.9	3.9	13	-	4.3	4.1	5.9	23	5.3	3.4	4.1	5.1
4	-	7.6	4.7	3.7	14	-	3.9	3.9	6.3	24	4.1	3.4	4.1	4.9
5	-	6.1	*4.3	3.7	15	-	*3.7	3.9	5.9	25	4.1	3.5	4.1	4.7
6	-	5.3	3.9	*3.9	16	-	3.9	4.1	5.7	26	5.5	6.3	4.1	4.9
7	-	4.9	3.9	4.1	17	-	3.9	4.1	7.0	27	*5.3	5.5	3.9	5.7
8	-	4.9	3.7	4.5	18	-	3.5	4.1	5.5	28	6.8	4.9	4.5	7.6
9	-	5.9	3.9	4.7	19	-	3.5	4.1	5.1	29	7.8	5.1	3.9	6.3
10	-	7.3	3.9	4.5	20	-	3.4	4.1	5.1	30	6.1	5.7	3.9	5.7
										31	-	11	4.3	-
Total											-	162.9	132.2	151.6
Mean											-	5.25	4.26	5.05
Cubic feet per second per square mile											-	0.438	0.355	0.421
Runoff in inches											-	0.50	0.41	0.47
Runoff in acre-feet											-	323	262	301

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	13	77	40	24	28	31	15	8.2	6.8	*5.5	4.8
2	5.3	32	62	49	24	28	*28	14	8.0	6.5	6.5	4.8
3	5.3	*80	43	92	23	62	25	13.5	11	6.8	6.8	5.0
4	6.5	62	32	124	23	66	27	13.5	13.5	6.8	5.8	5.0
5	9.2	39	33	147	30	46	29	15.5	14	7.8	5.8	4.8
6	6.3	43	*47	141	27	36	23	13.5	11	7.2	5.2	4.4
7	*14	19	42	98	26	47	30	12.5	13.5	6.2	5.2	4.6
8	32	24	50	68	24	61	23	12	15	6.2	5.2	4.6
9	40	19	48	55	22	42	20	11	25	6.2	5.0	5.0
10	31	*28	37	47	22	34	19.5	16	30	6.2	5.0	*5.8
11	*13.5	33	70	43	22	29	18	13.5	16.5	6.2	5.5	13
12	11.5	22	82	38	21	26	17	15	11.5	6.2	5.2	10
13	10.5	16	48	*56	20	28	16.5	12	10.5	6.0	5.2	8.0
14	9.2	14.5	35	44	20	24	16.5	*11	9.9	6.0	6.0	7.0
15	8.3	14.5	30	88	18	22	16	10.5	9.6	5.8	6.2	7.0
16	8.0	12.5	32	91	18	21	16	10	9.6	5.8	6.2	7.0
17	8.0	12	28	60	18.5	20	15	9.9	9.0	5.5	6.0	6.8
18	8.0	25	23	55	20	19.5	15	9.0	9.0	5.2	5.5	7.0
19	8.0	64	29	51	24	18.5	14	9.0	13.5	5.0	5.2	7.2
20	7.8	44	127	50	25	22	13.5	9.0	9.9	5.0	5.0	7.0
21	7.8	31	*172	48	*29	36	13.5	8.8	8.8	5.0	5.0	7.0
22	7.6	24	150	57	28	44	13.5	9.0	8.2	5.0	5.0	6.8
23	7.3	25	113	60	27	54	13.5	8.5	7.8	4.8	5.2	6.5
24	21	41	74	54	29	44	13.5	8.5	7.8	5.0	5.2	7.0
25	54	64	60	43	28	58	12.5	8.5	7.5	5.0	5.5	8.8
26	36	69	57	37	39	48	15	9.0	*7.2	5.0	6.8	18
27	*18	80	77	32	35	40	14	9.6	7.0	5.0	6.5	14.5
28	18	53	54	31	39	35	13.5	8.8	6.8	5.0	6.0	9.9
29	*28	50	43	29	32	46	21	8.5	7.0	5.0	5.5	13.5
30	21	60	36	25	-----	45	15.5	7.8	7.0	5.0	5.0	12
31	15	-----	32	22	-----	40	-----	7.8	-----	5.2	5.0	-----
Total	481.4	1,113.5	1,843	1,875	737.5	1,170.0	558.5	340.2	333.3	178.4	172.7	232.8
Mean	15.5	37.1	59.5	60.5	25.4	37.7	18.6	11.0	11.1	5.75	5.57	7.76
Cfsm	1.29	3.09	4.96	5.04	2.12	3.14	1.55	0.917	0.925	0.479	0.464	0.647
In.	1.49	3.45	5.71	5.81	2.29	3.63	1.73	1.05	1.03	0.55	0.54	0.72
Ac-ft	955	2,210	3,660	3,720	1,460	2,320	1,110	675	661	354	343	462

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 172 Min 4.4 Mean 24.7 Cfsm 2.06 In. 28.00 Ac-ft 17,930

Peak discharge (base, 100 cfs).--Nov. 3 (4:30 a.m.) 102 cfs (3.82 ft); Dec. 12 (1 a.m.) 110 cfs (3.92 ft); Dec. 20 (12 p.m.) 242 cfs (5.08 ft); Jan. 5 (12:30 a.m.) 178 cfs (4.59 ft).
* Discharge measurement made on this day.

Issaquah Creek near Issaquah, Wash.

Location.--Lat 47°28'55", long 122°02'10", in NW¼ sec. 15, T. 23 N., R. 6 E., on left bank 3½ miles south of Issaquah and 4 miles upstream from East Fork Issaquah Creek.

Drainage area.--26.4 sq mi (revised).

Records available.--June 1945 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 210 ft (from topographic map). Prior to Oct. 1, 1948, at datum 0.99 ft higher. Oct. 1, 1948, to July 6, 1952, at site 70 ft upstream at datum 0.41 ft lower.

Average discharge.--11 years, 72.2 cfs (52,270 acre-ft per year).

Extremes.--Maximum discharge during year, 1,050 cfs Dec. 11 (gage height, 3.90 ft); minimum, 14.5 cfs Sept. 5, 6 (gage height, 0.75 ft).
1945-56: Maximum discharge, 2,610 cfs Feb. 9 or 10, 1951 (gage height, 6.08 ft, site and datum then in use); minimum, 10.5 cfs Sept. 1, 3, 4, 1952; minimum gage height, that of Sept. 5, 6, 1956.

Remarks.--Records excellent except those above 400 cfs, which are fair. Many small diversions for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1092: 1946. WSP 1286: 1950. WSP 1346: 1953(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
0.8	16	1.5	87	0.7	12	1.5	116
.9	22	1.7	123	.8	17.5	1.7	164
1.0	30	2.0	195	.9	25	2.0	250
1.1	38	2.5	355	1.0	34	2.5	415
1.3	59	3.0	560	1.1	46	3.0	610
				1.3	76		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18.5	97	326	112	87	128	156	40	26	25	18	16.5
2	18.5	156	285	132	85	*156	144	39	26	25	19.5	15.5
3	19	244	198	268	85	186	128	39	30	*25	19.5	15.5
4	34	*220	157	390	85	164	118	39	32	25	18	15.5
5	34	157	136	345	97	134	107	41	30	28	17.5	15.5
6	24	130	143	331	89	118	105	37	29	29	17	15.5
7	30	108	130	298	89	154	105	36	32	26	17	15.5
8	49	108	143	235	87	156	95	34	32	24	17	15.5
9	159	97	172	194	85	134	*87	34	38	23	17	16.5
10	141	100	152	162	85	118	87	38	51	24	17	18
11	77	106	509	144	85	103	83	36	49	24	17.5	26
12	58	88	*524	134	89	97	78	42	37	23	17	20
13	48	79	265	162	87	95	73	38	32	23	17	19
14	40	72	186	142	85	91	69	34	32	23	17.5	17.5
15	37	65	152	241	80	89	65	32	38	22	19	17.5
16	34	64	139	223	78	89	62	32	34	21	18	17
17	30	59	128	186	78	89	58	30	32	21	17.5	17
18	30	100	110	175	78	91	57	30	32	20	17	*17
19	30	206	107	175	78	103	54	30	54	19.5	16.5	17
20	30	155	264	*180	78	103	53	30	47	19.5	*16.5	17
21	27	134	*331	159	80	132	51	29	39	19	16.5	16.5
22	27	115	384	169	78	154	49	29	34	19	15.5	16.5
23	25	119	310	214	78	208	47	29	32	18	16.5	16.5
24	61	159	226	180	78	191	46	29	32	18	16.5	17
25	156	289	191	154	80	238	45	29	30	18	17	19
26	*152	429	186	134	83	220	44	29	29	18	21	32
27	110	393	186	118	83	169	42	29	28	18	19	26
28	127	253	149	110	89	156	42	29	27	17.5	17.5	23
29	176	203	130	101	93	180	42	28	26	17.5	18	28
30	159	226	114	95	-----	191	41	27	26	18	17.5	28
31	121	-----	101	91	-----	183	-----	*26	-----	18	17	-----
Total	2,082.0	4,711	6,534	5,754	2,432	4,420	2,233	1,024	1,016	669.0	543.0	567.0
Mean	67.2	157	211	186	83.9	143	74.4	33.0	33.9	21.6	17.5	18.9
Cfsm	2.55	5.95	7.99	7.05	3.18	5.42	2.82	1.25	1.28	0.818	0.663	0.716
In.	2.93	6.64	9.20	8.11	3.43	6.23	3.15	1.44	1.43	0.94	0.76	0.80
Ac-ft	4,130	9,340	12,960	11,410	4,820	8,770	4,430	2,030	2,020	1,330	1,080	1,120

Calendar year 1955: Max 532 Min 17.5 Mean 83.8 Cfsm 3.17 In. 43.10 Ac-ft 60,670
Water year 1955-56: Max 524 Min 15.5 Mean 87.4 Cfsm 3.31 In. 45.06 Ac-ft 63,440

Peak discharge (base, 400 cfs).--Nov. 26 (8 a.m.) 474 cfs (2.80 ft); Dec. 1 (2:30 p.m.) 415 cfs (2.65 ft); Dec. 11 (9 p.m.) 1,050 cfs (3.90 ft); Dec. 22 (2 p.m.) 443 cfs (2.58 ft); Jan. 4 (10 p.m.) 429 cfs (2.54 ft).
* Discharge measurement made on this day.

Sammamish Lake near Redmond, Wash.

Location.--Lat 47°38'40", long 122°06'10", in NE¼ sec. 24, T. 25 N., R. 5 E., on west shore 0.6 mile upstream from outlet and 1.8 mile south of Redmond.

Drainage area.--97.7 sq mi (revised).

Records available.--January 1939 to September 1956.

Gage.--Staff gage read once daily between 8:30 and 11:30 a.m. Datum of gage is 24.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 22, 1942, staff gage 1,000 ft downstream at datum 1.00 ft higher. June 22, 1942, to Aug. 22, 1951, staff gage at present site at datum 1.00 ft higher.

Extremes.--Maximum gage height observed during year, 8.56 ft Jan. 7; minimum observed, 1.59 ft Sept. 10, 22-24.
1939-56: Maximum gage height observed, 9.40 ft Feb. 12, 1951 (present datum); minimum observed, 1.09 ft Aug. 25-27, 1951.
A stage of 10.83 ft (present datum) was observed on Dec. 22, 1933, from information by Corps of Engineers.

Remarks.--Many small diversions from tributaries for irrigation and domestic use. Slight regulation on tributaries.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.90	3.31	6.02	7.56	6.60	4.59	5.60	3.65	2.47	2.34	1.89	1.67
2	1.88	3.35	6.26	7.46	6.45	4.61	5.60	3.58	2.45	2.32	1.88	1.66
3	1.86	3.57	6.36	7.40	6.30	4.77	5.58	3.51	2.43	2.30	1.87	1.66
4	1.85	3.81	6.40	7.66	6.18	4.92	5.54	3.47	2.44	2.29	1.86	1.65
5	1.83	3.99	6.42	7.84	6.06	5.02	5.50	3.42	2.43	2.28	1.86	1.63
6	1.81	4.07	6.42	8.24	5.96	5.06	5.45	3.37	2.41	2.27	1.85	1.62
7	1.83	4.13	6.40	8.56	5.88	5.14	5.40	3.33	2.39	2.27	1.84	1.61
8	2.03	4.13	6.36	8.50	5.75	5.22	5.35	3.29	2.37	2.26	1.83	1.60
9	2.23	4.12	6.40	8.44	5.62	5.24	5.28	3.23	2.43	2.25	1.83	1.60
10	2.43	4.15	6.40	8.33	5.52	5.24	5.23	3.19	2.47	2.24	1.83	1.59
11	2.51	4.17	6.46	8.18	5.44	5.24	5.15	3.17	2.53	2.23	1.82	1.63
12	2.53	4.23	6.88	8.03	5.37	5.19	5.06	3.15	2.51	2.23	1.80	1.66
13	2.55	4.19	7.12	7.96	5.28	5.14	4.94	3.13	2.50	2.23	1.79	1.65
14	2.54	4.15	7.10	7.88	5.20	5.10	4.87	3.07	2.50	2.20	1.79	1.65
15	2.53	4.12	7.05	7.80	5.12	5.02	4.79	3.01	2.49	2.18	1.78	1.64
16	2.51	4.07	7.00	7.86	5.04	4.94	4.71	2.97	2.48	2.17	1.78	1.62
17	2.49	3.99	6.96	7.82	4.92	4.87	4.61	2.93	2.47	2.15	1.77	1.61
18	2.49	3.97	6.88	7.77	4.84	4.84	4.54	2.89	2.46	2.13	1.76	1.61
19	2.48	4.13	6.86	7.72	4.75	4.77	4.45	2.86	2.47	2.11	1.76	1.61
20	2.47	4.27	6.82	7.66	4.69	4.74	4.37	2.82	2.47	2.10	1.75	1.60
21	2.45	4.33	7.20	7.56	4.64	4.75	4.31	2.77	2.46	2.09	1.75	1.60
22	2.44	4.35	7.64	7.50	4.61	4.77	4.24	2.73	2.46	2.08	1.75	1.59
23	2.43	4.37	7.84	7.56	4.57	4.85	4.17	2.69	2.45	2.06	1.75	1.59
24	2.47	4.47	8.06	7.54	4.55	5.04	4.09	2.67	2.44	2.05	1.74	1.59
25	2.65	4.61	8.06	7.46	4.54	5.12	4.01	2.63	2.43	2.04	1.72	1.63
26	2.83	4.87	8.04	7.40	4.53	5.26	3.93	2.60	2.42	2.02	1.71	1.67
27	2.93	5.30	8.00	7.30	4.52	5.35	3.87	2.57	2.41	1.98	1.71	1.70
28	3.03	5.50	7.90	7.15	4.55	5.37	3.82	2.55	2.39	1.95	1.71	1.70
29	3.11	5.70	7.86	7.04	4.57	5.44	3.76	2.53	2.38	1.94	1.71	1.70
30	3.21	5.80	7.74	6.90	-------	5.50	3.70	2.51	2.36	1.93	1.70	1.71
31	3.25	-------	7.58	6.75	-------	5.56	-------	2.49	-------	1.90	1.68	-------

Cottage Lake Creek near Redmond, Wash.

Location (revised).--Lat 47°44'15", long 122°04'45", in NE¼SE¼ sec. 18, T. 26 N., R. 6 E., on left bank 100 ft downstream from county road bridge, 2 miles upstream from mouth, and 4½ miles northeast of Redmond.
Drainage area.--11.0 sq mi.
Records available.--June to September 1945, June 1955 to September 1956. Prior to June 1955, at different datum.
Gage.--Water-stage recorder. Altitude of gage is 210 ft (from topographic map).
Extremes.--1955: Maximum discharge during period June to September, 18.5 cfs July 1 (gage height, 1.26 ft); minimum, 4.6 cfs Aug. 22 (gage height, 0.79 ft).
1955-56: Maximum discharge during water year, 132 cfs Jan. 6 (2.19 ft); minimum, 4.5 cfs Aug. 19 (gage height, 0.68 ft).
1945, 1955-56: Maximum discharge, that of Jan. 6, 1956; minimum, 4.2 cfs Aug. 15, 17, 1945.
Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Several small diversions for irrigation and domestic use above station. No regulation.

Rating tables, June 14, 1955, to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

June 14, 1955, to Jan. 5, 1956				Jan. 6 to Sept. 30, 1956			
0.8	4.8	1.6	46	0.69	4.8	1.4	41
1.0	9.7	1.9	80	.8	8.8	1.6	58
1.2	17	2.2	131	1.0	17.5	1.9	91
1.4	29			1.2	28	2.2	133

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	15	8.8	5.2	11	-	9.1	5.4	6.0	21	6.0	5.8	5.0	7.0
2	-	11.5	7.6	5.0	12	-	8.0	5.4	5.8	22	5.8	5.8	4.8	6.6
3	-	11	6.8	5.2	13	-	7.6	5.4	5.8	23	7.3	5.8	5.0	6.3
4	-	11.5	6.6	5.0	14	*6.0	8.0	5.2	6.6	24	7.0	5.8	5.0	5.8
5	-	12	6.3	5.2	15	6.0	7.8	5.2	7.3	25	7.0	7.8	5.2	5.6
6	-	12	6.0	5.4	16	6.0	7.3	5.0	7.0	26	7.6	11	5.4	5.6
7	-	10	7.3	6.0	17	6.0	6.6	5.0	7.0	27	7.8	9.1	5.2	6.3
8	-	8.8	7.0	*7.0	18	6.0	6.3	5.0	6.3	28	8.8	8.3	5.0	7.0
9	-	9.4	5.8	7.8	19	6.3	6.0	5.0	6.6	29	10.5	7.6	4.8	6.6
10	-	10	*5.6	6.8	20	6.0	*6.0	5.0	*7.0	30	10.5	7.3	5.0	5.8
										31	-	9.1	5.0	-
Total											-	267.3	174.8	186.6
Mean											-	8.62	5.64	6.22
Cubic feet per second per square mile											-	0.784	0.513	0.565
Runoff in inches											-	0.90	0.59	0.63
Runoff in acre-feet											-	530	347	370

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	*11.5	36	42	18	19	20	9.6	7.2	6.8	*5.7	5.7
2	5.6	12	38	48	17	19	*19	9.6	7.2	6.8	5.7	5.4
3	5.6	21	35	60	16	23	17.5	9.2	8.4	6.0	5.7	5.4
4	5.6	25	30	80	17	28	22	10	11	6.4	5.4	5.7
5	6.3	22	33	105	18	25	26	11	10.5	7.2	8.0	5.7
6	*6.8	20	36	*120	19	22	22	10.5	10	7.6	9.6	5.4
7	7.6	16	37	111	18	24	22	10	10.5	7.2	9.2	5.4
8	10	16	*38	81	17	24	23	9.6	12.5	6.8	8.4	5.4
9	12	19	35	59	16	22	20	*9.6	17	6.4	7.6	5.4
10	13.5	23	40	47	15	21	18	14	17.5	6.0	7.2	6.0
11	*12	28	50	42	16	19	16.5	13.5	14.5	6.0	7.2	*8.0
12	10.5	20	55	38	16	18.5	16.5	12.5	12	5.7	6.8	6.8
13	9.1	16	50	44	17	19	16	11.5	11	5.7	5.7	6.0
14	7.8	14	43	39	16	18	15.5	11	10	5.7	5.1	6.0
15	7.3	12	38	47	14	17.5	15	9.2	8.8	6.0	5.1	6.0
16	6.8	11	36	51	12	15	14.5	8.0	10.5	6.0	5.1	6.0
17	6.3	10	33	45	12	13	15.5	8.0	13	5.7	5.1	6.0
18	5.8	12	32	43	13	13	16.5	7.2	12	5.7	5.1	6.4
19	5.8	15	45	41	16	12	14.5	6.8	*12.5	5.7	4.8	6.4
20	5.6	20	70	38	16	12	13.5	7.2	11	5.7	5.1	7.2
21	5.4	17	100	37	*19	15	12.5	7.2	10	5.4	5.1	7.6
22	5.4	16	120	37	18	19	12	7.2	9.6	5.4	5.1	6.8
23	5.4	15	94	34	17.5	21	11.5	7.6	8.8	6.0	5.1	6.8
24	7.8	20	80	30	17	20	11	7.6	8.0	6.4	5.1	6.8
25	18.5	25	70	27	18	22	11	7.6	6.8	6.0	5.4	8.0
26	16	35	60	25	20	21	10.5	8.0	6.8	6.0	6.0	11.5
27	12.5	37	52	23	21	21	10	8.0	6.8	6.0	6.0	10.5
28	11.5	33	47	22	22	21	9.2	8.0	6.8	5.7	5.7	8.8
29	*16.5	30	43	23	20	24	9.6	7.6	6.8	5.7	5.7	8.4
30	15	33	39	22	------	23	9.6	7.2	6.8	5.7	5.7	8.0
31	12.5	-----	37	20	------	22	-----	7.2	------	5.7	5.7	------
Total	282.1	604.5	1,552	1,481	491.5	613.0	470.4	281.2	304.3	189.1	188.2	203.5
Mean	9.10	20.2	50.1	47.8	16.9	19.8	15.7	9.07	10.1	6.10	6.07	6.78
Cfsm	0.827	1.84	4.55	4.35	1.54	1.80	1.43	0.825	0.918	0.555	0.552	0.616
In.	0.95	2.04	5.25	5.01	1.66	2.07	1.59	0.95	1.03	0.64	0.64	0.69
Ac-ft	560	1,200	3,080	2,940	975	1,220	933	558	604	375	373	404

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 120 Min 4.8 Mean 18.2 Cfsm 1.65 In. 22.52 Ac-ft 13,220

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 5 to Dec. 7, Dec. 9 to Jan. 6, Jan. 31 to Feb. 20; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Evans Creek above mouth, near Redmond, Wash.

Location.--Lat 47°40'30", long 122°04'50", on line between secs. 6 and 7, T. 25 N., R. 5 E., on right bank 25 ft upstream from county bridge, three-quarters of a mile upstream from mouth, and 2 miles east of Redmond.
Drainage area.--13.0 sq mi.
Records available.--June 1955 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 50 ft (from topographic map).
Extremes.--1955: Maximum discharge during period June to September, 20 cfs probably July 1 (gage height, 1.92 ft, from recorded range in stage); minimum, 6.6 cfs Aug. 29, 30 (gage height, 1.48 ft).
1955-56: Maximum discharge during water year, 145 cfs Dec. 22 (gage height, 3.49 ft); minimum, 7.0 cfs Aug. 22, 23 (gage height, 1.47 ft).
Remarks.--Records good except those for periods of no gage-height record, which are fair. Several small diversions for irrigation and domestic use. No regulation.

Rating table, June 14, 1955, to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

1.4	5.3	2.2	37
1.5	7.0	2.5	63
1.6	9.0	2.9	98
1.7	11.5	3.4	138
1.9	19		

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	16	12	7.2	11	-	10.5	7.6	7.4	21	a8.8	7.6	7.4	8.4
2	-	13	9.8	7.0	12	-	9.6	7.6	7.2	22	a8.8	7.6	7.4	8.4
3	-	12	9.0	7.0	13	-	9.0	7.6	8.4	23	a12	7.6	7.6	8.2
4	-	12	8.6	7.0	14	*9.6	8.6	7.6	9.0	24	a11	7.8	7.6	8.2
5	-	11	8.4	7.0	15	11	8.4	7.4	8.8	25	a10	7.8	7.4	8.2
6	-	10.5	8.0	7.0	16	a10.5	8.4	7.4	8.6	26	a12	9.2	7.4	8.2
7	-	9.8	7.8	7.2	17	a10.5	8.4	7.4	9.4	27	a12	9.4	7.2	8.8
8	-	9.8	7.8	*7.4	18	a11	8.2	7.4	8.8	28	a13	9.0	7.2	9.8
9	-	10	7.6	7.4	19	a11	*8.2	7.6	8.4	29	a14	8.8	7.0	9.4
10	-	11	*7.6	7.4	20	a10	8.0	7.8	*8.4	30	a12	9.0	6.8	9.0
										31	-	13	7.2	-
Total											-	299.2	242.2	242.6
Mean											-	9.65	7.81	8.09
Cubic feet per second per square mile											-	0.742	0.601	0.622
Runoff in inches											-	0.86	0.69	0.69
Runoff in acre-feet											-	593	480	481

*Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	18.5	77	47	28	43	46	16.5	10	9.6	8.2	8.0
2	8.8	19.5	79	50	26	40	40	16	10	9.4	*8.6	8.0
3	8.8	37	72	72	25	51	*36	15.5	12	9.4	8.6	8.0
4	8.8	42	61	102	26	58	36	15.5	13	9.4	8.2	8.0
5	10.5	46	53	129	30	53	39	16	15	9.8	8.0	7.8
6	*9.4	39	51	136	29	49	35	15	14	9.8	7.8	7.8
7	11	33	48	132	28	49	36	14.5	14	9.4	7.8	7.8
8	22	*34	*45	115	27	58	35	13.5	15	9.4	7.8	8.0
9	27	31	48	97	26	52	31	*13.5	17	9.2	7.8	8.0
10	29	43	43	81	25	49	29	18	18	9.4	7.8	8.4
11	*18.5	57	52	68	27	43	28	18	20	9.2	7.6	*12
12	14	54	67	58	28	39	25	23	18	9.0	7.6	11
13	12.5	41	66	60	29	39	24	18	15	9.0	7.6	10
14	11.5	33	58	54	28	36	22	15.5	14	9.0	7.8	9.8
15	11	27	51	70	27	32	22	14	14	8.8	8.0	9.8
16	10.5	22	48	76	24	31	20	13.5	14	8.8	8.0	9.8
17	10	19	44	*66	22	29	19.5	13	14	8.6	8.0	9.8
18	10	30	40	60	24	28	18.5	12.5	13	8.4	7.8	9.8
19	10	36	39	56	24	26	18	12.5	*15	8.2	7.6	9.8
20	10.5	33	70	53	27	26	18	12	13.5	8.0	7.6	9.8
21	10.5	31	*122	51	30	33	19	12	12	8.0	7.4	10
22	10	36	137	52	32	34	18	11	11.5	8.0	7.2	9.8
23	10	36	136	58	*28	40	17	11	11	8.0	7.2	9.8
24	18.5	43	119	60	29	39	16.5	11	11	8.0	7.4	9.8
25	32	52	97	53	31	47	16	11	11	8.0	7.6	10.5
26	*36	61	83	48	40	48	15	11	10.5	8.0	8.6	15.5
27	28	75	87	43	43	49	14.5	11.5	10.5	8	8.4	15
28	24	73	74	39	43	44	14.5	11	10	8	8.4	11.5
29	22	70	61	35	43	51	20	11	9.8	7.8	8.2	12.5
30	22	71	54	32	------	53	17.5	10.5	9.6	7.8	8.0	12
31	20	-----	47	30	-----	50	-----	10	------	8	8.0	------
Total	495.6	1,243.0	2,129	2,083	849	1,319	746.0	427.0	395.6	269.4	244.6	297.8
Mean	16.0	41.4	68.7	67.2	29.3	42.5	24.9	13.8	13.2	8.69	7.89	9.93
Cfsm	1.23	3.18	5.28	5.17	2.25	3.27	1.92	1.06	1.02	0.668	0.607	0.764
In.	1.42	3.56	6.09	5.96	2.43	3.77	2.13	1.22	1.13	0.77	0.70	0.85
Ac-ft	983	2,470	4,220	4,130	1,680	2,620	1,480	847	785	534	485	591

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 137 Min 7.2 Mean 28.7 Cfsm 2.21 In. 30.03 Ac-ft 20,820

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 13-18, Jan. 29 to Feb. 22, May 31 to June 18, July 27-31; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Bear Creek at Redmond, Wash.

Location.--Lat 47°40'10", long 122°06'30", in SW¼NE¼ sec. 12, T. 25 N., R. 5 E., on right bank 300 ft downstream from State Highway 2 crossing, half a mile east of Redmond, and three-quarters of a mile upstream from mouth.

Drainage area.--47.5 sq mi.

Records available.--June 1945 to November 1950, June 1955 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 30 ft (from topographic map). Prior to June 1955, at different datum.

Average discharge.--6 years (1945-50, 1955-56), 86.1 cfs (62,330 acre-ft per year).

Extremes.--1955: Maximum discharge during period June to September, 101 cfs July 1 (gage height, 3.09 ft); minimum, 16.5 cfs Sept. 3-5 (gage height, 2.02 ft).

1955-56: Maximum discharge during water year, 560 cfs Dec. 22 (gage height, 5.96 ft); minimum, 18 cfs Sept. 5, 6 (gage height, 2.05 ft).

1945-50, 1955-56: Maximum discharge, 654 cfs Mar. 5, 1950; maximum gage height, 6.53 ft, Jan. 22, 1950, datum then in use; minimum, 13 cfs Aug. 26, 1947 (gage height, 1.88 ft, datum then in use).

Remarks.--Records good. Many small diversions for irrigation and domestic use. Minor regulation by fish trap half a mile above station.

Revisions (water years).--WSP 1316: 1947(M), 1949(M), drainage area. The figure of supplemental peak discharge for the water year 1949 has been revised to 472 cfs Feb. 17 (2 p.m.), superseding figure published in WSP 1152.

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	87	48	22	11	-	43	24	22	21	29	24	22	*22
2	-	63	39	21	12	-	39	24	20	22	29	24	22	22
3	-	56	34	19.5	13	-	35	24	24	23	39	24	22	22
4	-	54	30	18.5	14	*32	32	23	27	24	33	24	22	20
5	-	48	28	18.5	15	33	30	23	27	25	32	26	22	20
6	-	47	26	19	16	32	30	22	26	26	39	37	23	20
7	-	44	26	20	17	32	29	22	28	27	39	39	23	24
8	-	40	27	*22	18	33	27	21	24	28	44	36	22	32
9	-	41	24	24	19	33	26	22	22	29	67	34	22	27
10	-	45	*24	23	20	30	*25	22	23	30	54	33	22	24
										31	-	51	22	-
Total											-	1,193	777	683.5
Mean											-	38.5	25.1	22.8
Cubic feet per second per square mile											-	0.811	0.528	0.480
Runoff in inches											-	0.93	0.61	0.54
Runoff in acre-feet											-	2,370	1,540	1,360

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	*65	280	154	100	134	146	53	34	32	22	22
2	22	73	278	176	94	127	134	54	34	31	*24	22
3	22	*138	230	288	93	172	*124	53	a38	30	24	22
4	22	163	187	421	95	201	140	52	a50	30	23	22
5	24	154	169	513	109	171	172	58	a49	33	24	19
6	*24	121	174	519	105	152	143	52	a48	33	31	19.5
7	29	99	159	501	104	162	144	48	a49	31	26	20
8	60	106	172	415	98	178	142	46	a52	30	24	21
9	81	97	169	318	92	154	126	45	a57	29	22	25
10	90	137	150	261	90	142	116	72	a70	28	22	24
11	60	171	206	222	96	126	109	77	a67	28	22	*42
12	*45	138	*304	191	96	117	102	76	a60	27	22	32
13	39	106	255	234	100	117	95	62	a52	31	27	29
14	34	89	196	219	97	110	89	56	47	27	25	27
15	31	77	168	296	86	103	84	51	47	26	25	27
16	29	65	163	340	76	97	79	47	47	25	25	30
17	27	59	150	*285	82	90	76	*44	48	24	24	27
18	27	76	133	252	82	86	75	42	45	24	23	27
19	26	122	137	228	89	82	70	40	59	29	22	26
20	27	114	314	214	99	86	67	39	51	29	22	27
21	27	105	493	206	106	114	67	39	46	26	22	34
22	26	102	523	222	113	131	64	38	42	24	22	30
23	26	106	527	244	*110	150	61	37	39	24	22	27
24	43	139	445	236	110	135	59	37	38	24	23	33
25	119	174	347	196	111	162	58	37	37	24	24	34
26	*125	196	303	172	145	157	54	38	*35	22	29	50
27	90	236	308	152	153	154	52	39	35	22	26	51
28	81	204	255	140	156	145	51	38	34	22	26	40
29	86	198	207	134	145	172	68	37	34	22	25	41
30	84	234	175	121	------	170	58	35	33	20	24	39
31	73	------	153	109	------	162	------	34	------	22	24	------
Total	1,521	3,864	7,730	7,979	3,032	4,259	2,825	1,476	1,377	829	746	889.5
Mean	49.1	129	249	257	105	137	94.2	47.6	45.9	26.7	24.1	29.6
Cfsm	1.03	2.72	5.24	5.41	2.21	2.88	1.98	1.00	0.966	0.562	0.507	0.623
In.	1.19	3.03	6.05	6.25	2.37	3.33	2.21	1.16	1.08	0.65	0.58	0.70
Ac-ft	3,020	7,660	15,330	15,830	6,010	8,450	5,600	2,930	2,730	1,640	1,480	1,760

Calendar year 1955 : Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56 : Max 527 Min 19 Mean 99.8 Cfsm 2.10 In. 28.60 Ac-ft 72,440

Peak discharge (base, 300 cfs).--Dec. 12 (10 a.m.) 318 cfs (4.72 ft); Dec. 22 (10 to 12 p.m.) 560 cfs (5.96 ft); Jan. 6 (7 p.m.) 537 cfs (5.86 ft); Jan. 15 (12:30 to 1:30 a.m.) 373 cfs (5.04 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Sammamish River near Redmond, Wash.

Location.--Lat 47°40'10", long 122°07'50", in NE¼ sec. 11, T. 25 N., R. 5 E., on right bank at highway crossing, 500 ft downstream from Bear Creek, half a mile west of Redmond, and 1¼ miles downstream from outlet of Sammamish Lake.

Drainage area.--148 sq mi (revised).

Records available.--January 1939 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 23.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 14, 1946, and May 30 to Nov. 15, 1950, staff gages at sites 1¾ miles or 2 miles upstream on west shore of lake at datum approximately 2.0 ft higher. Nov. 14, 1946, to July 8, 1947, water-stage recorder at present site at datum 1.52 ft higher.

Average discharge.--17 years, 287 cfs (207,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,340 cfs Jan. 7 (gage height, 8.55 ft); minimum, 61 cfs Sept. 5 (gage height, 1.17 ft).
1939-56: Maximum discharge, 1,520 cfs Feb. 11, 1951 (gage height, 9.17 ft); minimum, 43 cfs Aug. 20, 21, 24, 1951.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some small diversions from tributaries for irrigation and domestic use. Slight regulation on some tributaries.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.1	57	3.0	295
1.3	77	4.0	430
1.6	110	5.5	620
2.0	160	7.0	855
2.5	225	8.6	1,360

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	*261	707	925	719	490	612	317	155	115	79	67
2	91	279	734	918	894	490	604	310	155	112	80	66
3	90	374	732	965	*673	531	597	301	155	111	80	65
4	92	420	720	1,070	656	564	600	294	155	109	78	65
5	96	425	714	1,210	649	556	607	291	*165	111	77	63
6	96	407	718	*1,280	634	548	590	280	154	110	84	64
7	100	392	710	1,330	621	*557	586	273	155	107	79	65
8	138	404	713	1,280	607	584	578	263	159	106	76	65
9	168	396	718	1,220	590	577	562	259	187	106	75	70
10	199	427	707	1,160	577	570	550	280	198	106	74	70
11	178	459	749	1,120	568	560	537	274	186	104	74	84
12	165	438	851	1,080	559	550	524	268	169	102	73	79
13	157	413	870	1,070	551	544	511	256	159	104	77	77
14	152	391	851	1,040	538	535	498	242	154	101	75	76
15	150	374	831	1,060	522	525	486	230	152	98	74	75
16	147	372	821	1,090	507	513	473	220	148	*97	73	77
17	146	359	799	1,060	500	503	*457	210	148	97	72	75
18	144	370	773	1,040	490	492	448	205	143	96	71	75
19	142	425	761	1,010	487	485	435	200	159	99	69	74
20	140	430	865	992	482	481	422	195	151	98	68	76
21	140	431	1,020	970	485	498	414	190	144	96	67	81
22	137	431	1,120	962	485	512	404	185	140	91	67	77
23	135	438	1,200	978	477	539	391	180	137	89	67	75
24	155	465	1,170	975	474	544	381	175	133	89	*68	81
25	236	512	1,130	945	472	567	369	175	130	86	72	82
26	275	552	1,100	915	492	582	358	170	128	86	72	97
27	247	607	1,110	880	498	589	348	165	124	85	70	101
28	247	621	*1,080	847	500	586	338	165	123	84	70	92
29	261	634	1,030	819	496	604	345	160	121	80	70	97
30	274	663	980	785	------	612	329	160	118	79	68	97
31	267	------	942	748	------	616	------	155	------	78	68	------
Total	5,057	13,172	27,226	31,744	16,003	16,904	14,354	7,048	4,505	3,032	2,267	2,308
Mean	163	439	878	1,024	552	545	478	227	150	97.8	73.1	76.9
Cfsm	1.10	2.97	5.93	6.92	3.73	3.68	3.23	1.53	1.01	0.661	0.494	0.520
In.	1.27	3.31	6.84	7.98	4.02	4.25	3.61	1.77	1.13	0.76	0.57	0.58
Ac-ft	10,030	26,130	54,000	62,960	31,740	33,530	28,470	13,980	8,940	6,010	4,500	4,580

Calendar year 1955: Max 1,200 Min 87 Mean 336 Cfsm 2.27 In. 30.86 Ac-ft 243,600
Water year 1955-56: Max 1,330 Min 63 Mean 392 Cfsm 2.65 In. 36.09 Ac-ft 284,900

* Discharge measurement made on this day.
Note.--No gage-height record May 15 to June 5; discharge estimated on basis of recorded range in stage and records for station near Bothell.

North Creek near Bothell, Wash.

Location.--Lat 47°47'30", long 122°11'45", on line between secs. 29 and 32, T. 27 N., R. 5 E., on left bank 2 miles north of Bothell and 2½ miles upstream from mouth.

Drainage area.--23.7 sq mi (revised).

Records available.--June 1945 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). Apr. 5, 1950, to Sept. 30, 1951, at datum 0.59 ft higher.

Average discharge.--11 years, 36.9 cfs (26,710 acre-ft per year).

Extremes.--Maximum discharge during year, 360 cfs Jan. 6; maximum gage height, 4.95 ft Dec. 21; minimum discharge, 6.2 cfs Aug. 22 (gage height, 0.83 ft).
1945-56: Maximum discharge, 680 cfs Mar. 5 or 6, 1950 (gage height, 7.0 ft, present datum, from high-water elevation pointed out by local resident); minimum, 1.0 cfs Aug. 10, 1946 (gage height, 0.45 ft, present datum).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Many small diversions for irrigation and domestic use. Slight regulation for farm use.

Revisions (water years).--WSP 1286: 1950(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 4 to Mar. 6)

0.8	5.3	3.0	164
.9	8.7	3.5	209
1.1	18	4.0	255
1.5	45	4.5	305
2.0	80	5.0	355
2.5	120		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	24	171	96	a51	63	53	19	11.5	11.5	8.7	7.6
2	8.7	42	137	118	a54	61	54	22	12	11	14	7.2
3	9.1	126	96	174	a51	78	49	18	18	10.5	13	7.2
4	9.5	108	74	250	a54	99	59	18	31	11	9.9	7.6
5	11	67	68	311	56	*78	53	19.5	25	11.5	9.1	7.6
6	9.5	47	89	331	54	67	46	17.5	19.5	11	8.3	7.2
7	28	37	75	254	58	73	51	17	22	10.5	7.9	7.2
8	37	*51	96	180	52	69	49	16	38	9.5	7.6	7.6
9	43	40	86	136	48	63	43	16	79	9.1	7.6	7.6
10	62	39	76	114	48	56	39	43	67	9.5	7.6	7.9
11	32	36	106	106	53	49	36	36	49	9.5	7.9	20
12	21	26	116	94	84	46	*32	37	35	9.1	7.6	11.5
13	16.5	a20	85	140	88	48	30	27	28	8.7	7.6	9.5
14	14.5	a18	64	122	74	44	29	22	25	8.7	7.9	9.1
15	12.5	a17	58	181	a60	40	28	19	29	9.1	10.5	9.5
16	12	a16	59	200	a50	38	26	17	28	*8.3	9.5	9.5
17	11.5	a15	53	150	a52	35	24	15	24	7.9	9.1	9.5
18	11.5	a30	46	122	a56	33	23	14.5	22	7.9	8.7	9.9
19	12.5	64	*58	106	a62	31	22	13.5	32	7.6	7.6	9.9
20	12	49	242	97	a70	33	20	13	32	7.2	7.2	16
21	11.5	40	329	101	80	56	20	12.5	26	7.6	7.2	15
22	11	34	336	106	79	65	19	12	22	7.2	7.2	10.5
23	11	46	278	120	75	80	18	11.5	19.5	7.2	7.6	10.5
24	20	88	218	121	71	65	18	11.5	18	7.2	*7.6	14.5
25	89	87	186	*98	73	74	17.5	11	16.5	7.2	9.5	15
26	46	76	174	*83	74	65	17	13.5	14.5	7.2	9.5	33
27	32	86	191	74	77	56	16	14	14	7.2	8.7	20
28	32	69	145	69	85	58	19	12.5	13.5	7.2	7.9	14.5
29	46	74	114	64	72	72	22	*11.5	14	7.2	7.9	14
30	39	136	93	a56	------	72	18	11	13	7.2	7.9	12.5
31	30	------	81	a50	------	62	------	11	------	7.6	7.6	------
Total	750.0	1,608	4,000	4,224	1,861	1,829	950.5	552.0	798.0	269.1	265.9	348.6
Mean	24.2	53.6	129	136	64.2	59.0	31.7	17.8	26.6	8.68	8.58	11.6
Cfsm	1.02	2.26	5.44	5.74	2.71	2.49	1.34	0.751	1.12	0.366	0.362	0.489
In.	1.18	2.52	6.28	6.63	2.92	2.87	1.49	0.87	1.25	0.42	0.42	0.55
Ac-ft	1,490	3,190	7,930	8,380	3,690	3,630	1,890	1,090	1,580	534	527	691

Calendar year 1955: Max 336 Min 5.9 Mean 39.3 Cfsm 1.66 In. 22.53 Ac-ft 28,480
Water year 1955-56: Max 336 Min 7.2 Mean 47.7 Cfsm 2.01 In. 27.40 Ac-ft 34,620

Peak discharge (base, 250 cfs).--Dec. 21 (9 p.m.) 358 cfs (4.95 ft); Jan. 6 (10 a.m.) 360 cfs (4.90 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Sammamish River at Bothell, Wash.

Location.--Lat 47°45'20", long 122°11'35", in NW¼SE¼ sec. 8, T. 26 N., R. 5 E., on left bank in Bothell a quarter of a mile downstream from North Creek and 3½ miles upstream from mouth.

Drainage area.--209 sq mi (revised).

Records available.--October 1939 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean lower low water at Seattle (Corps of Engineers benchmark), or 6.54 ft below mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Dec. 28, 1939, staff gages at same site and datum.

Average discharge.--17 years, 365 cfs (264,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,910 cfs Jan. 6 (gage height, 32.22 ft); minimum, 90 cfs Aug. 23 (gage height, 23.00 ft).
1939-56: Maximum discharge, that of Jan. 6, 1956, but may have been higher Feb. 12 or 13, 1951; minimum, 62 cfs Aug. 22, 23, 1951 (gage height, 22.92 ft).

Remarks.--Records good. Some small diversions from tributaries for irrigation and domestic use. Slight regulation on some tributaries.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 6				Jan. 7 to Sept. 30			
23.3	107	27.0	686	23.0	90	27.0	690
24.0	192	29.0	1,080	24.0	204	29.0	1,080
25.0	335	32.0	1,840	25.0	344	32.1	1,870
26.0	502			26.0	509		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	308	1,040	1,160	842	626	758	372	191	157	107	100
2	112	349	1,020	1,170	806	612	747	372	189	153	109	100
3	111	629	940	1,280	785	713	728	353	198	151	117	98
4	117	644	890	1,440	770	815	753	344	235	150	112	97
5	124	574	866	1,660	777	*745	777	344	234	154	107	96
6	122	502	912	1,830	760	700	728	332	208	155	106	93
7	146	462	888	1,860	747	724	726	323	216	147	106	92
8	213	*495	920	1,740	718	762	718	311	238	144	103	92
9	246	476	916	1,640	688	726	684	305	344	143	99	92
10	300	507	880	1,540	671	698	657	375	329	143	99	96
11	247	549	966	1,460	669	673	639	372	300	143	99	134
12	215	500	1,080	1,380	703	655	*617	354	247	140	99	122
13	202	452	1,040	1,400	707	651	599	326	229	139	99	113
14	193	418	1,000	1,360	667	637	585	304	218	135	99	110
15	187	394	982	1,410	617	615	570	289	218	134	103	110
16	183	394	980	1,500	586	599	552	278	214	129	106	110
17	179	385	956	1,450	583	583	532	268	208	*125	105	110
18	176	416	920	1,380	572	568	514	261	201	122	102	110
19	179	551	*916	1,310	581	554	502	254	231	122	100	110
20	175	524	1,200	1,260	590	554	484	251	224	122	99	118
21	174	507	1,520	1,210	626	621	471	243	207	121	96	128
22	172	493	1,650	1,220	637	667	455	236	196	118	93	117
23	170	520	1,690	1,240	621	743	440	227	190	114	92	112
24	198	620	1,630	1,260	606	709	432	222	183	114	*94	118
25	386	692	1,570	*1,190	613	749	415	216	179	114	97	124
26	375	703	1,510	1,120	646	753	404	216	173	112	103	167
27	316	785	1,520	1,060	664	743	393	216	169	111	106	163
28	316	766	1,460	1,020	684	736	389	209	166	110	106	139
29	354	798	1,370	984	649	796	404	*203	167	107	104	135
30	346	900	1,280	934	------	798	385	196	162	105	103	138
31	320	------	1,190	882	------	791	------	192	------	106	101	------
Total	6,668	16,313	35,702	41,350	19,585	21,316	17,058	8,764	6,464	4,040	3,171	3,444
Mean	215	544	1,152	1,334	675	688	569	283	215	130	102	115
Cfsm	1.03	2.60	5.51	6.38	3.23	3.29	2.72	1.35	1.03	0.622	0.488	0.550
In.	1.19	2.90	6.35	7.36	3.49	3.79	3.04	1.56	1.15	0.72	0.56	0.61
Ac-ft	13,230	32,360	70,810	82,020	38,850	42,280	33,830	17,380	12,820	8,010	6,290	6,830

Calendar year 1955: Max 1,690 Min 105 Mean 428 Cfsm 2.05 In. 27.78 Ac-ft 309,600
Water year 1955-56: Max 1,860 Min 92 Mean 502 Cfsm 2.40 In. 32.72 Ac-ft 364,700

* Discharge measurement made on this day.

South Fork Skykomish River near Index, Wash.

Location.--Lat 47°48'20", long 121°32'40", in NE¼ sec. 29, T. 27 N., R. 10 E., on right bank 600 ft upstream from Sunset Falls, 1 mile southeast of Index, and 2 miles upstream from confluence with North Fork. Discharge measurements made about 2 miles upstream from gage.

Drainage area.--355 sq mi.

Records available.--October 1902 to September 1905, April 1911 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 574.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 15, 1934, at site 300 ft downstream. Oct. 6, 1902, to Sept. 30, 1905, staff gage at datum 0.39 ft higher and Apr. 26, 1911, to Sept. 30, 1913, at datum 1 ft higher. Oct. 1, 1913, to Sept. 13, 1920, staff gage, Sept. 14, 1920, to Oct. 1, 1921, water-stage recorder, and Jan. 23, 1922, to Mar. 14, 1934, staff gage, at present datum.

Average discharge.--48 years, 2,384 cfs (1,726,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,900 cfs Nov. 4 (gage height, 17.40 ft), from rating curve extended above 18,000 cfs; minimum, 449 cfs Sept. 20 (gage height, 1.63 ft).
1902-5, 1911-56: Maximum discharge, 55,000 cfs Dec. 12, 1921 (gage height, 22.8 ft, from high-water marks, site then in use), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, 165 cfs Nov. 29, 1952 (gage height, 1.35 ft).
Flood in 1897 reached a stage of about 5 ft higher than that of Dec. 12, 1921 (discharge, about 70,000 cfs).

Remarks.--Records excellent except those below 1,000 cfs, which are good. Small diversion for domestic use. No regulation.

Revisions (water years).--WSP 512: 1903-5, 1911-14. WSP 572: Drainage area. WSP 792: 1934. WSP 1286: 1903-5(M), 1912(M), 1914-29(M), 1931-34(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
2.2	485	7.0	4,490	1.6	440	6.0	3,530
3.0	965	9.0	7,150	2.0	570	7.0	4,620
4.0	1,660	11.0	10,500	2.5	780	9.0	7,270
5.0	2,480	13.0	15,000	3.0	1,060	11.0	10,500
6.0	3,420	16.0	23,400	4.0	1,750	13.0	15,000
				5.0	2,580		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	546	3,690	2,820	1,450	745	1,240	1,830	3,690	10,100	4,190	1,450	591
2	507	*3,690	2,280	1,350	805	2,100	1,620	3,850	7,860	4,700	1,320	566
3	502	14,600	1,920	1,410	750	1,980	1,500	3,650	8,160	4,680	1,250	542
4	1,630	23,300	1,660	*1,890	703	1,450	1,930	3,540	7,640	4,200	1,140	518
5	2,030	10,800	1,530	2,140	685	1,120	1,970	3,580	6,530	4,860	1,110	494
6	1,300	6,540	1,470	1,930	661	940	1,630	3,970	5,510	5,140	*1,150	479
7	1,110	5,090	1,470	1,750	653	940	1,520	4,760	5,860	4,600	1,130	473
8	2,330	4,690	1,420	1,540	633	958	1,570	6,060	5,790	5,270	1,100	473
9	7,180	7,000	1,390	1,390	621	860	1,700	6,980	7,060	6,140	1,080	473
10	4,730	14,400	1,330	1,260	625	770	2,190	7,640	7,740	6,250	1,050	488
11	3,080	7,420	10,500	1,210	846	698	3,180	6,360	6,990	5,540	1,020	805
12	3,250	4,860	14,900	1,190	1,580	669	3,800	4,990	5,490	5,700	1,010	730
13	2,970	3,670	5,880	1,530	1,180	649	4,380	4,170	5,120	5,800	1,010	574
14	2,610	3,040	3,920	1,520	970	629	5,220	*3,870	5,480	4,940	1,000	524
15	2,460	2,570	3,060	1,560	825	617	5,300	4,430	6,080	3,920	1,010	494
16	2,020	2,270	2,590	1,810	*775	617	*4,430	6,220	5,600	3,870	982	479
17	1,790	2,040	2,250	2,010	805	629	3,700	8,790	5,250	3,850	880	467
18	1,620	1,980	1,960	1,800	735	721	3,580	11,700	5,710	4,120	820	*458
19	1,500	1,990	1,830	1,710	681	952	4,480	13,400	7,740	4,400	810	455
20	1,390	1,810	2,440	1,550	653	1,070	6,240	12,800	6,700	4,440	815	504
21	1,250	1,700	4,030	1,400	633	1,200	8,350	9,290	5,360	4,120	795	1,210
22	1,140	1,560	8,570	1,460	613	1,760	8,650	8,690	5,140	3,590	775	775
23	1,040	1,480	6,110	1,660	602	2,850	7,050	9,540	4,970	3,190	755	609
24	2,710	1,790	3,980	1,510	605	2,960	5,820	8,760	4,370	3,040	730	892
25	13,300	3,580	3,110	1,290	621	2,780	5,400	7,200	*3,880	2,810	730	1,370
26	7,060	4,000	2,720	1,130	617	3,000	5,640	7,700	4,100	2,490	976	1,680
27	4,660	3,180	2,380	1,020	613	2,270	5,380	6,700	5,490	2,210	810	1,810
28	6,090	2,870	2,080	982	685	1,890	4,720	5,680	5,910	1,970	730	1,510
29	10,000	2,500	1,850	904	735	1,840	4,280	6,640	5,150	1,770	681	2,770
30	8,020	2,550	1,670	840	------	2,020	3,860	9,140	4,250	1,640	649	3,340
31	5,050	-----	1,540	745	-----	2,120	------	11,000	------	1,540	617	------
Total	104,875	150,660	104,560	44,941	21,635	44,299	120,920	214,790	181,030	124,980	29,385	26,553
Mean	3,383	5,022	3,373	1,450	746	1,429	4,031	6,929	6,034	4,032	948	885
Cfsm	9.53	14.1	9.50	4.08	2.10	4.03	11.4	19.5	17.0	11.4	2.67	2.49
In.	10.99	15.78	10.95	4.71	2.27	4.64	12.67	22.50	18.96	13.09	3.08	2.78
Ac-ft	208,000	298,800	207,400	89,140	42,910	87,870	239,800	426,000	359,100	247,900	58,280	52,670

Calendar year 1955: Max 23,300 Min 465 Mean 2,978 Cfsm 8.39 In. 113.87 Ac-ft 2,156,000
Water year 1955-56: Max 23,300 Min 455 Mean 3,193 Cfsm 8.99 In. 122.42 Ac-ft 2,318,000

Peak discharge (base, 10,000 cfs).--Oct. 25 (9:40 a.m.) 17,200 cfs (13.83 ft); Oct. 29 (1:40 p.m.) 16,200 cfs (13.48 ft); Nov. 4 (9:15 a.m.) 27,900 cfs (17.40 ft); Nov. 10 (2:30 a.m.) 18,300 cfs (14.26 ft); Dec. 11 (11:30 p.m.) 27,700 cfs (17.34 ft); Dec. 22 (5 p.m.) 10,200 cfs (10.82 ft); May 20 (3 a.m.) 14,600 cfs (12.86 ft); June 1 (1 a.m.) 11,700 cfs (11.58 ft).
* Discharge measurement made on this day.

Skykomish River near Gold Bar, Wash.

Location.--Lat 47°50'15", long 121°40'00", in SW¼ sec. 9, T. 27 N., R. 9 E., on right bank 2 miles southeast of Gold Bar and 5 miles upstream from Wallace River and Startup.

Drainage area.--535 sq mi.

Records available.--September 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 209.26 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--28 years, 3,841 cfs (2,781,000 acre-ft per year).

Extremes.--Maximum discharge during year, 46,900 cfs Dec. 11 (gage height, 16.13 ft); minimum daily, 814 cfs Sept. 19.
1928-56: Maximum discharge, 88,700 cfs Dec. 21, 1933 (gage height, 21.3 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 315 cfs Nov. 29, 1952; minimum gage height, 2.73 ft Dec. 1, 1936.

Remarks.--Records excellent except those for periods of shifting control or no gage-height record, which are good. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1932-35(M), 1944(M).

Rating tables, water year 1955-56, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
3.5	745	6.0	3,940	3.6	750	8.0	8,300
4.0	1,200	7.0	5,820	4.0	1,080	9.0	11,300
4.5	1,770	8.0	8,320	4.5	1,570	10.0	14,800
5.0	2,420	9.0	11,300	5.0	2,180	11.0	18,800
				5.5	2,900	13.0	28,300
Note.--Same as following table above 9.0 ft.				6.0	3,700	15.0	39,700
				7.0	5,700		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	919	5,620	4,750	2,320	1,320	2,360	2,880	5,480	15,400	6,420	2,320	1,080
2	884	*5,710	3,840	2,190	1,340	3,190	2,590	5,610	12,200	7,280	2,170	1,040
3	868	24,800	3,240	2,290	1,360	2,930	2,380	5,300	13,000	7,330	2,040	990
4	2,880	37,400	2,860	3,180	1,300	2,260	2,990	5,220	12,000	6,420	1,870	942
5	3,600	16,600	2,630	3,470	1,290	1,850	*3,100	5,260	10,200	7,660	1,840	902
6	2,310	10,200	2,530	*3,230	1,240	1,620	2,630	5,870	8,600	8,240	1,900	862
7	2,020	7,840	2,520	2,940	1,220	1,680	2,460	7,200	9,500	7,120	1,900	854
8	4,210	7,370	2,420	2,620	1,170	1,640	2,490	9,500	9,530	8,300	*1,850	854
9	11,800	11,200	2,350	2,350	1,150	1,530	2,680	10,900	11,900	9,800	1,820	838
10	7,500	22,100	2,290	2,180	1,150	1,380	3,420	12,000	12,600	9,920	1,790	886
11	4,900	11,400	17,200	2,100	1,430	1,290	4,990	9,830	10,800	8,720	1,740	1,440
12	5,140	7,420	23,700	2,090	2,660	1,250	5,800	7,490	8,480	8,990	1,720	1,280
13	4,680	5,500	9,040	2,640	2,000	1,220	6,780	6,230	7,990	9,320	1,740	1,060
14	4,180	4,530	5,820	2,560	1,690	1,170	8,080	*5,750	8,780	7,680	1,720	974
15	3,960	a3,800	4,580	2,660	1,460	1,150	7,990	6,580	10,000	5,940	1,740	910
16	3,240	a3,200	3,920	3,150	1,340	1,160	6,470	9,590	8,810	5,940	1,670	878
17	2,900	a2,800	3,400	3,370	*1,430	1,200	5,410	13,900	8,270	6,080	1,540	854
18	2,640	a2,600	2,980	3,080	1,320	1,380	5,350	18,400	9,320	6,450	1,450	830
19	2,410	3,260	2,810	2,920	1,230	1,720	6,970	20,500	12,800	6,990	1,430	*814
20	2,250	2,960	3,920	2,680	1,200	1,850	10,100	19,400	10,600	7,020	1,440	894
21	1,990	2,790	6,280	2,400	1,170	2,150	13,500	14,400	8,300	6,500	1,440	1,780
22	1,820	2,560	13,800	2,520	1,140	3,050	13,200	13,800	7,960	5,610	1,400	1,330
23	1,690	2,420	9,410	2,870	1,120	4,840	10,600	15,100	7,680	5,010	1,370	1,090
24	5,420	3,060	6,080	2,570	1,130	4,720	8,690	13,400	6,760	4,840	1,340	1,820
25	23,000	5,580	4,740	2,220	1,160	4,460	8,100	11,300	6,040	4,400	1,320	2,900
26	11,400	6,060	4,210	2,010	1,140	4,700	8,450	12,000	*6,230	3,860	1,550	3,500
27	7,450	5,050	3,700	1,820	1,150	3,550	8,020	10,200	8,570	3,420	1,370	3,270
28	9,740	4,750	3,230	1,780	1,360	2,990	7,020	8,810	9,290	3,050	1,260	2,630
29	15,600	4,180	2,880	1,620	1,410	2,960	6,420	10,800	8,020	2,750	1,210	4,480
30	12,000	4,330	2,640	1,530	------	3,190	5,750	15,000	6,400	2,600	1,170	5,610
31	7,600	-----	2,460	1,360	------	3,270	-----	17,500	------	2,450	1,110	------
Total	171,001	237,090	166,230	76,720	39,080	73,710	185,310	332,320	286,030	196,110	50,230	47,592
Mean	5,516	7,903	5,362	2,475	1,348	2,378	6,177	10,720	9,534	6,326	1,620	1,586
Cfsm	10.3	14.8	10.0	4.63	2.52	4.44	11.5	20.0	17.8	11.8	3.03	2.96
In.	11.89	16.48	11.56	5.33	2.72	5.12	12.88	23.10	19.88	13.63	3.49	3.31
Ac-ft	339,200	470,300	329,700	152,200	77,510	146,200	367,600	659,100	567,300	389,000	99,630	94,400

Calendar year 1955: Max 37,400 Min 825 Mean 4,699 Cfsm 8.78 In. 119.23 Ac-ft 3,402,000
Water year 1955-56: Max 37,400 Min 814 Mean 5,086 Cfsm 9.51 In. 129.39 Ac-ft 3,692,000

Peak discharge (base, 19,000 cfs).--Oct. 25 (10:30 a.m.) 30,700 cfs (13.48 ft); Oct. 29 (3:30 p.m.) 23,900 cfs (12.12 ft); Nov. 4 (8:30 a.m.) 46,500 cfs (16.07 ft); Nov. 10 (1 a.m.) 30,000 cfs (13.35 ft); Dec. 11 (11 p.m.) 46,900 cfs (16.13 ft); May 20 (2:15 a.m.) 22,200 cfs (11.75 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
Note.--Shifting-control method used Nov. 13 to Dec. 10.

Wallace River at Gold Bar, Wash.

Location.--Lat 47°51'50", long 121°41'45", in NE¼ sec. 6, T. 27 N., R. 9 E., on left bank 30 ft downstream from highway bridge, a quarter of a mile north of Gold Bar, and 1¼ miles upstream from Olney Creek.

Drainage area.--19.8 sq mi.

Records available.--October 1928 to September 1933, July 1946 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map). December 1928 to Sept. 30, 1933, staff gage 50 ft upstream at different datum.

Average discharge.--15 years (1928-33, 1946-56), 158 cfs (114,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,930 cfs Nov. 9 (gage height, 8.04 ft), but may have been higher Dec. 11 or 12; minimum, 13.5 cfs Sept. 6-9 (gage height, 3.38 ft). 1928-33, 1946-56: Maximum discharge, 2,740 cfs Feb. 26, 1932 (gage height, 8.5 ft, from graph based on gage readings, site and datum then in use); minimum, 9.2 cfs Oct. 18, 19, 1952; minimum gage height observed, 0.32 ft Aug. 27, Sept. 3-5, 1930, site and datum then in use.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some natural regulation in Wallace Lake. No diversion above station.

Revisions (water years).--WSP 1062: Drainage area. WSP 1316: 1930(M), 1932-33(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 20-27)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
3.6	31	4.5	180	3.38	13.5	4.5	154
3.8	50	5.0	340	3.5	19	5.0	297
4.0	74	6.6	1,070	3.7	32	6.1	810
4.2	107			4.0	64		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	*170	277	120	54	65	130	188	283	145	30	18
2	36	213	229	110	52	86	116	188	235	152	34	16.5
3	35	925	188	120	50	89	103	171	287	136	31	15.5
4	507	*961	149	170	48	74	188	178	277	120	32	15
5	213	326	129	221	49	62	176	210	270	235	32	14.5
6	103	257	127	*232	48	57	*143	238	212	196	30	14
7	128	205	111	199	46	57	139	283	304	141	*29	13.5
8	246	232	94	154	46	57	145	327	280	186	29	13.5
9	422	677	86	124	44	53	147	334	370	196	28	13.5
10	336	603	83	103	46	50	221	391	323	164	27	15.5
11	197	273	600	94	99	48	319	287	238	134	26	62
12	238	217	800	99	204	46	319	212	196	143	26	36
13	164	164	500	176	*110	46	350	176	201	134	26	26
14	122	134	380	128	86	44	396	168	263	98	26	24
15	103	109	300	164	72	42	342	*238	366	80	27	22
16	83	96	230	297	67	42	266	350	342	86	26	19
17	71	91	190	238	64	44	215	458	301	89	24	17
18	61	94	160	221	60	48	224	550	290	94	24	16
19	59	132	140	186	58	70	316	585	503	103	24	*15.5
20	58	98	200	176	56	74	444	453	362	94	23	31
21	51	89	320	154	53	106	550	327	273	78	22	42
22	47	82	500	207	52	188	448	358	254	64	21	28
23	43	78	360	235	51	273	346	366	218	60	21	24
24	387	129	300	176	51	241	277	290	176	58	18.5	195
25	1,050	264	250	139	50	235	270	248	*161	53	23	270
26	422	191	210	112	51	224	273	283	194	46	35	334
27	277	260	180	91	52	173	254	232	244	42	27	188
28	438	260	165	83	58	145	254	194	210	38	25	200
29	578	287	150	74	65	166	235	283	168	36	24	218
30	315	270	140	64	------	178	196	387	130	33	24	254
31	226	-----	130	58	-----	159	------	366	------	32	20	------
Total	7,053	7,887	7,678	4,725	1,842	3,242	7,802	9,319	7,931	3,266	814.5	2,171.0
Mean	228	263	248	152	63.5	105	260	301	264	105	26.3	72.4
Cfsm	11.5	13.3	12.5	7.68	3.21	5.30	13.1	15.2	13.3	5.30	1.33	3.66
In.	13.25	14.81	14.42	8.87	3.46	6.09	14.65	17.50	14.90	6.13	1.53	4.08
Ac-ft	13,990	15,640	15,230	9,370	3,650	6,430	15,480	18,480	15,730	6,480	1,620	4,310

Calendar year 1955: Max 1,050 Min 21 Mean 189 Cfsm 9.55 In. 129.66 Ac-ft 136,900
Water year 1955-56: Max 1,050 Min 13.5 Mean 174 Cfsm 8.79 In. 119.69 Ac-ft 126,400

Peak discharge (base, 1,350 cfs).--Oct. 25 (10 a.m.) 1,830 cfs (7.89 ft); Oct. 29 (12:30 p.m.) 1,410 cfs (7.19 ft); Nov. 4 (7:30 a.m.) 1,650 cfs (7.58 ft); Nov. 9 (9 p.m.) 1,930 cfs (8.04 ft); Dec. 11 or 12 (time and discharge unknown).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 11 to Jan. 4; discharge estimated on basis of records for stations on nearby streams.

Sultan River near Startup, Wash.

Location.--Lat 47°58'30", long 121°46'30", in NE¼ sec. 28, T. 29 N., R. 8 E., on left bank 1½ miles upstream from intake of Everett water-supply system and 7½ miles north of Startup.

Drainage area.--74.5 sq mi.

Records available.--May 1934 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to July 2, 1934, staff gage at same site and datum.

Average discharge.--22 years, 779 cfs (564,000 acre-ft per year).

Extremes.--Maximum discharge during year, 34,300 cfs Dec. 11 (gage height, 17.16 ft, from high-water mark in well), may have been less because of indeterminate amount of surge, from rating curve extended above 5,000 cfs on basis of slope-area determination at gage height 17.22 ft; minimum, 92 cfs Sept. 7-9 (gage height, 3.55 ft).
1934-56: Maximum discharge, 34,600 cfs Feb. 9, 1951 (gage height, 17.22 ft, from high-water mark in well), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 48 cfs Sept. 25, 27, 29, 30, 1942; minimum gage height, 3.32 ft Sept. 22, 23, 24, 1938, Oct. 19, 20, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1935, 1936(M), 1937-39, 1940(M), 1941, 1942(P), 1943-49. WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 10

4.2	185	8.0	2,200
4.6	270	9.0	3,400
5.0	380	10.0	5,000
5.5	560	11.0	7,100
6.0	770	12.0	9,800
7.0	1,360	13.0	13,000

Dec. 11 to Sept. 30

3.6	91	6.0	810
3.9	131	7.0	1,420
4.3	210	8.0	2,250
4.8	330	9.0	3,400
5.4	530		

Note.--Same as preceding table above 9.0 ft.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	*875	1,600	400	310	500	566	914	1,470	615	237	126
2	199	2,100	1,000	430	330	650	486	942	1,190	710	268	119
3	193	11,400	700	700	280	750	441	865	1,410	675	223	113
4	1,840	8,000	550	1,400	250	600	928	898	1,360	592	195	104
5	1,340	2,500	450	*931	260	450	656	1,030	1,250	1,090	192	98
6	720	1,500	560	909	240	320	476	1,140	1,210	1,040	206	93
7	824	1,000	600	620	230	310	490	1,400	1,880	770	*210	92
8	1,620	1,000	600	472	210	300	486	1,680	1,680	931	206	92
9	2,980	1,500	550	396	200	250	484	1,780	2,170	1,050	208	95
10	2,200	2,500	500	357	210	210	757	2,050	1,850	958	203	106
11	1,280	1,500	12,000	366	500	190	1,250	1,560	1,410	816	195	323
12	1,490	850	6,000	408	800	170	1,350	1,150	1,060	870	199	214
13	1,080	600	2,000	781	500	160	1,510	926	1,020	870	208	150
14	840	500	1,100	542	350	*148	1,780	882	1,090	685	208	130
15	730	430	800	628	280	148	1,570	*1,080	1,230	554	217	118
16	556	390	650	1,510	260	152	1,190	1,620	1,340	579	208	112
17	476	350	540	1,100	270	163	*953	2,200	1,230	615	173	104
18	410	400	500	920	260	217	980	2,600	1,240	675	161	99
19	383	600	600	760	230	339	1,410	2,660	1,960	745	167	97
20	365	500	2,000	735	220	375	2,090	2,300	1,390	735	167	168
21	315	420	2,200	592	210	498	2,600	1,690	1,050	646	169	275
22	282	360	3,500	1,000	190	838	2,290	1,720	975	550	171	*221
23	255	350	2,000	1,170	180	1,500	1,750	1,810	876	486	165	161
24	2,500	900	1,200	900	170	1,180	1,410	1,450	715	483	158	977
25	9,610	1,800	1,100	700	170	1,010	1,330	1,250	620	434	182	1,830
26	3,140	1,100	1,000	550	170	936	1,380	1,380	*680	381	228	2,380
27	1,880	1,000	900	470	160	670	1,280	1,140	953	345	186	1,210
28	3,080	1,400	700	420	250	566	1,250	970	936	308	158	1,020
29	4,360	1,400	550	380	400	725	1,160	1,280	770	275	154	1,260
30	2,140	1,500	450	330	------	848	964	1,780	592	258	148	1,400
31	1,260	------	400	300	------	750	------	1,810	------	250	134	------
Total	48,565	48,725	47,300	21,177	8,090	15,923	35,277	45,957	36,807	19,991	5,904	13,287
Mean	1,567	1,624	1,526	683	279	514	1,176	1,482	1,220	645	190	443
Cfsm	21.0	21.8	20.5	9.17	3.74	6.90	15.8	19.9	16.4	8.66	2.55	5.95
In.	24.24	24.32	23.61	10.57	4.04	7.95	17.61	22.94	18.27	9.98	2.95	6.63
Ac-ft	96,330	96,640	98,820	42,000	16,050	31,580	69,970	91,150	72,610	39,650	11,710	26,350

Calendar year 1955: Max 12,000 Min 125 Mean 1,002 Cfsm 13.4 In. 182.56 Ac-ft 725,400
Water year 1955-56: Max 12,000 Min 92 Mean 948 Cfsm 12.7 In. 173.11 Ac-ft 687,900

Peak discharge (base, 6,000 cfs).--Oct. 25 (9 a.m.) 18,700 cfs (14.42 ft); Oct. 29 (12:30 p.m.) 9,200 cfs (11.80 ft); Nov. 3 (1 a.m.) 15,600 cfs (13.66 ft); Dec. 11 (time unknown) 34,300 cfs (17.16 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 4 to Jan. 4, Jan. 24 to Mar. 13; discharge estimated on basis of recorded range in stage and records for South Fork Stillaguamish River near Granite Falls.

Woods Creek near Monroe, Wash.

Location.--Lat 47°52'20", long 121°55'10", in W½ sec. 33, T. 28 N., R. 7 E., on left bank 200 ft downstream from West Fork and 2½ miles northeast of Monroe.

Drainage area.--55.0 sq mi.

Records available.--July 1946 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--10 years, 157 cfs (113,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,450 cfs probably Dec. 21 (gage height, 6.48 ft, from high-water mark in well); minimum, 18.5 cfs Sept. 3 (gage height, 2.03 ft).
1946-56: Maximum discharge, 1,710 cfs Feb. 26, 1950 (gage height, 7.18 ft), from rating curve extended above 770 cfs; minimum, 12 cfs Aug. 22, 1951, Sept. 27, Oct. 10, 1952; minimum gage height, 1.97 ft Aug. 22, 1951, Oct. 10, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Several small diversions above station for domestic use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.2	28	3.4	197	2.0	17	3.5	210
2.5	55	3.9	325	2.2	28	4.0	340
2.9	105	4.4	485	2.5	55	5.0	700
				3.0	120	6.1	1,220

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	349	1,000	310	148	334	254	74	40	62	30	23
2	28	296	800	450	134	331	249	76	40	62	31	22
3	28	457	600	700	130	358	*225	71	44	60	33	20
4	35	608	450	800	128	367	246	68	60	57	32	20
5	67	580	350	1,000	144	316	277	73	64	59	30	20
6	48	438	350	900	143	269	269	71	64	58	*28	19
7	49	322	350	800	144	256	256	64	65	53	27	19
8	101	299	350	600	139	274	251	63	72	50	27	19
9	108	296	340	500	128	266	223	57	118	49	27	20
10	155	*385	300	450	133	244	204	93	134	48	27	22
11	127	331	500	400	208	217	188	146	162	47	27	38
12	95	300	550	350	400	198	171	117	130	42	27	33
13	79	250	450	650	400	192	157	101	108	41	26	24
14	67	200	350	600	*313	184	144	91	97	40	26	23
15	60	160	300	700	246	173	136	*83	97	40	28	22
16	53	150	290	900	208	166	126	78	120	38	28	22
17	51	140	250	880	198	167	117	74	118	39	27	21
18	50	140	250	*640	182	155	111	67	101	40	26	21
19	50	250	350	480	171	148	108	65	125	37	26	*21
20	48	300	800	397	166	148	99	62	143	35	25	26
21	43	270	1,200	346	167	171	94	59	128	36	26	28
22	40	250	1,000	352	175	200	91	55	112	34	26	25
23	39	270	900	418	171	256	88	52	101	34	25	24
24	51	300	900	397	175	256	83	50	92	38	24	30
25	198	330	800	337	221	251	78	48	85	34	26	33
26	409	350	750	285	261	288	74	49	*79	32	28	54
27	364	450	750	244	293	277	71	49	76	31	24	54
28	310	400	600	221	325	256	81	48	71	30	26	39
29	305	500	450	200	346	290	98	45	67	31	26	37
30	400	800	350	180	------	304	82	43	64	29	24	38
31	464	------	300	162	------	293	------	41	------	30	23	------
Total	3,950	10,171	16,980	15,629	5,997	7,605	4,651	2,133	2,777	1,316	836	818.0
Mean	127	339	548	504	207	245	155	68.8	92.6	42.5	27.0	27.3
Cfsm	2.31	6.16	9.96	9.16	3.76	4.45	2.82	1.25	1.68	0.773	0.491	0.496
In.	2.67	6.88	11.48	10.57	4.06	5.14	3.14	1.44	1.88	0.89	0.57	0.55
Ac-ft	7,830	20,170	33,680	31,000	11,890	15,080	9,230	4,230	5,510	2,610	1,660	1,620

Calendar year 1955: Max 1,200 Min 26 Mean 195 Cfsm 3.55 In. 48.07 Ac-ft 141,000
Water year 1955-56: Max 1,200 Min 19 Mean 199 Cfsm 3.62 In. 49.27 Ac-ft 144,500

Peak discharge (base, 700 cfs).--Probably Dec. 1 (time and discharge unknown); probably Dec. 21 (time unknown) 1,450 cfs (6.48 ft); probably Jan. 5 (time and discharge unknown); probably Jan. 16 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12 to Jan. 17, June 24, 25; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Patterson Creek near Fall City, Wash.

Location (revised).--Lat 47°34'50", long 121°56'25", in SW¼NE¼ sec. 8, T. 24 N., R. 7 E., 2 miles upstream from mouth and 2⅝ miles northwest of Fall City.
Drainage area.--15.5 sq mi (revised).
Records available.--February 1947 to October 1950, June 1955 to September 1956. Records for June to October 1945 at site 1¼ miles downstream not equivalent owing to intervening drainage area.
Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). Prior to June 1955 at different datum.
Extremes.--1955: Maximum discharge during period June to September, 38 cfs July 1 (gage height, 2.21 ft); minimum, 7.2 cfs Aug. 17, 22, Sept. 6 (gage height, 1.17 ft).
1955-56: Maximum discharge during water year, 194 cfs Dec. 22 (gage height, 5.19 ft); minimum, 6.4 cfs July 22 (gage height, 1.12 ft).
1947-50, 1955-56: Maximum discharge, 480 cfs Feb. 17, 1949 (gage height, 4.81 ft, datum then in use), from rating curve extended above 130 cfs; minimum, that of July 22, 1956.
Remarks.--Records good. Many small diversions for irrigation and domestic use. No regulation.

Rating table, June 16, 1955, to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 25-29)

1.2	7.6	3.0	81
1.5	14	4.0	135
2.0	29	5.0	185
2.5	52		

Discharge, in cubic feet per second, 1955

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	26	16	8.2	11	-	14	*8.9	8.3	21	10.5	9.1	7.8	*9.6
2	-	17	13	8.0	12	-	12.5	8.7	8.2	22	11	9.4	7.8	9.3
3	-	16	11.5	8.0	13	-	11.5	8.3	11	23	12.5	8.7	7.6	9.3
4	-	15.5	10.5	8.0	14	-	10.5	8.2	11.5	24	11	8.5	7.6	9.1
5	-	14	10	7.8	15	-	10	8.0	10	25	11	8.9	8.0	8.9
6	-	13.5	9.8	7.8	16	*11	10.5	7.8	8.3	26	13	11	8.0	9.1
7	-	13	9.6	*8.2	17	11.5	10.5	7.8	13.5	27	14.5	11	8.0	9.8
8	-	12	9.4	8.7	18	12	10	7.6	10	28	17	10.5	7.8	15.5
9	-	13.5	9.8	8.7	19	11.5	*9.4	7.6	9.4	29	17.5	11	8.0	11.5
10	-	15	9.3	8.5	20	11	9.3	7.8	9.4	30	17	11	8.2	10.5
										31	-	18	8.3	-
Total											-	380.8	276.7	284.1
Mean											-	12.3	8.93	9.47
Cubic feet per square mile											-	0.794	0.576	0.611
Inches											-	0.91	0.66	0.68
Acre-feet											-	755	549	564

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.8	32	132	60	38	62	67	21	14.5	11.5	8.2	10
2	9.6	52	135	73	38	58	57	20	14.5	11	9.1	10.5
3	9.6	95	116	114	35	91	*50	20	16	11	9.4	10.5
4	16.5	110	93	143	32	91	46	19.5	17.5	11	8.9	11
5	24	96	73	161	38	74	46	18.5	17.5	11.5	8.3	9.8
6	*12	79	72	163	35	61	41	18	16	11.5	8.5	9.8
7	35	54	64	150	35	70	44	17.5	18	11	8.0	10
8	65	56	71	128	33	85	38	17	19.5	10.5	8.3	9.4
9	109	47	82	104	31	74	36	17	22	10	8.3	10
10	82	105	70	84	31	63	34	20	31	10.5	8.5	11.5
11	35	114	114	69	32	51	32	20	23	10.5	8.7	19
12	*24	98	*141	60	32	46	31	23	18.5	10	8.3	14
13	19.5	65	120	73	33	47	30	20	17.5	9.8	8.2	12
14	17	44	96	62	31	44	29	*18.5	16.5	9.4	9.1	11
15	16	34	73	88	30	40	28	17.5	16	9.8	*9.8	11
16	14	30	64	101	27	36	27	17	16	9.3	9.4	11
17	13.5	27	62	92	26	35	26	16.5	15.5	9.1	8.9	10.5
18	13	47	51	*82	28	33	24	16	15	8.3	8.5	*11
19	13.5	94	54	77	30	32	24	16	*22	8.5	9.3	11
20	13.5	79	134	73	35	32	23	15.5	18.5	8.5	8.3	11
21	13	65	173	70	44	42	23	15.5	16	9.4	8.2	11
22	12.5	64	185	82	42	51	23	15.5	15	8.9	8.5	11
23	12	61	168	112	44	68	22	15	14	8.0	9.1	10.5
24	34	92	140	104	54	64	23	15	13.5	8.3	8.9	11
25	74	122	114	86	57	87	24	15	13	8.2	9.8	13.5
26	*66	142	106	71	65	80	22	15	12.5	7.8	13.5	45
27	46	147	112	59	64	70	22	15.5	12	8.3	13	25
28	44	129	98	54	76	62	22	15	12	8.2	12	17.5
29	52	112	80	50	*73	79	26	14.5	11.5	7.6	11.5	21
30	50	110	67	44	------	86	23	14.5	11.5	8.2	11	18
31	*39	------	58	41	------	82	------	14.5	------	8.3	11	------
Total	994.0	2,402	3,118	2,730	1,171	1,896	963	533.5	496.0	293.9	290.5	407.5
Mean	32.1	80.1	101	88.1	40.4	61.2	32.1	17.2	16.5	9.48	9.37	13.6
Cfsm	2.07	5.17	6.52	5.68	2.61	3.95	2.07	1.11	1.06	0.612	0.605	0.877
In.	2.38	5.76	7.48	6.55	2.81	4.55	2.31	1.28	1.19	0.71	0.70	0.98
Ac-ft	1,970	4,760	6,180	5,410	2,320	3,760	1,910	1,060	984	583	576	808

Calendar year 1955: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1955-56: Max 185 Min 7.6 Mean 41.8 Cfsm 2.70 In. 36.70 Ac-ft 30,320

Peak discharge (base, 200 cfs).--No peak above base.
* Discharge measurement made on this day.

Griffin Creek near Carnation, Wash.

Location.--Lat 47°37'00", long 121°54'15", in SW¼SW¼ sec. 27, T. 25 N., R. 7 E., on left bank a quarter of a mile upstream from bridge on State Highway 15B, three-quarters of a mile upstream from mouth, and 2 miles south of Carnation.

Drainage area.--17.1 sq mi.

Records available.--June 1945 to September 1956. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Altitude of gage is 120 ft (from topographic map). Prior to Sept. 21, 1951, at site 1,000 ft downstream at different datum.

Average discharge.--11 years, 43.5 cfs (31,490 acre-ft per year).

Extremes.--Maximum discharge during year, 393 cfs Dec. 12, 22 (gage height, 3.78 ft), from rating curve extended above 200 cfs; minimum, 2.8 cfs Sept. 3 (gage height, 1.40 ft).
1945-56: Maximum discharge, 738 cfs Feb. 10, 1951 (gage height, 5.03 ft, site and datum then in use); minimum, 2.2 cfs Aug. 20, 1953; minimum gage height, 0.75 ft Aug. 22, 23, 1945 (site and datum then in use).

Remarks.--Records good. Some small diversions for irrigation and domestic use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 10-17)

1.4	3.0	2.2	41
1.5	4.9	2.5	76
1.6	7.3	2.8	125
1.7	10.5	3.3	245
1.8	14.5	3.8	400
2.0	25		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	70	186	76	32	120	114	17	8.4	11.5	4.1	3.4
2	7.0	72	225	79	30	135	101	16.5	8.4	11	4.1	3.2
3	7.3	96	174	120	28	172	88	16	10	9.8	4.1	3.0
4	11.5	123	131	239	28	165	76	16	11	9.8	3.9	3.2
5	17.5	125	104	308	31	131	71	16.5	10	11	3.7	3.2
6	13.5	107	91	284	30	*102	62	16	9.8	*10.5	3.5	3.2
7	25	86	79	272	30	94	59	14	11	9.4	3.4	3.2
8	63	80	78	207	29	112	55	13.5	12.5	8.4	3.4	3.2
9	135	76	94	156	28	104	50	13.5	14	7.9	4.1	3.4
10	207	191	93	123	27	88	46	17.5	18	8.2	3.7	3.7
11	137	214	137	98	26	72	42	18.5	17.5	8.4	3.4	6.2
12	96	160	356	79	33	62	38	17	15	7.6	3.2	5.6
13	71	125	269	82	43	57	*36	16	13.5	7.3	3.2	4.7
14	55	96	177	82	45	50	32	14.5	13.5	7.0	3.4	4.3
15	44	*71	131	112	36	45	30	13.5	14.5	6.8	3.7	4.1
16	36	57	111	139	33	42	28	13.5	14	6.5	3.7	3.9
17	30	48	93	131	35	41	27	13.5	14	6.0	3.5	3.9
18	26	49	76	*120	35	41	26	11.5	14	5.8	3.4	3.9
19	24	72	68	107	34	43	24	10.5	26	5.6	3.4	3.9
20	23	72	120	105	33	47	23	11.5	27	5.1	3.2	3.9
21	21	73	275	94	33	59	21	11.5	27	4.9	3.2	3.9
22	19.5	79	368	94	33	82	21	10.5	24	4.7	*3.2	3.9
23	18.5	79	320	133	34	118	21	10	22	4.5	3.4	3.9
24	31	105	223	133	39	137	20	9.8	20	4.3	3.4	4.1
25	91	169	169	109	43	149	19	9.8	19	4.1	3.2	4.5
26	156	207	152	90	52	172	18.5	10	17	3.9	4.1	9.8
27	121	234	158	76	58	141	17.5	10.5	16	3.7	4.1	10.5
28	101	186	137	62	82	114	18	9.8	14	3.5	3.9	8.8
29	99	*149	111	52	107	111	21	9.4	11.5	3.5	3.7	12.5
30	91	147	94	45	-----	116	19	8.8	12	3.7	3.5	14
31	80	-----	79	38	-----	121	-----	*8.8	-----	4.3	3.4	-----
Total	1,865.1	3,418	4,879	3,845	1,127	3,043	1,224.0	405.4	464.6	208.7	111.2	153.0
Mean	60.2	114	157	124	38.9	98.2	40.8	13.1	15.5	6.73	3.59	5.10
Cfsm	3.52	6.67	9.18	7.25	2.27	5.74	2.39	0.766	0.906	0.394	0.210	0.298
In.	4.06	7.43	10.61	8.36	2.45	6.62	2.66	0.88	1.01	0.45	0.24	0.33
Ac-ft	3,700	6,780	9,680	7,630	2,240	6,040	2,430	804	922	414	221	303

Calendar year 1955: Max 368 Min 5.3 Mean 55.9 Cfsm 3.27 In. 44.40 Ac-ft 40,490
Water year 1955-56: Max 368 Min 3.0 Mean 56.7 Cfsm 3.32 In. 45.10 Ac-ft 41,160

Peak discharge (base, 220 cfs).--Oct. 10 (2 to 3:30 a.m.) 225 cfs (3.23 ft); Nov. 10 (12 p.m.) 245 cfs (3.30 ft); Nov. 27 (9:30 a.m.) 242 cfs (3.29 ft); Dec. 2 (9 a.m.) 237 cfs (3.27 ft); Dec. 12 (4:30 p.m.) 393 cfs (3.78 ft); Dec. 22 (5:30 p.m.) 393 cfs (3.78 ft); Jan. 5 (4 to 6 a.m.) 326 cfs (3.54 ft).

* Discharge measurement made on this day.

North Fork Tolt River near Carnation, Wash.

Location.--Lat 47°42'40", long 121°47'35", in SE¼NW¼ sec. 28, T. 26 N., R. 8 E., on right bank 2¾ miles upstream from confluence with South Fork and 7 miles northeast of Carnation.

Drainage area.--39.2 sq mi.

Records available.--October 1952 to September 1956.

Gage.--Water-stage recorder. Altutude of gage is about 600 ft above mean sea level (from river-profile map).

Extremes.--Maximum discharge during year, 7,360 cfs Dec. 11 (gage height, 12.2 ft, from high-water mark), from rating curve extended above 2,800 cfs; minimum, 46 cfs Sept. 19, 20 (gage height, 3.70 ft).
1952-56: Maximum discharge, that of Dec. 11, 1955; minimum, 40 cfs Nov. 30, Dec. 1, 1952, but may have been less sometime during period of no gage-height record in October 1952; minimum gage height, that of Sept. 19, 20, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

3.6	40	6.0	830
3.8	68	6.5	1,110
4.0	105	7.0	1,430
4.3	169	8.0	2,190
4.6	248	9.0	3,140
5.0	380	10.0	4,280
5.5	590		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	450	1,050	340	251	278	380	442	563	288	131	70
2	95	*920	700	340	*245	355	341	500	483	307	162	66
3	90	2,170	550	500	237	320	317	438	563	288	133	65
4	450	2,160	470	850	234	263	395	438	594	275	125	62
5	430	900	410	700	237	234	369	492	671	400	121	60
6	230	676	440	600	226	217	327	518	487	407	121	59
7	280	554	400	470	226	220	358	594	*735	317	119	58
8	600	612	380	380	217	215	384	676	676	348	117	56
9	1,200	1,100	430	*341	210	204	384	680	765	366	115	56
10	700	1,680	400	327	210	194	487	860	685	337	113	60
11	500	740	3,700	330	407	189	630	622	527	294	109	158
12	520	514	2,000	337	612	184	635	483	422	304	107	101
13	400	450	900	450	355	182	680	422	426	288	107	73
14	300	360	600	376	294	176	745	418	528	251	105	64
15	270	320	*458	496	257	179	653	536	695	228	103	59
16	240	300	458	736	248	179	532	715	626	234	99	54
17	220	270	422	599	242	184	458	910	504	231	96	52
18	200	340	380	617	231	215	475	1,030	504	240	92	50
19	200	520	450	536	223	269	648	1,010	820	242	90	48
20	210	420	600	617	212	*266	870	830	617	240	88	92
21	190	370	1,000	483	207	366	1,030	640	462	220	86	212
22	175	320	1,710	630	202	504	865	685	430	202	84	111
23	170	340	1,050	653	197	648	666	715	399	189	82	82
24	450	500	700	471	194	563	563	576	348	184	81	350
25	2,200	950	650	403	194	599	568	522	320	174	94	502
26	1,000	900	600	366	189	558	590	590	344	162	101	781
27	700	1,000	550	330	184	407	*540	514	414	*155	97	472
28	1,000	950	500	310	199	362	554	434	380	146	90	428
29	1,100	1,000	450	297	220	462	550	576	330	140	*81	634
30	900	1,000	400	275	-----	487	462	745	288	133	77	514
31	550	-----	350	260	-----	438	-----	720	-----	133	73	-----
Total	15,670	22,786	23,158	14,420	7,160	9,917	16,456	19,331	15,606	7,723	3,199	5,449
Mean	505	760	747	465	247	320	549	624	520	249	103	182
Cfsm	12.9	19.4	19.1	11.9	6.30	8.16	14.0	15.9	13.3	6.35	2.63	4.64
In.	14.87	21.62	21.97	13.68	6.79	9.41	15.61	18.34	14.81	7.33	3.03	5.17
Ac-ft	31,080	45,200	45,930	28,600	14,200	19,670	32,640	38,340	30,950	15,320	6,350	10,810

Calendar year 1955: Max 3,700 Min 90 Mean 453 Cfsm 11.6 In. 156.89 Ac-ft 328,000
Water year 1955-56: Max 3,700 Min 48 Mean 440 Cfsm 11.2 In. 152.63 Ac-ft 319,100

Peak discharge (base, 3,000 cfs).--Oct. 25 (time unknown) 4,400 cfs (10.1 ft); Nov. 2 (11:30 p.m.) 3,640 cfs (9.45 ft); Dec. 11 (time unknown) 7,360 cfs (12.2 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Nov. 2, Nov. 13 to Dec. 14, Dec. 18-20, Dec. 23 to Jan. 8; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

South Fork Tolt River near Carnation, Wash.

Location.--Lat 47°41'20", long 121°42'35", in SW¼SW¼ sec. 31, T. 26 N., R. 9 E., on left bank 7 miles upstream from confluence with North Fork and 10 miles northeast of Carnation.

Drainage area.--19.7 sq mi.

Records available.--October 1952 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,300 ft (from river-profile map).

Extremes.--Maximum discharge during year, 5,900 cfs Dec. 11 (gage height, 7.46 ft); minimum, 25 cfs Sept. 6-9 (gage height, 1.00 ft).
1952-56: Maximum discharge, that of Dec. 11, 1955; minimum daily discharge, 14 cfs Oct. 18, 1952.

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 10				Dec. 11 to Sept. 30			
1.3	42	3.0	405	1.0	25	3.0	445
1.5	62	3.5	610	1.2	39	3.5	665
1.8	102	4.0	880	1.4	58	4.0	950
2.1	154	4.5	1,230	1.7	95	4.5	1,290
2.5	249	5.0	1,690	2.0	149	5.0	1,700
				2.5	279	6.0	2,990

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	208	455	113	84	122	176	227	332	137	55	30
2	46	*344	269	106	*80	167	151	235	279	153	78	29
3	45	1,150	200	137	75	151	137	224	316	145	62	28
4	429	1,330	162	362	74	113	183	232	320	133	54	27
5	342	498	144	291	77	94	167	267	339	209	50	26
6	167	318	154	243	73	84	143	288	267	252	50	26
7	170	260	143	188	74	88	156	336	*406	173	49	25
8	375	266	137	149	70	85	171	395	362	190	48	25
9	968	480	156	129	66	75	181	402	413	205	47	26
10	552	1,140	169	118	67	68	264	468	389	203	46	29
11	283	404	2,370	118	169	65	362	352	323	162	45	83
12	294	252	1,180	129	323	62	355	258	241	162	44	60
13	236	191	362	208	164	60	389	213	235	162	44	43
14	167	158	243	169	122	58	438	211	270	135	44	36
15	139	133	198	190	97	58	378	279	339	111	44	32
16	115	121	181	336	91	*60	304	402	329	111	44	30
17	99	113	160	298	88	67	249	542	285	113	40	29
18	86	133	145	304	82	92	255	630	279	122	37	27
19	84	274	145	255	77	124	362	615	451	127	37	27
20	84	191	*353	270	73	122	516	508	375	125	37	38
21	77	164	494	218	69	185	650	368	270	113	37	155
22	70	137	1,100	273	66	291	528	378	243	100	36	76
23	63	123	479	304	64	395	399	416	218	91	36	56
24	355	270	288	208	62	323	320	339	181	88	35	156
25	1,450	583	238	160	61	342	316	285	156	84	36	241
26	523	468	232	135	60	320	332	326	162	75	42	364
27	325	500	195	120	58	211	*304	285	211	*70	44	303
28	508	422	160	113	70	181	288	229	208	66	40	252
29	690	405	139	103	80	232	288	301	178	60	*37	419
30	437	475	129	95	------	258	246	420	141	57	33	365
31	277	-----	120	87	-----	229	------	423	------	56	31	------
Total	9,505	11,511	10,900	5,929	2,616	4,782	9,008	10,854	8,518	3,990	1,362	3,063
Mean	307	384	352	191	90.2	154	300	350	284	129	43.9	102
Cfsm	15.6	19.5	17.9	9.70	4.58	7.82	15.2	17.8	14.4	6.55	2.23	5.18
In.	17.94	21.73	20.58	11.19	4.94	9.03	17.01	20.49	16.08	7.53	2.57	5.78
Ac-ft	18,850	22,830	21,620	11,760	5,190	9,480	17,870	21,530	16,900	7,910	2,700	6,080

Calendar year 1955: Max 2,370 Min 32 Mean 230 Cfsm 11.7 In. 158.73 Ac-ft 166,800
Water year 1955-56: Max 2,370 Min 25 Mean 224 Cfsm 11.4 In. 154.87 Ac-ft 162,700

Peak discharge (base, 2,000 cfs).--Oct. 25 (12 m.) 2,220 cfs (5.45 ft); Dec. 11 (7 p.m.) 5,900 cfs (7.46 ft).
* Discharge measurement made on this day.

Tolt River near Carnation, Wash.

Location.--Lat 47°41'45", long 121°49'30", in S½NE¼ sec. 31, T. 26 N., R. 8 E., on right bank 500 ft downstream from the forks, a quarter of a mile upstream from Stossel Creek, and 5 miles northeast of Carnation.

Drainage area.--79.7 sq mi.

Records available.--August 1928 to January 1932, September 1937 to September 1956. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Datum of gage is 348 ft above mean sea level (river-profile survey). Prior to Oct. 31, 1928, staff gage and Oct. 31, 1928, to Jan. 3, 1932, water-stage recorder, at site 350 ft upstream at datum 7.1 ft higher (by river-profile survey). Sept. 1 to Oct. 6, 1937, staff gage at present site at datum 1.64 ft higher.

Average discharge.--22 years (1928-31, 1937-56), 594 cfs (430,000 acre-ft per year).

Extremes.--Maximum discharge during year, 15,000 cfs Dec. 11 (gage height, 12.52 ft), from rating curve extended above 7,600 cfs as explained below; minimum, 94 cfs Sept. 7-9, 18-20 (gage height, 4.10 ft).
1928-32, 1937-56: Maximum discharge, 16,800 cfs Feb. 9, 1951 (gage height, 12.92 ft), from rating curve extended above 7,600 cfs on basis of slope-area determination of peak flow; minimum, 53 cfs Sept. 22, 23, 1951 (gage height, 3.84 ft).

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

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1929(M), 1930, 1938(M), 1939, 1943(M), 1945(M), 1951(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-24				Oct. 25 to Sept. 30			
4.3	132	6.0	740	4.1	94	7.0	1,600
4.5	175	7.0	1,480	4.5	175	7.5	2,130
5.0	315	8.0	2,650	5.0	315	8.0	2,750
5.5	495			5.5	495	9.0	4,400
				6.0	750	10.0	6,650
				6.5	1,130		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	757	1,750	527	406	507	750	744	978	461	189	114
2	153	1,380	1,190	519	391	684	660	820	813	503	242	112
3	149	3,730	922	728	374	660	605	732	954	472	204	108
4	891	3,920	764	*1,480	370	540	732	738	978	442	185	107
5	794	1,740	672	1,260	388	461	690	848	1,130	608	175	101
6	416	1,230	690	1,080	*370	420	605	883	*827	726	175	99
7	463	994	625	930	370	431	648	1,020	1,240	527	173	96
8	1,080	1,050	610	750	352	427	714	1,180	1,100	562	173	94
9	2,380	*1,720	648	654	332	398	708	1,210	1,300	605	168	96
10	1,460	3,230	615	590	349	363	898	1,550	1,180	566	164	105
11	824	1,470	6,640	576	659	346	1,150	1,130	970	495	162	240
12	878	962	3,680	585	1,140	325	1,130	855	738	491	155	189
13	685	757	1,410	827	648	318	1,240	720	714	491	155	136
14	507	636	994	696	540	312	1,360	690	832	424	153	118
15	438	548	834	848	457	305	1,290	869	1,210	370	153	110
16	384	503	771	1,270	427	305	970	1,220	1,090	374	151	105
17	335	465	672	1,180	424	315	820	1,630	914	370	145	101
18	302	511	600	1,130	395	377	834	1,880	869	*384	140	96
19	305	898	642	1,030	370	484	1,110	1,820	1,470	406	134	94
20	309	660	1,450	1,120	360	491	*1,550	1,500	1,180	398	132	123
21	277	600	1,940	898	349	*648	1,890	1,100	869	360	130	409
22	259	531	3,180	1,110	332	1,010	1,630	1,150	778	329	128	212
23	242	503	1,720	1,240	318	1,320	1,240	1,250	696	299	128	155
24	996	852	1,150	898	315	1,150	1,000	1,010	600	289	128	476
25	4,200	1,750	986	732	318	1,210	994	862	540	271	136	755
26	1,620	1,530	970	625	318	1,150	1,030	978	548	253	151	1,230
27	1,140	1,760	848	571	315	834	946	876	654	239	149	912
28	1,730	1,540	720	527	366	726	946	714	636	225	*142	702
29	1,960	1,610	654	491	420	898	946	922	553	209	132	1,110
30	1,440	1,670	600	457	-----	978	785	1,270	468	199	124	994
31	1,000	-----	558	427	-----	922	-----	1,260	-----	197	118	-----
Total	27,779	39,507	39,505	25,756	12,173	19,315	29,871	33,431	26,829	12,545	4,794	9,299
Mean	896	1,317	1,274	831	420	623	996	1,078	894	405	155	310
Cfsm	11.2	16.5	16.0	10.4	5.27	7.82	12.5	13.5	11.2	5.08	1.94	3.89
In.	12.96	18.43	18.43	12.02	5.68	9.01	13.94	15.60	12.52	5.85	2.24	4.34
Ac-ft	55,100	78,360	78,360	51,090	24,140	38,310	59,250	66,310	53,210	24,880	9,510	18,440

Calendar year 1955: Max 6,640 Min 132 Mean 787 Cfsm 9.87 In. 134.09 Ac-ft 570,000
Water year 1955-56: Max 6,640 Min 94 Mean 767 Cfsm 9.62 In. 131.02 Ac-ft 557,000

Peak discharge (base, 3,400 cfs).--Oct. 25 (11 a.m.) 7,420 cfs (10.30 ft); Nov. 3 (12:30 a.m.) 5,550 cfs (9.54 ft); Nov. 9 (12 p.m.) 4,750 cfs (9.17 ft); Dec. 11 (9:20 p.m.) 15,000 cfs (12.52 ft); Dec. 22 (1 p.m.) 3,860 cfs (8.72 ft).
* Discharge measurement made on this day.

Snoqualmie River near Carnation, Wash.

Location.--Lat 47°39'55", long 121°55'30", in W½ sec. 9, T. 25 N., R. 7 E., on left bank 40 ft downstream from highway bridge, 1 mile northwest of Carnation, and 2 miles downstream from Tolt River.

Drainage area.--608 sq mi.

Records available.--October 1928 to September 1956. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Datum of gage is at mean sea level, unadjusted. Prior to Dec. 20, 1933, chain or wire-weight gage on old bridge, 100 ft upstream at datum 42.96 ft higher. Dec. 20, 1933, to Sept. 30, 1939, water-stage recorder at present site at datum 42.96 ft higher than present datum. Auxiliary water-stage recorder 1¼ miles upstream from base gage.

Average discharge.--28 years, 3,745 cfs (2,711,000 acre-ft per year).

Extremes.--Maximum discharge during year, 40,800 cfs Dec. 12 (elevation, 57.67 ft); minimum daily, 620 cfs Sept. 8.

1928-56: Maximum discharge, 59,500 cfs Feb. 27, 1932 (elevation, 59.88 ft, from graph based on gage readings); maximum elevation observed, 59.93 ft Nov. 13, 1932; minimum discharge, 239 cfs Aug. 21, 1945, but may have been less sometime during period of faulty intake action Sept. 13 or 14, 1949; minimum elevation recorded, 43.30 ft Sept. 11, 1930; minimum daily discharge, 396 cfs Sept. 24, 1938.

Revisions.--The maximum discharge for the water year 1934 has been revised to 48,700 cfs Nov. 3, 1933; maximum gage height, 15.83 ft Dec. 10, 1933, superseding figure published in WSP 767.

Remarks.--Records good. Several small diversions for irrigation and domestic use above station. Low flow diverted for operation of powerplant at Snoqualmie Falls but returned to river above station. Some pondage at Snoqualmie Falls and some diurnal fluctuation caused by powerplant.

Revisions (water years).--WSP 1246: Drainage area. WSP 1316: 1932-33(M).

Rating table, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Nov. 5, 11, Dec. 12, 13, 23. Shifting-control method used Dec. 14 to May 17)

44.6	580	48.0	5,610
45.0	910	50.0	10,200
45.5	1,420	52.0	15,600
46.0	2,060	54.0	22,600
46.5	2,820	56.5	33,800
47.0	3,690		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	5,760	9,350	3,560	2,220	3,440	4,730	4,490	8,870	3,850	1,560	788
2	1,120	5,230	7,840	3,550	2,130	5,290	4,130	4,390	7,130	4,280	1,550	772
3	1,100	14,200	6,280	4,300	2,160	4,890	3,760	4,260	7,200	4,350	1,520	772
4	2,380	*19,700	5,250	6,870	2,120	4,240	3,830	4,240	7,540	3,940	1,390	796
5	6,450	16,900	4,600	7,630	2,100	3,510	4,130	4,430	6,820	4,320	1,310	676
6	3,820	8,540	4,470	6,580	2,120	*3,040	3,620	4,830	6,030	*5,570	1,310	692
7	2,920	6,800	4,490	5,990	2,020	2,960	3,470	5,510	6,300	4,730	1,290	660
8	4,720	5,990	4,140	5,110	1,920	3,580	3,620	6,740	6,520	4,720	1,270	620
9	12,100	6,030	4,580	4,410	1,800	3,090	3,580	7,350	7,700	5,610	1,240	708
10	11,300	17,200	4,220	3,920	1,780	2,740	3,980	8,200	7,770	5,590	1,240	668
11	7,020	14,100	11,500	3,640	2,140	2,420	5,390	7,240	7,900	5,070	1,240	919
12	5,800	7,740	*33,600	3,510	4,640	2,200	5,720	5,690	6,050	4,810	1,120	1,440
13	5,450	5,800	17,000	4,090	3,710	2,170	*6,200	4,720	5,430	5,050	1,140	1,130
14	4,430	4,810	8,780	4,110	3,010	2,090	7,150	4,300	5,590	4,410	1,140	883
15	3,780	4,110	6,470	4,470	2,630	1,960	7,220	4,720	6,710	3,600	1,140	756
16	3,210	3,650	5,690	5,550	2,260	1,870	6,090	6,430	6,340	3,470	1,150	748
17	2,760	3,310	5,130	6,090	2,240	1,870	5,130	8,970	5,670	3,400	1,090	740
18	2,470	3,260	4,560	5,390	2,240	2,120	4,790	11,400	5,740	3,460	991	684
19	2,300	5,780	4,320	5,210	2,050	2,630	5,760	12,700	8,040	3,710	937	676
20	2,230	4,990	6,090	5,290	2,000	2,840	7,790	12,500	8,230	3,850	964	660
21	2,060	4,320	10,200	4,680	1,930	3,130	10,200	9,310	6,300	3,650	964	1,310
22	1,870	3,920	15,600	4,640	1,920	4,600	10,500	8,300	5,690	3,310	*919	1,430
23	1,710	3,600	15,500	*5,430	1,860	6,200	8,510	9,280	5,350	2,900	955	1,120
24	2,550	4,410	8,920	4,850	1,880	6,780	6,960	*8,490	4,790	2,740	919	1,110
25	13,500	8,730	6,930	4,160	1,920	6,220	6,180	7,020	4,180	2,600	928	2,300
26	12,800	11,000	6,220	3,670	2,120	6,910	6,410	7,330	4,050	2,410	1,000	3,130
27	7,130	10,400	5,900	3,260	2,090	5,490	6,260	6,930	5,090	2,190	1,140	3,550
28	9,230	10,000	5,110	3,060	2,320	4,660	5,720	5,740	5,820	1,990	1,080	2,500
29	10,800	*8,350	4,510	2,850	2,770	4,770	5,450	6,260	5,110	1,800	1,000	4,560
30	12,800	7,930	4,090	2,640	------	5,170	4,850	8,420	4,240	1,640	928	6,280
31	7,700	-----	3,760	2,340	------	5,450	------	10,000	------	1,610	856	------
Total	168,770	236,560	245,100	140,850	66,100	118,330	171,130	220,190	188,200	114,630	35,281	43,078
Mean	5,444	7,885	7,906	4,544	2,279	3,817	5,704	7,103	6,273	3,698	1,138	1,436
Cfsm	8.95	13.0	13.0	7.47	3.75	6.28	9.38	11.7	10.3	6.08	1.87	2.36
In.	10.32	14.47	14.99	8.62	4.04	7.24	10.47	13.47	11.51	7.01	2.16	2.63
Ac-ft	334,800	469,200	486,100	279,400	131,100	234,700	339,400	436,700	373,300	227,400	69,980	85,440

Calendar year 1955: Max 33,600 Min 874 Mean 4,833 Cfsm 7.95 In. 107.87 Ac-ft 3,499,000
Water year 1955-56: Max 33,600 Min 620 Mean 4,777 Cfsm 7.86 In. 106.93 Ac-ft 3,468,000

Peak discharge (base, 16,000 cfs).--Oct. 25 (10:30 p.m.) 17,800 cfs (52.62 ft); Nov. 5 (2 to 3 a.m.) 24,600 cfs (54.49 ft); Nov. 10 (9 to 11 p.m.) 20,500 cfs (53.41 ft); Dec. 12 (12 m.) 40,800 cfs (57.67 ft); Dec. 23 (1 to 2 a.m.) 19,300 cfs (53.27 ft).

* Discharge measurement made on this day.

Pilchuck River near Granite Falls, Wash.

Location.--Lat 48°03'15", long 121°57'25", in SE¼ sec. 30, T. 30 N., R. 7 E., on right bank 200 ft upstream from county road bridge and 2 miles southeast of Granite Falls.

Drainage area.--53.5 sq mi.

Records available.--May to October 1911, January 1943 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 340 ft (from topographic map). Prior to Oct. 13, 1911, staff gage at approximately same site at different datum. Jan. 14, 1943, to July 9, 1946, several staff gages within 150 ft of present site at same datum.

Average discharge.--13 years, 343 cfs (248,300 acre-ft per year).

Extremes.--Maximum discharge during year, 4,600 cfs Oct. 26 (gage height, 7.66 ft); minimum, 36 cfs Sept. 6-10 (gage height, 2.17 ft).
1911, 1943-56: Maximum discharge, 10,500 cfs Oct. 25, 1945 (gage height, 10.4 ft, from graph based on gage readings), from rating curve extended above 4,100 cfs on basis of slope-area determination at gage height 8.00 ft; minimum, 27 cfs Oct. 19, 20, 1952; minimum gage height, 1.89 ft Aug. 23, 24, 1945.

Remarks.--Records good. City of Snohomish diverts about 5 cfs, 5 miles above station, for municipal use. Slight regulation at low flow from manipulation of diversion gates.

Revisions (water years).--WSP 1286: Drainage area, 1943(M), 1944, 1945(M), 1946, 1947(M). The figures of peak discharge for the water year 1948 have been revised as shown below, superseding those published in WSP 1122.

Revised peak discharge.--1947-48: Oct. 19 (2 a.m.) 5,380 cfs; Feb. 26 (8:30 a.m.) 2,850 cfs; Mar. 22 (12:30 a.m.) 3,480 cfs.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 30				Dec. 1 to Sept. 30			
2.3	59	4.0	590	2.1	30	4.0	590
2.7	123	5.0	1,300	2.5	74	5.0	1,300
3.2	254	6.5	2,850	3.0	182	6.0	2,260

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	526	1,780	285	191	505	481	225	200	141	58	40
2	69	808	900	297	185	550	418	242	174	148	58	39
3	69	2,450	600	476	174	640	384	212	212	136	58	38
4	413	1,930	454	1,210	168	490	681	206	289	127	55	38
5	377	994	384	1,190	200	372	590	256	312	271	55	37
6	176	670	380	1,250	191	312	427	259	348	294	54	36
7	224	495	372	893	200	312	468	270	436	177	54	36
8	441	526	348	620	197	328	458	300	384	168	53	36
9	545	897	376	500	179	289	432	285	610	163	52	36
10	658	*1,040	352	432	194	249	510	409	580	145	49	37
11	361	550	1,760	392	668	225	*590	368	552	133	52	104
12	333	397	1,420	404	1,010	212	525	270	352	133	49	71
13	248	a320	610	782	535	200	540	232	293	123	49	50
14	184	a260	432	555	392	191	550	206	289	114	48	47
15	156	a230	356	694	293	191	454	238	540	108	48	46
16	136	a210	336	1,720	249	194	372	*308	625	104	47	43
17	121	a200	285	*1,450	238	206	312	360	414	100	*45	42
18	110	206	249	886	215	267	328	388	324	99	48	40
19	108	268	324	682	200	372	414	384	638	95	49	39
20	110	232	1,010	795	*191	356	490	324	560	89	46	*62
21	101	232	1,150	565	191	477	555	235	368	84	43	86
22	94	214	1,480	767	185	718	463	249	297	77	42	63
23	89	206	978	858	179	970	364	252	252	76	42	52
24	438	530	706	560	177	712	293	209	212	76	41	301
25	2,520	844	754	436	191	640	297	185	206	71	52	406
26	2,240	545	767	368	197	646	312	206	206	67	59	544
27	1,010	585	640	312	200	505	293	174	*212	64	52	278
28	1,140	555	495	285	296	472	281	155	185	63	46	266
29	1,180	724	a410	252	392	670	308	203	163	60	47	242
30	1,090	1,170	a340	228	------	712	238	249	145	59	47	300
31	767	------	a290	206	------	640	------	245	------	59	43	------
Total	15,584	18,814	20,738	20,350	7,878	13,623	12,828	8,104	10,378	3,624	1,541	3,455
Mean	503	627	669	656	272	439	428	261	346	117	49.7	115
Ac-ft	30,910	37,320	41,130	40,360	15,630	27,020	25,440	16,070	20,580	7,190	3,060	6,850

Calendar year 1955: Max 2,530 Min 57 Mean 411 Ac-ft 297,400
Water year 1955-56: Max 2,520 Min 36 Mean 374 Ac-ft 271,600

Peak discharge (base, 2,500 cfs).--Oct. 26 (12:30 a.m.) 4,600 cfs (7.66 ft); Nov. 3 (3:30 a.m.) 2,720 cfs (6.40 ft); Nov. 30 (11 p.m.) 3,480 cfs (6.95 ft); Dec. 11 (10:30 p.m.) 3,480 cfs (6.95 ft); Jan. 16 (8 p.m.) 3,320 cfs (6.84 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

Little Pilchuck Creek near Lake Stevens, Wash.

Location.--Lat 48°02'00", long 122°03'00", in NW¼NW¼ sec. 4, T. 29 N., R. 6 E., on right bank just downstream from highway crossing, 1½ miles northeast of Lake Stevens and 2 miles upstream from Stevens Creek.

Drainage area.--17.5 sq mi.

Records available.--June 1946 to September 1951, September 1952 to September 1956.

Gage.--Water-stage recorder and wooden control. Altitude of gage is 200 ft (from topographic map).

Average discharge.--9 years (1946-51, 1952-56), 32.7 cfs (23,670 acre-ft per year).

Extremes.--Maximum discharge during year, 339 cfs probably Dec. 22 (gage height, 4.86 ft, from recorded range in stage); minimum, 0.7 cfs Sept. 6; minimum gage height, 0.87 ft July 19-22.
1946-56: Maximum discharge, 382 cfs Jan. 1, 1955 (gage height, 5.11 ft); minimum, that of Sept. 6, 1956; minimum gage height, 0.70 ft Aug. 18, 24-26, 1951.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Several small diversions above station for farm use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-14, July 22 to Sept. 30)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30			
0.9	2.5	2.0	45	0.7	0.8	1.6	21
1.1	6.2	2.5	72	.8	1.5	2.0	38
1.3	11.5	3.0	112	.9	2.5	2.5	66
1.6	25	4.1	236	1.1	6.1	3.0	102
				1.3	11	4.3	254

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	126	170	37	24	86	37	9.7	3.6	6.3	2.2	1.8
2	2.9	95	140	42	23	79	36	9.4	3.6	5.7	2.0	1.7
3	2.8	143	92	70	22	88	32	8.9	4.5	5.1	1.8	1.7
4	3.4	163	66	120	22	84	30	8.6	7.7	4.9	1.6	1.8
5	*4.3	164	51	140	25	67	33	9.2	10.5	6.8	1.4	2.6
6	3.5	112	42	150	28	53	32	8.6	20	5.9	1.4	1.1
7	5.1	72	40	110	31	48	30	7.9	17.5	5.1	1.3	1.2
8	9.2	65	37	82	28	53	30	7.4	15.5	4.5	*1.2	1.5
9	9.2	61	39	65	26	55	26	7.2	26	3.9	1.2	1.8
10	11.5	*76	38	56	28	48	24	12	39	3.7	1.6	2.0
11	8.6	64	160	50	54	38	21	14	55	3.6	1.6	5.5
12	7.3	48	140	51	103	33	19.5	12.5	35	3.4	1.7	2.6
13	6.2	32	90	80	94	33	*18.5	10.5	23	3.1	1.6	2.0
14	5.3	26	58	104	*72	32	18	9.4	19	2.9	1.7	1.8
15	4.9	b22	43	140	53	29	17	8.4	17	2.9	2.0	1.8
16	4.5	20	36	210	b40	26	16	*7.7	18.5	2.8	2.0	1.4
17	4.3	19	32	253	35	24	15	7.0	16	2.5	2.0	1.7
18	4.1	17	30	176	32	23	14	6.5	14	2.4	1.8	1.8
19	4.1	22	45	118	30	22	13.5	6.3	22	2.3	1.6	1.6
20	3.9	24	100	98	32	22	13	5.9	24	2.2	1.4	*2.3
21	3.9	21	160	*86	41	28	12	5.7	22	2.3	1.3	2.6
22	3.5	19	250	93	47	36	11.5	5.3	16	2.3	1.3	2.0
23	3.7	17	160	114	52	45	11	4.9	14	2.4	1.3	1.8
24	5.3	35	110	105	48	42	10.5	4.9	12.5	2.3	1.3	2.9
25	45	53	88	82	65	42	10	4.5	11.5	2.3	2.5	2.5
26	103	62	80	64	82	50	9.7	4.9	9.7	2.4	2.9	5.1
27	67	54	70	49	81	43	9.4	5.1	*8.6	2.3	2.4	3.7
28	58	57	57	41	79	43	10	4.7	7.7	2.0	2.2	3.1
29	70	90	46	35	79	59	11.5	4.3	7.0	2.2	2.3	3.2
30	235	120	40	30	------	56	9.9	3.7	7.0	2.2	2.0	3.4
31	222	------	37	b26	------	45	------	3.4	------	2.3	1.8	------
Total	924.5	1,899	2,547	2,877	1,376	1,432	581.0	228.5	507.4	105.0	54.4	70.0
Mean	29.8	63.3	82.2	92.8	47.4	46.2	19.4	7.37	16.9	3.39	1.75	2.33
Cfsm	1.70	3.62	4.70	5.30	2.71	2.64	1.11	0.421	0.966	0.194	0.100	0.133
In.	1.96	4.04	5.41	6.11	2.92	3.04	1.23	0.49	1.08	0.22	0.12	0.15
Ac-ft	1,830	3,770	5,050	5,710	2,730	2,840	1,150	453	1,010	208	108	139

Calendar year 1955: Max 317 Min 2.0 Mean 37.6 Cfsm 2.15 In. 29.15 Ac-ft 27,200
Water year 1955-56: Max 253 Min 1.1 Mean 34.4 Cfsm 1.97 In. 26.77 Ac-ft 25,000

Peak discharge (base, 150 cfs).--Oct. 30 (8 p.m.) 284 cfs (4.44 ft); Nov. 5 (6 a.m.) 176 cfs (3.63 ft); probably Dec. 1 (time and discharge unknown); probably Dec. 11 (time and discharge unknown); probably Dec. 22 (time unknown) 339 cfs (4.86 ft); probably Jan. 6 (time and discharge unknown); Jan. 17 (12 to 5 a.m.) 268 cfs (4.40 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 16 to Jan. 13, Feb. 1-5, 17-19; discharge estimated on basis of records for stations on nearby streams.

Snohomish River at Snohomish, Wash.

Location.--Lat 47°54'40", long 122°05'50", in SE¼ sec. 13, T. 28 N., R. 5 E., on downstream end of drawrest of bridge on State Highway 1A in Snohomish.

Drainage area.--1,720 sq mi, approximately.

Records available.--February 1941 to September 1956 (high-water discharges only). High-water elevations prior to 1932 and high-water profiles on flood peaks since that time are available at the Seattle office of Corps of Engineers.

Gage.--Water-stage recorder. Datum of each gage is 10 ft below mean sea level, datum of 1929. Auxiliary water-stage recorder 2½ miles downstream from base gage.

Extremes.--Maximum discharge during year, 58,600 cfs Nov. 4 (gage height, 28.10 ft). 1941-56: Maximum discharge, 136,000 cfs Feb. 10, 1951 (gage height, 30.12 ft). Maximum stage known, 35 ft at base gage and 31 ft at auxiliary gage in 1906, from flood profile furnished by Corps of Engineers.

Remarks.--Records good. Large diurnal fluctuation because of tides. No appreciable regulation or diversion at stages for which discharges are published.

Revisions (water years).--WSP 1152: 1948(M). WSP 1316: Drainage area, 1947(M). WSP 1396: 1951(M).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	19,200	25,200	-	-	-	11,400	13,100	28,900	11,900		-
2	-	14,900	21,000	-	-	11,400	10,300	12,700	22,600	12,500		-
3	-	37,800	17,300	10,300	-	11,600	-	12,000	21,200	13,000		-
4	-	57,600	14,100	15,000	-	11,100	-	12,000	22,500	11,800		-
5	13,100	53,200	11,800	20,600	-	-	11,300	12,000	19,700	12,000		-
6	10,100	36,000	11,000	20,100	-	-	-	12,700	17,400	14,900		-
7	-	26,000	10,500	20,300	-	-	-	14,700	17,900	13,100		-
8	-	21,000	-	14,300	-	-	-	17,400	17,900	13,600		-
9	22,000	19,900	-	11,800	-	-	-	20,300	22,800	15,900		-
10	28,900	40,000	-	10,000	-	-	-	23,300	23,600	16,400		-
11	20,600	36,700	15,700	-	-	-	12,500	22,400	23,800	15,800		-
12	15,300	26,100	54,300	-	10,500	-	14,100	17,900	18,600	14,200		-
13	14,900	18,900	45,200	11,200	10,900	-	15,900	15,000	16,000	15,300		-
14	12,000	14,700	29,600	10,700	-	-	17,700	12,800	15,900	14,100		-
15	10,400	12,000	20,400	11,500	-	-	19,200	13,600	18,300	11,900		-
16	-	10,500	16,000	14,700	-	-	17,200	16,900	18,500	11,300		-
17	-	-	14,500	18,100	-	-	14,400	23,400	16,800	11,100		-
18	-	-	12,100	15,000	-	-	12,700	31,000	16,100	11,300		-
19	-	-	11,200	13,900	-	-	14,500	36,400	21,900	12,000		-
20	-	11,000	13,600	13,000	-	-	18,800	38,400	23,500	12,300		-
21	-	-	24,500	12,000	-	-	25,900	30,900	18,400	12,500		-
22	-	-	34,200	11,800	-	-	30,600	24,800	15,800	10,100		-
23	-	-	38,000	14,400	-	14,400	24,600	*26,700	14,700	-		-
24	-	-	28,200	13,000	-	17,100	21,000	25,500	13,900	-		-
25	33,500	15,900	21,100	11,200	-	14,400	17,800	21,300	12,100	-		-
26	47,000	20,700	18,200	-	-	16,300	18,300	20,800	11,300	-		11,000
27	28,500	20,600	16,700	-	-	14,000	17,600	20,200	13,700	-		11,500
28	25,300	20,800	13,700	-	-	12,200	16,400	16,700	16,800	-		-
29	30,800	18,900	11,700	-	-	11,200	15,700	17,100	15,600	-		-
30	38,600	17,900	11,200	-	------	12,100	14,100	22,800	13,400	-		15,600
31	27,900	------	10,900	-	------	13,100	------	28,800	------	-		------
Total	-	-	-	-	-	-	-	633,600	549,600	-	-	-
Mean	-	-	-	-	-	-	-	20,440	18,320	-	-	-
Ac-ft	-	-	-	-	-	-	-	‡1,257	‡1,090	-	-	-

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

Peak discharge (base, 40,000 cfs).--Oct. 26 (1 a.m.) 54,500 cfs (27.07 ft); Nov. 4 (5 p.m.) 58,600 cfs (28.10 ft); Nov. 10 (6 p.m.) 46,500 cfs (25.57 ft); Dec. 12 (12 m.) 57,200 cfs (27.76 ft); Dec. 22 (11 p.m.) 42,400 cfs (24.41 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

Quilceda Creek near Marysville, Wash.

Location.--Lat 48°06'20", long 122°09'40", in NE¼NE¼ sec. 9, T. 30 N., R. 5 E., on right bank 300 ft downstream from Middle Fork and 3½ miles north of Marysville.

Drainage area.--13.9 sq mi.

Records available.--June 1946 to September 1956.

Gage.--Water-stage recorder and wooden control. Datum of gage is 28.2 ft above mean sea level (stadia traverse).

Average discharge.--10 years, 25.3 cfs (18,320 acre-ft per year).

Extremes.--Maximum discharge during year, 215 cfs Dec. 20 (gage height, 6.45 ft); minimum, 3.1 cfs Aug. 21 (gage height, 1.51 ft).
1946-56: Maximum discharge, 229 cfs Dec. 31, 1954 (gage height, 6.68 ft); minimum, 2.2 cfs July 16, 1951; minimum gage height, 1.49 ft Sept. 19, 1953.

Remarks.--Records good. Several diversions above station for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1286: 1950, drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 25 to Nov. 7, May 9 to July 5)

Oct. 1 to Dec. 20		Dec. 21 to Sept. 30			
1.6	5.4	1.5	3.0	2.5	23
2.0	15	1.6	4.4	3.0	38
3.0	43	1.8	7.7	4.0	75
4.0	78	2.0	11.5	6.0	188
6.0	188				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	44	160	34	24	57	30	11	7.9	8.8	4.7	4.0
2	5.4	48	106	43	22	50	29	11	7.7	8.4	5.0	3.8
3	*5.4	68	70	69	22	65	27	11	9.7	8.1	4.9	4.0
4	7.0	60	52	125	23	62	*25	11	10.5	8.1	4.6	3.8
5	7.4	68	46	163	33	48	25	11	12.5	9.0	4.3	3.8
6	6.2	45	44	174	34	40	24	11	22	8.6	4.3	3.8
7	11	36	44	127	38	40	25	10.5	13.5	8.2	4.4	3.8
8	12.5	42	46	83	34	40	26	10.5	13.5	7.7	3.8	3.8
9	11.5	43	44	67	30	46	23	10	23	7.2	4.0	4.0
10	13	49	41	55	33	40	22	14	38	6.8	*4.1	4.1
11	8.8	44	65	52	49	34	20	13	36	7.0	4.0	7.0
12	7.4	35	72	*44	65	31	18.5	11.5	24	6.7	4.0	5.5
13	6.8	28	53	99	53	34	17.5	11	18.5	6.5	4.0	4.9
14	6.6	22	41	78	45	33	17	10.5	15.5	6.3	4.0	4.7
15	6.4	19.5	36	121	*36	29	16.5	10	15	6.5	4.4	4.7
16	6.0	18	35	147	32	27	16	9.7	16	6.0	4.6	4.9
17	6.2	17	32	142	32	25	15.5	*9.5	14	5.8	4.1	4.7
18	6.0	17	30	93	31	24	15	9.3	13	5.5	4.0	4.9
19	5.8	37	40	76	38	22	14	9.5	17.5	5.7	4.0	4.9
20	5.8	37	159	70	53	23	13.5	9.3	17	5.4	3.8	5.5
21	5.8	34	184	69	*59	34	13	9.1	14.5	5.4	3.8	5.4
22	5.4	29	178	82	57	36	12	9.0	13	5.0	3.7	4.9
23	5.4	32	154	90	54	41	12	8.8	12	5.0	3.7	5.0
24	6.0	37	116	72	44	38	12	8.8	11	5.0	3.7	6.2
25	32	39	111	56	56	35	11.5	8.6	11	5.0	5.7	5.7
26	38	47	95	46	63	32	11	8.8	10	5.0	4.9	*9.1
27	*26	52	111	38	54	28	11	8.8	9.7	5.0	4.4	7.0
28	23	48	72	35	50	34	12	8.4	9.5	4.9	4.6	6.2
29	39	59	52	32	52	45	11.5	8.2	*9.3	4.9	4.4	6.5
30	115	103	40	29	------	40	11.5	7.9	9.1	4.9	4.1	6.8
31	67	------	34	25	------	34	------	7.9	------	4.7	4.0	------
Total	513.4	1,257.5	2,363	2,436	1,216	1,167	537.0	308.6	453.9	197.1	132.0	153.4
Mean	16.6	41.9	76.2	78.6	41.9	37.6	17.9	9.95	15.1	6.36	4.26	5.11
Cfsm	1.19	3.01	5.48	5.65	3.01	2.71	1.29	0.716	1.09	0.458	0.306	0.368
In.	1.37	3.36	6.32	6.52	3.25	3.12	1.44	0.83	1.21	0.53	0.35	0.41
Ac-ft	1,020	2,490	4,690	4,830	2,410	2,310	1,070	612	900	391	262	304

Calendar year 1955: Max 186 Min 4.6 Mean 31.3 Cfsm 2.25 In. 30.51 Ac-ft 22,640
Water year 1955-56: Max 184 Min 3.7 Mean 29.3 Cfsm 2.11 In. 28.71 Ac-ft 21,290

Peak discharge (base, 110 cfs).--Oct. 30 (10 a.m.) 151 cfs (5.50 ft); Dec. 1 (2:30 a.m.) 184 cfs (5.98 ft); Dec. 20 (9 p.m.) 215 cfs (6.45 ft); Dec. 26 (11 p.m.) 133 cfs (5.08 ft); Jan. 6 (10 a.m.) 190 cfs (6.03 ft); Jan. 13 (8 a.m.) 129 cfs (5.02 ft); Jan. 16 (6 to 7 p.m.) 185 cfs (5.95 ft).
* Discharge measurement made on this day.

Lake Goodwin near Silvana, Wash.

Location.--Lat 48°08'35", long 122°18'00", in NW¼SE¼ sec. 28, T. 31 N., R. 4 E., on west side of lake, 4.7 miles southwest of Silvana and 6 miles north of channel connecting Lake Goodwin and Lake Shoecraft.

Drainage area.--4.51 sq mi.

Records available.--April 1953 to September 1956.

Gage.--Staff gage read once daily. Altitude of gage is 321 ft (from topographic map). Prior to Feb. 15, 1955, at site 0.8 mile north of present site at datum 3.00 ft higher prior to Oct. 1, 1954, and at present datum thereafter.

Extremes.--Maximum gage height observed during year, 6.76 ft Jan. 6, 7; minimum observed, 5.22 ft Sept. 10.
1953-56: Maximum gage height observed, that of Jan. 6, 7, 1956; minimum observed, 5.12 ft (present datum) Sept. 25-28, 1953.

Remarks.--Level of Lake Goodwin is controlled by flashboards in a wooden flume at mouth of Lake Shoecraft. No known diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.48	5.80	6.18	6.60	6.10	6.02	6.28	6.00	5.82	5.94	5.58	5.34
2	5.46	5.82	6.18	6.62	6.06	6.02	6.28	6.00	5.80	5.92	5.58	5.32
3	5.46	5.86	6.18	6.64	6.02	6.12	6.26	5.98	5.84	5.90	5.58	5.32
4	5.46	5.88	6.18	6.68	6.00	6.04	6.26	5.98	5.86	5.90	5.56	5.30
5	5.48	5.88	6.18	6.72	5.98	6.12	6.24	5.98	5.88	5.90	5.56	5.28
6	5.46	5.88	6.20	6.76	5.96	6.16	6.22	5.96	5.90	5.90	5.56	5.26
7	5.54	5.88	6.18	6.76	5.94	6.16	6.22	5.96	5.90	5.88	5.56	5.26
8	5.54	5.90	6.20	6.74	5.92	6.20	6.22	5.96	5.92	5.88	5.54	5.24
9	5.56	5.92	6.20	6.66	5.90	6.22	6.20	5.96	5.90	5.88	5.52	5.24
10	5.58	5.92	6.20	6.58	5.90	6.22	6.20	6.00	6.00	5.86	5.50	5.22
11	5.60	5.94	6.22	6.52	5.90	6.24	6.20	6.00	6.00	5.86	5.48	5.30
12	5.60	5.94	6.22	6.48	5.90	6.22	6.18	6.00	6.00	5.86	5.48	5.30
13	5.60	5.92	6.22	6.50	5.88	6.26	6.16	5.98	6.00	5.84	5.48	5.30
14	5.58	5.90	6.22	6.46	5.90	6.26	6.16	5.98	6.00	5.82	5.48	5.30
15	5.58	5.90	6.22	6.52	5.88	6.24	6.14	5.96	6.00	5.82	5.48	5.28
16	5.58	5.88	6.22	6.56	5.86	6.24	6.14	5.96	6.02	5.80	5.48	5.28
17	5.56	5.88	6.22	6.54	5.88	6.22	6.14	5.96	6.02	5.80	5.48	5.28
18	5.56	5.88	6.22	6.54	5.86	6.22	6.12	5.94	6.00	5.78	5.46	5.28
19	5.56	5.90	6.28	6.52	5.86	6.20	6.10	5.94	6.06	5.78	5.46	5.28
20	5.56	5.92	6.36	6.50	5.86	6.22	6.10	5.92	6.06	5.76	5.44	5.30
21	5.56	5.94	6.40	6.48	5.86	6.24	6.10	5.90	6.04	5.76	5.42	5.30
22	5.56	5.94	6.48	6.46	5.88	6.24	6.10	5.90	6.02	5.74	5.42	5.28
23	5.56	5.94	6.52	6.44	5.88	6.24	6.08	5.90	6.00	5.74	5.40	5.26
24	5.56	5.96	6.56	6.40	5.88	6.28	6.08	5.88	6.00	5.72	5.40	5.26
25	5.72	5.98	6.64	6.36	5.90	6.28	6.06	5.88	5.98	5.70	5.40	5.26
26	5.72	6.02	6.66	6.30	5.90	6.30	6.04	5.86	5.98	5.68	5.40	5.32
27	5.72	6.04	6.68	6.26	5.92	6.28	6.04	5.86	5.96	5.66	5.38	5.32
28	5.72	6.04	6.68	6.24	5.98	6.28	6.04	5.84	5.96	5.64	5.38	5.32
29	5.76	6.04	6.66	6.20	5.98	6.26	6.02	5.84	5.96	5.62	5.38	5.32
30	5.76	6.14	6.66	6.18	-------	6.28	6.02	5.82	5.94	5.60	5.36	5.32
31	5.80	-------	6.60	6.12	-------	6.30	-------	5.82	-------	5.58	5.34	-------

Lake Shoecraft near Tulalip, Wash.

Location.--Lat 48°07'35", long 122°18'15", in SW¼ sec. 33, T. 31 N., R. 4 E., on piling 12 ft shoreward from boathouse on southwest shore, a quarter of a mile east of outlet, and 4¼ miles north of Tulalip.

Drainage area.--5.57 sq mi.

Records available.--April 1953 to September 1956.

Gage.--Staff gage read once daily. Altitude of gage is 324 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 2.48 ft Jan. 5; minimum observed, 1.06 ft Sept. 10.
1953-56: Maximum gage height observed, that of Jan. 5, 1956; minimum observed, 0.96 ft Sept. 23-27, 1953.

Remarks.--Levels of Lake Shoecraft is controlled by planks in wooden flume at outlet. No known diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.28	1.65	2.02	2.36	-	1.84	2.10	1.81	1.63	1.74	1.38	1.14
2	1.28	1.66	1.99	2.36	-	1.86	2.08	1.81	1.63	1.73	1.38	1.14
3	1.28	1.67	1.99	2.38	-	1.90	2.07	1.80	1.64	1.72	1.40	1.13
4	1.29	1.69	1.99	2.44	-	1.94	2.02	1.80	1.68	1.71	1.40	1.12
5	1.29	1.71	1.99	2.48	-	1.97	2.06	1.79	1.70	1.71	1.38	1.10
6	1.29	1.70	2.01	2.40	-	1.99	2.05	1.79	1.72	1.70	1.38	1.09
7	1.31	1.70	1.99	2.34	1.64	1.99	2.04	1.78	1.73	1.70	1.36	1.08
8	1.34	1.73	1.99	2.29	1.62	2.00	-	1.78	1.74	1.69	1.34	1.07
9	1.37	1.74	2.00	2.24	1.60	2.03	-	1.78	1.76	1.69	1.34	1.07
10	1.40	1.74	2.02	2.20	1.59	2.05	-	1.82	1.82	1.69	1.32	1.06
11	1.41	1.74	2.04	2.16	1.61	2.04	2.00	1.81	1.82	1.68	1.31	1.14
12	1.40	1.74	2.05	2.08	1.62	2.04	1.99	1.80	1.81	1.67	1.30	1.13
13	-	1.74	2.07	2.09	1.60	2.06	1.99	1.80	1.81	1.66	1.28	1.12
14	-	1.72	2.07	2.08	-	-	1.98	1.79	1.81	1.65	1.28	1.12
15	-	1.72	-	2.10	1.57	-	1.96	1.78	1.84	1.64	1.28	1.11
16	-	1.71	-	2.14	1.59	-	1.96	-	1.84	1.63	1.30	1.11
17	-	1.70	-	2.13	1.58	-	1.95	1.78	1.83	1.62	1.29	1.10
18	1.38	1.70	-	2.12	1.57	-	1.95	-	1.83	1.61	1.28	1.10
19	1.39	1.70	-	2.11	1.56	-	1.94	1.76	1.86	1.60	1.27	1.09
20	1.39	1.72	-	2.10	1.56	2.04	1.93	1.76	1.87	1.59	1.27	1.09
21	1.38	1.74	-	2.09	1.59	2.06	1.92	1.74	1.85	1.58	1.25	1.08
22	1.38	1.75	2.29	2.07	1.59	2.10	1.91	1.72	1.85	1.57	1.24	1.08
23	1.38	1.76	2.29	2.06	1.59	2.12	1.90	1.71	1.83	1.56	1.23	1.08
24	1.39	1.78	2.33	2.02	1.59	2.11	1.88	1.70	1.81	1.54	1.22	1.09
25	1.44	1.80	2.37	1.99	1.69	2.11	1.86	1.70	1.80	1.52	1.22	1.10
26	1.53	1.82	2.38	1.95	1.72	2.11	1.85	1.69	1.79	1.51	1.20	1.14
27	1.54	1.85	2.42	1.92	1.75	2.10	1.84	1.68	1.78	1.49	1.18	1.14
28	1.54	1.85	2.42	1.89	1.78	2.10	1.84	1.68	1.76	1.46	1.18	1.15
29	1.58	1.87	2.41	-	1.81	2.11	1.83	1.67	1.76	1.46	1.18	1.15
30	1.62	1.92	2.40	-	-------	2.12	1.82	1.67	1.74	1.44	1.18	1.15
31	1.63	-------	2.38	-	-------	2.10	-------	1.64	-------	1.40	1.14	-------

South Fork Stillaguamish River near Granite Falls, Wash.

Location.--Lat 48°06'10", long 121°56'40", in SW¼NW¼ sec. 8, T. 30 N., R. 7 E., on right bank a quarter of a mile upstream from county road bridge, 1½ miles upstream from Canyon Creek, and 2 miles northeast of Granite Falls.

Drainage area.--119 sq mi.

Records available.--December 1902 to July 1903 (gage heights only), July 1928 to September 1956. Published as "at Robe" 1902-3.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from river-profile map). Prior to Aug. 31, 1928, staff gage at site 8 miles upstream at different datum.

Average discharge.--28 years, 1,050 cfs (760,200 acre-ft per year).

Extremes.--Maximum discharge during year, 21,500 cfs Dec. 11 (gage height, 15.48 ft); minimum, 126 cfs Sept. 8 (gage height, 3.32 ft).
1928-56: Maximum discharge, 38,800 cfs Feb. 26, 1932 (gage height, 19.7 ft, from graph based on gage readings), from rating curve extended above 15,000 cfs; minimum, 55 cfs Sept. 23, 24, 1938; minimum gage height, 2.99 ft Aug. 19-21, 1941.

Remarks.--Records good. Some small diversions for domestic use above station. No regulation.

Revisions (water years).--WSP 902: 1939. WSP 1286: 1929-31(M), 1932, 1933-34(M), 1935, 1937(M), 1938-39(P), 1940-41(M), 1943(P), 1944(M), 1945(P), 1946(M), 1947(P), 1948(M), 1951(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-24				Oct. 25 to Sept. 30			
3.7	225	5.5	1,290	3.3	122	7.0	2,780
4.0	338	6.0	1,780	3.6	197	8.0	4,250
4.5	580	7.0	2,980	4.0	330	9.0	6,000
5.0	895	8.0	4,430	4.5	560	10.5	9,110
				5.0	860	12.0	12,500
				5.5	1,230	14.0	17,400
				6.0	1,660		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	259	1,230	2,270	588	445	814	1,000	1,040	1,790	765	304	177
2	239	2,680	1,310	593	479	1,030	834	1,090	1,420	874	300	166
3	239	*15,400	965	854	418	1,170	753	993	1,620	860	290	156
4	2,130	10,600	783	2,280	392	789	1,010	1,000	1,610	753	269	144
5	1,800	2,940	687	1,820	418	593	1,040	1,230	1,670	1,780	259	140
6	937	1,790	795	1,830	387	488	821	1,290	1,860	1,570	269	133
7	1,080	1,370	847	1,230	379	479	777	1,520	2,630	1,020	279	129
8	2,090	1,390	747	902	362	474	795	1,860	1,970	1,070	276	126
9	3,610	2,220	808	753	334	422	771	1,980	3,020	1,190	*276	129
10	2,770	4,000	723	675	342	387	916	2,370	2,540	1,110	273	144
11	1,550	1,660	7,760	705	790	338	*1,350	1,660	2,080	986	269	416
12	1,820	1,070	6,600	771	1,370	334	1,570	1,250	1,430	1,030	269	330
13	1,320	821	1,810	1,370	693	323	1,780	1,040	1,290	1,020	269	221
14	988	711	1,170	965	529	308	2,070	1,010	1,440	860	273	186
15	867	633	944	1,260	418	304	1,860	1,230	1,690	705	283	169
16	688	604	840	2,860	387	304	1,460	*1,820	1,520	717	290	159
17	574	484	723	*2,050	404	315	1,170	2,410	1,300	735	256	146
18	520	571	627	1,590	383	379	1,190	2,810	1,290	795	233	142
19	479	874	834	1,370	354	550	1,590	2,860	2,280	860	230	137
20	460	723	2,780	1,550	*338	621	2,240	2,520	1,830	860	233	*238
21	399	639	2,940	1,130	338	874	2,830	1,880	1,270	795	237	441
22	355	539	5,480	1,960	326	1,520	2,550	1,890	1,170	681	237	358
23	318	503	2,650	2,090	315	2,330	1,960	2,020	1,070	615	230	249
24	2,820	1,400	1,660	1,300	308	2,190	1,590	1,710	916	615	227	1,430
25	14,100	2,580	1,520	958	319	1,520	1,510	1,470	808	560	276	2,450
26	5,530	1,620	1,490	789	312	1,620	1,520	1,610	840	493	293	2,740
27	2,650	1,530	1,150	669	300	1,170	1,440	1,340	*1,100	441	259	1,440
28	3,640	2,030	888	621	486	958	1,330	1,140	1,130	392	227	1,170
29	5,600	2,000	753	555	711	1,210	1,250	1,470	944	358	206	1,270
30	3,390	2,120	675	479	------	1,360	1,060	1,990	765	330	209	1,590
31	1,780	------	604	427	------	1,360	------	2,100	------	323	186	------
Total	65,002	66,732	53,833	36,994	13,037	26,534	42,037	51,603	46,293	25,163	7,987	16,726
Mean	2,097	2,224	1,737	1,193	450	856	1,401	1,665	1,543	812	258	558
Cfsm	17.6	18.7	14.6	10.0	3.78	7.19	11.8	14.0	13.0	6.82	2.17	4.69
In.	20.31	20.86	16.82	11.56	4.07	8.29	13.14	16.13	14.47	7.86	2.50	5.23
Ac-ft	128,900	132,400	106,800	73,380	25,860	52,630	83,380	102,400	91,820	49,910	15,840	33,180

Calendar year 1955: Max 15,400 Min 168 Mean 1,307 Cfsm 11.0 In. 149.09 Ac-ft 946,200
Water year 1955-56: Max 15,400 Min 126 Mean 1,235 Cfsm 10.4 In. 141.24 Ac-ft 896,500

Peak discharge (base, 8,700 cfs).--Oct. 25 (11 a.m.) 21,300 cfs (15.40 ft); Oct. 29 (3 p.m.) 9,840 cfs (10.83 ft); Nov. 3 (2 a.m.) 18,200 cfs (14.27 ft); Dec. 11 (10:30 p.m.) 21,500 cfs (15.48 ft).
* Discharge measurement made on this day.

South Fork Stillaguamish River above Jim Creek, near Arlington, Wash.

Location.--Lat 48°10'05", long 122°04'05", in SW¼ sec. 17, T. 31 N., R. 6 E., on right bank 2 miles upstream from Jim Creek and 3 miles southeast of Arlington.

Drainage area.--199 sq mi.

Records available.--October 1936 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 80.00 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1936, staff gage at same site and datum.

Average discharge.--20 years, 1,585 cfs (1,147,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,400 cfs Dec. 11 (gage height, 24.90 ft); minimum, 164 cfs Sept. 7, 8 (gage height, 11.31 ft).
1936-56: Maximum discharge, 27,700 cfs Feb. 9, 1951 (gage height, 27.26 ft); minimum, 110 cfs Sept. 23, 24, 1951; minimum gage height, 10.44 ft Oct. 19, 20, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Some diversion for domestic use.

Revisions (water years).--WSP 1316: 1938-41(M), 1943-48(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-24				Oct. 25 to Sept. 30			
12.1	393	14.0	2,120	11.3	160	15.0	3,460
12.5	615	15.0	3,660	11.8	360	16.0	5,420
13.0	990	16.0	5,550	12.1	490	17.0	7,620
13.5	1,500			12.5	710	19.0	12,300
				13.0	1,040	21.0	16,300
				13.5	1,450	23.0	20,200
				14.0	1,970		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	444	2,050	4,480	1,010	740	1,300	1,500	1,490	2,500	1,030	409	244
2	408	3,420	2,300	1,020	760	1,600	1,270	1,540	1,930	1,180	404	232
3	408	19,300	1,670	1,360	710	1,800	1,170	1,390	2,080	1,180	396	216
4	2,550	14,100	1,370	3,980	660	1,290	1,670	1,400	2,360	1,020	360	204
5	2,870	5,050	1,220	3,260	670	977	1,570	1,750	2,230	2,010	348	188
6	1,470	3,010	1,300	3,260	650	837	1,180	1,840	3,040	2,580	364	180
7	1,250	2,260	1,430	2,160	620	800	1,250	2,120	3,840	1,460	368	168
8	2,840	*2,360	1,260	1,610	600	806	1,250	2,650	2,770	1,400	364	164
9	4,740	3,400	1,390	1,340	580	740	1,200	2,880	2,830	1,560	360	168
10	3,920	6,250	1,240	1,200	600	680	*1,550	3,390	3,800	1,530	360	192
11	2,190	2,700	10,100	1,240	1,100	596	2,260	2,530	3,320	1,310	352	542
12	2,480	1,770	10,000	1,380	3,000	596	2,440	1,830	2,090	1,330	352	540
13	1,890	1,430	3,140	*2,300	1,700	585	2,720	1,490	1,820	1,390	356	336
14	1,370	1,300	2,100	1,690	1,100	545	3,170	1,380	1,960	1,220	356	280
15	1,170	1,190	1,740	2,170	900	540	2,830	1,660	2,500	949	368	244
16	914	1,040	1,590	5,000	760	545	2,190	2,530	2,170	935	384	228
17	765	935	1,410	3,750	770	555	1,760	3,430	1,810	942	*344	208
18	687	949	1,290	2,680	720	644	1,750	*3,970	1,740	1,030	316	200
19	634	1,470	1,550	2,250	680	900	2,370	4,030	3,260	1,110	304	192
20	628	1,240	4,740	2,760	650	1,030	3,390	3,590	3,020	1,140	304	288
21	622	1,130	5,060	1,950	*630	1,340	4,260	2,560	2,030	1,050	304	*668
22	509	984	8,560	3,650	608	2,420	3,860	2,470	1,730	935	300	570
23	471	921	4,440	3,460	585	3,820	2,910	2,900	1,580	806	300	376
24	3,430	2,040	2,600	2,090	560	3,060	2,320	2,370	1,340	782	292	2,020
25	17,300	3,770	2,470	1,600	590	2,350	2,220	1,900	1,180	746	388	3,590
26	9,050	2,500	2,390	1,340	585	2,330	2,250	2,140	1,220	656	436	4,380
27	4,300	2,320	1,910	1,150	565	1,670	2,120	1,820	1,540	575	364	2,200
28	5,380	3,170	1,500	1,060	740	1,500	1,900	1,500	*1,570	525	312	1,690
29	9,130	3,550	1,300	956	1,150	2,030	1,830	1,860	1,340	476	292	1,840
30	6,870	3,580	1,140	880	------	2,130	1,540	2,650	1,090	445	300	2,600
31	3,070	------	1,060	780	------	1,980	------	2,990	------	432	264	------
Total	93,760	99,189	87,750	64,336	23,983	41,996	63,700	71,950	65,690	33,734	10,721	24,948
Mean	3,025	3,306	2,831	2,075	827	1,355	2,123	2,321	2,190	1,088	346	832
Cfsm	15.2	16.6	14.2	10.4	4.16	6.81	10.7	11.7	11.0	5.47	1.74	4.18
In.	17.52	18.54	16.40	12.02	4.48	7.85	11.90	13.45	12.28	6.30	2.00	4.66
Ac-ft	186,000	196,700	174,000	127,600	47,570	83,300	126,300	142,700	130,300	66,910	21,260	49,480

Calendar year 1955: Max 19,300 Min 304 Mean 2,008 Cfsm 10.1 In. 136.98 Ac-ft 1,454,000
Water year 1955-56: Max 19,300 Min 164 Mean 1,863 Cfsm 9.36 In. 127.40 Ac-ft 1,352,000

Peak discharge (base, 12,600 cfs).--Oct. 25 (1 p.m.) 22,600 cfs (24.38 ft); Oct. 29 (6 p.m.) 16,700 cfs (21.20 ft); Nov. 3 (4:30 a.m.) 22,100 cfs (24.07 ft); Dec. 11 (11:30 p.m.) 23,400 cfs (24.90 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 30 to Feb. 21; discharge estimated on basis of recorded range in stage and records for North Fork Stillaguamish River near Arlington.

Jim Creek near Arlington, Wash.

Location.--Lat 48°10'25", long 122°04'05", in W½ sec. 17, T. 31 N., R. 6 E., on right bank at abandoned bridge, 1¼ miles upstream from mouth and 3 miles southeast of Arlington.

Drainage area.--48.9 sq mi.

Records available.--October 1937 to September 1951, September 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 103.4 ft above mean sea level (stadia traverse).

Average discharge.--18 years (1937-51, 1952-56), 206 cfs (149,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,920 cfs Oct. 29 (gage height, 7.52 ft); minimum, 11 cfs Sept. 8 (gage height, 1.04 ft).
1937-51, 1952-56: Maximum discharge, 4,730 cfs Dec. 28, 1949 (gage height, 9.28 ft), from rating curve extended above 1,900 cfs; minimum, 5.9 cfs Sept. 16, 1943 (gage height, 0.62 ft).

Remarks.--Records good. Small diversions for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1042: 1938-44. WSP 1092: 1946.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
1.4	27	3.0	340	1.0	9.5	2.5	210
1.6	43	3.5	520	1.2	18.5	3.0	350
1.8	67	4.0	720	1.4	32	3.5	530
2.0	98	5.0	1,200	1.6	50	4.0	730
2.5	202	6.0	1,780	1.8	75	5.4	1,420
				2.0	107		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	419	1,040	210	a160	413	300	127	123	87	27	17.5
2	32	613	576	220	a155	420	260	121	105	86	27	16
3	31	1,740	388	271	a150	522	228	116	104	84	27	14
4	186	1,020	304	833	a150	430	233	112	142	76	26	13.5
5	207	596	247	910	a140	323	241	156	138	*100	24	13
6	109	426	229	995	a130	263	208	168	324	125	23	13
7	163	352	236	670	123	233	205	179	266	97	22	13
8	282	*340	221	441	121	233	210	186	199	86	20	12.5
9	325	435	247	350	111	215	200	179	468	84	19	12
10	346	574	224	291	111	193	*220	226	436	78	18.5	13
11	204	377	1,190	285	157	171	274	186	474	71	18	45
12	188	280	977	291	371	162	280	136	294	68	17.5	42
13	144	247	486	*524	291	148	285	121	220	66	17	29
14	105	a220	350	406	236	140	300	112	198	61	16	23
15	92	a190	285	564	203	133	266	118	186	55	16	19
16	78	a180	252	1,170	a170	131	213	166	164	52	15.5	17.5
17	68	a170	215	982	a155	129	184	205	148	50	15	14.5
18	60	a210	184	682	a145	138	182	*215	136	49	*14.5	14.5
19	58	266	248	506	a140	160	223	213	216	48	14	14
20	55	221	1,050	638	a135	191	288	193	329	46	13.5	26
21	51	197	1,100	469	*136	282	341	140	215	43	12.5	*50
22	47	177	1,420	738	142	498	291	134	179	40	12.5	43
23	45	175	880	726	138	642	226	148	154	38	12.5	31
24	159	328	606	494	136	531	182	134	133	36	12.5	92
25	1,140	468	606	374	146	438	179	114	123	33	78	145
26	852	364	530	308	162	416	191	112	116	32	48	218
27	640	417	490	255	160	326	175	105	120	32	31	146
28	638	440	385	228	205	300	150	90	116	30	24	107
29	1,280	560	311	205	303	438	142	93	104	29	23	111
30	1,480	706	263	186	------	416	133	123	93	29	24	368
31	672	-----	228	a170	-----	360	-----	144	------	28	19.5	------
Total	9,775	12,708	15,768	15,390	4,882	9,395	6,810	4,572	6,023	1,839	688.0	1,693.0
Mean	315	424	509	496	168	303	227	147	201	59.3	22.2	56.4
Cfsm	6.44	8.67	10.4	10.1	3.44	6.20	4.64	3.01	4.11	1.21	0.454	1.15
In.	7.43	9.66	11.99	11.70	3.71	7.15	5.18	3.48	4.58	1.40	0.52	1.29
Ac-ft	19,390	25,210	31,280	30,530	9,680	18,630	13,510	9,070	11,950	3,650	1,360	3,360

Calendar year 1955: Max 1,740 Min 19 Mean 261 Cfsm 5.34 In. 72.42 Ac-ft 188,900
Water year 1955-56: Max 1,740 Min 12 Mean 245 Cfsm 5.01 In. 68.09 Ac-ft 177,600

Peak discharge (base, 1,400 cfs).--Oct. 25 (4:30 p.m.) 1,880 cfs (6.16 ft); Oct. 29 (11:15 p.m.) 2,920 cfs (7.52 ft); Nov. 3 (2 a.m.) 2,560 cfs (7.07 ft); Dec. 11 (10:30 p.m.) 2,160 cfs (6.55 ft); Dec. 20 (10 p.m.) 1,740 cfs (5.94 ft); Dec. 22 (4:30 p.m.) 1,740 cfs (5.94 ft); Jan. 16 (7 p.m.) 1,750 cfs (5.95 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Squire Creek near Darrington, Wash.

Location.--Lat 48°16'15", long 121°40'00", in SE¼ sec. 8, T. 32 N., R. 9 E., on left bank 150 ft upstream from road crossing, a third of a mile upstream from Ashton Creek, and 3½ miles northwest of Darrington.

Drainage area.--18.8 sq mi.

Records available.--June 1950 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map).

Average discharge.--6 years, 189 cfs (136,800 acre-ft per year).

Extremes.--Maximum discharge during year, 4,450 cfs Nov. 3 (gage height, 9.84 ft); minimum, 33 cfs Sept. 19 (gage height, 1.74 ft).
1950-56: Maximum discharge, 6,440 cfs Feb. 10, 1951 (gage height, 10.52 ft), from rating curve extended above 700 cfs by logarithmic plotting; minimum, 7.3 cfs Oct. 20-24, 1952 (gage height, 0.57 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 30 to Nov. 1)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
1.7	39	4.0	555	1.7	31	5.0	990
2.2	96	5.0	1,010	2.2	71	6.0	1,600
3.0	255	7.0	2,300	3.0	220	8.0	3,000
				4.0	540		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	285	212	106	a82	90	153	168	396	201	79	48
2	48	667	136	104	a82	106	131	161	290	228	72	44
3	44	*2,970	106	127	a78	133	118	148	332	223	66	42
4	*293	1,490	90	294	a72	95	133	150	305	190	64	40
5	231	459	82	276	66	76	127	193	256	400	64	38
6	140	296	88	299	64	67	110	217	293	322	68	37
7	199	209	94	209	61	69	112	259	488	226	67	36
8	362	253	87	155	59	66	108	320	419	290	69	35
9	451	458	88	*129	56	61	115	341	760	329	69	35
10	278	478	86	113	56	56	155	350	564	308	67	41
11	190	204	1,330	118	67	52	220	262	462	282	68	78
12	240	a150	764	127	81	50	*245	201	288	311	71	50
13	184	a130	308	168	68	49	276	170	265	311	70	43
14	162	a110	215	136	62	47	314	164	285	240	72	40
15	130	a92	178	214	53	46	282	206	288	198	79	38
16	109	a83	150	400	52	46	223	320	228	201	*68	36
17	98	a76	131	285	52	47	188	435	206	223	63	36
18	86	a85	115	262	51	55	193	519	248	248	63	35
19	79	104	117	228	49	71	251	530	386	276	64	34
20	72	88	347	204	48	76	359	484	270	276	65	78
21	66	78	446	178	48	106	456	*362	217	254	64	115
22	60	67	950	288	46	209	407	365	223	198	64	62
23	56	65	414	293	46	362	326	407	209	196	62	47
24	908	128	268	206	*46	277	282	356	166	193	58	210
25	2,190	285	262	164	48	234	273	290	159	164	82	696
26	618	178	254	136	46	223	268	326	224	140	68	*701
27	*414	184	204	120	46	168	242	265	293	125	60	250
28	485	268	164	107	56	146	209	234	*237	107	54	229
29	1,520	226	138	96	70	170	188	296	190	98	58	329
30	*693	166	124	a90	------	188	173	390	166	92	50	395
31	381	-----	110	a84	-----	183	-----	449	------	87	47	------
Total	10,838	10,332	8,058	5,716	1,711	3,624	6,637	9,338	9,113	6,937	2,035	3,898
Mean	350	344	260	184	59.0	117	221	301	304	224	65.6	130
Cfsm	18.6	18.3	13.8	9.79	3.14	6.22	11.8	16.0	16.2	11.9	3.49	6.91
In.	21.44	20.44	15.94	11.31	3.38	7.17	13.13	18.47	18.03	13.72	4.03	7.71
Ac-ft	21,500	20,490	15,980	11,340	3,390	7,190	13,160	18,520	18,080	13,760	4,040	7,730

Calendar year 1955: Max 2,970 Min 33 Mean 201 Cfsm 10.7 In. 145.28 Ac-ft 145,700
Water year 1955-56: Max 2,970 Min 34 Mean 214 Cfsm 11.4 In. 154.77 Ac-ft 155,200

Peak discharge (base, 2,200 cfs).--Oct. 25 (8:30 a.m.) 3,720 cfs (8.93 ft); Oct. 29 (3:30 p.m.) 3,000 cfs (7.92 ft); Nov. 3 (8 a.m.) 4,450 cfs (9.84 ft); Dec. 11 (8 p.m.) 3,080 cfs (8.11 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

North Fork Stillaguamish River near Darrington, Wash.

Location.--Lat 48°16'40", long 121°42'00", in NW¼ sec. 7, T. 32 N., R. 9 E., in pier at left bank at highway bridge, 1 mile downstream from Squire Creek and 5 miles northwest of Darrington.

Drainage area.--82.2 sq mi.

Records available.--June 1950 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 410 ft (from topographic map).

Average discharge.--6 years, 600 cfs (434,400 acre-ft).

Extremes.--Maximum discharge during year, 17,500 cfs Nov. 3 (gage height, 9.55 ft), from rating curve extended above 3,300 cfs by logarithmic plotting; minimum, 67 cfs Oct 3; minimum gage height, 0.93 ft Sept. 16-20.
1950-56: Maximum discharge, that of Nov. 3, 1955; minimum, 28 cfs Oct. 18-24, 1952 (gage height, 0.86 ft).

Remarks.--Records good except those above 3,500 cfs, which are fair, and those for periods of doubtful or no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1950-52, drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 21-29)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
1.0	62	3.0	1,120	0.9	70	4.0	2,190
1.3	126	4.0	2,190	1.2	135	5.0	3,800
1.6	222	5.0	3,800	1.5	227	6.5	7,050
2.0	405	6.0	5,800	2.0	450	8.0	11,600
2.5	710			3.0	1,120		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	868	1,130	445	341	375	680	638	1,020	466	157	89
2	73	1,130	866	419	341	478	602	632	810	538	148	85
3	71	10,800	728	419	318	538	544	590	888	505	138	81
4	*443	4,720	626	740	280	434	602	584	873	445	130	80
5	438	1,830	554	968	268	350	590	698	754	734	130	80
6	246	1,290	527	968	253	310	516	810	880	641	130	78
7	295	*976	549	896	246	305	500	928	1,160	510	128	78
8	704	984	522	704	234	293	500	1,150	1,020	572	123	78
9	1,220	1,190	516	572	224	272	510	1,220	1,610	626	123	78
10	876	1,570	494	488	224	249	632	1,240	1,430	590	121	78
11	544	968	3,160	*483	249	234	852	944	1,320	538	118	132
12	619	a700	2,850	522	332	224	992	722	912	560	118	116
13	460	a560	1,200	656	280	217	*1,120	614	817	549	116	83
14	374	a480	896	596	253	207	1,290	584	838	456	116	78
15	311	a430	734	704	217	207	1,210	728	824	384	125	78
16	258	a380	638	1,380	205	210	968	1,110	674	379	*125	76
17	230	a340	549	1,170	210	217	803	1,480	620	388	118	76
18	200	a350	494	1,020	d200	253	782	1,730	662	408	118	76
19	183	a500	461	976	d200	297	984	1,750	944	434	116	76
20	167	a430	888	845	d195	323	1,350	1,520	782	429	116	110
21	151	a370	1,540	754	d195	402	1,720	1,080	638	408	113	193
22	143	a320	2,830	968	d190	710	1,600	*1,030	614	346	111	130
23	132	302	1,960	1,130	d190	1,220	1,250	1,140	572	328	109	96
24	1,370	493	1,300	852	*174	1,140	1,040	984	485	318	107	225
25	5,560	1,020	1,000	686	181	928	992	824	456	289	135	*744
26	2,120	940	904	584	171	904	1,000	880	505	257	135	930
27	1,280	805	824	505	171	722	928	728	632	234	116	462
28	1,490	1,100	698	456	220	638	789	674	*584	210	104	388
29	3,590	1,120	602	408	280	704	710	838	500	190	109	605
30	2,520	1,030	532	355	------	796	656	1,100	434	178	100	817
31	1,260	------	483	341	------	796	------	1,190	------	168	91	------
Total	27,408	37,996	31,055	22,010	6,840	14,953	26,712	30,140	24,261	13,078	3,744	6,296
Mean	884	1,267	1,002	710	236	482	890	972	809	422	121	210
Cfsm	10.8	15.4	12.2	8.64	2.87	5.86	10.8	11.8	9.84	5.13	1.47	2.55
In.	12.40	17.19	14.05	9.96	3.09	6.77	12.09	13.64	10.98	5.92	1.69	2.85
Ac-ft	54,360	75,360	61,600	43,660	13,570	29,660	52,980	59,780	48,120	25,940	7,430	12,490

Calendar year 1955: Max 10,800 Min 62 Mean 631 Cfsm 7.68 In. 104.18 Ac-ft 456,700
Water year 1955-56: Max 10,800 Min 71 Mean 668 Cfsm 8.13 In. 110.63 Ac-ft 485,000

Peak discharge (base, 4,400 cfs).--Oct. 25 (2:45 p.m.) 8,640 cfs (7.08 ft); Oct. 29 (5 p.m.) 6,800 cfs (6.40 ft); Nov. 3 (10:30 a.m.) 17,500 cfs (9.55 ft); Dec. 11 (10 p.m.) 8,520 cfs (7.04 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

d Doubtful gage-height record; discharge estimated on basis of weather records and records for nearby stations.

North Fork Stillaguamish River near Arlington, Wash.

Location.--Lat 48°15'40", long 122°02'50", in SE¼NW¼ sec. 16, T. 32 N., R. 6 E., on right bank 6 miles northeast of Arlington, 7 miles upstream from mouth, and 8 miles downstream from Deer Creek.

Drainage area.--269 sq mi.

Records available.--July 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 89.34 ft above mean sea level, datum of 1929. Prior to Sept. 18, 1928, staff gage at same site and datum.

Average discharge.--28 years, 1,775 cfs (1,285,000 acre-ft per year).

Extremes.--Maximum discharge during year, 26,500 cfs Nov. 3 (gage height, 12.68 ft); minimum, 258 cfs Sept. 9 (gage height, 1.46 ft).
1928-56: Maximum discharge, 30,600 cfs Feb. 9, 1951; maximum gage height, 13.46 ft Feb. 10, 11, 1951; minimum discharge, 117 cfs Sept. 23, 1938; minimum gage height, 0.97 ft Sept. 10, 12, 1944.

Remarks.--Records good except those for periods of shifting control, which are fair. No regulation. Small diversions for domestic use.

Revisions (water years).--WSP 832: Drainage area. WSP 1286: 1938-39.

Rating table, water year 1955-56, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.4	236	5.0	3,300
1.7	350	6.0	4,860
2.1	540	7.0	6,900
2.5	760	8.0	9,300
3.0	1,100	10.0	15,400
3.5	1,560	12.0	23,500
4.0	2,080		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	393	2,810	4,580	1,320	936	1,770	1,990	1,780	2,940	1,300	540	354
2	359	3,520	2,990	1,320	936	2,020	1,760	1,850	2,400	1,460	530	330
3	367	21,700	2,320	1,580	929	2,140	1,610	1,680	2,540	1,410	515	314
4	2,710	12,600	1,970	4,220	880	1,670	2,100	1,680	2,700	1,240	480	302
5	2,560	5,620	1,780	3,620	915	1,280	1,950	2,180	2,340	2,100	460	283
6	1,260	3,570	1,870	3,900	868	1,090	1,590	2,210	2,790	2,180	455	272
7	1,200	2,810	2,060	2,830	862	1,080	1,720	2,500	3,470	1,570	450	268
8	2,320	2,820	1,820	2,090	832	1,090	1,700	3,070	2,780	1,540	450	265
9	4,120	*3,720	1,860	1,720	796	1,010	*1,640	3,270	5,320	1,660	*450	265
10	3,610	5,420	1,780	1,520	814	915	1,940	3,520	4,370	1,650	450	283
11	1,990	3,220	11,200	1,580	1,220	856	2,560	2,780	4,160	1,450	445	455
12	2,090	2,320	11,300	1,830	1,930	838	2,790	2,100	2,790	1,440	440	540
13	1,630	1,950	3,810	2,780	1,220	814	3,100	1,790	2,380	1,470	440	380
14	1,240	1,700	2,660	2,160	1,010	778	3,520	1,700	2,410	1,310	445	338
15	1,050	1,540	2,170	2,430	850	790	3,370	1,990	2,600	1,080	480	310
16	901	1,450	1,880	*5,810	814	802	2,670	2,920	2,090	1,040	495	299
17	802	1,320	1,660	4,080	832	832	2,210	3,780	1,870	1,020	450	287
18	736	1,380	1,420	3,300	796	957	2,110	4,420	1,870	1,050	421	276
19	694	2,360	1,560	3,100	760	1,180	2,640	4,560	2,960	1,090	412	272
20	652	1,950	4,320	3,160	742	1,320	3,550	4,210	3,210	1,120	412	346
21	605	1,710	5,190	2,540	748	1,640	4,560	3,140	2,190	1,060	407	756
22	565	1,480	9,100	3,940	736	2,720	4,310	3,070	1,930	985	402	646
23	525	1,420	5,450	3,980	*706	3,930	3,430	*3,360	1,770	894	402	445
24	3,030	2,350	3,290	2,720	694	3,480	2,820	2,960	1,560	862	393	*1,170
25	15,000	3,870	2,910	2,090	760	2,720	2,660	2,480	1,440	826	570	2,270
26	7,980	3,180	2,740	1,750	754	2,700	2,680	2,660	1,460	760	575	3,020
27	4,160	2,880	2,440	1,510	760	2,110	2,520	2,230	1,740	754	465	1,800
28	4,660	3,780	1,970	1,370	964	1,980	2,170	2,000	1,720	652	416	1,940
29	8,910	4,070	1,670	1,240	1,320	2,600	1,980	2,400	1,520	615	421	2,150
30	8,870	3,980	1,520	1,090	------	2,620	1,830	3,050	1,330	585	426	3,510
31	4,180	-----	1,370	985	-----	2,460	-----	3,330	------	560	376	------
Total	89,169	112,500	102,620	77,565	26,384	52,192	75,480	84,670	74,650	36,733	14,073	24,146
Mean	2,876	3,750	3,310	2,502	910	1,684	2,516	2,731	2,488	1,185	454	805
Cfsm	10.7	13.9	12.3	9.30	3.38	6.26	9.35	10.2	9.25	4.41	1.69	2.99
In.	12.33	15.55	14.19	10.72	3.65	7.22	10.44	11.71	10.32	5.08	1.95	3.34
Ac-ft	176,900	223,100	203,500	153,800	52,330	103,500	149,700	167,900	148,100	72,860	27,910	47,890

Calendar year 1955: Max 21,700 Min 280 Mean 2,218 Cfsm 8.25 In. 111.91 Ac-ft 1,605,000
Water year 1955-56: Max 21,700 Min 265 Mean 2,104 Cfsm 7.82 In. 106.50 Ac-ft 1,527,000

Peak discharge (base, 11,500 cfs).--Oct. 25 (7 p.m.) 21,600 cfs (11.56 ft); Oct. 29 (10 p.m.) 16,400 cfs (10.26 ft); Nov. 3 (12:30 p.m.) 26,500 cfs (12.68 ft); Dec. 11 (10:30 p.m.) 24,700 cfs (12.27 ft); Dec. 22 (4:30, 5:15 p.m.) 11,600 cfs (8.84 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 27, 28, Oct. 31 to Nov. 2, Nov. 5 to Dec. 11, Dec. 13-21, Dec. 23 to Mar. 19.

Armstrong Creek near Arlington, Wash.

Location.--Lat 48°13'15", long 122°08'00", in NW¼ sec. 35, T. 32 N., R. 5 E., on right bank at Northern Pacific Railway culvert, 1 mile north of Arlington.

Drainage area.--7.33 sq mi.

Records available.--June 1950 to September 1951, September 1952 to September 1956.

Gage.--Water-stage recorder and wooden control on concrete base. Datum of gage is 56.6 ft (stadia traverse).

Average discharge.--5 years, 15.7 cfs (11,370 acre-ft per year).

Extremes.--Maximum discharge during year, 63 cfs Dec. 1 (gage height, 1.03 ft); minimum, 1.7 cfs Sept. 4 (gage height, 0.19 ft).
1950-56: Maximum discharge not determined, probably occurred sometime in December 1953; minimum, 1.2 cfs Sept. 14, 1951; minimum gage height, 0.14 ft July 5, 1951 (from outside gage, control leaking).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions.--WSP 1286: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 31 to Nov. 14)

0.2	1.8
.3	3.6
.5	10
.7	22
1.0	50

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	39	50	22	19	28	24	9.7	5.7	5.1	3.8	3.4
2	5.1	37	35	23	18	30	22	9.7	5.4	4.8	3.8	3.2
3	*5.1	42	37	25	19	28	21	9.3	6.7	4.8	3.8	3.4
4	15	*42	32	28	19	31	*21	8.9	8.5	4.8	3.8	3.2
5	12.5	43	28	31	21	31	20	10.5	9.7	5.4	3.8	3.2
6	9.7	35	27	34	21	28	18	10	9.7	6.3	3.8	3.4
7	11	29	27	33	24	28	18	8.9	7.7	5.7	3.8	3.4
8	16	30	25	30	22	28	17.5	8.5	6.6	5.1	3.8	3.2
9	15	31	24	28	20	28	17	8.1	10.5	4.8	3.8	3.0
10	19	44	26	26	21	27	16	12	15	4.6	*3.8	3.0
11	14.5	41	33	24	30	24	16	11	13	4.8	3.8	4.9
12	12	31	31	*23	33	23	15.5	9.7	8.5	4.8	3.8	4.0
13	10.5	27	36	29	30	23	14.5	8.9	7.4	4.8	3.6	3.6
14	9.7	22	31	28	28	23	14.5	8.5	7.3	4.6	3.8	3.6
15	8.9	19.5	28	30	*24	21	13.5	7.7	9.0	4.3	4.0	3.4
16	8.9	18	29	30	21	21	14.5	7.7	10	4.0	4.6	3.4
17	8.5	18	25	33	21	20	13.5	*7.3	8.5	3.6	4.0	3.2
18	8.1	19.5	22	30	21	20	13	6.6	7.7	3.6	3.8	3.2
19	8.5	27	28	30	21	20	12.5	6.3	12	3.6	3.8	3.2
20	8.5	23	36	30	23	21	12.5	6.0	14.5	3.6	3.6	3.8
21	8.1	21	38	29	27	26	12	6.0	11	3.6	3.6	*3.8
22	7.7	20	36	29	28	27	12	6.0	9.7	3.6	3.6	3.6
23	7.3	24	38	29	27	27	11.5	6.0	8.1	3.6	3.6	3.4
24	9.3	27	31	32	27	25	11	6.0	7.3	3.6	3.4	4.3
25	23	31	34	30	27	24	11.5	6.0	7.3	3.6	4.8	4.3
26	37	39	37	28	28	24	10.5	5.7	7.0	3.6	4.3	5.4
27	34	39	34	25	28	23	10	5.7	6.3	3.6	4.0	5.1
28	33	39	31	24	28	24	10	5.7	6.0	3.8	3.6	5.1
29	35	37	27	23	30	28	10	5.7	*5.7	3.6	3.6	5.1
30	39	36	24	21	------	27	10	5.7	5.4	3.6	3.6	7.0
31	43	-----	22	20	-----	24	-----	5.7	------	3.8	3.6	------
Total	488.3	931.0	962	857	706	782	443.0	239.5	257.2	133.1	118.5	115.8
Mean	15.8	31.0	31.0	27.6	24.3	25.2	14.8	7.73	8.57	4.29	3.82	3.86
Cfsm	2.16	4.23	4.23	3.77	3.32	3.44	2.02	1.05	1.17	0.585	0.521	0.527
In.	2.48	4.72	4.88	4.35	3.58	3.97	2.25	1.22	1.30	0.68	0.60	0.59
Ac-ft	969	1,850	1,910	1,700	1,400	1,550	879	475	510	264	235	230

Calendar year 1955: Max 50 Min 4.8 Mean 19.5 Cfsm 2.66 In. 36.19 Ac-ft 14,160
Water year 1955-56: Max 50 Min 3.0 Mean 16.5 Cfsm 2.25 In. 30.62 Ac-ft 11,970

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 27 to Jan. 11, Aug. 2-9; discharge estimated on basis of weather records and records for stations on nearby streams.

Pilchuck Creek near Bryant, Wash.

Location.--Lat 48°16'00", long 122°09'45", in NE¼ sec. 16, T. 32 N., R. 5 E., on right bank 500 ft upstream from highway bridge and 2 miles north of Bryant.

Drainage area.--49.7 sq mi.

Records available.--March 1929 to September 1931, June 1950 to September 1951, September 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 119.8 ft above mean sea level (stadia traverse). Prior to Oct. 1, 1931, staff gage at site 100 ft downstream at different datum.

Average discharge.--7 years (1929-31, 1950-51, 1952-56), 272 cfs (196,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,570 cfs Nov. 3 (gage height, 6.04 ft); minimum, 2.4 cfs Aug. 23, 24, 25 (gage height, 1.46 ft).
1929-31, 1950-56: Maximum discharge, 4,370 cfs Feb. 8, 1955 (gage height, 6.54 ft); minimum observed, 0.5 cfs Aug. 29 to Sept. 1, 1931 (gage height, 0.90 ft, site and datum then in use).

Remarks.--Records good except those below 10 cfs, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1316: Drainage area, 1930-31(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 31 to Feb. 3)

Oct. 1 to Jan. 15				Jan. 16 to Sept. 30			
1.8	25	3.0	410	1.4	1.2	2.6	235
2.0	50	3.7	880	1.5	3.6	3.0	435
2.3	115	4.5	1,600	1.6	8.5	3.5	750
2.6	220	5.5	2,790	1.8	25	4.0	1,150
				2.0	54	5.0	2,160
				2.3	126		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	525	1,370	209	140	667	429	145	101	58	4.4	10.5
2	30	696	667	278	120	609	337	145	96	58	5.3	7.9
3	32	2,530	471	421	115	729	303	126	91	52	6.8	6.2
4	618	1,080	330	1,350	112	471	504	136	136	46	6.8	5.8
5	540	564	274	1,070	126	327	459	250	120	119	5.8	5.3
6	193	388	292	1,240	132	253	*308	203	120	158	4.8	4.4
7	208	296	421	730	169	231	353	199	230	96	4.4	4.0
8	536	360	345	471	169	248	348	211	160	70	4.4	4.0
9	848	*735	345	350	139	211	337	191	585	58	4.0	4.0
10	832	815	320	287	142	184	441	219	564	49	3.6	4.0
11	377	421	1,940	*345	380	162	483	152	532	42	3.3	26
12	388	287	1,100	394	704	148	447	109	231	38	3.3	51
13	282	220	489	814	337	142	465	98	169	35	3.3	22
14	212	190	335	477	244	132	471	101	169	31	3.0	14
15	175	160	269	585	203	136	374	139	158	28	*4.0	10.5
16	153	140	236	2,080	219	148	270	176	155	25	5.3	8.5
17	130	127	205	1,090	199	162	244	*207	126	22	5.8	7.3
18	115	134	171	964	148	223	279	211	115	18	4.8	6.2
19	107	340	197	806	129	313	327	203	223	16.5	4.0	5.8
20	102	296	1,040	1,030	129	353	379	169	266	15.5	3.6	7.9
21	89	244	1,070	667	145	615	407	112	173	14	3.0	38
22	81	205	1,350	1,090	155	988	337	118	132	12.5	2.7	40
23	74	193	751	964	*142	1,110	266	132	115	10.5	2.4	22
24	383	620	590	597	136	714	223	118	96	8.5	2.4	*205
25	1,730	908	709	424	148	573	231	86	91	6.8	25	250
26	1,050	632	625	337	158	579	223	101	88	6.2	32	312
27	755	648	507	270	162	396	195	72	93	5.8	14.5	161
28	870	660	366	235	332	469	142	68	84	4.8	10.5	358
29	1,510	864	282	199	453	828	139	96	68	4.4	9.1	346
30	1,240	1,270	236	173	-----	722	139	132	66	4.4	26	450
31	779	-----	205	170	-----	603	-----	126	-----	4.4	14.5	-----
Total	14,476	16,548	17,508	20,117	5,887	13,446	9,860	4,551	5,353	1,119.3	232.8	2,397.3
Mean	467	552	565	649	203	434	329	147	178	36.1	7.51	79.9
Cfsm	9.40	11.1	11.4	13.1	4.08	8.73	6.62	2.96	3.58	0.726	0.151	1.61
In.	10.83	12.38	13.10	15.05	4.41	10.06	7.38	3.41	4.01	0.84	0.17	1.79
Ac-ft	28,710	32,820	34,730	39,900	11,680	26,670	19,560	9,030	10,620	2,220	462	4,750

Calendar year 1955: Max 2,530 Min 8.5 Mean 341 Cfsm 6.86 In. 93.26 Ac-ft 247,200
Water year 1955-56: Max 2,530 Min 2.4 Mean 305 Cfsm 6.14 In. 83.43 Ac-ft 221,200

Peak discharge (base, 2,500 cfs, revised).--Oct. 25 (8:30 p.m.) 2,860 cfs (5.55 ft); Oct. 29 (2:30 p.m.) 2,780 cfs (5.49 ft); Nov. 3 (9:30 a.m.) 3,570 cfs (6.04 ft); Dec. 11 (12 m.) 2,650 cfs (5.39 ft); Jan. 16 (5:30 p.m.) 3,260 cfs (5.83 ft).
* Discharge measurement made on this day.

Skagit River at international boundary, near Hope, British Columbia

(International gaging station)

Location.--Lat 49°00'05", long 121°04'15", on left bank 300 ft upstream from international boundary and 31 miles southeast of Hope, British Columbia.

Drainage area.--381 sq mi.

Records available.--December 1953 to September 1956 (gage heights only).

Gage.--Water-stage recorder. Datum of gage is 1,583.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1947; 1,584.07 ft above city of Seattle 1936 datum; and 1,581.65 ft above city of Seattle Ross Dam datum. Prior to Apr. 15, 1955, staff gage 300 ft downstream at international boundary at present datum.

Extremes.--Maximum daily gage height during year, 18.27 ft Aug. 15; minimum daily, 3.21 ft Mar. 18.
1953-56: Maximum gage height observed, 18.37 ft Aug. 23, 1954; minimum observed, 1.25 ft Mar. 5, 1955.

Remarks.--No diversion above station. Gage height subject to backwater from Ross Reservoir.

Cooperation.--This station is maintained by Canada under agreement with the United States.

Mean gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.32	9.86	5.44	-	3.47	3.30	3.92	7.25	9.83	8.25	18.21	17.73
2	13.08	9.10	5.30	-	3.46	3.30	3.93	7.12	9.36	8.60	18.15	17.87
3	12.72	9.62	5.16	-	3.50	3.35	3.93	6.96	9.03	8.94	18.10	18.01
4	12.32	12.34	5.05	-	3.51	3.35	4.00	6.83	9.02	9.38	18.05	17.95
5	11.90	13.84	4.95	-	3.55	3.30	4.09	6.80	8.59	9.95	18.17	17.71
6	11.52	13.92	4.85	-	3.52	3.30	4.09	6.86	8.00	10.56	18.20	17.45
7	11.09	13.20	4.75	-	3.48	3.30	4.06	7.10	7.63	11.04	18.20	17.21
8	10.97	-	4.69	-	3.47	3.30	4.10	7.58	7.42	11.38	18.20	17.00
9	11.28	-	4.60	-	3.44	3.30	4.14	8.06	7.89	11.77	18.20	16.84
10	11.36	11.02	4.52	-	3.45	3.29	4.33	8.41	8.54	12.45	18.20	16.68
11	10.95	10.30	4.55	-	3.44	3.28	4.67	8.47	8.66	13.70	18.18	16.40
12	10.56	9.44	5.02	-	3.46	3.35	5.01	8.15	8.10	15.16	18.23	16.10
13	10.17	8.76	4.87	-	3.46	3.29	5.45	7.82	7.73	16.69	18.21	15.85
14	9.85	8.68	4.61	3.89	3.44	3.25	6.05	7.63	7.64	17.70	18.22	15.57
15	9.75	8.55	4.57	-	3.36	3.23	6.78	7.65	7.76	17.72	18.27	15.40
16	9.72	8.28	4.58	3.84	3.33	3.22	6.92	8.00	7.69	17.50	18.18	15.17
17	9.61	8.05	4.50	3.82	3.32	3.22	6.75	8.67	7.55	17.56	18.15	15.00
18	8.90	7.81	-	3.82	3.34	3.21	6.73	9.26	7.52	17.72	18.19	14.65
19	8.13	7.70	-	3.83	3.34	3.22	6.94	9.68	7.99	17.88	18.25	14.36
20	7.88	7.62	4.39	3.83	3.32	3.25	7.35	9.77	8.20	17.99	18.15	14.06
21	7.52	7.41	4.47	3.80	3.31	3.27	7.87	9.63	7.89	17.80	18.17	13.78
22	7.17	7.09	4.55	3.78	3.31	3.30	8.35	9.36	7.76	17.66	18.20	13.50
23	6.89	6.79	4.58	3.81	3.30	3.40	8.48	9.40	7.70	17.61	18.19	13.23
24	6.81	6.60	4.50	3.80	3.30	3.49	8.25	9.39	7.59	17.86	18.16	13.11
25	9.34	7.60	4.43	3.77	3.30	3.55	8.02	9.21	7.44	18.06	18.15	12.94
26	11.94	6.40	4.42	3.73	3.30	3.60	7.98	9.18	7.30	18.14	18.25	13.18
27	12.30	6.29	4.40	-	3.30	3.61	7.91	8.97	7.60	18.20	18.15	13.43
28	11.86	6.13	4.32	-	3.31	3.63	7.80	8.69	8.01	18.18	18.03	13.32
29	11.46	5.89	4.25	3.69	3.29	3.68	7.58	8.60	8.10	18.22	17.94	13.28
30	11.12	5.63	4.19	3.61	-------	3.79	7.40	8.96	8.12	18.22	17.90	13.60
31	10.64	-------	4.15	-	-------	3.86	-------	9.43	-------	18.19	17.69	-------

Ruby Creek below Panther Creek, near Newhalem, Wash.

Location.--Lat 48°42'30", long 120°58'10", in NW¼ sec. 10, T. 37 N., R. 14 E. (unsurveyed), on right bank 200 ft downstream from Panther Creek, 4 miles upstream from mouth, and 13 miles northeast of Newhalem.

Drainage area.--199 sq mi.

Records available.--September 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,640 ft (by barometer).

Average discharge.--8 years, 744 cfs (538,600 acre-ft per year).

Extremes.--Maximum discharge during year, 6,240 cfs Oct. 25 (gage height, 9.25 ft); minimum daily, 80 cfs Mar. 16, 17.
1948-56: Maximum discharge, 8,640 cfs Nov. 27, 1949 (gage height, 10.95 ft), from rating curve extended above 5,600 cfs; minimum, 46 cfs Feb. 10, 1949, Nov. 28, 1952; minimum gage height, 0.70 ft Feb. 10, 1949.

Remarks.--Records good except those below 300 cfs, which are fair, and those for periods of doubtful or no gage-height record, which are poor. No regulation or diversion above station.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 23 to June 17)

1.5	65
2.5	410
4.0	1,180
6.0	2,810
8.0	4,850

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	650	*324	237	130	125	184	994	4,730	1,820	625	314
2	92	590	307	230	130	128	181	904	3,740	1,900	670	300
3	92	2,490	293	220	130	130	184	855	3,580	1,860	600	272
4	136	3,540	286	226	128	115	202	825	3,390	1,760	530	237
5	146	2,330	279	220	126	105	198	810	2,680	1,940	510	212
6	122	1,590	276	*216	124	96	184	865	*2,270	1,940	510	195
7	119	1,260	268	209	122	90	181	1,070	2,000	1,760	514	188
8	172	1,130	258	195	120	90	188	1,430	1,870	1,960	518	195
9	262	1,190	251	118	118	90	216	1,750	2,330	2,280	514	198
10	240	1,810	240	184	116	85	276	2,110	2,860	2,300	510	251
11	170	1,300	369	178	114	85	363	1,830	2,650	2,320	502	279
12	164	970	544	174	114	85	482	1,520	2,220	2,420	498	265
13	181	870	374	181	112	83	675	1,330	2,050	2,290	514	258
14	251	800	324	174	110	82	880	1,280	2,210	1,990	535	248
15	346	740	315	170	110	81	952	1,480	2,370	1,670	665	234
16	293	680	310	167	110	80	840	2,070	2,210	1,550	730	212
17	310	640	300	164	107	80	720	2,860	2,030	1,450	560	195
18	332	610	290	167	105	82	760	3,750	2,330	1,520	494	192
19	321	575	285	167	105	86	940	4,050	3,830	*1,650	482	198
20	*300	526	280	156	105	90	1,300	4,090	3,000	1,680	486	209
21	265	486	293	153	105	95	1,860	3,770	2,440	1,540	490	251
22	237	454	335	150	105	105	2,180	3,550	2,340	1,380	470	216
23	216	434	318	153	105	128	1,940	3,740	2,290	1,240	446	188
24	771	422	293	146	105	136	1,570	3,830	2,120	1,200	434	254
25	4,430	422	282	143	105	132	1,440	3,450	1,930	1,160	438	326
26	2,230	394	279	140	110	142	1,490	3,410	1,870	1,020	430	690
27	1,320	366	272	140	115	*174	*1,430	2,990	2,310	916	*402	535
28	1,030	352	254	140	*120	167	1,280	2,860	2,470	800	370	406
29	958	338	240	137	122	170	1,160	3,080	2,130	715	366	434
30	922	332	237	135	------	184	1,070	3,780	1,830	675	342	560
31	755	----	237	133	------	192	------	4,730	------	640	321	------
Total	17,281	28,291	9,213	5,393	3,328	3,513	25,326	75,063	76,080	49,346	15,476	8,512
Mean	557	943	297	174	115	113	844	2,421	2,536	1,592	499	284
Cfsm	2.80	4.74	1.49	0.874	0.578	0.568	4.24	12.2	12.7	8.00	2.51	1.43
In.	3.23	5.29	1.72	1.01	0.62	0.66	4.73	14.03	14.22	9.22	2.89	1.59
Ac-ft	34,280	56,110	18,270	10,700	6,600	6,970	50,230	148,900	150,900	97,880	30,700	16,880

Calendar year 1955: Max 4,500 Min 59 Mean 694 Cfsm 3.49 In. 47.34 Ac-ft 502,400
Water year 1955-56: Max 4,730 Min 80 Mean 866 Cfsm 4.35 In. 59.21 Ac-ft 628,400

Peak discharge (base, 3,000 cfs).--Oct. 25 (12:45 p.m.) 6,240 cfs (9.25 ft); Nov. 4 (2 a.m.) 3,920 cfs (7.12 ft); May 19 (1 a.m.) 4,300 cfs (7.61 ft); May 31 (11 p.m.) 5,810 cfs (8.98 ft); June 19 (11 a.m.) 4,300 cfs (7.50 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 14-18, Jan. 25 to Feb. 28; doubtful gage-height record Dec. 15-20, Feb. 29 to Mar. 22; discharge estimated on basis of weather records and records for stations on nearby streams.

Ross Reservoir near Newhalem, Wash.

(International gaging station)

Location.--Lat 48°44'00", long 121°04'10", in SE¼ sec. 35, T. 38 N., R. 13 E., at Ross Dam on Skagit River, 1 mile downstream from Ruby Creek and 9 miles northeast of Newhalem.

Drainage area.--980 sq mi, approximately.

Records available.--March 1940 to September 1956. Prior to October 1945, published as Ruby Reservoir near Newhalem. Prior to October 1946, monthly elevations and contents only.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (city of Seattle benchmark). Prior to Sept. 24, 1940, staff gage on west shore at site just uplake from Ross Dam at same datum. Sept. 24, 1940, to June 28, 1943, water-stage recorder at present site and datum. June 29, 1943, to Apr. 29, 1948, staff gage on right bank at site 500 ft uplake from dam at present datum.

Extremes.--Maximum contents during year, 1,405,300 acre-ft July 31, Aug. 1, 6, 19, 22, 26, 27 (elevation, 1,600.00 ft); minimum, 470,270 acre-ft Apr. 13 (elevation, 1,492.99 ft). 1940-56: Maximum contents observed, 1,406,500 acre-ft Aug. 23, 1954 (elevation, 1,600.10 ft, from plant log); minimum not determined.

Remarks.--Reservoir is formed by concrete dam completed to elevation 1,615 ft in 1949; storage began Mar. 11, 1940. Capacity, 1,202,920 acre-ft between elevations 1,250 ft (lowest outlet) and 1,582 ft (spillway crest). Dead storage negligible. Water used for power and to supplement low flow of Skagit River through city of Seattle's Diablo and Newhalem powerplants. Figures given herein represent total contents.

Cooperation.--Elevation records collected in cooperation with city of Seattle. This station is maintained by the United States under agreement with Canada.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey on basis of 15 contour areas furnished by city of Seattle)

1,490	454,480	1,570	1,078,800
1,510	571,110	1,590	1,291,700
1,530	718,200	1,600	1,405,300
1,550	888,320		

Elevation, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	594.35	591.09	585.60	574.47	555.20	530.77	503.04	510.24	565.62	589.44	599.80	599.44
2	594.11	590.31	585.16	574.00	554.34	529.72	501.83	509.81	567.33	589.94	599.72	599.68
3	593.59	592.23	584.77	573.46	553.53	528.84	500.70	509.96	569.00	590.42	599.67	599.73
4	593.17	595.19	584.43	572.91	552.80	528.25	499.64	509.93	570.52	591.00	599.78	599.50
5	592.77	595.83	583.83	572.35	552.45	527.09	498.67	510.48	571.24	591.65	599.90	599.25
6	592.30	595.56	583.36	571.78	551.59	525.95	497.60	510.70	571.44	592.30	599.85	598.94
7	591.80	594.60	582.92	571.32	550.83	524.86	497.05	511.13	571.41	592.72	599.87	598.70
8	592.06	593.64	582.42	571.04	550.02	523.94	496.60	512.11	571.73	593.16	599.88	598.54
9	592.38	592.78	581.95	570.30	549.20	522.94	495.47	513.62	573.13	593.46	599.88	598.43
10	592.03	592.60	581.59	569.61	548.34	522.05	494.61	515.39	575.02	594.62	599.82	598.14
11	591.54	591.75	581.76	569.08	547.65	521.43	493.98	517.14	576.38	595.92	599.88	597.87
12	591.18	590.76	581.55	568.48	547.30	520.05	493.32	518.16	577.08	597.62	599.94	597.60
13	590.74	590.42	581.18	567.80	546.35	518.98	493.00	518.97	577.54	598.94	599.83	597.30
14	590.41	590.26	580.77	567.33	545.43	517.87	493.40	519.39	578.25	599.50	599.92	597.05
15	590.43	589.96	580.32	566.90	544.32	516.82	494.97	519.92	578.89	599.30	599.88	596.86
16	590.35	589.72	579.87	566.25	543.29	516.13	495.28	521.25	579.56	599.17	599.81	596.74
17	590.07	589.39	579.49	565.62	542.35	515.44	495.50	523.34	580.10	599.35	599.80	596.40
18	589.72	589.18	579.10	565.00	541.47	515.59	495.85	526.79	580.61	599.53	599.93	596.06
19	589.51	589.14	578.54	564.36	540.93	514.29	496.47	530.90	581.91	599.64	599.90	595.76
20	589.15	589.12	578.15	563.77	539.76	513.26	497.36	534.93	582.95	599.60	599.78	595.45
21	588.80	588.63	577.92	563.30	538.84	512.25	499.53	538.01	583.56	599.40	599.86	595.17
22	588.43	588.25	577.91	562.88	538.25	511.03	502.26	540.71	584.18	599.29	599.83	594.89
23	588.18	587.75	577.64	562.16	537.14	510.18	504.23	543.44	584.76	599.40	599.80	594.77
24	586.54	587.84	577.43	561.51	536.10	509.78	506.06	546.35	585.19	599.57	599.76	594.45
25	592.76	587.67	577.40	560.80	535.24	509.32	507.51	549.07	585.44	599.84	599.82	594.57
26	594.00	587.47	577.20	560.02	534.69	508.25	508.82	551.56	585.71	599.82	599.86	594.99
27	593.92	587.36	576.77	559.25	533.60	507.30	509.13	553.73	586.42	599.80	599.70	594.95
28	593.35	586.84	576.22	558.62	532.80	506.24	509.59	555.37	587.45	599.88	599.60	594.72
29	592.96	586.46	575.67	557.99	531.68	505.15	509.89	557.15	588.18	599.92	599.56	595.01
30	592.71	586.00	575.14	556.97	-------	504.18	509.96	559.68	588.79	599.86	599.43	595.39
31	592.04	-------	574.80	556.09	-------	503.60	-------	562.62	-------	599.82	599.31	-------
(†)	1,314	1,247.5	1,128.1	943.9	731.89	530.59	571.11	1,005.6	1,278,4	1,403	1,397.2	1,352.4
(‡)	-30,400	-66,500	-119,400	-184,200	-212,000	-201,300	+40,520	+434,500	+272,800	+124,600	-5,800	-44,800

Calendar year 1955..... ‡ -19,900
Water year 1955-56..... ‡ +8,000

† Contents, in thousands of acre-feet, at end of month.
‡ Change in contents in acre-feet.
Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

Thunder Creek near Newhalem, Wash.

Location.--Lat 48°40'20", long 121°04'20", in SE¼ sec. 23, T. 37 N., R. 13 E. (unsurveyed), on right bank half a mile upstream from backwater from Diablo Reservoir, 8 miles east of Newhalem, and 20 miles northeast of Marblemount.

Drainage area.--98 sq mi, approximately.

Records available.--October 1930 to September 1956. Published as "above Colonial Creek, near Marblemount" 1930-31.

Gage.--Water-stage recorder. Altitude of gage is 1,220 ft (from river-profile map).

Average discharge.--26 years, 614 cfs (444,500 acre-ft per year).

Extremes.--Maximum discharge during year, 10,800 cfs Oct. 25 (gage height, 12.68 ft), from rating curve extended above 2,900 cfs on basis of logarithmic plotting; minimum, 68 cfs Mar. 1, 11 (gage height, 1.62 ft).
1930-56: Maximum discharge, that of Oct. 25, 1955; minimum not determined, probably less than 50 cfs during period of ice effect or no gage-height record in February 1936.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation or diversion above station.

Revisions (water years).--WSP 1012: 1943. WSP 1286: 1931(M), 1932, 1933(M), 1935(M), 1938-39(M), 1941-42(M), 1944-46(M), 1950(M), 1952 (annual runoff in acre-feet).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	66	5.0	1,050
2.0	109	6.0	1,640
2.5	193	7.5	2,910
3.0	303	9.0	4,610
4.0	610	11.0	7,630

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	591	219	176	b100	85	125	502	2,460	1,200	936	905
2	277	526	205	172	b100	88	122	467	1,860	1,240	856	734
3	265	2,760	195	172	b100	90	122	436	1,850	1,220	754	618
4	378	3,130	189	*174	b99	85	128	412	1,720	1,200	694	536
5	303	1,500	185	172	b98	84	131	406	*1,300	1,460	766	499
6	254	1,000	182	170	97	78	125	427	1,060	1,520	828	502
7	256	770	180	160	96	79	123	533	955	1,320	882	595
8	298	784	174	151	95	79	122	738	1,010	1,490	928	610
9	381	1,200	169	142	94	79	129	918	1,840	1,920	955	610
10	333	1,940	165	139	93	77	153	1,060	2,160	2,070	990	702
11	261	985	301	137	94	74	203	905	1,740	2,160	1,040	710
12	291	702	618	136	95	75	268	730	1,280	2,540	1,120	654
13	318	606	367	141	93	75	359	622	1,150	2,540	1,220	678
14	486	558	306	137	92	74	473	583	1,200	2,100	1,380	698
15	610	a500	284	137	b80	73	533	678	1,370	1,760	1,610	678
16	448	a400	261	139	b85	72	550	941	1,220	1,600	1,390	618
17	496	a370	252	139	b87	73	470	1,350	1,140	1,580	1,140	630
18	502	a360	241	141	b86	75	464	1,870	1,300	*1,830	1,100	718
19	*451	357	236	137	85	77	533	2,080	2,220	2,220	1,200	742
20	373	313	234	134	84	78	698	2,080	1,780	2,510	1,310	738
21	313	293	254	131	84	83	955	1,740	1,380	2,450	1,400	642
22	274	274	328	134	83	87	1,100	1,590	1,310	2,130	1,300	473
23	247	258	316	136	83	108	1,000	1,770	1,270	1,920	1,240	470
24	1,610	270	279	133	82	119	838	1,730	1,160	1,920	1,170	990
25	7,240	296	256	126	82	123	766	1,580	1,060	1,820	1,180	1,540
26	2,260	265	241	119	81	129	786	1,610	1,180	1,570	1,120	2,270
27	1,210	247	228	119	81	*125	722	1,420	1,650	1,410	1,020	1,200
28	1,000	241	211	116	81	117	642	1,360	1,680	1,160	887	905
29	995	232	195	112	*81	117	*587	1,450	1,380	1,070	980	1,130
30	990	*228	189	b105	------	120	543	1,840	1,180	1,040	833	1,020
31	734	-----	182	b102	-----	125	-----	2,390	------	995	*820	------
Total	24,097	21,956	7,663	4,339	2,591	2,823	13,750	36,218	43,865	52,965	33,049	23,815
Mean	777	732	247	140	89.3	91.1	458	1,168	1,462	1,709	1,066	794
Cfsm	7.93	7.47	2.52	1.43	0.911	0.930	4.67	11.9	14.9	17.4	10.9	8.10
In.	9.14	8.33	2.91	1.65	0.98	1.07	5.22	13.74	16.65	20.10	12.54	9.04
Ac-ft	47,800	43,550	15,200	8,610	5,140	5,600	27,270	71,840	87,000	105,100	65,550	47,240

Calendar year 1955: Max 7,240 Min 84 Mean 629 Cfsm 6.42 In. 87.11 Ac-ft 455,300
Water year 1955-56: Max 7,240 Min 72 Mean 730 Cfsm 7.45 In. 101.37 Ac-ft 529,900

Peak discharge (base, 2,400 cfs).--Oct. 25 (11 a.m.) 10,800 cfs (12.68 ft); Nov. 3 (12 p.m.) 3,840 cfs (8.38 ft); Nov. 10 (1 a.m.) 3,020 cfs (7.61 ft); June 1 (1:30 a.m.) 2,790 cfs (7.38 ft); June 19 (2 p.m.) 2,530 cfs (7.09 ft); July 12 (10 p.m.) 2,830 cfs (7.42 ft); July 20 (11 p.m.) 2,660 cfs (7.23 ft); Sept. 26 (1:30 p.m.) 2,710 cfs (7.29 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Stetattle Creek near Newhalem, Wash.

Location.--Lat 48°43'30", long 121°09'20", in NE¼ sec. 6, T. 37 N., R. 13 E., on left bank three-quarters of a mile upstream from mouth, 5½ miles northeast of Newhalem, and 18½ miles northeast of Marblemount.

Drainage area.--21.4 sq mi.

Records available.--December 1913 to November 1915 (fragmentary), September 1933 to September 1956. Published as "near Marblemount" 1913-15.

Gage.--Water-stage recorder. Altitude of gage is 925 ft (by barometer). Dec. 19, 1913, to Nov. 14, 1915, staff gage at site half a mile downstream at different datum. Sept. 7 to Oct. 20, 1933, staff gage and Oct. 21, 1933, to Aug. 26, 1937, water-stage recorder, at site 150 ft upstream at datum 1.69 ft higher.

Average discharge.--23 years (1933-56), 176 cfs (127,400 acre-ft per year).

Extremes.--Maximum discharge during year, 4,330 cfs Oct. 25 (gage height, 7.34 ft); minimum daily, 18 cfs Mar. 15, 16.
1913-15, 1933-56: Maximum discharge, 8,580 cfs Nov. 26, 1949 (gage height, 9.70 ft), from rating curve extended above 1,600 cfs on basis of slope-area determination of peak flow; minimum, 9 cfs Nov. 9-11, 1936.

Remarks.--Records good except those above 700 cfs, which are fair, and those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1935(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-24		Oct. 25 to Sept. 30			
1.6	49	0.4	17	3.0	530
2.0	100	.9	56	4.0	960
2.5	205	1.4	116	5.5	2,100
3.0	370	2.0	231		
4.1	970				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	224	75	50	b32	34	79	192	685	361	173	110
2	64	189	73	40	*30	40	73	189	551	388	177	94
3	77	1,500	73	43	b30	50	70	177	585	358	151	82
4	200	1,510	70	*45	30	40	82	171	488	344	136	74
5	124	506	65	52	29	35	82	189	350	498	145	70
6	94	288	65	60	28	30	72	217	284	526	163	66
7	104	221	65	56	28	28	67	295	*329	406	173	68
8	156	259	60	51	27	27	65	448	392	460	179	75
9	309	389	55	47	26	25	74	520	744	523	179	86
10	232	454	55	44	26	22	109	562	712	530	179	98
11	149	216	265	42	30	21	152	400	506	526	181	96
12	219	145	431	42	35	21	192	278	353	577	183	100
13	215	119	214	52	31	20	254	229	332	554	194	105
14	411	98	154	48	28	19	346	229	394	454	203	99
15	310	85	125	50	25	18	364	318	433	397	226	96
16	232	75	102	59	25	18	268	515	356	373	198	88
17	241	70	88	65	29	19	219	649	335	376	165	85
18	211	65	76	75	26	23	231	770	434	*427	160	87
19	*190	75	65	58	25	25	298	744	577	470	169	88
20	139	70	75	62	24	28	424	716	442	478	181	111
21	115	65	144	56	23	30	534	585	370	470	185	125
22	98	60	294	66	22	45	537	573	356	394	175	85
23	86	76	229	79	22	89	442	621	321	364	167	118
24	907	72	158	70	22	101	347	585	292	373	165	306
25	2,060	94	131	59	22	94	326	537	268	338	213	556
26	613	102	118	52	21	97	338	544	354	292	165	712
27	409	77	102	47	21	82	298	457	548	252	147	280
28	415	76	87	43	24	77	*247	457	454	207	*125	238
29	447	*75	77	b40	*29	79	212	535	358	185	152	494
30	432	75	65	b37	------	*88	200	649	315	183	118	514
31	301	------	60	b34	------	87	------	757	------	179	110	------
Total	9,614	7,340	3,716	1,634	770	1,412	7,002	14,108	12,918	12,263	5,237	5,206
Mean	310	245	120	52.7	26.6	45.5	233	455	431	396	169	174
Cfsm	14.5	11.4	5.61	2.46	1.24	2.13	10.9	21.3	20.1	18.5	7.90	8.13
In.	16.71	12.76	6.46	2.84	1.34	2.45	12.17	24.52	22.45	21.31	9.10	9.05
Ac-ft	19,070	14,560	7,370	3,240	1,530	2,800	13,890	27,980	25,620	24,320	10,390	10,330

Calendar year 1955: Max 2,060 Min 26 Mean 196 Cfsm 9.16 In. 124.07 Ac-ft 141,600
Water year 1955-56: Max 2,060 Min 18 Mean 222 Cfsm 10.4 In. 141.16 Ac-ft 161,100

Peak discharge (base, 1,000 cfs).--Oct. 25 (1:15 a.m.) 4,330 cfs (7.34 ft); Nov. 3 (11:30 p.m.) 2,300 cfs (5.70 ft); Sept. 25 (11:30 p.m.) 1,150 cfs (4.35 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 15-22, Dec. 4-10, Dec. 19, 20, Dec. 30 to Jan. 3, Feb. 4-28, Mar. 1-22, Sept. 4-7; discharge estimated on basis of records for stations on nearby streams. Computed from daily staff-gage readings Jan 4-28, Feb. 2.

Skagit River at Newhalem, Wash.

Location.--Lat 48°40'20", long 121°14'45", in SE¼ sec. 21, T. 37 N., R. 12 E., on right bank a quarter of a mile upstream from Newhalem Creek, half a mile downstream from city of Seattle powerplant at Newhalem, 11 miles upstream from Bacon Creek, and 13 miles northeast of Marblemount.

Drainage area.--1,160 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--October 1908 to May 1914 and October 1920 to September 1956 in reports of Geological Survey. October 1908 to September 1953 (monthly discharge only), in State Water-Supply Bulletin 6. Published as "near Marblemount" 1908-14, 1920-31.

Gage.--Water-stage recorder. Datum of gage is 401.5 ft above mean sea level (river-profile survey). Prior to May 24, 1914, staff gages at sites half a mile upstream at datum 91 ft higher. Nov. 15, 1920, to June 4, 1923, staff gage at site about 500 ft upstream at same datum.

Average discharge.--48 years (1908-56), 4,401 cfs (3,186,000 acre-ft per year), adjusted for storage in Diablo Reservoir since October 1929 and Ross Reservoir since March 1940.

Extremes.--Maximum discharge during year, 17,500 cfs Oct. 25 (gage height, 88.14 ft); minimum, 756 cfs Feb. 20 (gage height, 80.20 ft); minimum daily, 1,100 cfs Sept. 3. 1908-14, 1920-56: Maximum discharge, 63,500 cfs Nov. 29, 1909 (gage height, 22.0 ft, from floodmark, site and datum then in use); minimum, 54 cfs Nov. 1, 1943 (gage height, 78.15 ft); minimum daily, 136 cfs Aug. 24, 1930.

Remarks.--Records excellent. Water is diverted 3 miles above station and is returned to river at Seattle powerplant just above station. Flow regulated for power at Gorge Dam since August 1924 and by Diablo and Ross Reservoirs (see p. 143, 157), having a combined capacity of 1,279,000 acre-ft.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 512: 1909-14. WSP 1012: 1929. WSP 1316: 1914(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

80.6	1,040
81.5	1,820
83.0	3,610
85.0	7,410
87.5	15,000

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,250	10,100	4,890	3,090	5,370	5,390	3,570	6,620	11,500	6,200	4,320	1,860
2	2,730	8,260	4,620	3,480	5,570	5,260	4,990	5,490	12,200	7,430	4,430	1,590
3	4,210	11,000	4,210	4,780	4,910	5,130	5,200	5,710	11,600	7,270	4,200	1,100
4	4,420	11,300	3,690	4,880	3,800	4,110	5,210	5,460	11,900	6,020	3,840	3,940
5	4,680	12,100	5,050	5,180	3,890	5,120	5,220	4,920	10,900	7,170	2,720	4,190
6	4,310	12,500	5,100	4,930	4,640	5,060	5,280	4,310	11,900	7,970	3,910	2,970
7	4,400	13,000	5,090	4,030	4,630	5,010	3,420	5,690	10,900	7,800	4,090	3,370
8	1,800	12,700	4,680	3,820	4,650	4,600	3,430	5,730	*9,950	8,230	3,950	3,150
9	1,880	13,700	4,600	4,580	4,760	5,040	4,740	6,040	10,900	10,900	3,930	2,940
10	4,430	12,200	3,740	4,750	4,510	4,330	4,960	6,130	8,540	6,260	4,060	4,230
11	4,650	13,000	4,280	4,590	4,080	3,920	4,720	6,430	10,600	5,180	3,810	4,100
12	4,850	12,100	5,100	4,530	3,700	4,900	4,700	6,530	9,940	5,100	3,690	4,070
13	4,390	4,670	5,110	4,510	4,480	5,400	4,940	6,600	9,440	5,400	4,650	4,140
14	4,990	6,310	5,190	4,540	4,840	4,970	4,700	6,640	8,210	9,700	4,240	4,370
15	4,220	5,680	5,030	3,320	5,480	5,050	4,520	6,080	9,280	11,400	5,680	3,600
16	3,300	5,540	5,080	4,800	5,530	4,900	5,010	7,000	9,160	9,150	6,910	2,550
17	4,670	5,340	4,200	5,000	5,500	1,340	5,560	7,560	7,780	7,950	3,850	4,290
18	4,660	5,760	3,740	4,620	4,320	1,180	5,830	8,000	9,430	8,360	3,680	4,170
19	4,740	4,520	5,080	4,690	4,040	4,300	5,760	8,020	10,200	9,800	3,670	4,090
20	4,650	4,350	5,010	4,700	5,240	5,230	5,850	8,260	10,100	11,400	4,840	4,360
21	4,680	4,830	4,950	4,190	5,540	5,360	6,000	8,230	9,480	11,900	4,640	4,400
22	3,810	4,880	5,270	2,920	4,160	4,530	5,980	8,720	8,800	10,300	4,160	3,480
23	3,370	5,190	5,070	4,720	4,740	5,510	5,950	9,490	8,010	7,510	4,340	2,930
24	5,750	4,020	3,800	5,200	5,310	4,310	5,870	9,320	8,030	7,330	4,250	4,520
25	13,400	4,150	3,140	4,910	5,010	3,330	5,890	7,030	8,910	7,260	3,740	4,860
26	9,750	4,170	2,440	4,690	4,450	4,730	5,950	8,700	7,700	7,370	3,690	6,370
27	10,800	3,590	4,760	4,990	4,500	4,780	7,170	8,140	8,630	6,110	4,540	5,930
28	10,700	4,970	4,560	4,620	5,110	4,650	7,590	9,150	7,710	5,230	*4,370	5,220
29	9,930	*5,220	4,680	3,960	5,260	5,100	6,480	9,040	7,330	4,730	4,210	4,650
30	9,690	4,950	4,720	*5,060	-------	5,060	7,340	8,090	6,850	5,200	3,730	3,580
31	9,700	-------	4,500	5,280	-------	*4,730	-------	10,800	-------	4,890	3,830	-------
Total	172,810	230,100	141,380	139,360	138,020	142,330	161,610	224,130	285,860	236,520	129,950	115,020
Mean	5,575	7,670	4,561	4,495	4,759	4,591	5,387	7,230	9,529	7,630	4,192	3,834
Ac-ft	342,800	456,400	280,400	276,400	273,800	282,300	320,500	444,600	567,000	469,100	257,800	228,100
(†)	-30,040	-65,880	-121,500	-181,100	-213,000	-202,700	+39,820	+436,200	+272,500	+123,900	-5,710	-45,770

Adjusted for change in reservoir contents

Mean	5,087	6,563	2,584	1,550	1,057	1,259	6,055	14,320	14,110	9,644	4,100	3,064
Cfsm	4.39	5.66	2.23	1.34	0.911	1.12	5.22	12.3	12.2	8.31	3.53	2.64
In.	5.06	6.31	2.57	1.54	0.98	1.29	5.82	14.24	13.57	9.59	4.07	2.95
Ac-ft	312,800	390,500	158,900	95,300	60,800	79,600	360,300	880,800	839,500	593,000	252,100	182,300

Observed

Calendar year 1955: Max 17,900 Min 1,190 Mean 5,000 Ac-ft 3,620,000
Water year 1955-56: Max 13,700 Min 1,100 Mean 5,784 Ac-ft 4,199,000

Adjusted

Calendar year 1955: Mean 4,972 Cfsm 4.29 In. 58.18 Ac-ft 3,600,000
Water year 1955-56: Mean 5,794 Cfsm 4.99 In. 67.99 Ac-ft 4,206,000

* Discharge measurement made on this day.
† Change in contents in Ross and Diablo Reservoirs, in acre-ft.

Skagit River above Alma Creek, near Marblemount, Wash.

Location.--Lat 48°36'25", long 121°21'35", in NE¼ sec. 15, T. 36 N., R. 11 E., on right bank three-quarters of a mile upstream from Alma Creek and 7 miles north of Marblemount.

Drainage area.--1,260 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--October 1950 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 358.8 ft above mean sea level (from river-profile survey).

Average discharge.--6 years, 5,792 cfs (4,193,000 acre-ft per year).

Extremes.--Maximum discharge during year, 29,400 cfs Oct. 25 (gage height, 14.64 ft); minimum, 1,230 cfs Mar. 17, Sept. 3 (gage height, 4.80 ft); minimum daily, 1,360 cfs Mar. 18.
1950-56: Maximum discharge, that of Oct. 25, 1955; minimum, that of Mar. 17, Sept. 3, 1956; minimum daily, that of Mar. 18, 1956.

Remarks.--Records good except those for period of no gage-height record, which are fair. All diversions returned to river above gage. Flow partly regulated by powerplants on upper Skagit River, and by Ross Reservoir (see p. 143) and Diablo Reservoir (see p. 157).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

4.9	1,340	8.0	6,940
5.4	1,950	9.0	9,530
6.0	2,830	11.0	15,500
7.0	4,690	13.0	22,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	11,600	5,600	3,610	5,760	5,700	4,140	7,560	14,600	7,560	4,980	2,250
2	2,950	10,100	5,270	3,840	5,940	5,530	5,250	6,490	14,800	9,000	5,050	1,940
3	4,300	17,800	4,600	*5,050	5,160	5,490	5,610	6,450	14,500	8,820	4,760	1,500
4	5,050	20,000	4,270	5,290	4,250	4,310	5,640	6,170	14,700	7,370	4,260	3,870
5	5,240	16,100	5,380	5,590	4,110	5,400	5,650	5,700	12,700	9,050	3,200	4,650
6	4,860	14,900	5,530	5,330	4,750	5,300	5,740	5,020	13,600	10,100	4,380	3,060
7	4,840	15,200	5,460	4,540	4,920	5,290	3,840	6,750	*12,600	9,530	4,580	3,700
8	2,720	14,700	5,080	4,260	4,860	4,870	3,860	7,180	11,900	10,000	4,500	3,500
9	3,000	16,000	4,900	4,870	4,980	5,290	5,010	7,780	14,600	13,300	4,450	3,130
10	5,290	15,700	4,200	5,100	4,790	4,490	5,490	8,110	12,000	8,820	4,640	4,480
11	5,460	15,200	5,410	4,920	4,410	4,100	5,440	7,880	13,300	7,120	4,360	4,490
12	5,670	14,100	7,260	4,900	3,920	5,060	5,630	7,710	11,900	7,190	4,240	4,480
13	5,270	7,670	6,150	4,990	4,630	5,610	5,950	7,530	11,100	7,310	5,280	4,380
14	6,050	6,590	6,070	4,970	5,050	5,130	5,970	7,600	9,860	11,100	4,880	4,620
15	5,530	6,210	5,730	3,780	5,610	5,210	5,900	7,150	11,300	13,500	6,250	4,460
16	4,070	6,360	5,680	5,210	5,680	5,090	6,100	8,670	11,100	11,100	7,950	a3,000
17	5,500	6,010	4,860	5,470	5,660	1,820	6,510	10,000	9,200	*9,600	4,430	a4,600
18	*5,230	6,130	4,240	5,210	4,580	1,360	6,740	11,400	11,300	9,990	4,210	a4,700
19	5,350	5,340	5,520	5,200	4,070	4,220	6,880	11,300	13,000	12,000	4,220	a4,600
20	5,150	4,950	5,540	5,150	5,330	5,450	7,240	11,500	12,500	13,300	5,460	a4,700
21	5,030	4,920	5,760	4,720	5,690	5,570	8,100	10,600	11,400	14,500	5,180	a5,000
22	4,170	5,460	6,480	3,440	4,350	5,050	8,120	11,100	10,500	12,200	4,710	a4,100
23	3,730	5,360	6,110	5,200	4,880	5,840	7,760	12,300	9,550	9,250	4,830	a3,300
24	8,030	4,740	4,630	5,760	5,480	4,890	7,420	11,900	9,180	8,590	4,730	a4,100
25	22,800	4,650	4,020	5,340	5,230	3,910	7,300	9,100	10,200	8,450	4,350	a5,000
26	13,200	4,700	3,020	5,120	*4,630	5,150	7,420	10,800	9,120	8,490	4,290	a7,200
27	12,900	4,330	5,420	5,430	4,640	5,290	8,360	10,200	10,700	6,930	4,950	a6,800
28	13,000	5,420	5,190	5,020	5,280	5,050	*8,790	10,900	9,550	6,040	*4,770	a6,100
29	12,400	*5,650	5,190	4,370	5,490	5,540	7,490	11,300	8,860	5,420	4,690	a5,400
30	12,300	5,560	5,290	5,380	------	5,540	8,210	10,900	8,120	5,810	4,140	a4,000
31	11,100	------	5,000	5,660	------	*5,270	------	14,000	------	5,450	4,210	------
Total	213,770	281,450	162,860	152,720	144,130	151,820	191,560	281,050	347,740	286,890	146,930	127,110
Mean	6,896	9,382	5,254	4,926	4,970	4,897	6,385	9,066	11,590	9,255	4,740	4,237
Ac-ft	424,000	558,200	323,000	302,900	285,900	301,100	380,000	557,500	689,700	569,000	291,400	252,100

Calendar year 1955: Max 22,800 Min 1,530 Mean 5,887 Ac-ft 4,262,000
Water year 1955-56: Max 22,800 Min 1,360 Mean 6,798 Ac-ft 4,935,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Marblemount.

Cascade River at Marblemount, Wash.

Location.--Lat 48°31'25", long 121°23'00", in N½ sec. 16, T. 35 N., R. 11 E., on right bank 1½ miles downstream from Boulder Creek, 2 miles east of Marblemount, and 2½ miles upstream from mouth.

Drainage area.--171 sq mi.

Records available.--September 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 380.3 ft above mean sea level (river-profile survey). Prior to Oct. 10, 1928, staff gage at same site at datum 0.76 ft higher.

Average discharge.--28 years, 1,005 cfs (727,600 acre-ft per year).

Extremes.--Maximum discharge during year, 10,800 cfs Oct. 25 (gage height, 9.31 ft); minimum, 208 cfs Mar. 16-18 (gage height, 1.55 ft).
1928-56: Maximum discharge, 17,800 cfs Nov. 27, 1949 (gage height, 11.47 ft), from rating curve extended above 5,000 cfs by logarithmic plotting; minimum, 118 cfs Nov. 30, 1952; minimum gage height, 1.11 ft Feb. 8, 1937.

Remarks.--Records excellent except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 832: 1936. WSP 1286: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.5	195
2.5	495
3.5	980
4.5	1,730
6.0	3,530
8.2	7,880

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	381	1,250	780	500	315	258	439	1,030	3,840	1,850	968	700
2	372	1,130	710	490	*306	285	422	956	2,960	2,010	914	651
3	363	5,580	650	*467	303	309	404	896	3,250	2,040	805	579
4	564	5,940	600	539	294	279	422	872	*3,080	1,850	745	531
5	567	3,020	570	539	288	270	411	890	2,220	2,220	775	492
6	464	2,060	580	547	282	265	387	992	1,860	2,250	825	481
7	474	1,630	600	519	276	252	378	1,270	1,820	1,910	860	507
8	664	1,620	560	484	273	255	378	1,810	1,790	2,300	890	519
9	1,100	2,660	530	456	265	250	404	2,130	2,780	2,750	914	535
10	968	4,270	520	432	262	242	531	2,380	3,280	2,760	914	603
11	710	2,060	1,200	425	270	230	790	1,880	2,760	2,730	938	660
12	730	1,440	2,500	428	294	225	968	1,460	2,030	3,020	974	567
13	755	1,300	1,800	499	279	220	1,170	1,220	1,860	2,930	1,040	547
14	930	1,100	1,300	481	268	218	1,440	1,150	2,010	2,460	1,100	547
15	1,070	1,000	1,100	478	252	210	1,480	1,340	2,510	2,040	1,280	535
16	815	920	920	503	230	208	1,220	1,980	2,220	1,940	1,150	499
17	815	870	800	503	248	208	1,040	2,970	1,990	*1,930	932	495
18	*760	820	740	527	250	210	1,020	4,020	2,300	2,120	896	519
19	700	870	700	519	242	238	1,260	4,310	3,530	2,440	938	539
20	611	760	800	481	238	258	1,770	4,080	2,730	2,560	986	595
21	543	700	1,100	464	230	273	2,380	3,200	2,160	2,450	1,020	730
22	492	640	1,800	488	225	339	2,490	3,100	2,070	2,110	992	547
23	453	600	1,400	531	220	432	2,100	3,420	1,990	1,880	950	484
24	1,640	800	1,150	488	218	467	1,780	3,020	1,730	1,880	884	862
25	7,800	1,000	1,000	446	218	478	1,620	2,470	1,570	1,780	992	1,380
26	2,970	890	860	414	218	519	1,610	2,710	1,740	1,590	980	2,260
27	1,830	820	780	394	*218	467	1,500	2,340	2,460	1,450	872	1,340
28	1,670	*780	680	381	222	432	1,310	2,140	2,500	1,260	*755	1,030
29	2,160	800	620	360	238	428	*1,180	2,700	2,090	1,130	820	1,380
30	2,320	800	580	336	------	464	1,080	3,620	1,750	1,070	710	1,710
31	1,580	-----	540	324	------	*467	-----	4,260	------	1,020	656	------
Total	37,271	48,130	28,470	14,443	7,442	9,656	33,384	70,616	70,880	63,730	28,475	22,824
Mean	1,202	1,604	918	466	257	311	1,113	2,278	2,363	2,056	919	761
Cfsm	7.03	9.38	5.37	2.73	1.50	1.82	6.51	13.3	13.8	12.0	5.37	4.45
In.	8.11	10.47	6.19	3.14	1.62	2.10	7.26	15.36	15.42	13.86	6.19	4.96
Ac-ft	73,930	95,460	56,470	28,650	14,760	19,150	66,220	140,100	140,600	126,400	56,480	45,270

Calendar year 1955: Max 7,800 Min 222 Mean 1,126 Cfsm 6.58 In. 89.37 Ac-ft 814,900
Water year 1955-56: Max 7,800 Min 208 Mean 1,189 Cfsm 6.95 In. 94.68 Ac-ft 863,500

Peak discharge (base, 3,600 cfs).--Oct. 25 (2:30 p.m.) 10,800 cfs (9.31 ft); Nov. 3 (2 p.m.) 7,400 cfs (8.00 ft); Nov. 10 (1 a.m.) 6,960 cfs (7.81 ft); May 19 (2 a.m.) 4,630 cfs (6.66 ft); May 31 (12:30 a.m.) 4,590 cfs (6.64 ft); June 19 (2:15 p.m.) 4,030 cfs (6.32 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 13-27, Nov. 29 to Jan. 2; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Sauk River above Whitechuck River, near Darrington, Wash.

Location.--Lat 48°10'00", long 121°27'45", in NW¼ sec. 24, T. 31 N., R. 10 E., on right bank half a mile upstream from Whitechuck River and 9½ miles southeast of Darrington.

Drainage area.--152 sq mi.

Records available.--August to November 1910 (fragmentary gage heights only), October 1917 to September 1922, August 1928 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 930 ft (from river-profile map). Prior to Nov. 18, 1910, staff gage three-eighths of a mile downstream at different datum.

Average discharge.--33 years (1917-22, 1928-56), 1,126 cfs (815,200 acre-ft per year).

Extremes.--Maximum discharge during year, 14,400 cfs Nov. 4 (gage height, 9.86 ft); minimum, 220 cfs Mar. 11, 15-17 (gage height, 2.30 ft).
1917-22, 1928-56: Maximum discharge, 30,200 cfs Nov. 27, 1949 (gage height, 14.90 ft, in gage well), from rating curve extended above 15,000 cfs; minimum, 115 cfs Nov. 15, 16, 30, Dec. 1, 1936.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 752: 1932. WSP 1286: 1918(M), 1920(M), 1921, 1922(M), 1932(M), 1934(M), 1946-47(M), 1949.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.5	240	5.0	2,500	2.3	220	5.0	2,680
2.7	315	6.0	4,290	2.6	349	6.0	4,340
3.0	480	7.0	6,560	3.0	570	7.0	6,560
4.0	1,260	9.0	11,900	3.5	940	9.0	11,900
				4.0	1,410		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	268	1,670	1,250	622	350	448	628	1,390	4,800	2,170	940	448
2	261	1,490	994	583	349	522	564	1,350	3,830	2,480	860	421
3	264	*8,440	836	635	335	522	522	1,270	4,010	2,570	804	389
4	*657	*11,700	742	924	321	415	583	1,250	3,900	2,320	720	354
5	891	5,000	677	949	316	349	558	1,270	3,130	2,610	720	326
6	678	3,120	684	908	307	302	499	1,290	2,670	2,830	780	307
7	573	2,390	691	788	298	316	482	1,640	2,710	2,410	804	307
8	1,240	2,210	628	677	289	311	482	2,200	2,600	2,710	812	316
9	2,420	2,620	602	609	280	289	504	2,640	3,740	3,260	828	316
10	1,730	4,520	583	*556	276	263	622	2,940	3,920	3,350	836	359
11	1,180	2,720	3,040	540	316	240	868	2,530	3,520	3,160	812	686
12	1,210	1,950	4,390	546	379	243	*1,090	2,060	2,740	3,340	820	528
13	1,180	1,600	2,090	656	330	232	1,370	1,740	2,480	3,340	852	448
14	1,190	1,360	1,500	616	302	224	1,700	1,600	2,580	2,860	868	404
15	1,220	1,200	1,230	628	259	*220	1,810	1,730	2,860	2,320	940	379
16	995	1,060	1,070	844	268	220	1,550	2,340	2,680	2,260	*844	354
17	939	932	932	852	298	228	1,310	3,290	2,570	2,290	712	340
18	899	958	820	780	263	298	1,250	4,500	2,820	2,470	670	340
19	805	1,030	780	735	255	311	1,520	5,240	3,690	2,710	712	349
20	715	860	1,280	642	247	335	2,080	5,300	3,190	2,830	735	394
21	636	780	1,880	596	243	399	2,840	4,280	2,610	2,640	742	576
22	566	705	3,340	684	236	616	3,120	*3,970	2,480	2,260	728	464
23	512	670	2,330	828	236	1,080	2,710	4,280	2,460	2,030	712	379
24	1,770	876	1,600	691	232	1,120	2,290	4,010	2,180	2,040	677	725
25	10,200	1,620	1,330	583	236	958	2,060	3,430	1,960	1,870	691	*1,390
26	4,990	1,320	1,170	516	228	949	2,050	3,480	2,000	1,630	691	2,230
27	2,840	1,120	1,030	464	226	765	2,000	3,130	2,670	1,430	609	1,480
28	*2,920	1,340	876	448	289	656	1,770	2,780	2,920	1,240	534	1,060
29	*3,540	1,210	780	421	330	677	1,630	3,120	2,570	1,120	516	1,400
30	3,110	1,180	720	384	------	735	1,490	4,100	2,140	1,130	487	1,690
31	2,040	------	663	354	------	720	------	4,970	------	1,020	459	------
Total	52,439	67,651	40,538	20,061	8,296	14,963	41,952	89,120	88,430	72,700	22,915	19,159
Mean	1,692	2,255	1,308	647	286	483	1,398	2,875	2,948	2,345	739	639
Cfsm	11.1	14.8	8.61	4.26	1.88	3.18	9.20	18.9	19.4	15.4	4.86	4.20
In.	12.83	16.55	9.92	4.91	2.03	3.66	10.26	21.81	21.64	17.79	5.61	4.69
Ac-ft	104,000	134,200	80,410	39,790	16,450	29,680	83,210	176,800	175,400	144,200	45,450	38,000

Calendar year 1955: Max 11,700 Min 228 Mean 1,312 Cfsm 8.63 In. 117.21 Ac-ft 950,100
Water year 1955-56: Max 11,700 Min 220 Mean 1,471 Cfsm 9.68 In. 131.70 Ac-ft 1,068,000

Peak discharge (base, 4,000 cfs).--Oct. 25 (11:30 a.m.) 13,900 cfs (9.67 ft); Oct. 29 (4 p.m.) 4,760 cfs (6.22 ft); Nov. 4 (10:30 a.m.) 14,400 cfs (9.86 ft); Nov. 10 (2:30 a.m.) 6,440 cfs (6.95 ft); Dec. 11 (10:30 p.m.) 8,020 cfs (7.58 ft); May 20 (3 a.m.) 5,620 cfs (6.60 ft); June 1 (1 to 2 a.m.) 5,300 cfs (6.46 ft); June 10 (7 to 11 p.m.) 4,020 cfs (5.83 ft).
* Discharge measurement made on this day.

Sauk River near Sauk, Wash.

Location.--Lat 48°25'15", long 121°34'00", in NW¼ sec. 19, T. 34 N., R. 10 E., on left bank 5 miles upstream from mouth, 5 miles southeast of Sauk, and 8 miles downstream from Suiattle River.

Drainage area.--714 sq mi.

Records available.--August to October 1910 (fragmentary), March 1911 to August 1912, July 1928 to September 1956. Published as "near Suiattle Crossing, near Sauk" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 266 ft above mean sea level (river-profile survey). Prior to Aug. 4, 1912, staff gages at several sites from 1 mile downstream to 5 miles upstream from present site at various datums.

Average discharge.--28 years (1928-56), 4,256 cfs (3,081,000 acre-ft per year).

Extremes.--Maximum discharge during year, 40,600 cfs Oct. 25 (gage height, 12.23 ft); minimum, 1,210 cfs Oct. 3; minimum gage height, 3.09 ft Mar. 15, 16.
1910-12, 1928-56: Maximum discharge, 82,400 cfs Nov. 27, 1949 (gage height, 16.93 ft); minimum, 572 cfs Dec. 5, 1929, but may have been less during period of ice effect Jan. 10-27, 1930.

Remarks.--Records excellent except those for periods of doubtful or no gage-height record, which are fair. No regulation. Probably some small diversions for domestic use.

Revisions (water years).--WSP 1286: 1929, 1937, 1939.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-24)

2.9	1,140	6.0	7,600
3.4	1,760	8.0	15,100
4.0	2,700	10.0	26,000
5.0	4,820	12.0	39,000

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,300	a6,500	5,560	2,910	1,940	2,100	2,850	4,620	16,100	7,270	3,670	2,260
2	1,260	a6,000	4,550	2,780	1,920	2,500	2,670	4,400	12,700	8,130	3,420	2,190
3	1,220	26,300	3,940	2,910	1,890	2,560	2,450	4,170	12,700	8,880	3,240	1,990
4	2,240	33,600	3,500	4,120	1,820	2,230	*2,530	4,120	13,100	7,820	2,960	1,800
5	3,440	15,000	3,240	4,520	1,790	1,940	2,530	4,190	10,400	8,780	2,910	1,720
6	2,420	9,800	3,220	4,350	1,750	1,760	2,320	4,520	9,050	9,630	3,070	1,650
7	2,190	7,820	3,300	3,890	1,700	1,770	2,270	5,200	8,880	8,010	3,130	1,650
8	3,650	7,540	3,090	3,300	1,630	1,760	2,240	*6,740	8,010	8,910	*3,160	1,750
9	7,420	8,550	3,030	3,010	1,610	1,650	2,310	8,070	10,600	10,800	3,240	1,730
10	6,030	16,100	2,910	*2,780	1,590	1,570	2,700	9,120	12,000	11,200	3,240	1,890
11	4,150	9,360	7,440	2,720	1,690	1,480	3,570	7,910	12,000	10,400	3,260	2,370
12	3,960	a6,900	14,200	2,720	2,020	1,470	4,280	6,360	9,220	11,300	3,260	2,390
13	*3,780	a5,600	7,420	3,090	1,820	1,420	5,120	5,410	8,200	11,600	3,400	2,000
14	3,830	a4,800	5,590	2,980	*1,690	1,380	6,110	5,040	8,490	10,000	3,480	1,890
15	4,170	a4,200	4,720	3,070	1,580	1,360	6,510	5,360	9,390	8,260	3,890	1,830
16	3,420	a3,400	4,220	4,400	1,500	1,370	5,640	7,210	8,880	7,880	3,760	1,760
17	3,200	a3,000	3,720	4,430	1,590	1,380	4,820	10,200	8,170	7,820	3,180	1,750
18	3,110	a3,500	3,300	3,920	1,540	1,490	4,570	14,100	8,680	8,330	2,920	1,750
19	2,870	a4,500	3,240	3,740	1,490	1,700	5,360	16,400	12,100	9,320	3,010	1,790
20	2,630	*3,800	4,580	3,440	1,450	1,770	6,940	16,800	11,300	9,660	3,140	1,860
21	2,390	3,440	6,560	3,200	1,440	2,040	9,220	13,600	9,080	9,250	3,220	2,510
22	2,180	3,240	11,500	3,650	1,410	3,000	10,200	12,600	8,550	8,130	3,240	2,190
23	2,020	3,070	8,960	4,470	1,390	4,550	8,720	13,500	*8,390	7,120	3,110	1,770
24	4,650	3,740	6,340	3,690	1,390	4,500	7,390	12,900	7,480	7,000	2,980	2,450
25	28,800	6,080	5,410	3,140	1,410	3,960	6,740	10,700	6,770	6,590	3,010	3,890
26	15,100	5,510	5,000	2,840	1,380	4,010	6,680	11,000	6,650	5,860	3,130	6,620
27	9,460	4,770	4,450	2,560	1,390	3,240	6,450	9,880	6,550	5,330	2,890	5,540
28	8,880	5,810	3,920	2,420	1,580	2,910	5,750	8,680	9,840	4,720	2,600	*3,890
29	11,600	5,510	3,500	2,310	1,790	2,960	5,300	9,660	8,680	4,190	2,530	4,000
30	13,000	5,120	3,240	2,130	------	3,180	4,870	12,500	7,300	3,980	2,470	5,970
31	a8,600	-----	3,050	1,980	-----	3,160	-----	15,700	------	3,850	2,270	------
Total	172,970	232,560	156,700	101,470	47,190	72,170	149,110	280,660	291,260	250,120	96,790	76,850
Mean	5,580	7,752	5,055	3,273	1,627	2,328	4,970	9,054	9,709	8,068	3,122	2,562
Cfsm	7.82	10.9	7.08	4.58	2.28	3.26	6.96	12.7	13.6	11.3	4.37	3.59
In.	9.01	12.11	8.16	5.29	2.46	3.76	7.77	14.62	15.17	13.03	5.04	4.00
Ac-ft	343,100	461,300	310,800	201,300	93,600	143,100	295,800	556,700	577,700	496,100	192,000	152,400

Calendar year 1955: Max 33,600 Min 1,220 Mean 5,077 Cfsm 7.11 In. 96.52 Ac-ft 3,676,000
Water year 1955-56: Max 33,600 Min 1,220 Mean 5,267 Cfsm 7.38 In. 100.42 Ac-ft 3,824,000

Peak discharge (base, 13,000 cfs).--Oct 25 (3:30 p.m.) 40,600 cfs (12.23 ft); Oct. 28 (11 p.m.) 16,400 cfs (8.30 ft); Nov. 4 (10:30 a.m.) 40,300 cfs (12.19 ft); Nov. 10 (5 a.m.) 22,200 cfs (9.37 ft); Dec. 12 (1:30 a.m.) 20,700 cfs (9.11 ft); Dec. 22 (7 p.m.) 13,600 cfs (7.65 ft); May 20 (8 a.m.) 17,600 cfs (8.54 ft); June 1 (5 a.m.) 17,400 cfs (8.48 ft); June 11 (1 a.m.) 13,800 cfs (7.70 ft); June 19 (6 p.m.) 13,300 cfs (7.59 ft); July 13 (2 a.m.) 13,000 cfs (7.51 ft).

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of weather records and records for nearby stations.

Baker River below Anderson Creek, near Concrete, Wash.

Location.--Lat 48°39'50", long 121°40'25", in SE¼ sec. 30, T. 37 N., R. 9 E., on right bank 100 ft downstream from Anderson Creek and 9½ miles northeast of Concrete.

Drainage area.--211 sq mi.

Records available.--September 1910 to October 1925, August 1928 to November 1931, January 1955 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 521 ft above mean sea level (river-profile survey). Prior to Oct. 22, 1910, staff gage at site an eighth of a mile upstream at different datum. Oct. 22, 1910, to Sept. 23, 1915, staff gages and Sept. 24, 1915, to Oct. 3, 1925, Aug. 30, 1928, to Nov. 11, 1931, water-stage recorder at site 250 ft downstream at different datum.

Average discharge.--19 years (1910-25, 1928-31, 1955-56), 2,014 cfs (1,458,000 acre-ft per year).

Extremes.--Maximum discharge during year, 20,100 cfs Nov. 3 (gage height, 14.37 ft), from rating curve extended above 7,700 cfs; minimum, 432 cfs Mar. 15 (gage height, 3.26 ft).
1910-25, 1928-31, 1955-56: Maximum discharge, 36,800 cfs Dec. 29, 1917 (gage height, 13.7 ft, site and datum then in use), from rating curve extended above 8,100 cfs; minimum recorded, 219 cfs Dec. 15, 16, 1919.
Flood in about 1815 reached a stage about 2 ft higher than that of Dec. 29, 1917. Flood in 1897 reached a stage about equal to that of Dec. 29, 1917. Flood in November 1909 reached a stage 1.6 ft higher than that of Dec. 29, 1917 (discharge, 46,200 cfs).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1346: 1912-13(M), 1924, drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11, June 9 to Sept. 30				Dec. 12 to June 8			
4.0	800	9.0	6,200	3.2	412	6.0	2,100
5.0	1,400	11.0	10,300	3.8	643	7.0	3,150
7.0	3,290	13.0	15,600	4.4	945	8.0	4,450
				5.0	1,300	9.0	6,200

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	878	2,160	1,780	857	652	613	1,110	1,670	5,410	3,200	1,820	1,260
2	894	2,020	1,480	830	648	674	1,020	1,610	4,400	3,490	1,810	1,070
3	938	13,200	1,270	868	643	726	940	1,500	4,620	3,810	1,620	927
4	1,690	15,500	1,140	1,130	617	656	1,060	1,480	5,130	3,290	1,420	850
5	1,900	6,560	1,060	1,140	600	596	1,020	1,810	3,680	4,800	1,550	805
6	1,480	3,870	1,030	1,320	592	*555	918	2,050	3,040	5,800	1,760	810
7	1,470	2,830	1,030	1,180	596	555	950	2,430	3,450	4,370	1,870	850
8	2,190	2,900	1,020	1,030	575	536	901	3,200	5,780	4,290	*1,940	872
9	3,810	4,610	1,020	918	559	512	906	*3,630	10,100	4,840	1,970	883
10	3,190	5,780	998	835	563	486	1,080	3,940	8,460	4,850	1,960	1,000
11	2,290	3,370	2,770	912	596	460	1,470	3,320	6,430	4,720	2,000	1,060
12	2,480	2,290	4,770	945	674	457	*1,830	2,470	4,430	5,210	2,140	949
13	2,440	1,810	2,750	*1,060	609	453	2,200	1,950	3,650	5,160	2,240	949
14	*2,840	1,490	1,880	1,000	588	443	2,680	1,810	3,850	4,430	2,370	982
15	2,970	1,320	1,500	1,130	536	439	2,880	2,100	4,260	3,750	2,520	982
16	2,260	1,220	1,260	1,710	512	443	2,430	3,040	3,820	3,630	2,340	927
17	2,030	1,130	1,120	1,530	516	446	1,990	4,260	3,400	3,630	1,970	910
18	1,870	1,120	1,000	1,500	512	464	1,910	5,570	3,550	3,930	1,900	938
19	1,760	*1,100	989	1,400	509	493	2,300	5,950	5,290	4,400	2,000	938
20	1,480	1,030	1,380	1,340	493	536	3,150	5,680	5,110	4,680	2,130	1,100
21	1,260	960	1,920	1,230	486	626	4,240	4,570	3,930	4,540	2,180	1,410
22	1,130	900	3,000	1,400	482	890	4,520	4,290	*3,530	4,220	2,100	976
23	1,020	866	2,570	1,530	478	1,230	3,750	4,690	3,240	3,850	2,030	932
24	3,540	998	1,890	1,320	478	1,200	3,160	4,280	3,000	3,730	1,970	2,640
25	14,400	1,480	1,610	1,150	482	1,140	2,860	3,680	2,720	3,580	2,080	3,960
26	*7,350	1,300	1,450	1,020	468	1,140	2,780	3,880	3,070	3,200	2,060	5,560
27	4,290	1,330	1,300	906	471	1,020	2,540	3,520	4,200	2,850	1,800	3,860
28	3,890	1,640	1,140	840	547	1,010	2,160	3,380	4,360	2,450	1,410	*2,810
29	4,260	1,920	1,020	785	559	1,260	1,900	3,820	3,670	2,190	1,560	3,620
30	3,860	1,840	945	726	------	1,360	1,750	5,060	3,170	2,100	1,340	5,030
31	2,820	-----	890	684	-----	1,230	-----	5,860	------	2,000	1,220	------
Total	88,680	88,544	48,982	34,226	16,041	22,649	62,405	106,500	132,750	120,990	59,080	49,860
Mean	2,861	2,951	1,580	1,104	553	731	2,080	3,435	4,425	3,903	1,906	1,662
Cfsm	13.6	14.0	7.49	5.23	2.62	3.46	9.86	16.3	21.0	18.5	9.03	7.88
In.	15.63	15.61	8.63	6.03	2.83	3.99	11.00	18.77	23.40	21.33	10.41	8.79
Ac-ft	175,900	175,600	97,150	67,890	31,820	44,920	123,800	211,200	263,300	240,000	117,200	98,900

Calendar year 1955: Max 15,500 Min 450 Mean 2,109 Cfsm 10.0 In. 135.67 Ac-ft 1,527,000
Water year 1955-56: Max 15,500 Min 439 Mean 2,270 Cfsm 10.8 In. 146.42 Ac-ft 1,648,000

Peak discharge (base, 7,200 cfs).--Oct. 25 (1 p.m.) 18,400 cfs (13.86 ft); Nov. 3 (7:30 p.m.) 20,100 cfs (14.37 ft); Nov. 9 (7 p.m.) 8,200 cfs (10.04 ft); June 8 (11:30 p.m.) 11,300 cfs (11.41 ft).
* Discharge measurement made on this day.

Baker River at Concrete, Wash.

Location.--Lat 48°32'35", long 121°44'35", on line between secs. 10 and 11, T. 35 N., R. 8 E., on left bank 800 ft downstream from Baker River powerplant, a quarter of a mile northeast of Concrete, and three-quarters of a mile upstream from mouth.
Drainage area.--297 sq mi.
Records available.--September 1910 to March 1915, September 1943 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 172.6 ft above mean sea level (from river-profile survey). Prior to Mar. 5, 1915, staff gage at site half a mile downstream at different datum.
Average discharge.--17 years (1910-14, 1943-56), 2,600 cfs (1,882,000 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 26,900 cfs Nov. 4 (gage height, 15.07 ft); minimum, 68 cfs Mar. 20-22, 26-28, Apr. 3 (gage height, 1.04 ft); minimum daily, 446 cfs Sept. 16.
1910-15, 1943-56: Maximum discharge, 35,200 cfs Nov. 27, 1949 (gage height, 20.32 ft, from high-water mark), from rating curve extended above 16,000 cfs on basis of computation of peak flow over dam and through the powerplant by the Puget Sound Power and Light Co.; minimum, 21 cfs Feb. 7, 1949 (gage height, 0.20 ft); minimum daily, 73 cfs Mar. 13, 1955.
Remarks.--Records good. No diversions which are not returned to river above gage. Flow regulated by Baker River powerplant and Lake Shannon (see p. 157).
Revisions (water years).--WSP 1286: 1911-13(M), 1944(M), 1945-46, drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3		Nov. 4 to Sept. 30	
3.3	690	2.5	425
4.0	1,140	3.0	665
5.0	2,050	4.0	1,360
6.0	3,360	5.0	2,380
8.0	7,130	6.0	3,700
10.0	12,500	8.0	7,600
13.0	21,300	10.0	12,600
		13.0	21,300

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,940	2,770	1,790	1,980	2,540	1,780	1,440	1,750	7,340	3,960	2,230	2,120
2	1,740	3,040	1,780	1,730	2,470	1,690	1,520	1,740	5,970	4,790	2,150	1,870
3	1,920	20,400	1,730	1,990	2,350	1,730	1,500	1,710	5,980	4,810	2,160	1,810
4	1,900	20,200	1,960	1,880	1,980	1,650	1,500	1,700	7,120	4,340	2,060	1,960
5	1,920	8,080	2,160	1,820	2,060	1,670	1,660	1,660	5,760	6,200	1,910	2,270
6	1,920	4,960	2,010	1,740	2,210	1,900	1,590	1,120	3,460	7,320	2,110	2,140
7	1,910	3,600	1,980	1,740	2,250	1,910	1,580	1,690	4,320	5,460	2,050	2,070
8	1,750	4,060	1,990	2,220	2,500	1,600	1,430	1,620	7,310	5,580	*2,100	1,990
9	1,670	6,910	1,960	2,160	2,480	1,700	1,510	*2,980	13,600	6,160	2,200	2,030
10	1,890	6,860	1,940	*1,890	2,430	1,830	1,500	4,090	10,600	6,320	2,190	2,020
11	984	4,330	2,580	1,950	2,370	1,700	1,500	6,220	7,640	6,250	2,090	2,100
12	730	3,120	6,040	*1,950	1,970	1,650	1,520	3,730	5,580	6,010	1,990	2,130
13	1,060	2,620	3,680	2,080	1,890	1,500	1,530	3,010	4,320	6,080	2,120	2,120
14	1,190	2,620	2,570	1,950	2,110	1,480	1,400	2,600	4,880	5,800	2,630	2,050
15	1,290	2,610	2,560	1,710	*2,430	1,470	1,440	2,600	4,980	5,140	2,690	1,710
16	1,760	2,580	2,480	1,740	2,430	1,440	1,560	3,190	4,670	3,750	2,700	446
17	2,040	2,470	2,360	1,770	2,420	1,570	1,730	6,180	4,720	4,150	2,150	1,720
18	2,150	2,260	2,540	1,760	2,160	1,600	2,210	8,060	4,580	4,600	2,120	1,770
19	2,200	2,020	2,520	1,770	2,200	1,430	1,630	8,010	7,200	5,610	2,330	1,780
20	2,280	1,900	2,490	1,780	1,920	1,420	1,540	7,960	7,080	5,860	2,290	1,680
21	2,330	1,870	2,150	1,690	2,020	1,410	1,320	5,890	4,300	5,420	2,490	1,770
22	2,060	2,080	2,650	1,580	1,920	1,430	1,050	6,520	*4,420	5,380	2,360	1,690
23	1,950	1,830	2,740	2,140	1,960	1,450	1,560	6,070	4,160	4,170	2,130	624
24	2,020	1,250	2,860	2,400	2,020	1,650	1,680	5,760	3,700	4,540	2,170	1,740
25	16,600	1,660	2,560	2,080	2,130	1,540	1,700	4,610	3,630	3,840	2,370	1,830
26	*8,800	1,780	2,260	1,950	2,080	1,450	1,700	5,540	3,910	3,680	2,220	2,660
27	5,340	1,690	2,140	1,970	1,820	1,470	1,700	4,740	5,590	3,360	2,350	2,740
28	5,130	2,070	1,990	2,030	1,850	1,520	1,580	4,550	5,540	2,890	2,150	*2,830
29	6,100	1,940	1,850	2,040	1,790	1,500	736	5,350	4,470	2,620	2,080	3,190
30	5,450	1,760	1,930	2,120	-------	1,600	1,740	6,480	4,280	2,540	2,120	6,050
31	3,410	-------	2,080	2,540	-------	1,560	-------	8,130	-------	2,430	1,440	-------
Total	93,434	125,340	74,330	60,150	62,760	49,300	46,056	135,260	171,110	149,060	68,150	62,910
Mean	3,014	4,178	2,398	1,940	2,164	1,590	1,535	4,363	5,704	4,808	2,198	2,097
Ac-ft	185,300	248,600	147,400	119,300	124,500	97,790	91,350	268,300	339,400	295,700	135,200	124,800
(†)	+37,110	-3,550	-520	-7,220	-77,090	-21,960	+84,020	+24,800	+1,210	-870	-2,100	+2,470

Adjusted for change in contents in Lake Shannon

Mean	3,617	4,117	2,389	1,823	824	1,233	2,948	4,767	5,724	4,794	2,165	2,139
Cfsm	12.2	13.9	8.04	6.14	2.77	4.15	9.93	16.1	19.3	16.1	7.29	7.20
In.	14.04	15.47	9.27	7.08	2.99	4.79	11.07	18.50	21.50	18.61	8.40	8.04
Ac-ft	222,400	245,000	146,900	112,100	47,410	75,830	175,400	293,100	340,600	294,800	133,100	127,300

Observed

Calendar year 1955: Max 20,400 Min 73 Mean 2,731 Ac-ft 1,977,000
Water year 1955-56: Max 20,400 Min 446 Mean 3,000 Ac-ft 2,178,000

Adjusted

Calendar year 1955: Mean 2,751 Cfsm 9.26 In. 125.75 Ac-ft 1,992,000
Water year 1955-56: Mean 3,050 Cfsm 10.3 In. 139.76 Ac-ft 2,214,000

* Discharge measurement made on this day.
† Change in contents in Lake Shannon, in acre-feet, furnished by Puget Sound Power & Light Co.

Skagit River near Concrete, Wash.

Location.--Lat 48°31'30", long 121°46'10", in NE¼ sec. 16, T. 35 N., R. 8 E., on right bank at dalles 1½ miles southwest of Concrete and 2½ miles downstream from Baker River.

Drainage area.--2,700 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--September 1924 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 130.0 ft above mean sea level, datum of 1929. Prior to Dec. 10, 1924, staff gage 200 ft upstream and Dec. 10, 1924, to Sept. 30, 1937, water-stage recorder at present site; both gages at datum 12.7 ft higher.

Average discharge.--32 years, 14,650 cfs (10,610,000 acre-ft per year).

Extremes.--Maximum discharge during year, 106,000 cfs Nov. 3 (gage height, 34.48 ft); minimum, 3,250 cfs Mar. 19 (gage height, 13.95 ft); minimum daily, 4,950 cfs Mar. 18.
1924-56: Maximum discharge, 154,000 cfs Nov. 27, 1949 (gage height, 40.8 ft); minimum, probably less than 2,160 cfs during period Oct. 1-24, 1925, when recorder was not operating and gates in Baker River Dam were first closed; minimum daily recorded, 2,610 cfs Nov. 14, 1936.
Maximum stage known, 69.3 ft, present datum, at site 200 ft upstream, from flood-marks (discharge, about 500,000 cfs); occurred about 1815. Records of other floods, at site 200 ft upstream, prior to establishment of station, are given in WSP 612.

Remarks.--Records excellent. Flow regulated by powerplants on Baker and upper Skagit Rivers, and by Ross Reservoir (see p. 143) and by Diablo Reservoir and Lake Shannon (see p. 157).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,000	24,800	16,700	11,100	11,300	10,300	11,100	17,400	44,800	23,500	13,900	8,760
2	7,220	23,100	15,000	9,980	11,300	10,900	10,400	15,700	39,200	26,100	13,300	7,530
3	7,680	76,800	13,100	11,300	10,400	11,400	11,200	15,200	38,600	28,100	12,900	6,350
4	10,400	94,100	12,700	13,700	9,100	9,860	11,300	14,700	42,100	24,800	11,200	7,330
5	12,800	52,600	12,600	14,900	8,720	9,580	*11,600	14,500	34,400	28,200	10,600	9,480
6	11,000	38,600	13,000	14,600	9,280	9,860	11,200	13,600	30,400	33,000	11,000	8,060
7	10,200	33,700	13,200	*13,400	9,600	9,780	9,500	16,800	30,700	28,400	12,000	8,060
8	10,800	32,000	12,500	12,100	9,620	9,380	8,880	*19,700	31,000	28,900	11,900	8,220
9	16,800	35,000	12,100	12,100	9,660	9,080	9,580	23,600	44,400	34,800	12,100	7,880
10	16,300	49,200	11,500	11,700	9,550	8,710	11,300	26,600	42,800	33,700	12,200	8,960
11	13,300	34,600	16,100	11,300	9,300	7,860	12,800	26,600	40,800	30,100	11,900	10,400
12	12,900	28,300	35,600	11,400	8,760	8,390	14,200	21,800	31,900	30,900	11,600	10,300
13	*12,800	22,500	22,100	12,200	8,870	9,070	15,700	19,500	28,300	31,300	13,000	9,770
14	13,700	17,200	18,200	11,900	*9,510	8,400	17,600	18,300	28,800	31,800	13,400	9,440
15	14,700	16,800	16,500	10,900	10,100	8,240	18,500	18,100	30,600	31,200	14,900	9,060
16	12,200	16,400	15,500	13,400	10,100	8,300	17,100	22,800	30,200	28,100	17,700	5,820
17	12,700	15,300	14,100	14,700	10,200	6,310	16,300	30,700	27,400	25,900	12,300	8,480
18	13,000	15,100	12,800	13,800	8,890	4,950	16,400	40,000	28,800	27,200	11,300	8,780
19	12,700	*14,900	13,400	13,500	8,320	6,020	17,100	44,000	38,000	30,900	11,600	9,000
20	12,100	13,400	15,000	13,000	8,980	9,290	20,000	45,200	37,600	32,200	13,100	8,990
21	11,500	12,800	18,500	12,200	9,480	9,460	24,200	37,100	30,100	34,200	13,200	11,000
22	10,300	13,000	25,300	11,700	8,360	10,600	25,800	36,600	*28,400	31,000	12,600	9,460
23	9,380	12,500	23,700	13,700	8,090	13,000	24,000	38,500	27,500	25,900	12,300	6,700
24	14,100	12,400	18,400	14,400	9,160	14,200	21,800	36,900	25,200	24,100	11,900	11,000
25	57,500	15,200	16,200	12,800	9,360	11,900	20,400	30,300	24,800	23,800	12,200	14,500
26	*47,600	15,600	14,000	11,800	8,280	12,800	20,300	33,100	23,900	22,300	11,900	24,100
27	33,800	14,100	14,700	11,700	8,150	12,300	20,300	31,000	29,900	19,600	12,200	19,800
28	32,800	16,400	14,000	11,000	9,140	11,500	19,800	28,700	31,400	18,200	11,500	15,900
29	36,200	16,700	13,200	10,400	9,720	11,900	17,400	31,600	27,900	15,800	11,100	*17,300
30	38,800	15,800	12,900	10,500	------	12,500	17,700	36,300	24,200	15,400	10,400	24,000
31	27,800	------	12,500	11,200	------	12,500	------	43,600	------	14,200	9,130	------
Total	561,080	798,900	495,100	382,380	271,300	308,340	483,460	848,500	974,100	833,600	380,330	324,430
Mean	18,100	26,630	15,970	12,330	9,355	9,946	16,120	27,370	32,470	26,890	12,270	10,810
Ac-ft	‡1,113	‡1,585	982,000	758,400	538,100	611,600	958,900	‡1,683	‡1,932	‡1,653	754,400	643,500

Calendar year 1955: Max 94,100 Min 5,600 Mean 16,900 Ac-ft 12,240,000
Water year 1955-56: Max 94,100 Min 4,950 Mean 18,200 Ac-ft 13,210,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Alder Creek near Hamilton, Wash.

Location.--Lat 48°31'40", long 121°57'00", in NE¼ sec. 18, T. 35 N., R. 7 E., on left bank at railroad trestle a quarter of a mile upstream from highway bridge, three-quarters of a mile upstream from mouth, and 2 miles east of Hamilton.

Drainage area.--10.7 sq mi.

Records available.--August 1943 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 125 ft (by barometer). Prior to Nov. 15, 1945, at site 80 ft upstream at datum 2.46 ft higher. Nov. 15, 1945, to Jan. 7, 1947, at present site at datum 2.56 ft higher. Jan. 8, 1947, to Aug. 24, 1951, at same site at datum 0.98 ft higher.

Average discharge.--13 years, 35.4 cfs (25,630 acre-ft per year).

Extremes.--Maximum discharge recorded during year, 363 cfs Nov. 3 (gage height, 4.11 ft); minimum, 4.3 cfs Sept. 16; minimum gage height, 2.15 ft Aug. 18, Sept. 16.
1943-56: Maximum discharge, 670 cfs Jan. 7, 1945 (gage height, 4.28 ft, site and datum then in use); minimum, that of Sept. 16, 1956; minimum gage height, 1.87 ft Oct. 19, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1945(M), 1947, drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 28 to Jan. 15, Aug. 1 to Sept. 30)

2.26	4.5
2.5	13
3.0	74
4.0	330

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	225	125	37	37	47	63	40	19	17	9.8	9.8
2	9.4	220	97	35	34	57	55	38	19	17	12.5	9
3	9.8	*325	76	40	34	66	49	35	19.5	17	12.5	6.9
4	13	205	63	64	33	52	*63	33	20	16	12.5	6.3
5	11	130	54	70	32	40	54	33	19.5	17.5	13	9
6	10.5	97	52	106	31	34	48	32	19.5	17	11.5	8.5
7	10.5	72	59	*83	31	35	48	32	19	17	11	7.2
8	12	76	55	68	28	33	43	31	19.5	15.5	11.5	5.8
9	17	99	55	*61	26	32	42	*31	19.5	15.5	*11	5.8
10	21	122	57	52	28	30	43	35	24	15.5	11	6
11	19.5	92	152	49	43	28	48	32	31	15.5	11	9.8
12	18	66	198	46	57	27	52	31	23	15.5	10.5	7.2
13	17.5	55	132	54	44	26	57	28	22	15	9.8	6.3
14	16	48	97	46	40	25	61	28	22	15	9.4	5.5
15	16	40	79	50	33	24	61	27	21	14.5	11	4.5
16	15.5	39	66	115	*31	23	55	25	20	14.5	10.5	4.8
17	15.5	35	57	120	30	26	49	25	19.5	14.5	9	7.2
18	*15.5	35	48	115	31	28	49	24	19.5	13.5	9	8.1
19	16	35	48	108	33	32	50	24	23	13.5	9.4	7.2
20	16	*35	55	97	34	33	54	23	22	13.5	10.5	8.5
21	16	33	63	86	34	40	57	22	21	13.5	9.8	12
22	16	31	102	86	35	55	57	22	*20	13	11	9.4
23	16	31	92	86	35	83	55	21	19	12.5	11	9.8
24	33	43	74	72	35	81	52	20	19	12.5	11	13.5
25	*79	76	72	64	35	76	49	20	18	12.5	16	12
26	76	83	64	59	35	74	44	19.5	19	12.5	12	16
27	74	79	63	52	36	66	44	19.5	18	11.5	11.5	13
28	88	86	52	48	38	63	43	19.5	17.5	10.5	11	17.5
29	170	113	44	44	42	76	39	19.5	17.5	8.1	12	*22
30	300	104	39	40	------	83	38	18	17	7.8	11	24
31	250	-----	37	38	-----	74	-----	18	------	9.0	11	------
Total	1,407.1	2,730	2,327	2,091	1,015	1,469	1,522	826.0	607.5	433.4	343.7	292.6
Mean	45.4	91.0	75.1	67.5	35.0	47.4	50.7	26.6	20.2	14.0	11.1	9.75
Cfsm	4.24	8.50	7.02	6.31	3.27	4.43	4.74	2.49	1.89	1.31	1.04	0.911
In.	4.89	9.49	8.09	7.27	3.53	5.11	5.29	2.87	2.11	1.51	1.19	1.02
Ac-ft	2,790	5,410	4,620	4,150	2,010	2,910	3,020	1,640	1,200	860	682	580

Calendar year 1955: Max 325 Min 9.4 Mean 48.4 Cfsm 4.52 In. 61.43 Ac-ft 35,060
Water year 1955-56: Max 325 Min 4.5 Mean 41.2 Cfsm 3.85 In. 52.37 Ac-ft 29,870

Peak discharge (base, 140 cfs).--About Oct. 30 (time and discharge unknown); Nov. 3 (10 a.m.) 363 cfs (4.11 ft); Nov. 9 (9:30 p.m.) 172 cfs (3.40 ft); Nov. 30 (11 p.m.) 145 cfs (3.29 ft); Dec. 11 (10:30 p.m.) 255 cfs (3.74 ft); Jan. 16 (2:30 a.m.) 165 cfs (3.43 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 26 to Nov. 3, Feb. 18, Feb. 20 to Mar. 5; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Day Creek near Lyman, Wash.

Location.--Lat 48°30'05", long 122°02'45", in NW¼ sec. 28, T. 35 N., R. 6 E., on left bank at highway bridge 1 mile upstream from mouth and 1¾ miles southeast of Lyman.

Drainage area.--36.3 sq mi.

Records available.--July 1943 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 90 ft (from topographic map).

Average discharge.--13 years, 269 cfs (194,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,750 cfs Nov. 3 (gage height, 8.27 ft), from rating curve extended above 3,000 cfs; minimum, 13.5 cfs Sept. 8, 9; minimum gage height, 0.41 ft Oct. 2.
1943-56: Maximum discharge, 5,570 cfs Dec. 28, 1949 (gage height, 8.35 ft), from rating curve extended above 3,000 cfs on basis of logarithmic plotting; minimum, 5.9 cfs Feb. 1, 1945.

Remarks.--Records good except those for periods of indefinite stage-discharge relation or no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1316: Drainage area, 1944(M).

Rating tables, water year 1955-56, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Jan. 6-15)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
0.3	28	2.0	530	0.8	10	3.0	580
.6	76	3.0	1,040	1.0	21	4.0	1,070
1.0	171	4.0	1,660	1.3	48	5.0	1,710
1.5	330	5.0	2,430	1.6	93	7.0	3,400
				2.0	190		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	348	530	250	99	276	306	266	210	120	27	18
2	36	1,220	450	240	95	306	*252	286	220	127	29	15.5
3	39	3,100	370	360	91	366	205	258	230	113	31	15
4	798	*1,340	300	500	86	241	398	272	262	103	27	15
5	467	*643	260	640	93	168	302	530	252	307	25	15
6	192	470	250	*770	88	131	220	410	316	252	24	14.5
7	324	440	270	470	86	131	294	*430	466	162	24	14.5
8	829	900	290	350	81	120	262	454	467	152	23	14.5
9	1,140	1,700	300	290	76	107	262	446	884	136	*21	14
10	*815	1,100	280	248	79	95	346	450	689	113	21	15.5
11	362	700	1,300	414	169	86	418	314	586	99	20	39
12	405	450	1,000	406	234	79	426	248	420	91	20	37
13	256	330	600	618	*144	76	458	230	300	83	18.5	25
14	183	230	480	394	113	70	494	262	280	73	18	21
15	149	180	400	587	93	72	450	342	269	62	20	19
16	118	170	310	1,290	93	76	362	438	238	58	21	17
17	103	160	260	548	88	84	314	414	217	57	20	16
18	88	150	200	535	78	107	334	380	220	54	18	15.5
19	84	160	240	486	74	154	426	360	402	52	17	15
20	74	150	400	499	74	182	535	310	354	48	15.5	61
21	65	140	1,000	450	81	366	602	270	248	45	15.5	72
22	62	130	1,300	634	78	643	548	280	217	41	15	48
23	55	*120	750	522	73	914	450	290	*184	37	15	33
24	699	350	600	358	76	558	402	260	165	37	15	268
25	2,140	920	450	258	86	450	414	240	154	36	55	536
26	1,070	430	460	196	79	382	406	240	179	32	35	438
27	854	470	390	162	84	276	334	230	184	31	25	220
28	875	700	320	141	220	290	280	220	149	29	21	438
29	1,730	1,000	270	134	241	553	283	250	131	27	24	*454
30	951	720	240	113	--	553	266	300	118	27	27	504
31	512	-----	230	101	-----	426	-----	342	-----	27	20	-----
Total	15,516	18,921	14,500	12,964	3,052	8,338	11,049	10,022	9,011	2,631	707.5	3,428.0
Mean	501	631	468	418	105	269	368	323	300	84.9	22.8	114
Cfsm	13.8	17.4	12.9	11.5	2.89	7.41	10.1	8.90	8.26	2.34	0.628	3.14
In.	15.90	19.38	14.86	13.28	3.13	8.54	11.32	10.27	9.23	2.70	0.72	3.51
Ac-ft	30,780	37,530	28,760	25,710	6,050	16,540	21,920	19,880	17,870	5,220	1,400	6,800

Calendar year 1955: Max 3,100 Min 18.5 Mean 328 Cfsm 9.04 In. 122.78 Ac-ft 237,700
Water year 1955-56: Max 3,100 Min 14 Mean 301 Cfsm 8.29 In. 112.84 Ac-ft 218,500

Peak discharge (base, 3,000 cfs).--Oct. 25 (5:30 p.m.) 3,570 cfs (6.35 ft); Oct. 29 (12 m.) 3,530 cfs (6.30 ft); Nov. 3 (7 a.m.) 4,750 cfs (8.27 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 6-21, Nov. 24, 26, 27, Dec. 3, 4, 10, 11, 16-18, Dec. 20 to Jan. 5, May 18-30, June 1-3, 12-14; indefinite stage-discharge relation Nov. 5, 22, 23, 25, Nov. 28 to Dec. 2, Dec. 5-9, Dec. 12-15, 19; discharge estimated on basis of records for stations on nearby streams.

Skagit River near Mount Vernon, Wash.

Location.--Lat 48°26'40", long 122°20'00", in SE¼ sec. 7, T. 34 N., R. 4 E., on drawrest of, and 150 ft downstream from, bridge on U. S. Highway 99 and 1 mile north of Mount Vernon.

Drainage area.--3,060 sq mi, approximately.

Records available.--October 1940 to September 1956. Monthly discharge only for October 1940, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929.

Average discharge.--16 years, 16,160 cfs (11,700,000 acre-ft per year).

Extremes.--Maximum discharge during year, 107,000 cfs Nov. 4 (elevation, 33.52 ft); minimum, 5,620 cfs Mar. 19 (elevation, 10.38 ft).
1940-56: Maximum discharge, 144,000 cfs Feb. 11, 1951 (elevation, 36.85 ft); minimum, 2,740 cfs Oct. 26, 1942 (elevation, 7.37 ft).
Maximum stage known, 37 ft in 1906, from Great Northern Railway high-water profile.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow regulated by powerplants on Baker and upper Skagit Rivers, and by Ross Reservoir (see p. 143) and by Diablo Reservoir and Lake Shannon (see following page). Small diversions for domestic and municipal use.

Rating tables, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 5-8)

Oct. 1-9		Oct. 10 to Sept. 30			
11.6	7,390	10.9	6,480	23.0	41,300
13.0	10,200	13.0	10,800	27.0	61,400
16.1	17,400	16.0	18,500	33.0	103,000
		19.0	27,000		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,670	28,800	20,200	13,600	12,400	11,500	13,500	18,800	49,300	23,800	14,200	9,600
2	7,880	25,700	18,200	11,800	12,200	12,200	11,800	17,500	43,800	24,600	13,300	8,300
3	7,450	52,400	16,100	12,500	11,900	13,300	12,600	16,500	40,200	27,600	13,100	7,390
4	9,780	98,700	14,800	16,100	10,800	12,400	12,800	15,800	44,600	26,300	12,100	6,970
5	13,600	86,300	13,800	18,400	10,100	10,900	13,100	16,200	39,400	25,200	11,200	9,400
6	12,100	50,800	14,500	18,700	10,000	11,200	*12,600	15,900	33,500	33,200	10,600	9,050
7	10,700	38,200	14,900	17,500	10,700	10,900	11,800	16,700	32,500	30,200	11,800	8,240
8	12,300	33,800	14,300	15,500	10,700	10,900	10,300	20,200	31,700	28,200	11,900	8,440
9	17,200	33,900	13,800	*14,200	10,600	10,000	10,100	23,500	43,800	32,600	12,100	8,420
10	*19,400	52,700	13,300	13,600	10,600	10,200	12,000	27,400	49,400	36,300	*12,100	8,240
11	16,900	44,900	16,600	13,600	10,700	9,240	13,600	29,700	47,200	31,000	12,100	9,900
12	14,400	33,600	39,400	13,800	10,700	8,780	15,200	25,200	37,800	30,000	11,800	10,500
13	14,200	27,600	29,500	14,700	9,970	9,650	16,700	*21,300	31,200	32,200	12,200	9,900
14	14,100	19,600	21,800	14,600	10,500	9,440	18,700	19,300	29,800	31,100	13,100	9,510
15	15,200	a17,500	18,700	13,900	a11,500	8,980	20,200	19,300	31,200	31,400	13,900	9,380
16	13,900	a16,500	17,400	17,000	a11,500	9,200	19,000	22,100	32,200	29,600	16,200	8,180
17	12,400	16,400	16,200	19,600	a11,500	8,630	17,800	29,600	29,300	26,000	14,000	6,900
18	13,600	15,800	14,800	17,500	10,300	6,690	17,500	39,500	28,400	26,100	11,800	8,890
19	13,100	16,200	14,200	17,500	9,930	6,510	17,800	46,400	34,500	28,500	11,300	8,980
20	12,800	14,800	16,900	16,900	8,980	9,650	20,400	48,100	42,600	31,900	12,100	9,020
21	12,200	13,800	21,200	15,500	10,300	10,400	25,100	42,700	*34,000	33,900	12,900	10,200
22	11,400	13,800	26,600	15,600	10,100	12,300	28,500	38,300	29,700	31,900	12,400	10,500
23	10,100	13,400	30,500	16,200	8,980	15,000	26,900	39,500	28,500	27,800	12,000	8,480
24	10,500	*13,800	23,100	17,400	*9,700	17,300	24,300	40,500	26,600	23,900	11,800	8,380
25	45,600	17,000	19,700	15,700	10,400	14,700	22,400	35,300	24,800	24,300	12,000	13,300
26	77,400	18,800	17,800	14,200	9,600	14,100	21,900	27,500	24,300	22,400	12,000	20,300
27	45,700	16,500	16,700	13,500	9,240	14,200	21,600	27,100	26,800	20,400	11,800	*22,600
28	38,300	18,200	16,700	13,100	9,790	13,200	21,500	29,500	31,900	18,500	11,500	17,100
29	38,200	20,000	15,400	12,500	10,700	14,100	19,800	31,500	29,300	16,400	10,900	17,100
30	48,800	19,100	14,600	11,500	-------	14,900	18,200	36,700	25,600	15,100	10,900	23,400
31	35,300	-------	14,300	12,400	-------	14,800	-------	43,300	-------	15,000	9,810	-------
Total	633,180	888,600	576,000	468,600	304,390	355,270	527,700	880,900	‡1,033.9	835,400	378,910	326,570
Mean	20,430	29,620	18,580	15,120	10,500	11,460	17,590	28,420	34,460	26,950	12,220	10,890
Ac-ft	‡1,256	‡1,763	‡1,142	929,500	603,700	704,700	‡1,047	‡1,747	‡2,051	‡1,657	751,600	647,700

Calendar year 1955: Max 98,700 Min 6,320 Mean 18,330 Ac-ft 13,270,000
Water year 1955-56: Max 98,700 Min 6,510 Mean 19,700 Ac-ft 14,300,000

Peak discharge (base, 55,000 cfs).--Oct. 26 (10:30 a.m.) 84,900 cfs (30.69 ft); Nov. 4 (10:30 p.m.) 107,000 cfs (33.52 ft); Nov. 10 (3 p.m.) 59,100 cfs (26.58 ft).
* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for station near Concrete.

Reservoirs in Skagit River basin, Wash.

Ross Reservoir.--See page 143.

Diablo Reservoir.--Lat 48°43'00", long 121°08'00", in SE¼ sec. 5, T. 37 N., R. 13 E. (unsurveyed), in Diablo Dam on Skagit River, 1 mile downstream from Thunder Creek and 6 miles northeast of Newhalem. Drainage area, 1,100 sq mi, approximately. Records available, October 1929 to September 1956. October 1929 to September 1938, monthly change in reservoir contents published with records for Skagit River at Newhalem. Gage, water-stage recorder. Datum of gage is at mean sea level, subject to adjustment to datum of 1929. Maximum contents during year, 90,300 acre-ft Oct. 25 (elevation, 1,206.17 ft); minimum, 83,310 acre-ft Mar. 16 (elevation, 1,198.33 ft). Maximum contents during period 1929-56, 90,600 acre-ft July 14, 1933 (elevation, 1,206.5 ft).

Reservoir is formed by concrete dam, completed in 1930; storage began in October 1929. Usable capacity, 76,220 acre-ft between elevations 1,040 ft (bottom of outlet pipes) and 1,205 ft (top of taintor gates). Dead storage, 13,000 acre-ft. Crest of spillway is at elevation 1,187 ft. Water is used by city of Seattle for power development at Diablo and Newhalem powerplants. Gage-height record collected in cooperation with city of Seattle. Figures given herein represent total contents.

Lake Shannon.--Lat 48°32'55", long 121°44'25", in SW¼ sec. 2, T. 35 N., R. 8 E., at Baker Dam on Baker River near left bank, half a mile north of Concrete and 1 mile upstream from mouth of Baker River. Drainage area, 297 sq mi. Records available, November 1925 to September 1956. Gage, water-stage recorder. Datum of gage is at mean sea level, subject to adjustment to datum of 1929. Maximum contents observed during year, 160,660 acre-ft Nov. 4 (elevation, 436.95 ft); minimum observed, 40,060 acre-ft Mar. 21 (elevation, 371.78 ft). Maximum contents observed during period 1925-56, that of Nov. 4, 1955.

Reservoir is formed by concrete dam, completed in June 1927. Capacity, 132,500 acre-ft between elevations 360 ft (lowest elevation for capacity operation) and 435 ft (spillway crest). Dead storage unknown. Water is used by Puget Sound Power & Light Co. for power development. Gage-height records furnished by Puget Sound Power & Light Co. Figures given herein represent contents above elevation 340 ft (center line of outlet tunnel).

Month-end elevation and contents, water year October 1955 to September 1956

Date	Diablo Reservoir			Lake Shannon		
	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	1,201.9	86,430	-	419.57	123,020	-
Oct. 31.....	1,202.3	86,790	+360	436.72	160,130	+37,110
Nov. 30.....	1,203.0	87,410	+620	435.15	156,580	-3,550
Dec. 31.....	1,200.6	85,290	-2,120	434.92	156,060	-520
Calendar year 1955.	-	-	-350	-	-	+15,160
Jan. 31.....	1,204.1	88,400	+3,110	431.69	148,840	-7,220
Feb. 29.....	1,203.0	87,410	-990	392.06	71,750	-77,090
Mar. 31.....	1,201.4	85,990	-1,420	378.33	49,790	-21,960
Apr. 30.....	1,200.6	85,290	-700	424.75	133,810	+84,020
May 31.....	1,202.5	86,960	+1,670	436.05	158,610	+24,800
June 30.....	1,202.2	86,700	-260	436.58	159,820	+1,210
July 31.....	1,201.4	85,990	-710	436.20	158,950	-870
Aug. 31.....	1,201.5	86,080	+90	435.27	156,850	-2,100
Sept.30.....	1,200.4	85,110	-970	436.36	159,320	+2,470
Water year 1955-56.	-	-	-1,320	-	-	+36,300

† Elevation at 12 p.m.

Note.--Midnight elevations for Diablo Reservoir for May 31 and June 30 furnished by city of Seattle from their powerplant logs.

Samish River near Burlington, Wash.

Location.--Lat 48°32'45", long 122°20'15", in SE¼ sec. 6, T. 35 N., R. 4 E., on left bank 500 ft downstream from bridge on U. S. Highway 99, half a mile downstream from Friday Creek, and 5 miles north of Burlington.

Drainage area.--87.8 sq mi.

Records available.--July 1943 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 45 ft (from topographic map). Prior to Dec. 1, 1948, at site 500 ft upstream at different datum. Dec. 1, 1948, to Jan. 7, 1949, staff gage 200 ft upstream at datum 3.14 ft higher than present datum.

Average discharge.--13 years, 242 cfs (175,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,000 cfs Nov. 3 (gage height, 7.40 ft); minimum, 24 cfs Aug. 9 (gage height, 2.18 ft).
1943-56: Maximum discharge, 5,830 cfs Dec. 28, 1949 (gage height, 11.89 ft); minimum recorded, 11 cfs July 10, 1951 (gage height, 2.01 ft).

Remarks.--Records good. State fish hatchery on Friday Creek diverts about 4 cfs, which is returned above station. There is evidence of slight regulation and there may be some pumping for irrigation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1944(M), 1945.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 29 to Apr. 9)

2.2	25	3.5	222
2.4	38	4.0	360
2.7	68	5.0	740
3.0	116	7.0	1,760

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	336	923	298	217	516	426	145	85	75	35	29
2	34	352	672	324	208	536	376	147	78	71	35	29
3	34	1,730	512	357	194	744	345	133	84	66	34	28
4	55	*1,370	423	644	189	616	466	127	107	71	32	28
5	81	742	376	672	196	489	437	149	85	85	31	27
6	55	512	366	*808	200	402	*360	151	82	102	30	27
7	62	402	386	708	220	395	373	*151	81	87	29	27
8	131	392	416	532	205	437	351	155	100	78	29	28
9	157	504	489	440	189	392	327	151	124	71	*29	29
10	139	734	473	379	217	342	333	176	246	67	29	30
11	105	504	1,090	357	365	298	354	145	247	64	29	37
12	92	a360	1,560	351	485	279	339	120	161	62	28	36
13	79	a300	876	451	a360	273	333	109	127	58	28	32
14	72	a250	612	392	a280	263	330	105	127	56	27	31
15	69	a220	500	389	a240	244	318	109	112	55	30	30
16	62	a200	437	616	*210	232	276	124	105	53	31	29
17	*58	*194	379	680	215	224	247	141	98	50	30	27
18	56	205	327	592	210	227	240	141	105	47	30	26
19	56	224	316	572	210	255	250	141	131	44	28	26
20	55	222	444	596	240	295	268	135	159	42	29	29
21	52	227	644	500	295	348	298	109	*135	40	28	37
22	51	255	852	512	298	426	273	111	116	40	27	34
23	50	287	752	540	298	548	237	109	105	37	27	31
24	75	399	584	473	293	552	210	98	100	36	27	58
25	400	656	489	416	316	444	198	92	96	34	44	52
26	426	648	473	370	318	485	187	93	96	34	38	94
27	313	572	536	324	307	448	180	87	95	33	33	*76
28	*406	572	419	301	287	487	155	81	88	32	31	72
29	587	676	360	273	327	792	143	84	82	32	30	120
30	556	825	324	242	------	640	141	90	79	39	32	200
31	412	------	295	222	------	520	------	92	------	38	30	------
Total	4,816	14,870	17,305	14,331	7,589	13,149	8,771	3,801	3,436	1,699	950	1,359
Mean	155	496	558	462	262	424	292	123	115	54.8	30.6	45.3
Cfsm	1.77	5.65	6.36	5.26	2.98	4.83	3.33	1.40	1.31	0.624	0.349	0.516
In.	2.04	6.30	7.33	6.07	3.21	5.57	3.72	1.61	1.46	0.72	0.40	0.58
Ac-ft	9,550	29,490	34,320	28,430	15,050	26,080	17,400	7,540	6,820	3,370	1,880	2,700

Calendar year 1955: Max 1,900 Min 30 Mean 282 Cfsm 3.21 In. 43.58 Ac-ft 204,000
Water year 1955-56: Max 1,730 Min 26 Mean 252 Cfsm 2.87 In. 39.01 Ac-ft 182,600

Peak discharge (base, 1,100 cfs).--Nov. 3 (12:30 p.m.) 2,000 cfs (7.40 ft); Nov. 30 (10:30 p.m.) 1,170 cfs (5.94 ft); Dec. 12 (1 a.m.) 1,910 cfs (7.25 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Whatcom Creek below hatchery, near Bellingham, Wash.

Location.--Lat 48°45'10", long 122°25'40", in NW¼SE¼ sec. 28, T. 38 N., R. 3 E., on right bank in Whatcom Falls Park, seven-eighths of a mile downstream from Lake Whatcom and 2 miles east of Bellingham.
Drainage area.--55.5 sq mi.
Records available.--October 1945 to November 1956 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 252.55 ft above mean sea level (city of Bellingham datum).
Average discharge.--11 years, 84.8 cfs (61,390 acre-ft per year).
Extremes.--1955-56: Maximum discharge during water year, 432 cfs Dec. 12 (gage height, 3.87 ft); minimum, 1.4 cfs Sept. 10 (gage height, 1.39 ft).
1956: Maximum discharge during period October to November, 260 cfs Oct. 31 (gage height, 3.25 ft); minimum, 0.8 cfs Oct. 11, 12; minimum gage height, 1.31 ft Oct. 11.
1945-56: Maximum discharge, 1,350 cfs about Dec. 29, 1949 (gage height, 6.0 ft, from recorded range in stage); minimum, 0.7 cfs Nov. 24, 1952; minimum gage height, that of Oct. 11, 1956.
Remarks.--Records fair. Flow completely regulated by Lake Whatcom (usable capacity, about 28,800 acre-ft under normal operating conditions). City of Bellingham diverts about 30 cfs from lake for municipal supply.
Cooperation.--Gage-height record collected in cooperation with city of Bellingham.
Revisions.--WSP 1286: Drainage area.

Rating table, Oct. 1 1955, to Nov. 6, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 2-16, 1955, Sept. 7 to Oct. 14, 1956)

1.5	1.5	2.5	82
1.6	3.0	3.0	192
1.8	9.6	4.0	485
2.0	22		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	6.2	423	342	12.5	38	357	14.5	8.6	8.2	6.2	7.3
2	5.9	6.6	414	333	13	37	273	14	8.6	8.2	6.6	6.9
3	5.9	7.7	420	*324	13	127	*136	14	9.1	8.6	6.6	6.9
4	5.9	6.2	423	324	12.5	222	18.5	13	8.2	8.6	6.2	6.9
5	6.2	6.6	420	333	12	194	18.5	13	8.2	8.2	6.2	5.9
6	5.9	6.2	411	345	12	291	87	13	8.2	8.2	5.6	4.5
7	5.9	5.6	405	351	12	324	159	13	8.2	7.7	*5.6	3.7
8	6.2	5.9	399	351	11.5	354	159	13	8.2	7.7	5.3	4.2
9	6.2	6.2	399	345	11.5	348	159	12.5	8.6	7.3	5.0	4.7
10	6.2	5.9	399	339	11.5	339	159	12.5	9.1	7.3	5.3	3.3
11	5.9	5.3	411	333	11.5	330	159	*12	9.1	6.9	5.0	4.5
12	6.2	4.7	426	322	12	231	159	12	9.1	6.9	4.7	5.0
13	5.9	4.5	426	322	11.5	22	159	12	8.6	7.3	5.3	5.3
14	5.9	5.0	426	313	11.5	22	159	11.5	8.2	7.3	7.1	5.3
15	5.9	5.9	417	308	9.1	24	159	11.5	8.2	6.9	6.9	5.3
16	5.9	5.9	408	308	11.5	22	125	9.1	8.2	6.9	5.3	5.9
17	5.6	*5.9	396	310	11.5	21	16.5	5.9	8.2	6.6	5.6	5.6
18	*5.6	5.9	387	260	11.5	19	16.5	8.6	8.2	6.6	5.6	5.3
19	5.3	5.6	375	182	11.5	20	15.5	9.1	8.2	6.6	6.5	5.6
20	5.3	5.9	372	184	*16	20	15.5	8.6	8.2	6.2	5.6	6.2
21	5.3	5.6	372	184	24	20	15.5	9.1	*8.2	6.2	5.0	5.0
22	5.3	5.6	381	184	28	20	15.5	9.6	8.2	6.6	5.3	5.9
23	5.6	5.9	393	189	40	232	15.5	9.6	8.6	6.2	5.6	5.6
24	7.3	7.3	393	157	41	363	15.5	9.6	8.6	5.9	5.6	5.3
25	8.6	6.9	393	14.5	41	366	14.5	9.6	8.2	6.6	6.2	*5.6
26	7.7	6.6	384	14.5	40	366	14.5	9.6	8.2	6.2	5.9	5.3
27	8.2	6.9	384	56	40	363	15	8.6	7.7	6.9	6.6	4.7
28	7.7	92	372	14.5	38	360	15	9.1	8.2	7.3	6.6	5.3
29	8.2	339	366	14.5	38	360	14.5	9.1	8.2	6.9	6.6	5.6
30	6.9	399	357	14	------	357	14.5	8.6	10	6.6	6.6	5.6
31	6.6	------	351	14	------	360	------	8.6	------	6.2	6.6	------
Total	195.4	992.5	12,303	7,085.0	569.1	6,172	2,660.0	333.9	253.3	219.8	182.8	162.2
Mean	6.30	33.1	397	229	19.6	199	88.7	10.8	8.44	7.09	5.90	5.41
Ac-ft	388	1,970	24,400	14,050	1,130	12,240	5,280	662	502	436	363	322

Calendar year 1955: Max 600 Min 4.5 Mean 92.4 Ac-ft 66,860
Water year 1955-56: Max 426 Min 3.3 Mean 85.1 Ac-ft 61,740

* Discharge measurement made on this day.

Discharge, in cubic feet per second, 1956

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1	4.5	252	9	2.9	-	17	7.3	-	25	9.1	-
2	4.5	249	10	2.8	-	18	6.6	-	26	9.1	-
3	3.7	249	11	2.9	-	19	8.6	-	27	8.6	-
4	2.7	246	12	3.5	-	20	12.5	-	28	7.7	-
5	2.7	246	13	4.2	-	21	11	-	29	65	-
6	3.5	*246	14	5.6	-	22	11	-	30	202	-
7	2.8	-	15	5.9	-	23	11.5	-	31	249	-
8	3.5	-	16	6.6	-	24	9.1	-			
Total										690.4	-
Mean										22.3	-
Runoff in acre-feet										1,370	-

* Discharge measurement made on this day.

Nooksack River above Cascade Creek, near Glacier, Wash.

Location.--Lat 48°54'20", long 121°50'30", in NW¼ sec. 1, T. 39 N., R. 7 E., on right bank a quarter of a mile upstream from Cascade Creek, half a mile downstream from Dead Horse Creek, 4½ miles east of Glacier, and 6 miles upstream from Glacier Creek.

Drainage area.--105 sq mi.

Records available.--October 1937 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,245 ft (from river-profile map). Supplementary water-stage recorder on left bank at same datum (principal gage prior to Oct. 1, 1953).

Average discharge.--19 years, 754 cfs (545,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,960 cfs Nov. 3 (gage height, 9.27 ft), from rating curve extended above 2,900 cfs on basis of contracted-opening determination at gage height 8.75 ft; minimum, 96 cfs Feb. 27, Mar. 13-16, 19, 20 (gage height, 2.19 ft).
1937-56: Maximum discharge, 10,300 cfs Nov. 26, 1949 (gage height, 10.50 ft, supplementary gage), from rating curve extended above 2,900 cfs on basis of contracted-opening determination at gage height 8.13 ft (supplementary gage); minimum, 73 cfs Feb. 16, 1949.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Some regulation at low flow by powerplant at Excelsior.

Revisions (water years).--WSP 1092: 1946.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 26 to Nov. 2)

Oct. 1 to Nov. 2				Nov. 3 to Sept. 30			
4.0	336	6.0	1,680	2.3	119	4.0	930
4.5	545	8.1	4,710	2.6	200	5.0	1,730
5.0	845			3.0	350	7.0	3,800
				3.5	600	9.0	6,550

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	362	580	422	300	200	154	292	636	2,900	1,500	825	630
2	389	626	395	288	195	165	262	618	2,380	1,690	825	540
3	420	5,260	368	281	190	185	247	588	2,690	1,780	762	505
4	644	4,040	342	292	190	165	251	588	2,680	1,570	714	470
5	517	1,960	333	292	194	156	240	672	1,860	2,320	748	445
6	437	1,330	329	422	185	148	220	755	1,530	2,310	*790	436
7	454	1,010	321	342	185	148	233	909	1,610	1,890	811	465
8	601	1,080	316	*300	176	146	226	1,240	2,940	1,970	839	465
9	852	1,840	304	288	173	143	240	1,470	6,100	2,360	853	470
10	617	2,100	300	269	170	136	304	1,590	4,580	2,410	818	525
11	494	1,170	665	329	179	129	*404	1,290	3,060	2,390	846	535
12	522	846	799	342	179	131	490	*986	*2,020	2,530	937	490
13	540	714	515	364	170	131	558	832	1,680	2,450	986	495
14	873	624	445	329	165	129	690	797	1,840	2,050	1,050	505
15	742	582	404	350	160	129	762	937	1,940	1,740	1,160	505
16	575	540	368	530	155	131	648	1,330	1,730	1,680	965	480
17	575	500	333	455	150	131	594	1,960	1,630	1,680	818	475
18	550	*475	304	455	150	131	576	2,570	1,820	1,860	832	490
19	*536	460	333	418	145	141	684	2,680	2,470	2,180	909	490
20	467	426	564	372	145	146	944	2,680	*2,090	2,290	958	546
21	433	408	648	342	145	170	1,400	2,270	1,680	2,320	944	510
22	408	382	818	346	*145	269	1,540	2,180	1,620	1,990	895	475
23	392	368	606	368	145	386	1,340	2,370	1,590	1,820	902	515
24	1,340	413	500	329	145	377	1,120	2,260	1,420	1,810	902	831
25	4,650	485	515	288	150	329	1,010	2,110	1,230	1,680	930	1,190
26	1,820	413	515	269	150	321	979	2,150	1,500	1,470	832	*2,030
27	*1,150	413	436	255	150	273	902	1,890	2,110	1,270	748	940
28	1,100	470	386	240	151	258	797	1,770	2,010	1,040	660	678
29	1,120	485	354	230	156	329	720	2,000	1,680	965	755	943
30	1,000	450	329	220	-----	359	660	2,560	1,440	930	642	1,060
31	736	-----	312	210	-----	329	-----	3,050	-----	895	612	-----
Total	25,316	30,450	13,579	10,115	4,793	6,275	19,333	49,738	65,830	56,840	26,268	19,134
Mean	817	1,015	438	326	165	202	644	1,604	2,194	1,834	847	638
Cfsm	7.78	9.67	4.17	3.10	1.57	1.92	6.13	15.3	20.9	17.5	8.07	6.08
In.	8.97	10.79	4.81	3.58	1.70	2.22	6.85	17.62	23.32	20.13	9.30	6.78
Ac-ft	50,210	60,400	26,930	20,060	9,510	12,450	38,350	98,650	130,600	112,700	52,100	37,950

Calendar year 1955: Max 5,260 Min 169 Mean 782 Cfsm 7.45 In. 101.10 Ac-ft 566,100
Water year 1955-56: Max 6,100 Min 129 Mean 895 Cfsm 8.52 In. 116.07 Ac-ft 649,900

Peak discharge (base, 3,600 cfs).--Oct. 25 (11 a.m.) 6,840 cfs (9.25 ft); Nov. 3 (11:30 a.m.) 6,960 cfs (9.27 ft); Nov. 9 (8:30 p.m.) 4,110 cfs (7.26 ft); June 9 (3 a.m.) 6,700 cfs (9.10 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 28 to Feb. 4, Feb. 15-27; discharge estimated on basis of records for nearby stations.

South Fork Nooksack River near Wickersham, Wash.

Location.--Lat 48°39'50", long 122°07'50", in lot 2, SW¼ sec. 26, T. 37 N., R. 5 E., on left bank three-quarters of a mile upstream from Skookum Creek and 4 miles east of Wickersham.

Drainage area.--103 sq mi.

Records available.--October 1933 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 385 ft (from river-profile map). Prior to July 9, 1934, staff gage at same site and datum.

Average discharge.--23 years, 731 cfs (529,200 acre-ft per year).

Extremes.--Maximum discharge during year, 19,300 cfs Nov. 3 (gage height, 13.40 ft), from rating curve extended above 11,000 cfs; minimum, 112 cfs Sept. 19, 20 (gage height, 2.13 ft).
1933-56: Maximum discharge, that of Nov. 3, 1955; minimum, 66 cfs Oct. 9, 1940, Sept. 11-13, 1944; minimum gage height, 1.95 ft Sept. 24, 1951.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 832: 1935-36.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 14, 15)

Oct. 1 to Nov. 2				Nov. 3 to June 8				June 8 to Sept. 30			
2.3	139	4.0	1,000	2.5	208	6.0	3,230	2.1	106	3.5	650
2.6	226	5.0	1,980	3.0	400	8.0	6,830	2.4	178	4.0	1,000
3.0	385	6.0	3,300	4.0	950	10.3	11,800	2.7	277	5.0	2,050
3.5	650	7.0	4,980	5.0	1,850			3.0	400	6.1	3,540

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	165	819	1,150	486	382	491	639	790	1,520	696	238	154
2	152	988	820	531	344	556	556	772	1,260	800	234	149
3	155	11,700	678	582	319	700	496	683	1,390	746	224	141
4	981	5,350	597	*1,010	304	501	661	700	1,340	634	211	134
5	686	1,840	556	852	300	387	587	971	971	1,270	205	129
6	354	1,210	577	1,120	281	344	472	1,060	918	1,280	205	125
7	441	957	608	766	277	348	511	1,220	1,570	835	*208	125
8	1,230	1,170	629	597	270	344	496	1,580	2,760	865	208	123
9	1,900	2,320	639	531	266	319	491	1,620	3,520	967	208	123
10	1,360	1,900	597	472	270	288	*650	*1,750	2,850	888	202	132
11	*758	1,030	2,800	661	344	273	885	1,200	2,280	800	199	156
12	928	754	2,640	732	501	270	937	885	1,460	800	196	156
13	668	650	1,110	937	365	263	1,030	766	1,250	746	199	137
14	628	620	840	722	323	248	1,280	814	1,440	645	199	125
15	628	560	710	754	277	245	1,280	1,070	1,260	541	208	123
16	475	520	613	1,540	273	259	971	1,550	1,040	541	208	121
17	405	447	501	1,120	281	277	892	2,090	967	561	181	116
18	362	442	501	1,040	263	319	911	2,430	1,080	572	175	114
19	362	486	521	957	238	378	1,220	2,390	1,870	597	175	112
20	324	472	1,070	937	228	409	1,650	2,130	*1,400	597	170	167
21	295	419	1,410	820	224	531	2,090	1,610	959	541	167	263
22	276	*391	2,020	992	231	790	1,870	1,740	903	491	164	193
23	250	419	1,250	1,010	*224	1,120	1,460	1,760	814	442	159	159
24	1,290	757	911	778	231	930	1,260	1,430	740	428	159	902
25	4,560	1,290	892	639	245	722	1,230	1,270	685	405	359	639
26	1,880	885	885	541	241	688	1,220	1,380	857	360	231	*1,020
27	1,370	852	754	476	234	556	1,100	1,150	1,010	336	190	587
28	1,690	1,120	634	447	285	674	859	1,110	895	300	173	824
29	2,590	1,410	566	396	344	1,160	784	1,390	759	281	211	1,290
30	1,820	1,240	531	360	------	1,010	754	1,820	645	270	202	1,840
31	1,080	-------	496	352	-----	826	-----	1,850	-------	263	164	------
Total	30,063	43,018	28,506	23,158	8,365	16,226	29,242	42,981	40,413	19,498	6,232	10,379
Mean	970	1,434	920	747	288	523	975	1,386	1,347	629	201	346
Cfsm	9.42	13.9	8.93	7.25	2.80	5.08	9.47	13.5	13.1	6.11	1.95	3.36
In.	10.85	15.53	10.29	8.36	3.02	5.86	10.56	15.52	14.59	7.04	2.25	3.75
Ac-ft	59,630	85,320	56,540	45,930	16,590	32,180	58,000	85,250	80,160	38,670	12,360	20,590

Calendar year 1955: Max 11,700 Min 123 Mean 806 Cfsm 7.83 In. 106.21 Ac-ft 583,400
Water year 1955-56: Max 11,700 Min 112 Mean 814 Cfsm 7.90 In. 107.62 Ac-ft 591,200

Peak discharge (base, 4,800 cfs).--Oct. 25 (11 a.m.) 5,610 cfs (7.32 ft); Nov. 3 (11 a.m.) 19,300 cfs (13.40 ft); Nov. 9 (8:30 p.m.) 6,490 cfs (7.82 ft); Dec. 11 (11 p.m.) 6,180 cfs (7.65 ft).
* Discharge measurement made on this day.

Skookum Creek near Wickersham, Wash.

Location.--Lat 48°40'20", long 122°08'25", in NE¼ sec. 27, T. 37 N., R. 5 E., on left bank 100 ft upstream from private road crossing, 500 ft upstream from mouth, and 3½ miles northeast of Wickersham.

Drainage area.--23.1 sq mi.

Records available.--July 1948 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from river-profile map).

Average discharge.--8 years, 138 cfs (99,910 acre-ft per year).

Extremes.--Maximum discharge during year, 1,290 cfs Nov. 3 (gage height, 5.90 ft), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 19 cfs Sept. 18-20 (gage height, 1.87 ft).

1948-56: Maximum discharge, 3,050 cfs Nov. 27 or Dec. 1, 1949 (gage height, 9.0 ft, from floodmark), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 17 cfs Feb. 9, 10, 1949, Sept. 23, 24, 1951; minimum gage height, 1.70 ft Oct. 19, 20, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1949. WSP 1286: 1950(M), drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-8				Oct. 9 to Sept. 30			
1.9	35	3.0	214	1.8	15	3.0	204
2.2	65	3.5	346	2.0	28	4.0	504
2.5	108			2.3	58	5.2	970
				2.6	109		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	120	226	101	60	96	128	148	268	103	51	30
2	39	237	158	90	58	110	109	148	231	113	51	29
3	41	956	132	109	58	158	96	130	274	105	48	28
4	185	450	113	*223	52	94	113	130	245	100	45	27
5	122	290	107	173	52	70	100	204	178	207	44	24
6	72	200	117	234	48	56	83	226	200	191	43	24
7	134	160	117	153	46	66	90	271	318	142	*45	23
8	283	210	137	120	44	58	83	320	517	142	43	23
9	257	440	128	100	42	50	85	314	562	148	44	24
10	160	310	124	87	46	44	*120	*326	535	137	42	27
11	*107	200	408	*168	72	41	183	223	350	128	42	38
12	122	130	370	163	68	38	204	160	245	135	43	30
13	92	110	201	223	52	36	237	142	215	126	42	24
14	90	97	153	146	43	36	282	156	231	109	42	23
15	85	90	132	193	41	37	259	226	191	92	46	22
16	64	82	117	371	43	41	188	323	166	90	46	21
17	54	77	103	228	50	46	151	411	160	88	41	20
18	48	82	83	239	40	56	166	445	178	90	37	20
19	45	88	104	209	37	73	248	427	279	98	35	19
20	41	83	329	199	36	73	335	380	*223	103	36	38
21	39	73	365	173	42	120	405	294	158	100	36	54
22	36	*67	408	186	40	199	362	329	151	98	35	29
23	34	83	253	186	*37	245	288	329	139	85	34	34
24	169	218	191	144	*38	178	245	271	117	80	34	144
25	549	268	173	120	47	144	234	253	109	80	127	92
26	350	158	176	100	41	142	228	256	139	73	50	*226
27	220	212	144	90	42	105	207	218	168	68	40	101
28	262	268	117	85	80	142	160	209	148	62	34	142
29	368	308	103	73	80	268	146	276	124	57	41	225
30	253	253	96	62	----	242	142	341	101	54	38	316
31	158	----	87	62	----	168	----	323	----	52	37	----
Total	4,521	6,320	5,472	4,810	1,435	3,232	5,677	8,209	6,920	3,256	1,370	1,877
Mean	146	211	177	155	49.5	104	189	265	231	105	44.2	62.6
Cfsm	6.32	9.13	7.66	6.71	2.14	4.50	8.18	11.5	10.0	4.55	1.91	2.71
In.	7.28	10.17	8.81	7.74	2.31	5.20	9.14	13.22	11.14	5.24	2.21	3.02
Ac-ft	8,970	12,540	10,850	9,540	2,850	6,410	11,260	16,280	13,730	6,460	2,720	3,720

Calendar year 1955: Max 956 Min 34 Mean 140 Cfsm 6.06 In. 82.48 Ac-ft 101,600
Water year 1955-56: Max 956 Min 19 Mean 145 Cfsm 6.28 In. 85.48 Ac-ft 105,300

Peak discharge (base, 850 cfs).--Oct. 25 (8:20 a.m.) 922 cfs (5.08 ft); Nov. 3 (3:30 a.m.) 1,290 cfs (5.90 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 26, 27, Nov. 4-21, Feb. 15-17; discharge estimated on basis of records for stations on nearby streams.

Nooksack River at Deming, Wash.

Location.--Lat 48°48'40", long 122°12'15", in lot 12, sec. 6, T. 38 N., R. 5 E., on left bank 800 ft downstream from South Fork and 1 mile southeast of Deming.
Drainage area.--580 sq mi.
Records available.--September 1910 to March 1911 (gage heights only), July 1935 to September 1956. Published as "near Deming" 1910-11.
Gage.--Water-stage recorder. Datum of gage is 203.6 ft above mean sea level, datum of 1929. Prior to Dec. 5, 1910, staff gage at site 1 1/8 miles downstream at different datum. Dec. 5, 1910, to Mar. 31, 1911, staff gage at site 5 miles downstream at different datum. July 20 to Sept. 19, 1935, staff gage at same site and datum.
Average discharge.--21 years (1935-56), 3,231 cfs (2,339,000 acre-ft per year).
Extremes.--Maximum discharge during year, 38,500 cfs Nov. 3 (gage height, 15.25 ft), from rating curve extended above 25,000 cfs; minimum, 980 cfs Oct. 4; minimum gage height, 4.33 ft Mar. 15.
1935-56: Maximum discharge, 43,200 cfs Feb. 10, 1951 (gage height, 15.69 ft), from rating curve extended above 25,000 cfs; minimum, 502 cfs Nov. 29, 1952 (gage height, 3.72 ft).
Revisions.--The maximum discharge for the water year 1937 has been revised to 20,900 cfs June 21, 1937 (gage height, 11.02 ft), superseding figure published in WSP 832 and 1316.
Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. No diversion. Slight regulation by powerplant at Excelsior.
Revisions (water years).--WSP 1286: 1951.

Rating tables, water year 1955-56, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
5.0	910	9.0	10,900	4.2	1,140	8.0	8,030
5.5	1,470	10.0	15,300	5.0	1,990	9.0	11,700
6.0	2,220	11.0	19,900	6.0	3,370	10.0	15,800
7.0	4,260	13.0	29,400	7.0	5,280	12.0	24,700
8.0	7,110						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	3,700	5,190	2,110	1,700	2,100	3,110	3,210	8,980	3,800	2,000	1,600
2	1,050	3,670	3,940	2,060	1,650	2,350	2,760	3,210	7,310	4,300	2,000	1,500
3	1,000	28,000	3,190	2,100	1,600	2,860	2,520	2,930	7,520	4,100	2,000	1,350
4	2,920	*22,700	2,730	3,050	1,550	2,360	3,000	2,870	8,230	3,900	2,100	1,300
5	3,100	*10,800	2,540	3,150	1,500	2,030	2,760	3,340	6,180	4,500	2,100	1,200
6	1,660	7,100	2,530	4,110	1,500	1,820	2,360	3,890	5,240	6,200	*2,100	1,200
7	1,690	5,460	2,700	3,470	1,500	1,800	2,460	4,320	6,400	5,000	2,120	1,200
8	3,660	5,530	2,690	2,680	1,400	1,770	2,360	5,650	9,120	4,900	2,160	1,250
9	5,850	7,580	3,050	2,330	1,400	1,660	2,360	6,100	17,800	5,800	2,190	1,250
10	4,520	10,600	2,760	2,100	1,400	1,520	2,790	6,560	16,600	5,600	2,130	1,250
11	*2,970	6,080	7,930	*2,090	1,500	1,420	*3,540	5,280	12,400	5,200	2,160	1,250
12	3,170	4,360	12,100	2,500	2,100	1,380	3,710	*4,110	*7,740	5,600	2,280	1,300
13	2,690	3,400	5,850	3,300	1,700	1,350	4,110	3,510	6,210	4,800	2,390	1,300
14	2,930	3,100	4,340	3,000	1,500	1,310	4,890	3,370	6,610	4,300	2,480	1,250
15	3,300	2,900	3,730	2,900	1,400	1,280	5,260	3,930	6,230	4,000	2,690	1,250
16	2,330	2,800	3,270	4,500	1,400	1,310	4,370	5,350	5,560	3,900	2,450	1,250
17	2,140	2,700	2,900	5,600	*1,400	1,380	3,730	7,310	5,170	3,800	2,070	1,200
18	2,030	*2,600	2,560	4,400	1,350	1,530	3,710	9,710	5,280	4,000	2,070	1,200
19	*1,970	2,610	2,700	4,300	1,350	1,780	4,490	10,700	7,680	4,500	2,210	1,250
20	1,700	2,580	4,380	3,800	1,300	1,830	5,920	10,300	7,970	5,000	2,300	1,300
21	1,480	2,370	5,800	3,500	1,300	2,130	7,870	8,000	6,000	4,800	2,270	1,350
22	1,420	2,220	8,100	4,000	*1,300	3,110	7,490	7,490	5,000	4,300	2,150	1,200
23	1,400	*2,240	5,820	4,300	1,300	4,300	6,340	8,130	4,500	4,000	2,130	1,200
24	3,490	3,360	4,260	3,400	1,300	4,030	5,400	7,400	4,000	3,800	2,130	2,790
25	15,600	5,730	3,850	2,900	1,380	3,310	4,890	6,500	3,800	3,500	2,590	2,860
26	9,280	4,550	3,850	2,500	1,400	3,270	4,770	6,810	4,100	3,200	2,170	5,120
27	*6,000	3,980	3,390	2,300	1,360	2,770	4,770	6,050	5,800	2,800	1,970	*3,940
28	*7,010	5,000	2,820	2,100	1,440	2,860	3,780	5,440	6,800	2,500	1,700	3,560
29	8,120	6,080	2,520	1,900	1,740	4,550	3,420	6,210	4,500	2,300	1,700	4,530
30	6,910	5,210	2,320	1,800	------	4,450	3,190	7,900	4,000	2,200	1,700	6,310
31	4,650	------	2,150	1,750	------	3,780	------	10,200	------	2,100	1,600	------
Total	117,140	179,010	125,980	94,000	42,720	73,400	121,830	185,780	212,730	128,700	66,110	58,510
Mean	3,779	5,967	4,063	3,032	1,473	2,368	4,061	5,993	7,091	4,152	2,133	1,950
Cfsm	6.52	10.3	7.01	5.23	2.54	4.08	7.00	10.3	12.2	7.16	3.68	3.36
In.	7.51	11.48	8.08	6.03	2.74	4.71	7.81	11.91	13.64	8.25	4.24	3.75
Ac-ft	232,300	355,100	249,800	186,400	84,730	145,600	241,600	368,500	421,900	255,300	131,100	116,100

Calendar year 1955: Max 28,000 Min 990 Mean 3,767 Cfsm 6.49 In. 88.15 Ac-ft 2,727,000
Water year 1955-56: Max 28,000 Min 1,000 Mean 3,841 Cfsm 6.62 In. 90.15 Ac-ft 2,788,000

Peak discharge (base, 13,000 cfs).--Oct. 25 (5 p.m.) 21,800 cfs (11.85 ft); Nov. 3 (2:30 p.m.) 38,500 cfs (15.25 ft); Nov. 9 (12 p.m.) 18,100 cfs (11.15 ft); Dec. 11 (11:30 p.m.) 20,400 cfs (11.37 ft); June 9 (8 a.m.) 19,400 cfs (10.93 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 13-18, Jan. 12 to Feb. 21, June 21, to Aug. 5, Aug. 28 to Sept. 23; discharge estimated on basis of recorded range in stage, 2 discharge measurements, and records for station at Lynden. Shifting-control method used Oct. 1-4, Oct. 16 to Nov. 12, Nov. 19 to Jan. 11, June 11-20, Aug. 6-27, Sept. 24-30.

Nooksack River near Lynden, Wash.

Location.--Lat 48°55'10", long 122°29'10", in NE¼NE¼ sec. 36, T. 40 N., R. 2 E., on right bank 150 ft downstream from bridge on State Highway 1B, 1½ miles upstream from Fishtrap Creek, 2 miles southwest of Lynden, and 12 miles upstream from mouth.

Drainage area.--636 sq mi.

Records available.--October 1944 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 24.4 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--12 years, 3,740 cfs (2,708,000 acre-ft per year).

Extremes.--Maximum discharge during year, 42,600 cfs Nov. 3 (gage height, 21.37 ft); minimum, 1,130 cfs Oct. 1, 2 (gage height, 5.95 ft).
1944-56: Maximum discharge, 46,200 cfs Feb. 10, 1951 (gage height, 21.76 ft); minimum, 595 cfs Nov. 30, 1952 (gage height, 5.01 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Slight regulation by powerplant at Excelsior.

Revisions (water years).--WSP 1286: 1945(P), 1947-48(P), 1950-51(P), 1952(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
5.9	1,100	11.0	7,650	6.0	1,190	11.0	7,830
7.0	1,950	13.0	11,500	7.0	2,020	13.0	11,500
8.0	3,000	16.0	18,000	8.0	3,080	16.0	18,000
9.0	4,350	19.0	27,400	9.0	4,460	20.0	32,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,150	4,020	6,160	2,300	a1,780	2,060	3,300	3,190	9,000	4,020	2,110	1,640
2	1,140	3,470	4,640	2,310	a1,740	2,460	2,820	3,370	7,340	4,430	2,080	1,560
3	1,170	24,100	3,690	2,320	a1,700	3,000	*2,540	3,000	7,060	4,790	2,010	1,400
4	1,720	31,400	3,160	3,140	a1,660	2,720	2,850	2,890	8,480	4,200	1,830	1,310
5	3,560	14,000	2,860	*4,000	1,600	2,230	2,920	3,200	6,160	5,040	1,810	1,240
6	2,000	8,590	2,880	5,070	1,570	1,940	2,420	3,950	4,950	7,290	1,880	1,210
7	1,630	6,450	3,120	4,520	1,610	1,880	2,400	4,320	5,910	5,460	*1,910	1,250
8	2,760	5,980	3,040	3,360	1,500	1,910	2,360	5,600	6,930	5,190	1,950	1,300
9	5,450	6,020	3,660	2,830	1,460	1,750	2,240	6,400	14,900	5,890	1,980	1,280
10	4,660	13,000	3,210	2,510	1,470	1,640	2,600	6,830	16,200	6,180	1,920	1,320
11	3,180	7,090	6,410	2,510	1,620	1,510	3,450	*5,860	13,000	5,720	1,930	1,440
12	2,990	a5,150	14,900	3,160	2,320	1,480	3,840	4,370	8,460	6,010	2,040	1,360
13	2,780	a4,300	7,360	3,590	1,900	1,440	4,180	3,510	6,560	6,180	2,170	1,310
14	2,580	a3,750	4,990	3,330	1,680	1,400	4,960	3,290	6,710	5,520	2,230	1,310
15	3,340	a3,400	4,040	3,030	1,470	1,360	5,540	3,700	6,640	4,380	2,450	1,310
16	2,470	a3,200	3,460	5,380	1,420	1,360	4,580	5,220	5,840	4,130	2,410	1,280
17	2,170	a3,000	3,010	5,930	1,420	1,410	3,720	7,200	5,330	4,010	2,050	1,250
18	*2,030	a2,900	2,620	4,610	1,400	1,530	3,500	9,160	5,330	4,180	1,940	1,260
19	1,920	a2,750	a2,750	4,480	1,370	1,770	4,190	9,910	*7,650	4,670	2,040	1,270
20	1,770	a2,700	a3,860	4,310	1,370	1,880	5,590	9,870	8,050	5,220	2,120	1,330
21	1,590	*2,590	5,940	3,700	*1,440	2,120	7,560	8,010	5,960	5,150	2,150	1,600
22	1,470	2,440	8,910	4,060	1,480	3,210	8,140	7,340	5,300	4,830	2,080	1,350
23	1,390	2,420	7,420	4,630	1,390	4,360	6,970	8,140	5,030	4,190	2,040	1,190
24	2,120	3,110	5,190	3,930	1,410	4,710	5,670	7,630	4,500	4,000	2,050	2,660
25	13,400	6,370	4,400	3,230	1,490	3,450	5,060	6,610	4,070	3,870	2,310	*3,190
26	11,900	5,390	4,300	2,750	1,480	3,420	4,930	6,860	4,260	3,420	2,310	5,380
27	6,160	4,100	3,930	2,410	1,450	2,900	4,660	6,220	5,740	3,060	1,990	4,680
28	6,810	5,300	3,260	2,260	1,490	2,720	3,950	5,460	6,130	2,700	1,760	3,080
29	7,520	6,560	2,830	2,060	1,790	4,800	3,580	6,010	5,110	2,430	1,780	4,200
30	8,010	5,760	2,610	1,890	------	4,830	3,290	7,720	4,250	2,310	1,880	7,250
31	5,210	------	2,410	a1,810	------	4,120	------	9,130	------	2,230	1,660	------
Total	116,050	199,310	141,020	105,420	45,480	77,370	123,810	183,970	210,850	140,700	62,870	61,210
Mean	3,744	6,644	4,549	3,401	1,568	2,496	4,127	5,935	7,028	4,539	2,028	2,040
Cfsm	5.89	10.4	7.15	5.35	2.47	3.92	6.49	9.33	11.1	7.14	3.19	3.21
In.	6.79	11.65	8.25	6.16	2.66	4.52	7.24	10.76	12.33	8.23	3.68	3.58
Ac-ft	230,200	395,300	279,700	209,100	90,210	153,500	245,600	364,900	418,200	279,100	124,700	121,400

Calendar year 1955: Max 31,400 Min 1,060 Mean 3,957 Cfsm 6.22 In. 84.46 Ac-ft 2,865,000
Water year 1955-56: Max 31,400 Min 1,140 Mean 4,011 Cfsm 6.31 In. 85.85 Ac-ft 2,912,000

Peak discharge (base, 15,000 cfs).--Oct. 25 (9:30 p.m.) 21,000 cfs (17.19 ft); Nov. 3 (11:45 p.m.) 42,600 cfs (21.37 ft); Nov. 10 (4 a.m.) 18,500 cfs (16.19 ft); Dec. 12 (5:15 a.m.) 20,000 cfs (16.79 ft); June 10 (4 a.m.) 17,300 cfs (15.70 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

Fishtrap Creek at Lynden, Wash.

Location.--Lat 48°57'50", long 122°26'00", on north line sec. 16, T. 40 N., R. 3 E., on right bank on downstream side of bridge on State Highway 1A, 1 mile north of Lynden.

Drainage area.--24.1 sq mi, of which 18.5 sq mi is in Canada.

Records available.--July 1948 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 110 ft (from topographic map).

Average discharge.--8 years, 36.2 cfs (26,210 acre-ft per year).

Extremes.--Maximum discharge during year, 299 cfs Nov. 3 (gage height, 5.11 ft); minimum, 3.6 cfs sometime during period Sept. 1-24 (gage height, 1.24 ft, from recorded range in stage).

1948-56: Maximum discharge, 550 cfs Feb. 11, 1951 (gage height, 6.59 ft); minimum, 0.4 cfs Sept. 10, 1949 (gage height, 1.00 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation. Probably some small diversions for minor irrigation and domestic use.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
1.3	3.7	3.0	80	1.2	3.0	3.0	80
1.4	5.8	4.3	201	1.4	6.9	4.6	235
2.0	25			2.0	26		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	23	139	38	34	100	65	21	12	11.5	6.2	4.0
2	5.5	25	93	38	32	87	55	21	12	11.5	8.9	3.9
3	5.8	195	64	40	32	74	*50	20	14	11	7.9	3.9
4	7.1	214	54	58	32	79	61	19	17.5	11	7.2	3.8
5	8.1	113	47	*74	34	73	54	20	14.5	11.5	6.9	3.8
6	6.4	66	62	160	35	60	52	21	13.5	11.5	*6.4	3.9
7	6.9	50	80	131	35	60	53	19.5	14.5	10.5	5.9	4.0
8	10.5	46	88	80	33	67	49	18.5	20	10	5.7	4.1
9	8.7	54	116	62	32	65	47	18	26	9.7	5.7	4.3
10	9.5	74	90	56	43	55	48	19	38	9.4	5.5	4.5
11	8.9	57	184	60	55	46	50	*22	31	8.9	5.5	4.5
12	9.2	46	226	63	62	43	49	22	22	8.7	5.5	4.8
13	9.5	37	118	71	52	42	48	19.5	18	8.9	5.2	4.7
14	8.9	33	74	68	45	40	47	18	18	8.7	5.2	4.4
15	10.5	30	60	63	40	38	44	17.5	16.5	8.9	5.5	4.2
16	9.2	28	53	100	37	36	38	16.5	15	8.4	5.9	3.9
17	8.4	27	46	115	35	34	35	16.5	14	8.2	5.5	3.8
18	*7.6	28	42	94	35	33	35	16	13.5	7.9	5.0	3.8
19	7.4	28	42	89	35	32	36	15.5	*16.5	7.9	4.8	3.9
20	7.1	31	40	89	37	32	38	15	20	7.6	4.6	4.2
21	6.7	*32	68	79	*40	47	40	14.5	16.5	7.4	4.5	5.0
22	6.4	33	155	97	41	56	35	14.5	14.5	7.4	4.3	4.7
23	6.2	34	138	131	38	59	33	14	13	7.4	4.1	4.5
24	11	51	88	103	41	59	30	14	13	7.2	4.3	8.8
25	28	110	71	79	57	50	27	13.5	13	7.2	4.3	*11.5
26	34	85	71	66	60	60	26	13	15	6.9	4.5	14
27	32	56	72	54	58	54	25	13	16.5	6.9	4.5	11.5
28	44	47	59	48	72	68	22	13	14.5	6.4	4.5	12
29	46	60	51	42	94	134	21	12.5	13	6.4	4.6	21
30	56	89	44	38	------	109	20	12	12	5.9	4.5	29
31	32	------	40	36	------	86	------	12	------	5.9	4.1	------
Total	463.0	1,802	2,575	2,322	1,276	1,878	1,232	521.5	507.5	266.9	167.2	204.4
Mean	14.9	60.1	83.1	74.9	44.0	60.6	41.1	16.8	16.9	8.61	5.39	6.81
Ac-ft	918	3,570	5,110	4,610	2,530	3,720	2,440	1,030	1,010	529	332	405

Calendar year 1955 : Max 226 Min 4.7 Mean 35.7 Ac-ft 25,810
Water year 1955-56 : Max 226 Min 3.8 Mean 36.1 Ac-ft 26,200

Peak discharge (base, 220 cfs).--Nov. 3 (6 p.m.) 299 cfs (5.11 ft); Dec. 11 (12 p.m.) 282 cfs (4.98 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 12-18, Feb. 6-20, Apr. 6 to May 5, Sept. 1-24; discharge estimated on basis of weather records and records for stations on nearby streams.

KOOTENAI RIVER BASIN

Kootenai River at Newgate, British Columbia

(International gaging station)

Location.--Lat 49°01', long 115°10', on left bank at old highway bridge site, 0.7 mile northwest of Newgate and 0.9 mile north of international boundary.

Drainage area.--7,660 sq mi, approximately.

Records available.--October 1930 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,310.23 ft above mean sea level (datum of Geodetic Survey of Canada, adjustment of 1945). Prior to Oct. 1, 1940, staff gage at same site at datum 1.00 ft higher. Oct. 1, 1940, to Apr. 30, 1947, staff gage at present site and datum.

Average discharge.--26 years, 10,240 cfs (7,413,000 acre-ft per year).

Extremes.--Maximum discharge during year, 92,000 cfs May 22 (gage height, 14.08 ft); minimum recorded, 1,850 cfs Feb. 1 (gage height, 1.27 ft), but may have been less during period of ice effect.
1930-56: Maximum discharge, 98,200 cfs May 28, 1948 (gage height, 15.02 ft); minimum observed, 994 cfs Feb. 7, 1936; minimum gage height observed, 0.21 ft Jan. 11, 1944.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Records give total flow of main channel and slough.

Cooperation.--This station is maintained by Canada under agreement with the United States.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 23, 24)

Oct. 1 to May 22				May 23 to Sept. 30			
1.3	1,890	7.0	21,000	3.3	4,900	8.0	26,100
2.0	3,080	8.0	26,800	4.0	6,810	9.0	34,200
3.0	5,350	9.0	34,200	5.0	10,400	10.0	43,500
4.0	8,300	10.0	43,500	6.0	14,600	12.0	65,200
5.0	11,800	12.0	65,800	7.0	19,800	14.0	88,900
6.0	16,000	14.0	91,000				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*4,840	8,780	4,320	3,160	1,960	b2,630	4,280	12,500	75,400	27,700	12,700	7,540
2	4,890	8,030	4,320	3,000	2,020	b2,540	4,230	11,600	80,700	25,000	12,200	6,840
3	4,610	7,550	4,230	3,270	2,150	*b2,430	4,120	10,800	81,900	24,000	12,000	6,600
4	4,540	7,970	4,140	3,460	2,300	b2,350	4,170	10,200	79,000	*25,200	12,000	6,400
5	4,560	10,100	4,010	3,750	2,430	b2,200	4,340	9,780	*78,500	25,800	12,000	6,150
6	4,580	9,440	4,010	3,810	2,530	b2,200	4,230	9,600	75,800	26,300	11,400	5,980
7	4,560	*8,690	3,970	3,700	2,750	b2,100	4,060	*9,880	67,400	27,200	10,600	5,820
8	4,390	8,060	3,880	3,640	2,840	b2,200	3,880	11,400	54,500	26,700	9,920	5,630
9	4,490	7,610	3,880	3,540	2,820	b2,320	3,860	14,000	45,000	25,600	9,640	5,500
10	5,270	7,340	*3,750	3,420	2,800	b2,200	*4,080	16,200	44,600	26,000	9,560	5,420
11	6,650	7,100	3,730	3,330	2,820	b2,100	4,420	18,400	51,900	27,900	9,640	5,370
12	6,060	5,660	3,970	3,290	2,760	b2,000	4,710	19,600	54,900	28,800	9,560	5,320
13	5,690	4,320	3,920	3,250	2,670	b2,000	5,210	19,400	47,800	28,900	9,160	5,260
14	5,320	3,700	3,100	3,190	b2,380	2,690	6,030	18,500	40,600	29,900	8,860	5,060
15	5,180	3,290	2,710	3,060	b2,200	2,760	7,370	18,700	37,900	30,800	8,780	5,030
16	5,210	3,480	2,460	2,910	b2,080	2,820	9,290	21,000	39,000	28,700	8,820	5,080
17	5,410	3,540	2,360	*2,850	b1,920	2,930	11,700	28,400	45,200	26,300	8,780	5,110
18	5,460	3,680	2,170	2,930	b1,980	2,930	12,800	35,400	49,100	24,500	8,780	5,110
19	5,550	4,030	2,220	3,000	b2,270	2,950	13,300	50,100	48,600	23,000	8,640	5,080
20	5,940	4,490	2,510	3,040	2,510	3,140	14,600	65,700	47,900	22,400	8,320	5,110
21	6,320	4,680	3,100	3,060	2,620	3,270	17,400	78,600	47,300	22,200	8,070	*5,130
22	6,320	4,740	3,540	3,000	2,750	3,350	20,200	89,800	44,300	22,000	7,930	5,160
23	6,170	4,710	4,080	3,020	2,760	3,520	20,600	88,600	39,500	21,800	7,960	5,260
24	5,910	4,580	4,210	3,000	2,750	3,950	19,100	*83,900	37,300	20,700	7,860	5,160
25	6,830	4,660	4,140	2,910	2,760	4,420	17,000	81,400	36,400	19,600	7,930	5,030
26	10,700	4,890	4,030	2,550	2,620	4,990	15,400	78,700	33,500	18,900	7,930	4,950
27	14,900	4,660	4,080	2,330	b2,580	5,130	14,400	75,200	30,100	*17,800	8,070	5,030
28	14,000	4,340	4,250	2,430	b2,550	4,610	13,800	73,800	28,400	16,200	7,960	5,080
29	11,800	4,280	3,790	2,180	b2,510	4,340	13,400	73,400	30,500	15,300	7,860	5,630
30	10,400	4,250	3,560	2,040	------	4,250	13,000	73,800	30,800	14,200	7,660	5,650
31	9,440	------	3,270	2,170	------	4,210	------	74,300	------	13,300	7,570	------
Total	205,990	172,650	111,650	94,290	72,090	95,530	294,980	1,282,660	‡1,503.8	732,700	288,160	165,490
Mean	6,640	5,760	3,600	3,040	2,490	3,080	9,830	41,400	50,100	23,600	9,300	5,520
Cfsm	0.87	0.75	0.47	0.40	0.33	0.40	1.28	5.40	6.54	3.08	1.21	0.72
In.	1.00	0.84	0.54	0.46	0.36	0.46	1.43	6.23	7.30	3.55	1.40	0.80
Ac-ft	408,600	342,400	221,500	187,000	143,000	189,500	585,100	‡2,544	‡2,983	‡1,453	571,600	328,200

Calendar year 1955: Max 69,800 Min 1,660 Mean 11,000 Cfsm 1.44 In. 19.54 Ac-ft 7,986,000
Water year 1955-56: Max 89,800 Min 1,920 Mean 13,700 Cfsm 1.79 In. 24.37 Ac-ft 9,957,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Fisher River near Jennings, Mont.

Location.--Lat 48°14'40", long 115°17'10", in NW¼SE¼ sec. 27, T. 29 N., R. 29 W., on right bank 80 ft below bridge, 1 mile downstream from Wolf Creek, 9 miles upstream from mouth, and 9 miles southeast of Jennings.

Drainage area.--780 sq mi.

Records available.--December 1950 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,443.23 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Average discharge.--5 years (1951-56), 600 cfs (434,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6,320 cfs Apr. 17 (gage height, 7.32 ft); minimum, 116 cfs Oct. 4.

1950-56: Maximum discharge, that of Apr. 17, 1956; minimum daily, 60 cfs Nov. 30, 1952.

Maximum discharge known, 6,560 cfs about May 22, 1948, from slope-area determination of peak flow at site 7½ miles downstream.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 14-17)

Oct. 1 to Apr. 17				Apr. 18 to Sept. 30			
1.4	104	3.0	795	1.3	125	3.0	828
1.5	129	4.0	1,520	1.5	153	4.0	1,680
1.7	183	5.0	2,480	1.7	199	5.0	2,820
2.0	280	6.0	3,670	2.0	301	7.5	6,650
2.5	510	8.0	6,690	2.5	537		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	126	245	256	480	150	356	1,530	2,620	2,440	460	184	148
2	122	226	245	510	140	360	1,490	2,390	2,430	456	184	145
3	119	242	235	540	160	347	1,470	2,160	2,100	475	189	142
4	116	464	210	565	190	338	1,520	2,000	1,920	485	192	142
5	126	1,230	180	670	200	320	1,580	1,950	1,790	465	186	140
6	139	814	170	570	220	300	1,500	1,850	1,510	470	182	139
7	129	609	180	532	240	292	1,500	1,870	1,310	451	176	139
8	126	*500	*175	516	230	252	1,460	2,200	1,180	422	172	137
9	244	435	190	490	220	*207	1,450	*3,460	1,230	403	166	136
10	666	505	201	*406	220	189	1,590	3,920	1,290	389	166	133
11	598	520	204	440	230	166	*1,890	3,720	1,270	389	159	*132
12	374	380	460	420	230	170	2,180	3,260	1,050	380	159	131
13	308	320	320	406	210	180	2,490	2,870	*938	366	157	131
14	276	290	220	388	*190	185	3,120	2,650	905	398	155	129
15	276	260	140	374	170	189	4,100	2,640	892	362	151	127
16	266	240	170	360	160	192	5,080	3,000	879	*327	151	125
17	242	240	160	360	180	198	5,840	3,700	905	148	126	126
18	*226	260	170	338	210	207	5,960	4,180	841	293	147	129
19	226	280	240	329	240	219	*5,270	4,550	809	278	145	127
20	245	310	300	316	280	256	*5,240	*4,710	809	267	*145	129
21	226	396	700	316	300	276	5,720	4,760	740	263	143	135
22	210	352	1,200	304	320	312	5,950	4,250	686	256	140	a138
23	195	347	2,110	300	350	401	5,500	*3,740	668	246	139	a140
24	189	334	1,490	292	340	648	*4,730	*3,520	651	236	139	a138
25	223	352	1,140	259	330	970	4,070	3,430	618	223	140	a135
26	223	440	1,020	220	330	1,350	3,470	3,030	569	217	151	a134
27	223	356	886	200	330	1,410	3,280	2,850	548	208	168	a133
28	216	316	771	180	340	1,310	3,180	2,690	569	199	161	a136
29	226	276	723	180	350	1,320	3,000	2,530	542	192	161	a145
30	259	259	587	170	------	1,380	2,780	2,370	485	189	168	a150
31	270	-----	500	160	-----	1,510	------	*2,290	------	184	155	------
Total	7,410	11,798	15,553	11,645	7,060	15,810	97,940	95,160	32,574	10,259	4,979	4,071
Mean	239	393	502	376	243	510	3,265	3,070	1,086	331	161	136
Cfsm	0.306	0.504	0.644	0.482	0.312	0.654	4.19	3.94	1.39	0.424	0.206	0.174
In.	0.35	0.56	0.74	0.56	0.34	0.75	4.67	4.54	1.55	0.49	0.24	0.19
Ac-ft	14,700	23,400	30,850	23,100	14,000	31,360	194,300	188,700	64,610	20,350	9,880	8,070

Calendar year 1955: Max 3,340 Min 94 Mean 505 Cfsm 0.647 In. 8.78 Ac-ft 366,000
Water year 1955-56: Max 5,960 Min 116 Mean 859 Cfsm 1.10 In. 14.98 Ac-ft 623,300

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.
Note.--Stage-discharge relation affected by ice Nov. 11-20, Dec. 5-9, 13-21, 31, Jan. 1-3, 26-31, Feb. 1-29, Mar. 5, 6, 12-14.

Kootenai River at Libby, Mont.

Location.--Lat 48°24'00", long 115°33'10", in SE¼SW¼ sec. 34, T. 31 N., R. 31 W., on right bank 1,800 ft downstream from highway bridge at Libby and 1 mile downstream from Libby Creek.

Drainage area.--10,240 sq mi, approximately.

Records available.--October 1910 to September 1956. Monthly only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 2,041.54 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 28, 1931, staff, chain, and wire-weight gages 1,800 ft upstream at different datum.

Average discharge.--46 years, 11,870 cfs (8,594,000 acre-ft per year).

Extremes.--Maximum discharge during year, 96,600 cfs May 23 (gage height, 18.63 ft); minimum, 1,880 cfs Feb. 17 (gage height, 0.80 ft).
1910-56: Maximum discharge, 121,000 cfs June 21, 1916 (gage height, 20.7 ft, present datum, derived from gage-relation study); minimum observed, 895 cfs June 11, 1930 (discharge measurement).

Remarks.--Records good except those for periods of ice effect, which are poor. Diversions for irrigation of about 4,200 acres from tributaries above station.

Revisions (water years).--WSP 1042: 1933. WSP 1246: 1912(M), 1915(M), 1916, 1918-19(M), 1924-27(M).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 1-10, Apr. 15 to June 6)

0.9	2,080	8.0	26,600
2.0	4,570	12.0	49,500
4.0	10,200	19.0	101,000
6.0	17,500		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,450	10,200	5,390	b4,700	b2,500	3,530	7,820	18,700	78,600	30,500	14,400	8,400
2	5,290	9,330	5,480	b4,800	b2,400	3,480	7,620	17,700	82,000	27,600	13,900	8,020
3	5,260	8,760	5,340	b5,000	b2,500	3,530	7,540	16,300	84,400	26,200	13,500	7,620
4	5,080	9,500	5,130	5,180	b2,600	3,510	7,650	15,100	81,900	26,400	13,200	7,460
5	5,080	12,700	4,980	5,910	2,680	3,390	8,020	14,400	79,500	27,700	13,300	7,180
6	5,130	12,800	4,950	5,800	3,260	3,230	7,880	13,900	78,200	27,900	13,000	6,950
7	5,080	*11,300	4,920	5,640	3,650	3,210	7,570	13,900	70,800	28,700	12,200	6,730
8	5,080	10,100	*4,800	5,580	3,700	3,280	7,290	16,100	60,100	28,900	11,600	6,500
9	5,450	9,330	4,770	5,370	3,820	*3,230	*7,120	*22,300	49,400	27,500	11,100	6,280
10	7,240	9,120	4,740	*5,080	4,150	3,190	7,480	26,600	46,100	27,300	10,900	6,180
11	7,880	9,090	4,570	5,030	4,270	2,880	8,430	28,800	50,100	28,600	10,900	*6,040
12	7,740	8,050	5,450	4,800	4,250	2,940	9,180	28,600	55,500	30,100	10,900	6,020
13	6,950	6,480	5,260	4,700	b3,800	3,100	10,000	27,400	51,800	30,200	10,600	5,880
14	6,500	5,500	4,270	4,770	*b3,300	3,070	11,600	25,900	*44,800	31,100	10,200	5,800
15	6,260	4,870	3,890	4,620	b2,800	3,140	14,000	26,000	40,700	32,300	10,000	5,690
16	6,180	3,910	b3,600	4,440	b2,400	3,260	17,900	29,600	40,300	31,200	9,960	5,610
17	*6,020	3,960	b3,400	4,150	b2,200	3,420	21,500	38,200	45,100	*28,800	9,960	5,640
18	6,200	4,770	b3,600	4,100	b2,600	3,700	24,400	50,200	49,600	26,800	9,960	5,690
19	6,280	4,980	b3,700	4,080	b2,900	3,700	*24,600	62,000	50,000	25,200	9,900	5,690
20	6,500	5,660	b4,000	4,130	3,390	4,010	25,900	72,800	49,000	24,200	9,600	5,690
21	6,840	6,070	4,600	4,180	3,550	4,320	29,700	83,100	48,200	24,000	*9,540	5,740
22	7,010	6,340	5,930	4,180	3,620	4,570	34,000	92,000	46,000	23,600	9,030	5,740
23	6,920	6,450	7,940	4,180	3,720	5,050	34,200	95,500	42,200	23,400	8,850	5,830
24	6,730	6,120	7,740	4,220	3,650	5,830	*31,200	*91,100	39,300	23,000	8,850	5,880
25	6,780	6,100	6,950	4,080	3,580	7,040	27,200	88,600	37,900	21,800	8,880	5,770
26	8,920	6,310	6,560	3,820	3,580	8,970	24,200	84,700	36,200	20,900	9,030	5,580
27	13,800	5,850	6,760	3,650	3,530	9,090	22,500	81,300	33,200	20,000	9,090	5,560
28	15,800	5,580	6,560	b3,300	3,420	8,340	21,600	78,200	31,200	18,900	9,090	5,580
29	13,800	5,240	6,100	b3,100	3,440	7,740	20,700	77,400	31,700	17,500	9,000	5,880
30	12,300	5,450	5,960	b2,900	------	7,650	19,900	76,800	32,400	16,500	8,880	6,390
31	11,100	-----	5,420	b2,700	-----	7,880	-----	77,300	------	15,300	8,640	------
Total	230,650	219,920	162,760	138,190	95,260	143,280	508,700	‡1,490.5	‡1,566.2	792,100	327,960	187,020
Mean	7,440	7,331	5,250	4,458	3,285	4,622	16,960	48,080	52,210	25,550	10,580	6,234
Cfsm	0.727	0.716	0.513	0.435	0.321	0.451	1.66	4.70	5.10	2.50	1.03	0.609
In.	0.84	0.80	0.59	0.50	0.35	0.52	1.85	5.41	5.69	2.88	1.19	0.68
Ac-ft	457,500	436,200	322,800	274,100	188,900	284,200	‡1,009	‡2,956	‡3,107	‡1,571	650,500	370,900

Calendar year 1955: Max 69,900 Min 1,700 Mean 12,640 Cfsm 1.23 In. 16.76 Ac-ft 9,148,000
Water year 1955-56: Max 95,500 Min 2,200 Mean 16,020 Cfsm 1.56 In. 21.30 Ac-ft 11,630,000

Peak discharge (base, 37,000 cfs).--May 23 (9 to 10 a.m.) 96,600 cfs (18.63 ft).
* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Lake Creek at Troy, Mont.

Location.--Lat 48°26'40", long 115°52'30", in SW¼ sec. 18, T. 31 N., R. 33 W., on right bank a quarter of a mile downstream from powerplant, half a mile upstream from mouth, and 1¼ miles southeast of Troy.

Drainage area.--210 sq mi.

Records available.--January 1945 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,900 ft (from topographic map). Prior to Nov. 1, 1946, wire-weight gage at site a quarter of a mile upstream at different datum.

Average discharge.--11 years, 523 cfs (378,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,150 cfs May 21 (gage height, 7.05 ft); minimum daily, 143 cfs Oct. 2, 3.
1945-56: Maximum discharge, 3,250 cfs May 30, 1948 (gage height, 8.28 ft); minimum, 2.0 cfs Sept. 1, 1947, Sept. 15, 1948; minimum daily, 55 cfs Nov. 27, 1952.

Remarks.--Records fair. Large diurnal fluctuation at low flow and some at high flow caused by small dam at powerplant diversion. Water diverted returns to stream at powerplant above station. Natural regulation by Bull and Spar Lakes.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 11-15, May 21-23)

Oct. 1 to May 21				May 22 to Sept. 30			
3.6	131	5.0	750	3.7	145	5.0	690
4.0	240	6.0	1,700	4.0	210	6.0	1,600
4.5	450	7.1	3,020	4.5	395	7.1	3,020

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	346	346	548	314	247	542	1,240	2,560	753	286	190
2	143	360	318	548	330	244	566	1,170	2,490	746	294	185
3	143	390	310	554	310	247	542	1,070	2,340	718	274	190
4	150	548	330	584	306	231	548	1,020	2,300	697	282	188
5	192	972	306	650	314	234	554	981	2,230	677	264	185
6	153	715	292	572	272	228	506	936	1,990	690	286	183
7	170	*614	*268	548	272	213	480	945	1,800	670	270	183
8	170	608	292	530	254	*225	524	1,130	1,680	632	264	175
9	334	566	278	*542	254	213	480	*1,380	1,710	599	249	173
10	729	590	261	490	258	207	530	1,480	1,830	618	243	188
11	620	560	240	485	258	195	*566	1,580	1,830	599	228	*173
12	480	500	668	465	261	216	632	1,460	1,570	573	240	169
13	430	465	590	460	*275	204	680	1,390	*1,450	506	249	169
14	390	450	490	450	258	195	813	1,320	1,370	573	243	165
15	355	460	484	410	258	192	954	1,340	1,380	518	222	161
16	380	495	578	465	247	201	1,210	1,560	1,380	512	225	161
17	*415	450	522	420	250	195	1,250	1,940	1,350	*456	231	173
18	326	465	626	400	250	207	1,280	2,310	1,280	445	213	153
19	342	495	644	395	254	198	1,320	2,550	1,250	456	200	159
20	330	405	602	385	237	222	*1,400	*2,730	1,240	390	228	163
21	334	390	785	346	240	222	1,610	2,940	1,160	395	*208	167
22	334	395	778	338	247	282	1,790	*2,920	1,090	386	208	165
23	292	400	876	415	219	338	1,760	2,820	1,070	415	200	153
24	282	346	778	338	237	420	1,690	2,810	1,030	372	198	167
25	346	490	708	338	237	518	1,580	*2,690	961	346	205	159
26	420	470	701	310	254	680	1,460	2,610	918	342	200	157
27	395	405	722	322	234	838	1,420	2,530	886	330	249	157
28	415	350	656	318	228	536	1,400	2,440	878	314	190	161
29	375	360	638	326	244	560	1,350	2,480	862	302	213	161
30	370	338	614	289	-----	566	1,280	2,470	781	328	213	161
31	385	-----	578	318	-----	554	-----	*2,480	-----	306	190	-----
Total	10,348	14,398	16,279	13,559	7,572	9,628	30,717	58,722	44,666	15,662	7,265	5,094
Mean	334	480	525	437	261	311	1,024	1,894	1,489	505	234	170
Cfsm	1.59	2.29	2.50	2.08	1.24	1.48	4.88	9.02	7.09	2.40	1.11	0.810
In.	1.83	2.55	2.88	2.40	1.34	1.71	5.44	10.40	7.91	2.77	1.29	0.90
Ac-ft	20,520	28,560	32,290	26,890	15,020	19,100	60,930	116,500	88,590	31,070	14,410	10,100

Calendar year 1955: Max 2,380 Min 116 Mean 486 Cfsm 2.31 In. 31.43 Ac-ft 352,100
Water year 1955-56: Max 2,940 Min 143 Mean 639 Cfsm 3.04 In. 41.42 Ac-ft 464,000

* Discharge measurement made on this day.

Yaak River near Troy, Mont.

Location.--Lat 48°33'45", long 115°58'05", in N½SE¼SE¼ sec. 5, T. 32 N., R. 34 W., on right bank 400 ft upstream from bridge on U. S. Highway 2, a quarter of a mile upstream from mouth, and 7½ miles northwest of Troy.

Drainage area.--766 sq mi.

Records available.--October 1910 to September 1916 (fragmentary record), March to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,850 ft (river-profile survey). Oct. 15, 1910, to Sept. 30, 1916, staff gage at several sites within 11 miles of present site at various datums.

Extremes.--Maximum discharge during period March to September 1956, 12,100 cfs May 21 (gage height, 9.70 ft in gage well, 10.8 ft from outside gage); minimum, 116 cfs Sept. 18.
1910-16, 1956: Maximum discharge, that of May 21, 1956; minimum not determined. Flood of May to June 1948 reached a stage of 11.0 ft, from floodmarks (discharge, 12,500 cfs). Flood of May 1954 reached a stage of 11.4 ft, from floodmarks (discharge, 13,400 cfs).

Remarks.--Records good.

Rating table, Mar. 1 to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 18-20)

2.9	108	6.0	2,430
3.0	120	7.0	4,200
3.5	230	8.0	6,560
4.0	415	9.0	9,690
4.5	680	9.5	11,400
5.0	1,100		

Discharge, in cubic feet per second, March to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						265	1,180	3,720	*5,330	715	254	161
2						265	1,090	3,350	5,160	687	262	151
3						265	1,040	2,980	4,550	680	276	147
4						265	1,090	2,770	4,360	715	286	143
5						265	1,270	2,630	4,000	674	272	143
6						265	1,190	2,610	3,260	660	262	141
7						265	1,130	2,920	2,760	701	251	139
8						265	1,010	3,800	2,490	628	240	134
9						265	1,000	*4,940	2,500	582	234	132
10						265	*1,270	5,780	2,710	550	230	128
11						248	1,790	6,120	2,680	525	224	128
12						265	2,080	5,260	2,180	510	224	*124
13						265	2,440	4,500	*1,940	485	221	123
14						265	3,140	4,300	1,830	525	212	122
15						265	4,040	4,760	1,930	500	209	120
16						265	4,920	6,010	2,030	485	206	119
17						265	5,100	7,830	1,920	*475	200	118
18						265	5,300	9,380	1,750	442	200	116
19						282	5,470	10,000	1,640	411	200	118
20						318	*5,940	10,600	1,560	387	*195	119
21						335	6,850	*11,000	1,400	371	185	135
22						355	7,440	*9,790	1,290	359	180	135
23						465	6,790	8,650	1,210	339	173	130
24						634	*5,780	8,910	1,120	324	171	129
25						955	4,960	8,420	1,050	314	171	129
26						1,590	4,440	*7,230	946	304	178	128
27						1,540	4,260	6,730	886	293	195	132
28						1,310	4,240	6,230	878	286	209	137
29						1,140	4,200	5,840	838	279	215	143
30					------	1,100	4,040	5,640	758	265	200	198
31		-----			-----	1,200	-----	5,380	----	262	173	-----
Total						15,977	104,490	188,080	66,956	14,733	6,708	4,022
Mean						515	3,483	6,067	2,232	475	216	134
Cfsm						0.672	4.55	7.92	2.91	0.620	0.282	0.175
In.						0.78	5.07	9.13	3.25	0.72	0.33	0.20
Ac-ft						31,690	207,300	373,100	132,800	29,220	13,310	7,980

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

* Discharge measurement made on this day.
Note.--No gage-height record Mar. 1-7; discharge estimated.

Kootenai River at Leonia, Idaho

Location.--Lat 48°37', long 116°03', in NW¼NW¼ sec. 20, T. 33 N., R. 34 W., on right bank at Leonia, 450 ft east of Montana-Idaho State line and half a mile upstream from Boulder Creek.

Drainage area.--11,740 sq mi, approximately.

Records available.--March 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,700.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 13, 1928, chain gage on bridge 250 ft upstream at datum 0.41 ft lower.

Average discharge.--28 years, 13,650 cfs (9,882,000 acre-ft per year).

Extremes.--Maximum discharge during year, 115,000 cfs May 23 (gage height, 121.65 ft); minimum daily, 3,000 cfs Feb. 17; minimum gage height, 101.35 ft Mar. 11.
1928-56: Maximum discharge, 123,000 cfs May 28, 1948 (gage height, 123.40 ft); minimum, 996 cfs Dec. 9, 1936; minimum gage height, 97.56 ft Dec. 10, 1929.
Floods in June 1894 and 1916 reached stages of 124.6 and 121.6 ft, respectively, from information by Great Northern Railway Co.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Diversions above station for irrigation of about 14,600 acres.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,830	*11,700	g6,770	6,800	3,800	4,120	10,900	26,600	92,900	32,500	15,500	9,100
2	5,670	10,800	a6,700	6,500	*3,400	4,150	10,600	25,000	95,800	29,700	14,900	8,640
3	5,600	10,200	a6,500	6,600	3,300	4,240	10,300	23,000	97,300	28,100	14,500	8,270
4	5,480	11,800	a6,300	7,000	3,500	4,270	10,400	21,400	94,900	27,800	14,300	8,040
5	*5,570	17,500	*5,960	8,110	3,800	4,210	11,000	20,600	91,200	28,900	14,200	7,810
6	*5,510	16,800	5,930	8,040	4,200	4,010	10,800	19,900	88,600	29,200	14,100	7,520
7	5,540	14,500	5,860	7,910	4,300	4,010	10,400	20,300	81,500	29,800	13,400	7,320
8	5,640	12,900	5,800	7,810	4,300	4,070	9,920	23,200	70,000	30,000	12,700	7,090
9	6,360	11,600	5,770	7,550	4,400	3,980	9,560	31,200	58,000	29,000	12,100	6,920
10	9,500	11,600	5,640	7,120	5,000	3,980	10,200	38,200	53,700	28,500	11,800	6,790
11	10,600	11,600	5,670	6,920	5,000	3,820	11,900	41,500	*57,100	29,200	11,700	6,620
12	9,760	10,400	7,280	6,820	5,000	3,790	13,500	39,600	62,400	30,800	11,700	6,560
13	8,640	8,600	7,000	6,660	4,500	3,840	14,900	37,000	59,200	30,900	11,500	6,490
14	7,910	g6,930	4,800	6,520	4,100	3,820	17,600	34,800	50,600	31,700	11,100	6,360
15	7,450	g6,960	4,600	6,360	3,800	3,870	21,700	35,400	46,200	32,700	10,800	6,230
16	7,350	g5,360	4,300	6,290	3,400	3,980	27,100	41,400	45,200	32,300	10,600	6,060
17	7,220	g5,900	4,000	5,960	3,000	4,120	31,100	54,200	*49,300	29,900	10,600	6,130
18	7,180	g5,770	4,300	5,770	3,200	4,350	35,000	69,800	54,800	27,900	10,600	6,100
19	7,180	a6,300	4,400	5,800	3,500	4,660	35,700	83,800	55,600	26,400	10,500	6,100
20	7,420	g6,700	4,800	5,800	3,900	4,900	37,700	96,200	54,300	25,200	10,400	6,100
21	7,680	a6,800	5,800	5,770	4,210	5,280	43,200	107,000	53,300	24,800	10,000	6,160
22	7,840	g6,860	8,000	5,770	4,380	5,600	49,500	*113,000	51,300	24,500	9,690	6,200
23	7,710	g7,120	10,000	*5,770	4,530	6,360	49,100	115,000	47,000	24,200	9,460	6,230
24	7,550	g7,280	11,000	5,670	4,500	7,680	44,500	113,000	43,200	*23,700	9,460	6,330
25	7,940	g7,340	10,500	5,480	4,440	9,730	38,700	110,000	41,200	22,700	9,500	6,230
26	9,630	a7,200	10,000	5,190	4,350	12,800	34,200	104,000	39,000	21,800	9,560	6,100
27	14,000	a7,000	9,600	4,600	4,320	13,200	31,800	99,000	35,600	21,000	*9,760	6,030
28	17,300	a6,700	9,200	4,500	*4,150	11,900	*30,700	94,600	33,300	19,900	9,760	6,060
29	15,800	g6,540	8,100	4,500	4,090	10,900	29,500	92,700	33,200	18,600	9,760	6,160
30	14,100	g6,700	8,400	4,500	------	*10,500	28,200	91,700	33,800	17,400	9,590	6,920
31	12,800	------	7,500	4,300	------	10,900	------	*91,900	------	16,400	9,330	------
Total	263,760	273,460	210,480	192,390	118,370	187,040	729,680	1,915,000	1,769,500	825,500	352,870	202,670
Mean	8,508	9,115	6,790	6,206	4,082	6,034	24,320	61,770	58,980	26,630	11,380	6,756
Cfsm	0.725	0.776	0.578	0.529	0.348	0.514	2.07	5.26	5.02	2.27	0.969	0.575
In.	0.84	0.87	0.67	0.61	0.37	0.59	2.31	6.07	5.61	2.62	1.12	0.64
Ac-ft	523,200	542,400	417,500	381,600	234,800	371,000	‡1,447	‡3,798	‡3,510	‡1,637	699,900	402,000

Calendar year 1955: Max 78,500 Min 2,120 Mean 14,570 Cfsm 1.24 In. 16.86 Ac-ft 10,550,000
Water year 1955-56: Max 115,000 Min 3,000 Mean 19,240 Cfsm 1.64 In. 22.32 Ac-ft 13,960,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of weather records and records for station at Bonners Ferry and intervening tributaries.
g Computed from once-daily wire-weight-gage readings.
Note.--Stage-discharge relation affected by ice Dec. 13 to Jan. 4, Jan. 27 to Feb. 20.

Boulder Creek near Leonia, Idaho

Location.--Lat 48°36', long 116°06', in NE¼ sec. 32, T. 61 N., R. 3 E., on right bank three-quarters of a mile downstream from McGinty Creek, three-quarters of a mile upstream from buildings of the Idamont Lead-Zinc Mines Co., 2½ miles southwest of Leonia, and 2¾ miles upstream from mouth.

Drainage area.--53 sq mi, approximately.

Records available.--April 1928 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 2,600 ft (from topographic map). Prior to Nov. 20, 1928, staff gage at site 1 mile downstream at different datum. Nov. 20, 1928, to Nov. 29, 1933, Oct. 13, 1934, to Sept. 27, 1946, water-stage recorder and Dec. 30, 1933, to Oct. 12, 1934, staff gage, at site a quarter of a mile upstream at different datum.

Average discharge.--28 years (1928-56), 114 cfs (82,530 acre-ft per year).

Extremes.--Maximum discharge during year, 1,660 cfs May 20 (gage height, 6.19 ft); minimum, 11 cfs Sept. 15; minimum gage height, 2.72 ft Oct. 3, 4.
1928-56: Maximum discharge, 2,700 cfs Oct. 19, 1947 (gage height, 7.85 ft), from rating curve extended above 970 cfs on basis of contracted-opening determination of peak flow; minimum, 2 cfs Aug. 25, Sept. 5, 1931.

Remarks.--Records good except those for periods of ice effect, which are fair, and those for period of no gage-height record, which are poor. No regulation or diversion.

Revisions (water years).--WSP 1396: 1936(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 19-25)

Oct. 1 to May 25				May 26 to Sept. 30			
2.7	12	4.0	335	2.8	12	4.0	247
2.9	24	4.5	575	2.9	16	4.5	451
3.1	48	5.0	880	3.1	30	5.0	715
3.3	85	6.0	1,630	3.3	59	5.3	895
3.6	173			3.6	127		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	*81	50	130	30	27	92	435	751	100	20	15
2	16	75	47	120	30	28	83	380	703	95	21	15
3	16	105	*45	116	35	28	81	340	600	95	22	14
4	19	513	44	125	38	27	92	322	606	90	24	14
5	47	371	43	122	39	27	*98	312	480	88	20	14
6	28	225	43	110	39	24	88	353	378	88	19	14
7	23	166	40	108	38	*24	85	480	370	77	18	14
8	30	147	40	100	35	24	79	641	365	73	18	14
9	282	134	39	92	33	24	86	727	400	69	17	13
10	619	202	38	88	31	22	116	784	418	65	16	13
11	225	156	56	83	33	20	160	778	337	61	17	13
12	137	119	280	79	35	22	177	608	276	57	16	13
13	131	98	150	77	32	22	213	570	255	56	16	13
14	113	90	115	73	30	22	290	614	252	75	15	12
15	113	80	90	71	27	23	384	733	302	54	15	12
16	95	70	80	69	25	23	495	929	333	47	15	12
17	83	70	70	63	25	24	470	1,130	*321	42	15	12
18	73	80	65	62	26	27	500	1,250	261	38	14	12
19	71	95	70	60	26	32	535	1,250	244	36	14	12
20	75	90	90	58	26	39	608	1,330	227	35	14	12
21	63	77	110	56	27	38	733	1,230	202	32	14	15
22	56	65	130	55	30	44	784	1,050	189	29	13	14
23	51	62	353	55	30	77	739	1,020	177	28	13	13
24	66	60	232	51	29	113	691	1,160	166	*27	14	13
25	125	67	184	45	27	137	597	943	149	25	14	13
26	180	65	244	40	26	163	570	*847	140	24	18	13
27	128	56	265	45	26	122	580	835	135	22	18	15
28	108	55	205	45	26	100	*565	793	130	21	17	16
29	98	53	173	43	26	92	515	*775	120	20	*24	18
30	119	51	155	38	-----	95	475	763	107	20	20	26
31	95	-----	140	30	-----	100	-----	757	-----	19	16	-----
Total	3,303	3,578	3,686	2,309	880	1,590	10,983	24,139	9,394	1,608	527	419
Mean	107	119	119	74.5	30.3	51.3	366	779	313	51.9	17.0	14.0
Cfsm	2.02	2.25	2.25	1.41	0.572	0.968	6.91	14.7	5.91	0.979	0.321	0.255
In.	2.32	2.51	2.59	1.62	0.62	1.12	7.71	16.94	6.59	1.13	0.37	0.29
Ac-ft	6,550	7,100	7,310	4,580	1,750	3,150	21,780	47,880	18,630	3,190	1,050	831

Calendar year 1955: Max 1,030 Min 11 Mean 138 Cfsm 2.60 In. 35.46 Ac-ft 100,200
Water year 1955-56: Max 1,330 Min 12 Mean 171 Cfsm 3.23 In. 43.81 Ac-ft 123,800

Peak discharge (base, 800 cfs).--Oct. 10 (7:30 a.m.) 845 cfs (4.90 ft); Nov. 4 (5 p.m.) 824 cfs (4.91 ft); Apr. 21 (10 p.m.) 845 cfs (4.94 ft); May 10 (7 p.m.) 971 cfs (5.12 ft); May 20 (6 p.m.) 1,660 cfs (6.19 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-19, Dec. 12-22, Dec. 30 to Jan. 2, Jan. 25 to about Feb. 29, Mar. 10-13. No gage-height record Feb. 3 to Mar. 6; discharge estimated on basis of weather records and records for other Kootenai River tributaries.

Moyie River at Eastport, Idaho

(International gaging station)

Location.--Lat 49°00', long 116°11', in SE¼ sec. 10, T. 65 N., R. 2 E., on left bank at Eastport, 1,000 ft downstream from international boundary.

Drainage area.--570 sq mi.

Records available.--August 1929 to September 1956 in reports of Geological Survey. January 1915 to December 1916, and discharge measurements during 1914 and 1917, in reports of Water Resources Division, Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 2,620.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. January 1915 to December 1916 staff gage at site 0.2 mile upstream at different datum.

Average discharge.--27 years, 701 cfs (507,500 acre-ft per year).

Extremes.--Maximum discharge during year, 9,310 cfs May 20 (gage height, 10.52 ft); minimum, 62 cfs Sept. 17-20 (gage height, 3.51 ft).
1929-56: Maximum discharge, 9,400 cfs May 20, 1954 (gage height, 10.55 ft); minimum, 23 cfs Nov. 7, 1936 (gage height, 3.20 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

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

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.5	60	6.0	1,740
3.7	108	7.0	3,060
4.0	202	8.0	4,610
4.5	445	9.0	6,360
5.0	770	10.6	9,470
5.5	1,200		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	672	298	b260	*b150	154	624	2,980	*5,200	838	180	90
2	93	624	288	b300	b170	154	617	2,680	5,070	800	180	86
3	*90	*637	279	b310	b180	b155	*637	2,400	4,680	770	177	*83
4	90	1,010	270	322	b200	160	728	2,200	4,550	749	170	83
5	100	1,460	266	327	b200	b150	770	2,030	4,180	707	163	83
6	98	1,190	261	303	b200	b140	714	2,060	3,660	700	157	81
7	93	1,040	252	298	b200	b145	693	2,450	3,220	693	154	78
8	98	934	248	293	b200	b145	651	3,120	2,890	630	147	78
9	154	877	243	b270	b210	b140	686	4,000	2,740	598	144	76
10	401	925	235	270	b230	b130	893	4,270	2,790	565	144	74
11	342	861	*235	261	b250	b130	1,130	4,290	2,680	535	147	74
12	*248	721	317	256	b230	b130	1,240	3,740	2,360	517	141	72
13	227	b640	b300	252	b200	b135	1,460	3,500	2,280	493	135	72
14	214	b590	b260	248	b180	b140	1,870	3,570	2,030	523	130	69
15	214	b530	b240	239	b170	141	2,410	4,160	*2,110	475	124	67
16	214	b490	b230	248	b155	138	3,080	5,150	2,100	469	122	65
17	210	b460	b230	235	b150	141	3,150	6,250	1,980	434	119	65
18	214	b420	b250	227	b155	147	3,340	7,070	1,880	401	119	62
19	222	b430	b270	222	b160	163	*3,520	7,580	1,800	379	116	62
20	284	b440	b400	214	b200	191	3,910	8,450	1,720	353	113	62
21	252	412	b580	210	b230	198	4,530	8,870	1,590	327	108	69
22	239	390	b590	210	b250	214	4,900	8,470	1,490	308	103	72
23	227	364	535	206	b230	298	4,230	*8,030	1,400	288	100	67
24	231	369	423	202	206	493	4,000	8,270	1,310	274	98	65
25	434	364	369	b195	188	679	3,540	7,760	1,220	256	98	67
26	830	353	379	b185	*173	808	3,360	6,880	1,140	*243	100	67
27	869	348	434	b190	160	693	3,380	6,430	1,090	231	103	69
28	877	b330	b360	b180	157	610	3,440	6,020	1,040	214	100	72
29	845	312	b320	b170	157	591	*3,480	5,660	950	206	100	76
30	808	303	b300	b160	------	610	3,240	5,440	885	195	98	103
31	735	------	b270	b155	------	651	------	5,240	------	184	93	------
Total	10,051	18,496	9,932	7,418	5,541	8,774	70,223	159,020	72,035	14,355	3,983	2,209
Mean	324	617	320	239	191	283	2,341	5,130	2,401	463	128	73.6
Cfsm	0.568	1.08	0.561	0.419	0.335	0.496	4.11	9.00	4.21	0.812	0.225	0.129
In.	0.66	1.21	0.65	0.48	0.36	0.57	4.58	10.38	4.70	0.94	0.26	0.14
Ac-ft	19,940	36,690	19,700	14,710	10,990	17,400	139,300	315,400	142,900	28,470	7,900	4,380

Calendar year 1955: Max 5,230 Min 56 Mean 793 Cfsm 1.39 In. 18.90 Ac-ft 574,000
Water year 1955-56: Max 8,870 Min 62 Mean 1,044 Cfsm 1.83 In. 24.93 Ac-ft 757,800

Peak discharge (base, 2,900 cfs).--Apr. 22 (2 a.m.) 5,170 cfs (8.33 ft); May 20 (11:30 p.m.) 9,310 cfs (10.52 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Moyie River at Eileen, Idaho

Location.--Lat 48°46', long 116°10', in NE¼ sec. 35, T. 63 N., R. 2 E., on right bank an eighth of a mile downstream from Skin Creek, a quarter of a mile southeast of Eileen, and 4 miles upstream from mouth.

Drainage area.--755 sq mi.

Records available.--October 1925 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,124.5 ft (river-profile survey). Prior to June 1, 1928, staff gage and June 1, 1928, to Sept. 30, 1944, water-stage recorder, at same site at datum 1.0 ft higher.

Average discharge.--31 years, 863 cfs (624,800 acre-ft per year).

Extremes.--Maximum discharge during year, 10,300 cfs May 21 (gage height, 6.72 ft); minimum, 108 cfs Sept. 19, 20 (gage height, 1.92 ft).
1925-56: Maximum discharge, 11,000 cfs May 20, 1954 (gage height, 6.99 ft); minimum, 40 cfs Nov. 27, 1936; minimum gage height, 0.50 ft Feb. 22, 1944, present datum.

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 21, 22)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30			
2.1	128	3.5	1,070	1.9	102	4.5	2,810
2.3	198	4.0	1,680	2.2	215	5.0	3,970
2.6	345	5.0	3,390	2.5	380	6.0	7,410
3.0	610	6.0	6,350	3.0	770	6.7	10,200
				4.0	1,960		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	780	418	b490	b260	281	1,140	3,650	6,410	1,080	270	148
2	160	717	405	b540	b290	271	*1,080	3,360	6,300	1,040	270	144
3	157	753	399	b580	b310	281	1,080	3,050	5,730	981	265	141
4	*154	1,030	*387	596	b320	281	1,180	2,850	5,620	970	260	137
5	168	*1,630	381	603	b330	b260	1,260	2,640	5,070	920	250	133
6	168	1,320	375	554	b330	*b245	1,170	2,660	4,320	900	235	130
7	157	1,160	369	547	b330	b260	1,140	3,010	3,730	910	230	127
8	168	1,070	357	540	b320	b260	1,050	3,750	3,310	840	220	127
9	229	1,000	351	505	b340	b250	1,060	4,770	3,160	790	215	124
10	498	1,050	345	491	b380	b230	1,310	5,310	3,220	743	211	121
11	519	990	357	470	405	b230	1,640	5,340	*3,160	707	211	118
12	381	807	505	457	375	b230	1,790	4,600	2,910	672	206	118
13	345	735	b440	450	329	b235	2,060	4,200	2,490	640	202	114
14	323	b690	b390	438	302	247	2,540	4,230	2,360	707	193	114
15	318	b660	b350	424	b270	262	3,150	4,830	2,480	648	189	114
16	323	b620	b340	412	b250	257	3,800	6,080	2,510	632	184	111
17	318	b600	b350	405	b240	262	3,870	7,710	2,370	592	180	111
18	318	b570	b370	393	b250	271	4,080	8,830	*2,240	544	175	111
19	323	b590	b410	387	b270	302	4,410	9,150	2,140	506	171	108
20	393	b620	575	381	b320	351	4,880	9,150	2,060	485	167	114
21	363	b560	960	375	b370	375	5,510	9,860	1,920	457	163	124
22	345	b530	1,010	369	412	412	5,980	9,570	1,810	436	160	121
23	334	498	910	369	369	533	5,480	9,200	1,690	408	152	114
24	351	b500	717	*357	334	807	5,170	9,240	1,620	380	152	114
25	512	b500	610	340	302	1,110	4,480	8,950	1,530	362	152	114
26	852	b470	658	b330	b280	1,400	4,170	8,260	1,440	*344	152	111
27	960	457	771	b340	b275	1,240	4,140	7,680	1,370	332	160	118
28	970	450	650	b320	286	1,080	*4,170	7,140	1,300	314	163	118
29	940	438	b590	b300	291	1,030	4,170	*6,660	1,200	304	*167	127
30	900	424	b530	b280	------	1,060	3,940	6,590	1,120	287	163	148
31	825	-----	b500	b270	-----	1,170	-----	6,440	------	276	156	------
Total	12,947	22,219	15,780	13,313	9,140	15,483	90,900	188,760	86,590	19,207	6,044	3,674
Mean	418	741	509	429	315	499	3,030	6,089	2,886	620	195	122
Cfsm	0.554	0.981	0.674	0.568	0.417	0.661	4.01	8.06	3.82	0.821	0.258	0.162
In.	0.64	1.09	0.78	0.66	0.45	0.76	4.48	9.30	4.27	0.95	0.30	0.18
Ac-ft	25,680	44,070	31,300	26,410	18,130	30,710	180,300	374,400	171,700	38,100	11,990	7,290

Calendar year 1955: Max 6,240 Min 114 Mean 963 Cfsm 1.28 In. 17.31 Ac-ft 697,200
Water year 1955-56: Max 9,860 Min 108 Mean 1,323 Cfsm 1.75 In. 23.86 Ac-ft 960,100

Peak discharge (base, 3,500 cfs).--Apr. 22 (4:30 a.m.) 6,320 cfs (5.89 ft); May 11 (3 a.m.) 5,590 cfs (5.54 ft); May 21 (7 a.m.) 10,300 cfs (6.72 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Kootenai River at Boom Camp, near Bonners Ferry, Idaho

Location.--Lat 48°42'05", long 116°14'30", in NW¼ sec. 29, T. 62 N., R. 2 E., on left bank 600 ft east of Boom Camp, 3½ miles upstream from Bonners Ferry, and 4 miles downstream from Moyie River.

Drainage area.--12,950 sq mi, approximately.

Records available.--October 1927 to September 1956 (gage heights only) in reports of Geological Survey. April 1925 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.04 ft higher. Prior to Aug. 23, 1934, staff gage at same site. Datum of gage was 54.08 ft higher prior to Oct. 8, 1934.

Extremes.--Maximum elevation during year, 1,781.38 ft May 24; minimum, 1,757.51 ft Feb. 17.
1927-56: Maximum elevation recorded, that of May 24, 1956; minimum, 1,755.53 ft Dec. 9, 1936.

Remarks.--Elevations affected by backwater from Kootenay Lake Apr. 21-28, May 10 to July 10, July 15-17. Drainage district No. 7 and three small areas above district No. 4 (district No. 14, Casey, and Spurling tracts) flooded May 21; dikes on drainage district No. 1 began failing May 21; small area above district No. 9 (Kerr tract), district No. 16, district No. 2 and small areas north of district No. 10 (Vickaryous tract) flooded May 23; districts Nos. 4, 5, 10, and 13, flooded May 24; and Klockmann tract just south of Boundary Creek flooded June 1. Drainage district No. 15 flooded from seepage.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58.47	60.54	59.52	63.79	57.88	57.96	60.37	64.28	79.43	65.33	61.35	59.60
2	58.39	60.27	59.44	63.89	57.91	57.97	60.27	63.96	79.59	64.77	61.22	59.46
3	58.37	60.12	59.34	63.99	57.96	58.00	60.20	63.52	79.83	64.35	61.12	59.33
4	58.32	60.53	59.20	64.17	58.13	57.99	60.23	63.16	79.79	64.20	61.06	59.26
5	58.36	62.05	59.07	64.37	57.99	58.16	60.44	62.93	79.45	64.30	61.03	59.19
6	58.33	61.88	59.01	64.33	58.19	58.08	60.38	62.78	78.97	64.33	61.00	59.09
7	58.31	61.32	58.95	64.01	58.33	57.84	60.26	62.87	78.20	64.41	60.82	59.02
8	58.32	60.91	58.92	63.75	58.39	57.87	60.11	63.49	76.90	64.45	60.65	58.94
9	58.72	60.57	58.87	63.37	58.32	57.83	60.01	64.93	75.05	64.27	60.49	58.87
10	59.90	60.62	58.76	62.95	58.20	57.86	60.21	66.15	73.57	64.12	60.40	58.79
11	60.22	60.58	58.77	62.69	58.23	57.98	60.72	66.76	73.02	64.22	60.37	58.74
12	59.92	60.23	59.60	62.48	58.23	57.87	61.13	66.55	73.11	64.47	60.36	58.72
13	59.56	59.84	60.30	62.22	58.28	57.70	61.51	66.09	72.85	64.50	60.30	58.70
14	59.33	59.24	59.88	61.89	58.33	57.65	62.19	65.75	71.78	64.65	60.19	58.63
15	59.18	59.25	59.58	61.51	58.18	57.67	63.09	65.80	70.75	64.81	60.11	58.58
16	59.13	59.81	59.02	61.32	58.22	57.71	64.14	66.76	70.07	64.77	60.07	58.53
17	59.08	61.02	58.78	60.80	57.68	57.69	64.82	69.17	69.94	64.40	60.05	58.57
18	59.06	62.94	58.62	60.19	57.80	57.79	65.42	72.35	70.43	64.03	60.04	58.55
19	59.07	63.65	59.66	59.71	57.70	57.91	65.62	75.36	70.72	63.73	60.02	58.56
20	59.17	63.77	60.85	59.29	57.84	58.03	65.93	78.45	70.65	63.47	59.96	58.55
21	59.27	63.01	62.22	58.95	57.87	58.19	66.92	79.52	70.44	63.37	59.85	58.58
22	59.32	60.99	63.51	58.80	57.98	58.35	68.16	78.55	70.12	63.31	59.76	58.59
23	59.26	60.67	65.59	58.69	58.06	58.71	68.40	80.39	69.41	63.26	59.69	58.60
24	59.20	60.56	66.95	58.52	58.07	59.28	67.79	80.97	68.60	63.18	59.68	58.64
25	59.40	60.18	66.54	58.44	58.03	60.00	66.75	80.99	67.95	62.98	59.69	58.60
26	59.96	60.30	66.26	58.76	57.99	60.81	65.71	80.54	67.39	62.76	59.73	58.55
27	61.04	60.16	66.33	58.67	57.96	60.94	65.27	80.29	66.64	62.59	59.79	58.50
28	61.88	59.86	66.06	58.62	57.92	60.60	65.08	79.99	65.99	62.36	59.80	58.55
29	61.60	59.54	65.50	58.64	57.94	60.33	64.85	79.70	65.67	62.06	59.79	58.59
30	61.16	59.53	64.85	58.38	-------	60.23	64.60	79.48	65.61	61.82	59.76	58.86
31	60.83	-------	64.06	57.88	-------	60.38	-------	79.36	-------	61.59	59.67	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Bonners Ferry, Idaho

Location.--Lat 48°42'00", long 116°18'45", in NE¼ sec. 27, T. 62 N., R. 1 E., near right bank on downstream side of highway bridge at Bonners Ferry.

Drainage area.--13,000 sq mi, approximately.

Records available.--May to October 1904, October 1927 to September 1956 (gage heights only prior to March 1928). Gage heights collected in this vicinity since 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage read once daily. Water-stage recorder 800 ft across channel from wire-weight gage at same datum used as supplementary gage during high stages since May 8, 1942. Datum of gage is 1,743.00 ft above mean sea level with respect to Geological Survey benchmark V-3-1929 at elevation 1,777.08 ft. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.02 ft higher. May 1 to Oct. 15, 1904, staff gage on railroad bridge three-quarters of a mile downstream at different datum. Oct. 1, 1927, to Nov. 30, 1929, staff gage near left bank. Dec. 1, 1929, to June 12, 1933, chain or wire-weight gages on old highway bridge 40 ft downstream. Datum of gages Oct. 1, 1927, to Jan. 2, 1931, was about 0.23 ft lower.

Average discharge.--28 years (1928-56), 14,760 cfs (10,690,000 acre-ft per year).

Extremes.--Maximum discharge during year, 127,000 cfs May 22, 23 (affected by dike breakage downstream); maximum elevation, 1,780.09 ft May 24; minimum daily discharge, 3,400 cfs Feb. 17; minimum elevation observed, 1,744.05 ft Mar. 20.
1927-56: Maximum discharge, 139,000 cfs May 27, 1948 (affected by dike breakage downstream); maximum elevation, that of May 24, 1956; minimum daily discharge, 1,300 cfs Feb. 8, 1936; minimum elevation, 1,741.14 ft Dec. 5, 1929, Dec. 29, 1930, datum then in use.
Flood of June 1894 reached a stage of 1,777.2 ft, present datum.

Remarks.--Records excellent except those for period of ice effect, which are good. Backwater from Kootenay Lake usually present at Bonners Ferry. Discharge for periods of backwater at Boom Camp from Kootenay Lake, Apr. 21-28, May 10 to July 10, July 15-17, computed on basis of fall between gages at Boom Camp and near Bonners Ferry; that for remainder of year on basis of stage-discharge relation for station at Boom Camp. Discharge measurements made at station near Bonners Ferry. See Remarks for Kootenai River at Boom Camp on preceding page.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.05	49.42	50.23	50.47	47.84	47.32	47.18	57.85	78.39	61.79	51.43	47.01
2	47.00	48.94	50.13	50.49	47.96	47.17	47.00	57.13	78.52	61.02	50.96	47.01
3	46.92	48.70	50.03	50.75	48.04	46.96	46.80	56.22	78.83	60.19	50.57	46.97
4	46.83	49.23	49.84	51.10	48.48	46.77	46.73	55.38	78.83	59.59	50.33	46.95
5	46.91	51.70	49.58	51.67	48.72	46.70	47.12	54.68	78.52	59.33	50.16	46.89
6	46.93	51.88	49.39	51.71	48.58	46.47	47.13	54.21	77.91	59.21	50.01	46.85
7	46.87	50.99	48.40	51.82	48.64	46.31	46.91	54.22	77.16	59.15	49.68	46.89
8	46.84	50.12	48.38	51.88	48.43	46.09	46.61	55.18	75.76	59.11	49.21	46.88
9	47.17	49.53	48.38	51.75	48.40	45.85	46.34	57.69	73.98	58.88	48.84	46.86
10	48.28	49.55	48.35	51.38	48.40	45.67	46.58	60.34	72.41	58.54	48.61	46.83
11	48.96	49.58	48.33	51.08	48.30	45.14	47.40	61.89	71.57	58.40	48.45	46.86
12	48.51	48.91	49.25	50.79	48.10	45.14	48.28	61.97	71.45	58.54	48.36	46.90
13	48.05	50.11	49.86	50.47	48.17	45.33	49.03	61.36	71.28	58.69	48.26	46.91
14	47.75	50.94	48.96	50.22	47.99	45.14	50.30	60.77	70.41	58.90	48.05	46.88
15	47.59	50.45	49.05	49.96	48.04	45.00	52.19	60.70	69.29	59.12	47.88	46.91
16	47.58	50.21	49.43	49.69	47.74	44.61	54.64	61.98	68.48	59.27	47.80	46.86
17	47.56	50.15	49.70	49.42	47.97	44.28	56.63	65.07	66.11	58.92	47.77	46.93
18	47.53	50.21	49.73	49.22	47.82	44.14	58.18	69.26	68.33	58.34	47.77	46.93
19	47.54	50.24	49.40	49.07	47.90	44.11	59.05	72.97	68.55	57.72	47.77	47.02
20	47.65	50.19	49.36	49.05	48.02	44.05	59.79	76.46	68.54	57.13	47.67	46.95
21	47.73	50.23	50.34	48.63	48.25	44.09	61.41	77.39	68.35	56.70	47.50	47.05
22	47.84	50.52	51.19	48.85	48.29	44.18	63.58	75.78	68.03	56.38	47.32	47.02
23	47.69	50.46	52.63	48.77	48.35	44.62	64.61	78.52	67.43	56.12	47.19	47.04
24	47.57	50.51	53.08	47.96	48.35	45.56	64.00	79.44	66.53	55.86	47.19	47.10
25	47.81	50.37	51.98	48.30	47.95	46.59	62.57	79.66	65.74	55.46	47.16	47.01
26	48.80	50.42	51.77	48.50	47.80	47.77	60.92	79.35	65.04	54.94	47.17	47.04
27	50.06	50.45	52.07	48.86	47.75	48.35	59.86	79.22	64.21	54.47	47.24	47.15
28	51.50	50.39	51.88	48.65	47.54	47.76	59.33	78.99	63.32	53.92	47.31	47.01
29	51.26	50.31	51.32	48.73	47.32	47.16	58.93	78.68	62.63	53.28	47.25	47.00
30	50.52	50.25	50.89	48.11	------	46.85	58.48	78.50	62.23	52.63	47.32	47.31
31	49.90	------	50.60	48.21	------	47.07	------	78.33	------	52.01	47.14	------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Bonners Ferry, Idaho--Continued

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,170	12,800	7,300	7,600	4,300	4,500	12,400	32,600	98,900	34,400	15,800	9,370
2	5,960	*11,800	7,200	7,300	3,800	4,600	*12,000	30,700	101,000	32,000	15,300	8,920
3	5,910	11,300	7,000	7,400	3,700	4,650	11,800	28,000	103,000	30,300	14,800	8,500
4	5,780	12,800	6,800	7,800	4,000	4,700	11,900	26,000	100,000	30,200	14,600	8,290
5	*5,890	19,700	6,400	9,000	4,300	*4,600	12,700	24,600	97,900	31,400	14,500	8,080
6	5,810	18,800	*6,400	8,800	*4,700	4,400	12,400	23,800	95,000	31,800	14,400	7,790
7	*5,760	16,100	6,300	8,600	4,800	4,400	12,000	24,200	87,800	32,400	13,700	7,590
8	5,780	14,300	6,200	8,600	4,800	4,400	11,400	27,800	79,500	32,700	13,000	7,370
9	6,650	13,000	6,200	8,300	4,900	4,400	11,100	36,600	66,600	31,600	12,400	7,170
10	10,500	13,100	6,100	7,800	5,350	4,400	11,800	44,600	61,100	31,000	12,000	6,960
11	11,700	13,000	6,100	7,500	5,500	4,200	13,700	46,300	*61,600	31,600	12,000	6,820
12	10,600	11,700	8,100	7,450	5,500	4,200	15,400	44,500	65,200	33,100	11,900	6,740
13	9,330	10,300	7,600	7,300	5,000	4,200	17,200	42,000	61,900	33,200	11,700	6,690
14	8,600	8,320	5,400	7,200	4,600	4,200	20,600	40,800	54,400	34,000	11,300	6,500
15	8,140	7,800	5,100	7,000	4,300	4,330	25,500	41,300	49,800	34,900	11,000	6,360
16	7,990	6,200	4,800	6,900	3,800	4,420	31,700	46,400	49,800	34,300	10,900	6,230
17	7,850	6,600	4,500	6,600	3,400	4,380	35,900	60,000	51,300	32,100	10,900	6,340
18	7,790	6,500	4,800	6,300	3,600	4,600	39,600	77,300	*56,900	30,200	10,800	6,280
19	7,820	7,000	5,000	6,300	3,900	4,870	40,900	90,800	59,000	28,400	10,800	6,310
20	8,110	7,500	5,500	6,300	4,400	5,160	43,000	108,000	57,900	26,900	10,500	6,280
21	8,410	7,500	7,000	6,300	4,650	5,570	48,700	*121,000	56,500	26,300	10,200	6,360
22	8,570	7,500	9,400	6,300	4,900	5,990	54,100	125,000	54,800	26,000	9,880	6,390
23	8,380	7,700	11,500	6,300	5,000	6,960	53,500	125,000	49,700	*25,700	9,640	6,420
24	8,200	7,900	12,500	6,200	4,950	8,600	49,900	*125,000	45,600	25,200	9,610	6,500
25	8,820	8,000	11,500	6,000	4,850	11,000	44,800	119,000	43,300	24,000	9,640	6,390
26	10,700	7,800	11,100	5,700	4,800	14,100	39,900	111,000	41,300	22,800	9,810	6,260
27	14,800	7,600	10,800	5,050	4,700	14,600	*38,100	108,000	37,800	22,000	10,000	6,120
28	18,800	7,300	10,200	4,900	4,550	13,300	37,500	102,000	35,600	20,800	10,000	6,260
29	17,400	7,100	9,700	4,900	4,500	12,200	36,100	99,900	35,000	19,300	10,000	6,360
30	15,300	7,200	9,200	4,850	------	11,900	34,500	98,200	35,800	18,100	*9,910	7,090
31	14,000	-----	8,300	4,650	-----	12,400	-----	97,600	------	17,000	9,610	------
Total	285,720	304,220	234,000	211,200	131,550	206,230	840,100	‡2,128	‡1,894	883,700	360,600	208,740
Mean	9,217	10,140	7,548	6,813	4,536	6,653	28,000	68,650	63,130	28,510	11,630	6,958
Cfsm	0.709	0.780	0.581	0.524	0.349	0.512	2.15	5.28	4.86	2.19	0.895	0.535
In.	0.82	0.87	0.67	0.60	0.38	0.59	2.40	6.09	5.42	2.53	1.03	0.60
Ac-ft	566,700	603,400	464,100	418,900	260,900	409,100	‡1,666	‡4,221	‡3,757	‡1,753	715,200	414,000

Calendar year 1955: Max 85,600 Min 2,400 Mean 15,910 Cfsm 1.22 In. 16.62 Ac-ft 11,520,000
Water year 1955-56: Max 125,000 Min 3,400 Mean 21,010 Cfsm 1.62 In. 22.00 Ac-ft 15,250,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--Stage-discharge relation affected by ice Nov. 15 to Mar. 14.

Kootenai River near Bonners Ferry, Idaho

Location.--Lat 48°41'55", long 116°20'40", in NW¼ sec. 28, T. 62 N., R. 1 E., on left bank 1.6 miles downstream from highway bridge at Bonners Ferry.

Drainage area.--13,000 sq mi, approximately.

Records available.--May 1928 to September 1956 (gage heights only, fragmentary prior to May 1929).

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.02 ft higher at Bonners Ferry. May 17 to July 20, 1928, water-stage recorder at same site at datum 43.42 ft higher. July 21 to Oct. 22, 1928, and for elevations below 1,742 ft prior to Jan. 2, 1931, staff gage at same site and datum.

Extremes.--Maximum elevation during year, 1,778.94 ft May 24, from graph based on gage readings; minimum, 1,743.61 ft Mar. 21.
1928-56: Maximum elevation, that of May 24, 1956; minimum, 1,740.16 ft Mar. 29, 1944.

Remarks.--Elevations affected by backwater from Kootenay Lake and by dike breakages (see Remarks for station at Boom Camp p.175).

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.98	49.18	47.67	47.98	45.44	45.53	46.47	57.45	77.66	61.51	51.20	46.80
2	46.91	48.72	47.66	47.96	45.31	45.53	46.31	56.73	77.78	60.78	50.72	46.78
3	46.90	48.46	47.61	48.08	45.32	45.53	46.11	55.84	78.02	59.98	50.34	46.77
4	46.73	48.95	47.50	48.27	45.43	45.49	f46.11	54.98	78.06	59.34	50.10	46.75
5	46.85	51.27	47.34	f48.75	45.65	45.31	f46.52	54.32	77.72	59.04	49.92	46.73
6	46.83	51.55	47.28	48.94	46.06	45.11	f46.45	53.87	77.24	58.86	49.76	46.70
7	46.78	50.74	47.23	48.88	46.13	44.94	f46.20	53.85	76.54	58.79	49.44	46.73
8	46.68	49.88	47.18	48.94	46.16	44.88	f45.88	54.73	f75.24	58.75	48.99	46.71
9	47.05	49.27	47.18	48.86	46.21	44.84	f45.70	57.06	f73.48	58.55	48.60	46.70
10	48.10	49.23	47.13	48.69	46.23	44.72	f45.88	59.74	f71.93	58.20	48.35	46.69
11	48.74	49.30	47.18	48.57	46.26	44.48	f46.63	61.29	f71.18	58.03	48.20	46.74
12	48.32	48.73	47.90	48.50	46.26	44.33	f47.57	61.40	71.03	58.14	48.10	46.80
13	47.96	48.18	48.23	48.42	46.20	44.36	f48.38	60.80	70.88	58.27	47.99	46.81
14	47.71	47.81	47.43	48.34	45.97	44.31	49.62	60.24	70.02	58.47	47.82	46.81
15	47.54	47.25	47.06	48.21	45.80	44.21	f51.54	60.19	69.00	58.67	47.65	46.80
16	47.50	46.94	46.93	48.08	45.53	44.08	f53.93	61.40	68.16	58.84	47.56	46.78
17	47.44	46.73	46.87	47.90	45.27	43.90	f55.95	64.44	67.73	58.59	47.55	46.83
18	47.41	46.94	46.54	47.75	45.08	43.74	f57.49	68.42	67.92	58.05	47.53	46.87
19	47.43	47.31	46.43	47.68	45.21	43.67	f58.44	72.06	68.12	57.43	47.49	46.92
20	47.55	47.58	46.48	47.62	45.45	43.63	f59.16	75.56	68.11	56.82	47.41	46.89
21	47.60	48.18	47.08	47.55	45.64	43.62	f60.66	76.36	67.90	56.39	47.26	46.99
22	47.69	48.25	48.02	47.47	45.84	43.85	f62.90	74.55	67.58	56.05	47.08	46.97
23	47.57	47.91	49.46	47.39	45.99	f44.15	f63.93	f77.48	67.01	55.80	46.98	46.98
24	47.44	47.90	50.47	47.19	49.95	f44.81	f63.28	f78.40	66.19	55.56	46.94	47.02
25	47.61	47.93	49.95	46.95	45.82	f45.76	f61.80	f78.65	65.39	55.14	46.92	46.95
26	48.55	48.24	49.59	46.50	45.72	47.06	f60.36	f78.50	64.72	54.66	46.94	46.94
27	49.67	48.11	50.01	46.44	45.62	47.73	59.36	f78.38	63.92	54.19	46.98	47.08
28	51.05	47.88	49.97	46.23	45.54	47.14	58.82	78.24	63.03	53.65	47.02	46.95
29	50.98	47.70	49.45	46.09	45.53	46.52	58.47	77.95	62.35	53.03	47.00	46.96
30	50.24	47.62	48.84	45.92	-------	46.18	58.04	77.75	61.91	52.38	47.08	47.17
31	49.64	-------	48.23	45.67	----	46.35	-------	77.63	-------	51.77	46.89	-------

f Gage height partly or wholly estimated on basis of recorder graphs for stations upstream and downstream.

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Deep Creek at Moravia, Idaho

Location.--Lat 48°38', long 116°24', in sec. 18, T. 61 N., R. 1 E., on downstream side of right abutment of highway bridge, 1 mile downstream from Ruby Creek and 1 mile southwest of Moravia.

Drainage area.--133 sq mi.

Records available.--May 1928 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Staff gage read once daily. Altitude of gage is 1,800 ft (from topographic map). Prior to Aug. 2, 1949, at datum 2.00 ft higher.

Average discharge.--28 years (1928-56), 141 cfs (102,100 acre-ft per year).

Extremes.--Maximum discharge observed during year, 1,180 cfs Apr. 22; maximum gage height, 7.10 ft May 20; minimum discharge observed, 16 cfs Aug. 20-25, Sept. 12-17.
1928-56: Maximum discharge, 1,670 cfs May 18, 1954 (gage height, 7.40 ft, from graph based on gage readings); minimum observed, 5 cfs Aug. 14, 22, 1940.

Remarks.--Records fair except those for periods of ice effect or doubtful gage-height record, which are poor. Small diversions above station for irrigation. Occasional regulation above station at migratory waterfowl refuge near Elmira.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	77	d88	330	*105	97	435	718	518	81	28	27
2	27	*77	d84	310	110	97	395	666	*502	77	27	26
3	25	134	d80	304	115	96	415	608	440	68	30	23
4	34	239	79	304	120	96	460	608	420	81	28	23
5	70	204	d74	367	120	100	*440	594	385	81	28	22
6	47	164	d70	312	120	*100	380	570	344	77	28	20
7	34	140	d68	296	120	88	354	692	304	77	27	*19
8	36	127	*67	272	115	100	320	811	272	54	26	20
9	70	118	d66	249	110	74	420	895	265	62	23	19
10	224	145	d64	239	105	84	470	909	239	59	22	18
11	121	136	162	224	110	81	540	881	239	57	20	18
12	96	118	236	213	115	81	600	797	210	54	20	16
13	81	98	174	204	105	74	624	744	199	62	20	16
14	75	90	140	204	100	74	770	718	188	72	20	16
15	65	85	120	190	90	70	867	712	*279	62	19	16
16	59	80	110	190	92	70	1,100	790	293	57	19	16
17	59	90	100	180	94	88	1,080	888	227	54	19	16
18	59	95	95	167	98	92	825	975	204	47	19	18
19	62	120	110	160	98	100	902	1,050	188	43	18	19
20	62	160	140	154	105	125	923	1,160	177	41	16	23
21	59	136	200	152	120	143	1,020	945	152	41	16	26
22	59	123	d900	147	130	172	1,180	804	143	38	16	22
23	59	118	d750	140	130	255	1,160	818	134	35	16	22
24	59	118	496	135	120	354	1,090	960	118	33	16	22
25	106	190	d440	125	115	430	1,000	*712	108	32	16	22
26	136	164	d480	115	110	507	930	648	104	30	18	25
27	96	d130	502	130	100	395	888	612	96	27	23	23
28	88	d110	460	130	98	340	846	600	88	26	28	28
29	96	d100	410	130	98	320	*797	558	86	26	28	34
30	96	d95	380	120	------	338	732	546	81	28	30	44
31	98	-----	350	110	------	362	------	518	------	*28	28	------
Total	2,290	3,781	7,495	6,303	3,166	5,401	21,963	23,503	7,003	1,628	690	659
Mean	73.9	126	242	203	109	174	732	758	233	52.5	22.3	22.0
Cfsm	0.556	0.947	1.82	1.53	0.820	1.31	5.50	5.70	1.75	0.395	0.168	0.165
In.	0.64	1.06	2.10	1.78	0.89	1.51	6.14	6.57	1.96	0.45	0.19	0.18
Ac-ft	4,540	7,500	14,870	12,500	6,280	10,710	43,560	46,620	13,890	3,230	1,370	1,310

Calendar year 1955: Max 900 Min 14 Mean 160 Cfsm 1.20 In. 16.37 Ac-ft 116,200
Water year 1955-56: Max 1,180 Min 16 Mean 229 Cfsm 1.72 In. 23.45 Ac-ft 166,400

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of weather records and records for nearby streams.
Note.--Stage-discharge relation affected by ice Nov. 14-20, Dec. 14-21, Dec. 28 to Jan. 2, Jan. 23 to Mar. 2.

Kootenai River at Klockmann Ranch, near Bonners Ferry, Idaho

Location.--Lat 48°47'40", long 116°22'50", in SE¼ sec. 19, T. 63 N., R. 1 E., on right bank 0.3 mile downstream from dike of drainage district No. 5 and 8 miles north of Bonners Ferry.

Drainage area.--13,300 sq mi, approximately.

Records available.--May to July, September to November 1928, April to September, December 1929 (fragmentary), April 1930 to September 1956 (gage heights only).

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is about 0.03 ft higher.

Extremes.--Maximum elevation during year, 1,775.89 ft May 24; minimum, 1,742.43 ft Mar. 16. 1928-56: Maximum elevation, that of May 24, 1956; minimum, 1,738.76 ft Apr. 1, 1944.

Remarks.--Elevations affected by backwater from Kootenay Lake and by dike breakages (see Remarks for station at Boom Camp, p. 175).

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.59	48.23	46.98	46.99	44.84	43.70	45.02	55.78	75.18	60.11	50.09	45.98
2	46.56	47.86	46.98	46.94	44.74	43.69	44.85	55.12	75.24	59.42	49.62	46.04
3	46.54	47.70	46.92	47.01	44.69	43.65	44.67	54.32	75.48	58.65	49.24	46.08
4	46.43	48.04	46.84	47.21	44.66	43.61	44.62	53.54	75.58	58.02	48.96	46.11
5	46.50	49.83	46.71	47.50	44.78	43.47	44.96	52.88	75.32	57.69	48.77	46.11
6	46.48	50.14	46.68	47.60	44.86	43.32	44.92	52.44	74.92	57.49	48.62	46.13
7	46.44	49.58	46.65	47.50	44.89	43.16	44.72	52.35	74.38	57.35	48.32	46.18
8	46.36	48.86	46.60	47.50	44.85	43.11	44.45	53.08	73.39	57.29	47.91	46.21
9	46.62	48.33	46.61	47.33	44.83	43.03	44.24	55.10	71.97	57.08	47.55	46.22
10	47.41	48.28	46.59	47.12	44.80	42.90	44.39	57.70	70.54	56.75	47.31	46.23
11	47.93	48.31	46.61	46.96	44.78	42.68	45.10	59.28	69.64	56.59	47.14	46.30
12	47.57	47.84	47.07	46.88	44.77	42.57	45.86	59.49	69.35	56.64	47.02	46.37
13	47.31	47.20	47.43	46.81	44.72	42.61	46.59	58.96	69.17	56.77	46.92	46.40
14	47.10	46.91	46.87	46.73	44.57	42.49	47.72	58.40	68.47	56.95	46.78	46.40
15	46.99	46.58	46.54	46.62	44.46	42.46	49.51	58.31	67.51	57.12	46.65	46.42
16	46.96	46.44	46.47	46.52	44.16	42.46	51.91	59.45	66.71	57.26	46.58	46.40
17	46.92	46.32	46.43	46.43	44.00	42.46	53.92	62.41	66.20	57.03	46.55	46.44
18	46.91	46.47	46.21	46.29	43.87	42.47	55.39	66.09	66.21	56.53	46.53	46.48
19	46.94	46.75	46.15	46.24	43.89	42.56	56.32	69.37	66.36	55.97	46.51	46.54
20	47.01	46.96	46.18	46.20	43.94	42.65	57.05	72.55	66.38	55.41	46.44	46.52
21	47.07	47.38	46.55	46.15	44.02	42.78	58.55	73.48	66.20	54.99	46.32	46.60
22	47.12	47.46	47.23	46.11	44.10	42.86	60.65	71.98	65.91	54.69	46.18	46.57
23	47.01	47.19	48.29	46.08	44.14	43.11	61.69	74.26	65.44	54.43	46.09	46.59
24	46.92	47.18	49.05	46.01	44.06	43.71	61.37	75.20	64.70	54.18	46.07	46.62
25	47.08	47.19	48.66	45.90	43.94	44.62	60.06	75.43	63.94	53.81	46.06	46.55
26	47.86	47.41	48.34	45.61	43.89	45.54	58.59	75.58	63.25	53.36	46.07	46.57
27	48.69	47.33	48.62	45.54	43.82	46.14	57.55	75.69	62.51	52.91	46.09	46.68
28	49.79	47.14	48.64	45.40	43.71	45.64	57.07	75.68	61.71	52.40	46.12	46.57
29	49.78	47.02	48.22	45.26	43.71	45.06	56.74	75.47	61.02	51.83	46.11	46.56
30	49.15	46.95	47.73	45.16	-------	44.78	56.34	75.28	60.54	51.22	46.19	46.72
31	48.61	-------	47.24	44.98	-------	44.96	-------	75.18	-------	50.64	46.05	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River near Copeland, Idaho

(International gaging station)

Location.--Lat 48°54'45", long 116°25'00", in NW¼NW¼SW¼ sec. 12, T. 64 N., R. 1 W., on right bank at Andrews Ranch, three-quarters of a mile downstream from Mission Creek and 1½ miles northwest of Copeland.

Drainage area.--13,400 sq mi, approximately.

Records available.--October 1927 to September 1956 (gage-height record only prior to May 1929) in reports of Geological Survey. April 1925 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, referred to benchmark T-10-1914, elevation, 1,791.49 ft (datum of 1929, supplementary adjustment of 1947, is about 0.04 ft higher). Gage readings have been reduced to elevations above mean sea level. Prior to Nov. 20, 1929, staff or recording gage at site three-quarters of a mile upstream at same datum.

Average discharge.--27 years, 15,380 cfs (11,130,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 112,000 cfs May 26; maximum elevation, 1,771.78 ft May 28; minimum daily discharge, 3,750 cfs Feb. 17; minimum elevation, 1,741.71 ft Mar. 18.
1929-56: Maximum daily discharge, 124,000 cfs May 30, 1948; maximum elevation, that of May 28, 1956; minimum daily discharge, 1,350 cfs Feb. 8, 1936; minimum elevation, 1,738.52 ft Apr. 2, 3, 1944.

Remarks.--Records excellent except those for periods of ice effect or dike breakages, which are good. Discharge and elevations affected by flooding of drainage districts (see Remarks for station at Boom Camp, p. 175). Stage-discharge relation affected by backwater from Kootenay Lake. Discharge computed from fall-mean stage-discharge relations determined on basis of fall in reach between stations at Klockmann Ranch and at Porthill and discharge measurements made at station near Copeland.

Cooperation.--This station is maintained by the United States under agreement with Canada.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.36	47.27	46.49	46.50	44.63	43.13	43.33	53.33	71.35	57.95	48.79	45.18
2	46.34	47.02	46.47	46.42	44.50	43.11	43.21	52.82	71.40	57.52	48.35	45.32
3	46.32	46.94	46.43	46.42	44.47	43.04	43.06	52.19	71.60	56.70	47.97	45.43
4	46.25	47.19	46.36	46.51	44.49	42.95	43.01	51.49	71.73	56.07	47.71	45.51
5	46.29	48.43	46.26	46.68	44.53	42.84	43.24	50.94	71.58	55.71	47.51	45.57
6	46.26	48.71	46.25	46.73	44.54	42.72	43.24	50.54	71.29	55.46	47.33	45.65
7	46.23	48.28	46.23	46.66	44.55	42.55	43.06	50.43	70.90	55.25	47.07	45.74
8	46.18	47.74	46.20	46.66	44.51	42.48	42.88	50.88	70.15	55.12	46.71	45.80
9	46.36	47.35	46.22	46.53	44.44	42.41	42.74	52.37	69.12	54.93	46.41	45.85
10	46.76	47.32	46.20	46.37	44.38	42.27	42.80	54.51	67.91	54.64	46.20	45.88
11	47.15	47.31	46.22	46.26	44.35	42.13	43.21	55.90	67.03	54.45	46.05	45.97
12	46.91	46.98	46.51	46.20	44.32	42.01	43.86	56.24	66.57	54.45	45.93	46.06
13	46.77	46.56	46.72	46.15	44.29	41.99	44.40	55.89	66.33	54.53	45.84	46.10
14	46.65	46.27	46.39	46.09	44.15	41.89	45.30	55.46	65.77	54.67	45.75	46.13
15	46.58	46.14	46.19	46.00	44.09	41.82	46.71	55.40	65.02	54.79	45.66	46.16
16	46.58	46.12	46.15	45.92	43.89	41.78	48.72	56.30	64.30	54.90	45.62	46.16
17	46.55	46.08	46.14	45.87	43.78	41.75	50.54	58.67	63.70	54.73	45.50	46.19
18	46.54	46.18	46.01	45.76	43.67	41.72	51.87	61.91	63.51	54.33	45.59	46.23
19	46.55	46.38	45.98	45.70	43.65	41.72	52.83	64.91	63.56	53.90	45.56	46.29
20	46.62	46.53	46.00	45.66	43.64	41.78	53.53	67.87	63.55	53.43	45.52	46.28
21	46.63	46.77	46.20	45.61	43.67	41.87	54.87	69.32	63.40	53.08	45.44	46.35
22	46.67	46.82	46.56	45.56	43.67	41.94	56.74	68.24	63.14	52.80	45.35	46.31
23	46.58	46.64	47.13	45.52	43.65	42.20	57.89	69.70	62.76	52.58	45.30	46.32
24	46.49	46.62	47.65	45.46	43.54	42.69	57.80	70.83	62.17	52.33	45.29	46.34
25	46.64	46.63	47.50	45.40	43.44	43.20	56.85	70.21	61.51	52.03	45.27	46.29
26	47.27	46.77	47.28	45.21	43.39	43.76	55.63	71.05	60.89	51.65	45.26	46.30
27	47.72	46.70	47.45	45.15	43.29	44.19	54.79	71.58	60.26	51.24	45.26	46.44
28	48.34	46.59	47.51	45.06	43.18	43.81	54.34	71.74	59.52	50.81	45.29	46.33
29	48.36	46.52	47.26	44.97	43.16	43.39	54.09	71.63	58.90	50.33	45.29	46.31
30	47.94	46.46	46.97	44.90	-------	43.17	53.78	71.50	58.38	49.80	45.37	46.40
31	47.53	-------	46.67	44.75	-------	43.28	-------	71.41	-------	49.30	45.23	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River near Copeland, Idaho--Continued

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,380	13,400	7,400	8,350	4,700	4,800	13,600	34,900	e105,000	39,500	16,900	9,450
2	6,230	12,300	7,300	7,900	4,100	4,900	13,200	32,600	103,000	37,500	16,100	9,120
3	6,150	*11,600	7,200	7,900	3,900	5,000	*12,900	30,100	104,000	35,400	15,600	8,760
4	5,950	12,400	7,000	8,200	*4,100	*5,100	12,800	27,900	104,000	33,900	15,100	8,550
5	6,120	18,400	6,600	9,300	4,400	5,100	13,700	26,000	102,000	33,600	15,000	8,240
6	6,120	19,100	6,500	9,200	4,700	4,900	13,500	24,900	*99,900	33,500	15,000	7,840
7	6,090	17,400	*6,400	9,200	5,000	4,900	13,100	25,000	97,600	33,700	14,500	7,630
8	5,860	15,300	6,300	9,000	5,000	4,700	12,400	27,700	91,400	34,100	13,700	7,480
9	6,750	13,700	6,200	8,800	5,100	4,650	12,000	34,900	82,200	33,700	12,900	7,150
10	*10,100	13,300	6,200	8,400	5,600	4,700	12,400	43,600	73,200	32,800	12,500	7,010
11	12,000	13,600	6,300	8,000	5,700	4,500	14,300	48,400	67,800	32,700	12,400	6,830
12	10,800	12,300	8,000	7,900	5,700	4,500	15,900	48,400	68,000	33,200	12,200	6,710
13	9,550	10,000	7,600	7,700	5,250	4,500	17,500	46,000	68,100	33,800	12,000	6,660
14	8,710	9,490	6,100	7,600	4,900	4,500	20,100	43,900	64,600	34,400	11,600	6,410
15	8,280	7,830	5,500	7,400	4,600	4,600	24,600	43,500	60,000	35,200	11,300	6,350
16	8,040	6,790	5,000	7,300	4,200	4,700	31,000	47,200	56,800	35,600	11,100	6,200
17	7,860	6,020	4,600	7,000	3,750	4,700	36,500	58,100	55,700	34,800	11,000	6,310
18	7,820	6,540	5,100	6,700	3,900	4,900	*40,600	70,900	*57,300	33,100	11,000	6,250
19	7,960	7,000	5,100	6,700	4,050	5,100	42,900	84,400	58,900	30,700	11,000	6,360
20	8,080	7,600	5,600	6,600	4,500	5,400	44,800	97,800	59,400	29,400	10,800	6,250
21	8,400	7,400	6,900	6,600	4,800	5,900	48,900	e98,400	58,800	28,300	10,500	6,370
22	8,660	7,600	9,500	6,600	5,050	6,200	55,200	*e88,500	57,900	27,500	10,100	6,440
23	8,560	8,100	11,800	6,600	5,250	7,300	58,000	e102,000	56,200	26,900	9,850	6,470
24	8,430	8,100	12,500	6,600	5,300	8,900	55,800	e106,000	53,000	26,400	9,740	6,590
25	8,700	8,300	12,500	6,400	5,300	11,300	50,200	e110,000	50,200	*25,400	9,740	6,440
26	10,200	7,900	12,200	6,200	5,250	14,400	44,700	e112,000	48,100	24,200	9,880	6,320
27	13,900	7,900	11,400	5,400	5,100	15,000	*41,100	e110,000	45,400	23,300	10,100	6,360
28	18,300	7,600	11,000	5,300	5,000	14,600	39,400	*e110,000	42,700	21,900	10,100	6,320
29	18,300	*7,400	10,800	5,200	4,800	13,600	38,300	e107,000	40,600	20,500	10,100	6,390
30	16,200	7,400	10,300	5,200	------	13,000	36,800	e106,000	39,900	19,200	10,100	7,040
31	14,600	-----	9,300	5,000	-----	13,400	-----	e105,000	------	17,900	*9,810	------
Total	289,100	311,770	244,200	224,250	139,000	219,750	886,200	‡2,051.1	‡2,071.7	942,100	371,720	210,300
Mean	9,326	10,390	7,877	7,234	4,793	7,089	29,540	66,160	69,060	30,390	11,990	7,010
Cfsm	0.696	0.775	0.588	0.540	0.358	0.529	2.20	4.94	5.15	2.27	0.895	0.523
In.	0.80	0.87	0.68	0.62	0.39	0.61	2.46	5.69	5.75	2.61	1.03	0.58
Ac-ft	573,400	618,400	484,400	444,800	275,700	435,900	‡1,758	‡4,068	‡4,109	‡1,869	737,300	417,100

Calendar year 1955: Max 86,500 Min 2,600 Mean 16,440 Cfsm 1.23 In. 16.67 Ac-ft 11,910,000
Water year 1955-56: Max 112,000 Min 3,750 Mean 21,750 Cfsm 1.62 In. 22.19 Ac-ft 15,790,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
e Mean stage-fall-discharge relation affected by dike breakages.
Note.--Stage-fall-discharge relation affected by ice Nov. 19 to Mar. 28.

Long Canyon Creek near Porthill, Idaho

Location.--Lat 48°57', long 116°32', in NW¼ sec. 36, T. 65 N., R. 2 W., on left bank 200 ft below U. S. Forest Service bridge at mouth of canyon and 4 miles southwest of Porthill.

Drainage area.--29 sq mi, approximately.

Records available.--May 1928 to September 1956 (no winter records prior to 1931). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,830 ft (by barometer). Prior to Mar. 20, 1930, staff gages and Mar. 20, 1930, to Nov. 16, 1948, water-stage recorders, at several nearby sites and at various datums. July 25, 1951, to June 12, 1955, water-stage recorder at site 200 ft upstream at datum 9.79 ft higher.

Average discharge.--26 years (1930-56), 63.2 cfs (45,750 acre-ft per year).

Extremes.--Maximum daily discharge during year, 900 cfs May 24; minimum daily, 5.5 cfs Sept. 18-20.

1928-56: Maximum discharge, 1,300 cfs May 27, 1948 (gage height, 6.75 ft, site and datum then in use), by slope-area determination of peak flow; maximum gage height, 8.55 ft June 14, 15, 1933 (datum used Sept. 4, 1941, to Aug. 23, 1948), backwater from drift; minimum discharge, 1 cfs Nov. 29, 30, 1952, and possibly other days during period of no gage-height record in that year.

Remarks.--Records poor. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1939. WSP 1396: 1942.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*11	65	28	22	10	*8.4	25	120	700	130	23	8.7
2	8.6	60	27	24	10	8.4	23	110	600	130	23	8.4
3	8.0	65	26	26	11	8.4	23	100	450	120	23	*7.8
4	8.8	*170	25	24	11	8.4	*25	90	600	120	25	8
5	24	145	25	22	12	8.2	25	80	450	120	21	8
6	17	126	24	22	12	8.0	23	80	350	130	18	8
7	15	110	23	23	12	8.0	23	100	350	120	16	8
8	20	100	22	22	12	8.0	23	130	300	115	16	7
9	47	95	22	20	12	8.0	23	160	350	110	16	7
10	84	114	21	19	12	7.8	26	190	450	105	16	6.5
11	*44	99	25	18	12	7.8	28	220	350	100	16	6.5
12	35	69	*45	19	12	7.6	32	170	250	95	14	6.5
13	33	50	30	18	11	7.8	36	140	200	80	13	6
14	32	54	25	18	11	7.8	48	160	250	70	12	6
15	34	45	22	17	10	7.8	60	200	350	70	12	6
16	35	40	22	17	9.0	7.8	80	300	*310	65	11	6
17	33	45	22	17	9.5	8.2	85	400	290	60	11	6
18	30	50	23	17	9.0	8.6	90	500	260	55	11	5.5
19	44	50	25	16	9.5	9.0	100	700	270	50	11	5.5
20	54	45	27	16	9.5	10	120	850	270	47	10	5.5
21	36	40	30	16	10	11	170	800	230	45	9.4	6
22	33	37	35	16	10	12	200	700	210	40	8.7	6.5
23	30	35	31	16	10	15	200	650	210	35	8.7	6
24	45	36	29	15	10	20	180	900	190	32	8.1	6
25	108	36	28	15	10	24	160	700	170	30	8.1	7
26	172	35	28	12	9.5	28	140	550	160	28	11	6.5
27	105	31	30	14	9.5	23	140	600	160	27	13	7
28	85	31	27	13	9.0	21	150	500	160	25	16	7
29	80	30	24	12	9.0	21	150	550	140	23	14	10
30	75	29	22	12	------	23	*131	600	130	*21	13	20
31	70	-----	21	*11	-----	25	-----	650	------	20	9.4	------
Total	1,456.4	1,937	814	549	303.5	387.0	2,539	12,000	9,160	2,218	437.4	218.9
Mean	47.0	64.6	26.3	17.7	10.5	12.5	84.6	387	305	71.5	14.1	7.30
Cfsm	1.62	2.23	0.907	0.610	0.362	0.431	2.92	13.3	10.5	2.47	0.486	0.252
In.	1.87	2.48	1.04	0.70	0.39	0.50	3.26	15.39	11.75	2.84	0.56	0.28
Ac-ft	2,890	3,840	1,610	1,090	602	768	5,040	23,800	18,170	4,400	868	434

Calendar year 1955: Max 990 Min 6 Mean 74.6 Cfsm 2.57 In. 34.92 Ac-ft 54,020
Water year 1955-56: Max 900 Min 5.5 Mean 87.5 Cfsm 3.02 In. 41.06 Ac-ft 63,510

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 24-30, May 13-31, July 26-28; discharge estimated on basis of weather records and records for Boundary Creek and Smith Creek near Porthill and other nearby streams. Stage-discharge relation affected by ice Nov. 13 to Feb. 29. Stage-discharge relation indefinite Oct. 6-8, 17, 18, 21-24, Oct. 27 to Nov. 4, Nov. 7-9, Mar. 11 to Apr. 3, Apr. 12 to July 29, Sept. 4-30; discharge estimated on basis of recorder record or supplementary staff-gage record, 5 discharge measurements, weather records, and records for Boundary Creek and Smith Creek near Porthill and other nearby streams.

Smith Creek near Porthill, Idaho

Location.--Lat 48°57'40", long 116°33'20", in NE¼ sec. 26, T. 65 N., R. 2 W., on right bank at U. S. Forest Service bridge, 1 mile south of Smith Creek ranger station and 4 miles southwest of Porthill.

Drainage area.--70 sq mi, approximately.

Records available.--May 1928 to September 1956 (no winter records 1928-30). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,770 ft (from topographic map). Prior to Apr. 20, 1929, staff gage at site 40 ft downstream at datum 2.67 ft lower.

Average discharge.--26 years (1930-56), 190 cfs (137,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,560 cfs May 20 (gage height, 6.37 ft); minimum, 10 cfs Sept. 18-20 (gage height, 0.43 ft).
1928-56: Maximum discharge, 3,810 cfs June 23, 1955 (gage height, 7.65 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum daily, 3 cfs Nov. 29, 30, 1952.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 3-28)

0.2	9.5	2.5	245
.4	12	3.0	385
.6	16	3.5	570
.9	26	4.0	800
1.2	44	5.0	1,380
1.6	88	6.0	2,160
2.0	146	7.0	3,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*49	219	91	b70	b30	30	63	395	*1,910	309	40	a17
2	44	204	87	b75	b32	30	61	350	1,760	309	41	a15
3	43	247	82	a80	b33	30	60	317	1,390	306	43	15
4	50	*719	80	a75	b34	30	*77	295	1,670	295	43	a14
5	97	590	77	a65	b35	29	70	279	1,210	298	36	*14
6	64	385	76	a65	b35	28	62	292	885	341	35	14
7	54	317	74	a70	b35	29	57	366	880	287	32	14
8	83	287	70	a65	b35	28	53	492	795	264	30	13
9	340	272	69	a62	b35	28	60	586	990	257	29	13
10	691	332	66	a58	b35	28	77	664	1,300	245	29	12
11	*306	255	71	a56	36	28	88	682	1,070	225	26	12
12	212	180	*184	a58	35	b27	94	554	765	206	25	12
13	190	154	101	a54	34	28	112	496	735	190	24	11
14	180	165	b85	a52	33	26	149	522	*800	206	22	11
15	208	b140	b75	a52	33	27	208	673	985	172	21	11
16	192	b130	b75	a52	a28	28	274	1,010	940	178	21	11
17	174	b150	b75	a50	a30	29	282	1,330	865	146	21	11
18	169	b170	b80	b50	a29	30	309	1,610	770	132	a22	10
19	212	b160	b90	50	a30	32	353	1,800	820	120	a20	10
20	227	b150	b95	49	a31	35	444	2,040	825	111	a20	10
21	182	138	b105	48	a32	33	578	2,040	678	102	a20	11
22	163	128	154	48	a31	37	673	1,790	619	93	a18	12
23	144	122	133	48	a31	62	668	*1,760	610	86	a16	11
24	158	118	a110	47	a31	77	606	2,170	574	78	a16	11
25	603	120	a95	38	a31	87	511	1,730	507	70	a17	14
26	902	112	a90	b36	a31	93	462	1,530	466	63	18	12
27	462	102	a95	b42	*31	70	470	1,590	485	57	19	13
28	359	101	a85	b40	31	60	496	1,480	485	52	23	13
29	309	97	a75	b36	31	58	492	1,580	412	48	23	18
30	279	94	a70	*b35	------	64	*441	1,650	332	*45	25	59
31	243	------	b65	b32	------	69	------	1,770	------	42	21	------
Total	7,389	6,358	2,780	1,658	938	1,290	8,350	33,843	26,533	5,333	796	424
Mean	238	212	89.7	53.5	32.3	41.6	278	1,092	884	172	25.7	14.1
Cfsm	3.40	3.03	1.28	0.764	0.461	0.594	3.97	1.56	12.6	2.46	0.367	0.201
In.	3.93	3.38	1.48	0.88	0.50	0.69	4.44	17.98	14.10	2.83	0.42	0.23
Ac-ft	14,660	12,610	5,510	3,290	1,860	2,560	16,560	67,130	52,630	10,580	1,580	841

Calendar year 1955: Max 2,060 Min 16 Mean 238 Cfsm 3.40 In. 46.08 Ac-ft 172,000
Water year 1955-56: Max 2,170 Min 10 Mean 261 Cfsm 3.73 In. 50.86 Ac-ft 189,800

Peak discharge (base, 1,400 cfs).--Oct. 26 (1 a.m.) 1,460 cfs (5.12 ft); May 20 (10:30 p.m.) 2,560 cfs (6.37 ft); May 31 (7:30 p.m.) 2,210 cfs (6.03 ft); June 10 (10 p.m.) 2,150 cfs (5.99 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Boundary Creek near Porthill and other Kootenai River tributaries.
b Stage-discharge relation affected by ice.

Boundary Creek near Porthill, Idaho

(International gaging station)

Location.--Lat 48°59'50", long 116°34'05", in SW¼ sec. 11, T. 65 N., R. 2 W., on left bank near mouth of canyon, 0.2 mile south of international boundary and 3 miles west of Porthill.

Drainage area.--97 sq mi, approximately.

Records available.--May 1928 to September 1956 (no winter records 1929, 1930).

Gage.--Water-stage recorder. Altitude of gage is 1,770 ft (from topographic map). Prior to Apr. 24, 1929, staff gage at site 140 ft upstream at different datum.

Average discharge.--26 years (1930-56), 191 cfs (138,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,610 cfs May 20 (gage height, 5.24 ft); minimum, 21 cfs Sept. 18, 19 (gage height, 0.67 ft).
1928-56: Maximum discharge, 3,280 cfs June 23, 1955 (gage height, 5.80 ft), from rating curve extended above 2,000 cfs; minimum, 5 cfs sometime between Nov. 10 and Dec. 3, 1936; minimum gage height, 0.24 ft Nov. 22, 1952.
Revisions.--The maximum discharge for water year 1930 has been revised to 1,020 cfs May 20, 1930 (gage height, 3.61 ft), superseding figure published in WSP 707 and 1316.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Cooperation.--This station is maintained by the United States under agreement with Canada.

Revisions (water years).--WSP 1396: 1943(M), 1945(M), 1950(M), 1953(M).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.6	18	2.5	390
.7	22	3.0	610
1.0	43	3.5	900
1.3	76	4.0	1,310
1.6	124	5.0	2,340
2.0	217		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	173	100	b70	b41	41	98	528	2,020	394	53	30
2	45	166	95	b75	b41	41	90	479	1,880	390	55	*29
3	*41	178	90	b85	b45	40	90	442	1,560	378	58	28
4	45	*452	87	b75	b47	41	*98	418	1,770	378	56	28
5	89	422	86	72	b48	39	103	394	1,410	398	51	27
6	61	315	84	72	b48	b38	92	406	1,020	402	48	27
7	52	270	82	75	b48	39	92	484	1,020	350	47	26
8	71	250	77	73	b48	39	86	610	921	336	45	26
9	246	241	77	71	b49	38	87	685	1,070	329	43	26
10	454	270	75	70	b49	38	104	728	1,330	312	42	24
11	229	232	76	66	b49	b38	130	746	1,070	280	40	24
12	168	168	*111	68	b47	b36	144	650	800	264	39	24
13	153	157	77	67	b45	b37	173	615	758	257	37	24
14	144	164	b72	64	b45	37	232	645	*837	235	35	23
15	155	138	b70	63	b45	37	318	782	1,080	209	34	23
16	146	b130	b66	63	b41	37	422	1,120	986	201	34	22
17	134	b140	b68	62	b39	37	430	1,560	865	171	34	22
18	128	b160	b73	62	b40	39	479	1,900	806	155	34	21
19	142	b160	b80	61	b41	41	524	2,110	865	140	33	21
20	144	b150	b90	60	b42	46	605	2,340	879	128	32	22
21	128	b140	b100	59	42	47	740	2,210	770	122	32	24
22	120	b130	b110	59	42	49	812	1,940	705	111	30	23
23	108	126	b100	59	43	67	770	*1,930	695	100	29	23
24	119	122	b95	56	42	92	705	2,270	650	89	30	23
25	280	120	89	53	42	108	625	1,870	575	83	32	26
26	481	117	89	b50	41	115	590	1,700	546	76	37	24
27	298	106	93	b55	*41	95	590	1,690	580	73	38	24
28	247	*108	84	b50	41	87	615	1,630	560	67	37	24
29	226	104	b75	b47	41	86	620	1,710	470	62	37	40
30	209	101	b70	b45	-----	92	*575	1,770	410	*59	40	60
31	190	-----	b65	*b42	-----	100	-----	1,850	-----	55	32	-----
Total	5,102	5,510	2,606	1,949	1,273	1,717	11,039	38,212	28,908	6,604	1,224	788
Mean	165	184	84.1	62.9	43.9	55.4	368	1,233	964	213	39.5	26.3
Cfsm	1.70	1.90	0.867	0.648	0.453	0.571	3.79	12.7	9.94	2.20	0.407	0.271
In.	1.96	2.11	1.00	0.75	0.49	0.66	4.23	14.65	11.08	2.53	0.47	0.30
Ac-ft	10,120	10,930	5,170	3,870	2,520	3,410	21,900	75,790	57,340	13,100	2,430	1,560

Calendar year 1955: Max 2,020 Min 27 Mean 240 Cfsm 2.47 In. 33.61 Ac-ft 173,800
Water year 1955-56: Max 2,340 Min 21 Mean 287 Cfsm 2.96 In. 40.23 Ac-ft 208,100

Peak discharge (base, 1,300 cfs).--May 20 (9 to 10 p.m.) 2,610 cfs (5.24 ft); June 10 (8 p.m.) 1,660 cfs (4.36 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Kootenai River at Porthill, Idaho

(International gaging station)

Location.--Lat 49°00'00", long 116°30'10", in SW¼ sec. 8, T. 65 N., R. 1 W., on right bank 300 ft south of international boundary at Porthill.

Drainage area.--13,700 sq mi, approximately.

Records available.--May to July 1904 and October 1927 to March 1928 (gage heights only), and April 1928 to September 1956 in reports of Geological Survey. October 1924 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level referred to benchmark IO-M-1928, at elevation 1,767.68 ft. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, and datum of Geodetic Survey of Canada, Pub. 24, 1951 edition, are 0.03 ft higher. Prior to May 17, 1928, staff gages at approximately same site. Datum of gages prior to July 28, 1928, was 38.34 ft higher, except in 1904 when different datum was used.

Average discharge.--28 years, 15,680 cfs (11,350,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 114,000 cfs May 28; maximum elevation, 1,767.53 ft June 5; minimum daily discharge, 3,880 cfs Feb. 17; minimum elevation, 1,741.27 ft Mar. 19.

1928-56: Maximum daily discharge, 125,000 cfs June 1, 1948; maximum elevation, that of June 5, 1956; minimum daily discharge, 1,380 cfs Feb. 8, 1936; minimum elevation, 1,738.21 ft Apr. 3, 1944.

Maximum elevation known, 1,772.7 ft in June 1894, present datum.

Remarks.--Records excellent except those for periods of ice effect at station near Copeland and those for period of dike breakages, which are good. Daily discharge represents entire flow passing international boundary, computed by adding tributary inflow, including that of Boundary Creek, to flow at station near Copeland and correcting for storage change in channel and flooded areas between stations near Copeland and at Porthill. Boundary dike of Reclamation Farm and U. S. Forest Service roadway dike (south side of Boundary Creek) remained intact and flow of river was confined throughout year to main channel on which gage and cableway are located. Elevations affected by backwater from Kootenay Lake and by flooding of areas upstream (see Remarks for Kootenai River at Boom Camp, p. 175).

Cooperation.--This station is maintained by United States under agreement with Canada.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.06	46 57	46.13	46.06	44.33	42.80	42.36	51.35	66.70	56.11	47.92	44.80
2	46.05	46.39	46.11	45.98	44.27	42.76	42.28	50.99	67.06	55.58	47.51	44.94
3	46.04	46.35	46.06	45.95	44.23	42.67	42.16	50.47	67.25	54.99	47.17	45.06
4	45.95	46.58	46.00	46.01	44.22	42.59	42.11	49.93	67.48	54.46	46.94	45.14
5	46.00	47.40	45.92	46.14	44.24	42.48	42.25	49.50	67.46	54.09	46.73	45.20
6	45.98	47.61	45.92	46.16	44.24	42.35	42.25	49.15	67.20	53.85	46.55	45.30
7	45.94	47.32	45.89	46.11	44.23	42.18	42.14	49.01	66.81	53.62	46.30	45.39
8	45.89	46.92	45.87	46.11	44.18	42.12	42.00	49.33	66.28	53.45	46.00	45.46
9	46.04	46.63	45.89	46.00	44.12	42.05	41.85	50.35	65.53	53.26	45.75	45.52
10	46.36	46.65	45.88	45.87	44.07	41.90	41.90	51.91	64.73	53.02	45.57	45.56
11	46.57	46.63	45.90	45.78	44.03	41.79	42.16	53.10	64.14	52.84	45.41	45.66
12	46.40	46.37	46.11	45.73	44.00	41.68	42.66	53.42	63.62	52.79	45.30	45.76
13	46.33	46.10	46.22	45.68	43.95	41.64	43.06	53.19	63.32	52.82	45.22	45.80
14	46.25	45.88	46.00	45.61	43.84	41.54	43.73	52.93	62.89	52.92	45.16	45.84
15	46.20	45.81	45.87	45.54	43.79	41.47	44.85	52.92	62.34	52.99	45.10	45.87
16	46.21	45.83	45.86	45.48	43.61	41.41	46.42	53.67	61.75	53.07	45.08	45.87
17	46.19	45.82	45.85	45.43	43.53	41.35	47.90	55.50	61.25	52.96	45.06	45.90
18	46.19	45.90	45.75	45.35	43.42	41.31	49.06	58.10	60.99	52.66	45.04	45.95
19	46.19	46.06	45.72	45.30	43.39	41.28	49.95	60.43	60.91	52.43	45.03	46.00
20	46.25	46.17	45.76	45.25	43.35	41.29	50.60	62.65	60.85	51.97	44.99	45.99
21	46.26	46.37	45.87	45.19	43.37	41.33	51.75	64.12	60.69	51.67	44.94	46.06
22	46.27	46.36	46.13	45.13	43.37	41.36	53.40	63.71	60.47	51.44	44.87	46.02
23	46.17	46.23	46.46	45.09	43.32	41.48	54.40	64.65	60.15	51.21	44.83	46.04
24	46.09	46.20	46.77	45.05	43.20	41.78	54.44	65.54	59.70	50.99	44.82	46.05
25	46.22	46.23	46.70	45.00	43.11	42.10	53.83	65.48	59.18	50.73	44.81	46.00
26	46.82	46.33	46.59	44.85	43.07	42.63	53.00	65.67	58.66	50.43	44.79	46.04
27	47.03	46.26	46.71	44.77	42.97	42.98	52.37	66.35	58.17	50.05	44.77	46.15
28	47.37	46.20	46.75	44.71	42.88	42.70	52.07	66.62	57.60	49.69	44.80	46.04
29	47.35	46.15	46.59	44.63	42.85	42.41	51.90	66.68	57.08	49.29	44.80	46.02
30	47.05	46.11	46.39	44.57	-------	42.24	51.69	66.73	56.58	48.81	44.89	46.09
31	46.76	-------	46.20	44.45	-------	42.33	-------	66.76	-------	48.37	44.80	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Porthill, Idaho--Continued

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,490	14,000	7,620	8,620	4,850	4,910	13,800	36,300	e104,000	41,100	17,400	9,530
2	6,340	12,900	7,540	8,104	4,240	5,000	13,500	33,900	106,000	39,100	16,500	9,110
3	6,260	12,200	7,440	8,130	4,020	5,130	13,200	31,400	107,000	37,200	16,000	8,760
4	6,100	13,700	7,240	8,360	4,210	5,240	13,100	29,100	108,000	35,400	15,500	8,560
5	6,320	19,100	6,850	9,400	4,480	5,240	13,800	27,100	106,000	34,900	15,300	8,260
6	6,280	19,800	6,700	9,370	4,800	5,040	13,700	26,000	104,000	34,700	15,300	7,850
7	6,240	18,300	6,600	9,420	5,100	5,080	13,400	26,100	101,000	34,800	14,900	7,640
8	6,060	16,200	6,490	9,180	5,130	4,820	12,700	28,800	96,100	35,100	14,100	7,500
9	7,330	14,500	6,370	9,040	5,240	4,770	12,300	35,700	88,200	34,700	13,200	7,170
10	11,200	14,100	6,380	8,640	5,740	4,860	12,600	44,000	79,800	33,800	12,800	7,040
11	12,500	14,200	6,480	8,210	5,820	4,640	14,400	49,100	72,800	33,600	12,600	6,830
12	11,300	12,900	8,240	8,100	5,820	4,640	15,900	49,600	71,200	33,900	12,400	6,710
13	10,000	10,600	7,740	7,880	5,370	4,590	17,600	47,600	70,900	34,400	12,100	6,680
14	9,140	10,000	6,440	7,790	5,060	4,630	20,200	45,600	68,500	35,000	11,700	6,430
15	8,730	8,230	5,770	7,590	4,730	4,720	24,600	45,300	64,700	35,700	11,400	6,380
16	8,430	7,110	5,190	7,480	4,380	4,800	30,900	49,100	61,400	36,100	11,200	6,240
17	8,240	6,390	4,780	7,170	3,880	4,810	36,500	59,500	59,300	35,400	11,100	6,340
18	8,170	6,900	5,350	6,890	4,050	5,000	40,900	71,800	59,600	33,800	11,000	6,270
19	8,380	7,300	5,330	6,870	4,150	5,200	43,400	86,000	61,000	31,400	11,100	6,370
20	8,490	7,900	5,810	6,760	4,600	5,480	45,600	99,900	61,800	30,100	10,900	6,300
21	8,770	7,620	7,070	6,770	4,880	5,970	49,600	e102,000	61,200	28,900	10,600	6,380
22	8,980	7,900	9,700	6,770	5,140	6,290	55,500	e94,200	60,300	28,000	10,200	6,510
23	8,910	8,480	11,900	6,760	5,370	7,370	58,800	e105,000	58,900	27,400	9,930	6,500
24	8,820	8,410	12,500	6,750	5,450	8,910	57,400	e107,000	56,000	26,900	9,800	6,630
25	9,670	8,590	12,800	6,550	5,440	11,300	52,300	e104,000	53,100	25,900	9,810	6,520
26	11,500	8,120	12,500	6,400	5,370	14,400	46,800	e109,000	50,800	24,700	9,980	6,340
27	14,600	8,190	11,600	5,560	5,240	15,000	43,000	e112,000	48,300	23,800	10,200	6,320
28	18,800	7,900	11,200	5,460	5,140	15,000	41,000	e114,000	45,600	22,400	10,200	6,430
29	19,000	7,680	11,100	5,350	4,910	14,000	39,800	e111,000	43,000	21,000	10,200	6,470
30	17,000	7,670	10,600	5,340	------	13,300	38,200	e110,000	41,800	19,700	10,100	7,140
31	15,300	-----	9,600	5,170	-----	13,600	-----	e110,000	------	18,400	9,940	------
Total	303,350	326,890	250,930	229,920	142,610	223,740	904,500	‡2,100.1	‡2,170.3	967,300	377,440	211,210
Mean	9,785	10,900	8,095	7,417	4,918	7,217	30,150	67,750	72,340	31,200	12,180	7,040
Cfsm	0.714	0.798	0.591	0.541	0.359	0.527	2.20	4.95	5.28	2.28	0.889	0.514
In.	0.82	0.89	0.68	0.62	0.39	0.61	2.46	5.70	5.89	2.63	1.02	0.57
Ac-ft	601,700	648,400	497,700	456,000	282,900	443,800	‡1,794	‡4,165	‡4,305	‡1,919	748,600	418,900

Calendar year 1955: Max 88,700 Min 2,720 Mean 17,030 Cfsm 1.24 In. 16.88 Ac-ft 12,330,000
Water year 1955-56: Max 114,000 Min 3,880 Mean 22,430 Cfsm 1.64 In. 22.28 Ac-ft 16,280,000

e Discharge affected by large storage change as a result of dike breakages upstream.
Note.--Stage-fall-discharge relation for station at Copeland affected by ice Nov. 19 to Mar. 28.

Kootenay Lake at Kuskonook, British Columbia

(International gaging station)

Location.--Lat 49°18', long 116°40', on east shore of Lake at Kuskonook.

Records available.--April 1936 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,735.20 ft above mean sea level, Geodetic Survey of Canada, datum of Pub. 24, 1951 edition, which is the same at Porthill as datum of 1929, supplementary adjustment of 1947, and 0.03 ft higher than datum in use at station Kootenai River at Porthill. Gage heights have been reduced to elevations above datum in use at station Kootenai River at Porthill. Prior to Apr. 25, 1938, staff gage at same site at datum 3.00 ft higher.

Extremes.--Maximum elevation during year, 1,762.16 ft June 5; minimum, 1,740.19 ft Apr. 11. 1936-56: Maximum elevation, that of June 5, 1956; minimum daily, 1,737.86 ft Apr. 5, 6, 1944.

Remarks.--Elevation is subject to partial regulation by Corra Linn Dam below outlet. Diversions for irrigation of about 14,600 acres above Kootenay Lake.

Cooperation.--This station is maintained by Canada under agreement with the United States.

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45.76	45.55	45.62	-	-	-	40.51	47.20	60.84	-	46.69	44.21
2	45.77	45.52	45.60	-	-	-	40.48	47.19	61.25	52.38	46.32	44.39
3	45.76	45.58	45.57	45.37	-	-	40.45	47.07	61.51	51.98	46.00	44.53
4	45.73	45.63	45.53	45.40	-	-	40.44	46.89	61.77	51.61	45.76	44.64
5	45.73	45.64	45.48	45.45	-	42.06	40.42	46.69	62.01	51.29	45.55	44.76
6	45.73	45.70	45.48	45.42	43.90	41.93	40.39	46.48	62.01	51.00	45.37	44.89
7	45.71	45.69	45.48	45.39	43.89	41.78	40.37	46.29	61.81	50.74	45.13	45.00
8	45.68	45.57	45.47	45.36	43.84	41.72	40.33	46.15	61.46	50.49	44.89	45.08
9	45.73	45.50	45.49	45.30	43.75	41.65	40.30	46.15	60.97	50.30	44.71	45.16
10	45.78	45.57	45.49	45.22	43.70	41.52	40.27	46.30	60.46	50.15	44.58	45.24
11	45.75	45.53	45.52	45.18	43.65	41.42	40.23	46.64	60.08	50.02	44.46	45.35
12	45.74	-	45.58	45.14	43.62	41.30	40.27	47.00	59.55	49.94	44.36	45.44
13	45.76	-	45.55	45.11	43.56	41.25	40.35	47.27	59.00	49.92	44.31	45.48
14	45.76	-	45.50	45.06	43.49	41.14	40.47	47.46	58.50	49.95	44.30	45.53
15	45.75	-	-	45.02	43.44	41.06	40.67	47.63	58.07	49.95	44.27	45.57
16	45.75	-	-	44.97	43.31	40.98	41.02	-	57.67	49.93	44.29	45.60
17	45.77	-	-	44.92	43.23	40.90	41.47	48.27	57.29	49.88	44.28	45.62
18	45.78	-	-	44.87	43.15	40.82	41.99	48.99	56.91	49.80	44.28	45.66
19	45.78	45.66	-	44.83	43.10	40.75	42.53	50.03	56.61	49.69	44.26	45.72
20	45.80	45.72	-	44.78	43.03	40.70	43.11	51.41	56.42	49.53	44.23	45.72
21	45.81	45.78	-	44.72	43.03	40.65	-	52.95	56.22	49.37	44.21	45.76
22	45.78	45.72	-	44.67	43.01	40.60	44.41	54.29	55.98	49.21	44.19	45.74
23	45.71	45.67	45.55	44.64	42.92	40.54	45.20	55.28	55.72	49.05	44.19	45.73
24	45.67	45.67	45.56	44.61	42.78	40.53	45.90	56.35	55.44	48.88	44.19	45.73
25	45.73	45.70	45.60	44.56	42.72	40.48	46.43	57.33	55.14	48.69	44.18	45.73
26	46.02	45.68	45.66	44.48	42.66	40.47	46.78	58.01	-	48.50	44.15	45.77
27	45.96	45.64	45.71	44.41	42.54	40.50	46.99	58.60	-	48.23	44.13	45.84
28	45.81	45.65	45.70	44.35	42.47	40.52	47.11	59.17	-	48.00	44.14	45.75
29	45.70	45.64	45.67	44.29	-	40.52	47.20	59.64	-	47.71	44.15	45.72
30	45.62	45.62	45.62	-	-------	40.52	47.21	60.06	-	47.37	44.19	45.75
31	45.57	-------	-------	-------	-------	40.53	-------	60.42	-------	47.03	44.13	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Columbia River at Birchbank, British Columbia

(International gaging station)

Location.--Lat 49°10', long 117°43', on right bank at Birchbank, British Columbia, 7 miles upstream from Trail, 11 miles downstream from Kootenay River, and 17 miles upstream from international boundary.

Drainage area.--34,000 sq mi, approximately.

Records available.--April 1913 to September 1956. Published as "at Trail, British Columbia" 1913-37.

Gage.--Water-stage recorder. Datum of gage is 1,329.90 ft above mean sea level, 1947 International joint adjustment, published as 1,338.00 ft prior to October 1948. Prior to Oct. 1, 1937, chain or wire-weight gage on highway bridge at site 7 miles downstream at datum 16.27 ft lower.

Average discharge.--43 years, 70,300 cfs (50,900,000 acre-ft per year).

Extremes.--Maximum discharge during year, 334,000 cfs June 7 (gage height, 47.37 ft); minimum, 16,800 cfs Feb. 5 (gage height, 5.52 ft).
1913-56: Maximum discharge, 370,000 cfs June 11, 1948 (gage height, 50.62 ft); minimum observed, 8,940 cfs Feb. 3, 1937 (gage height, 6.27 ft, site and datum then in use).

Remarks.--Many small diversions above station for irrigation of about 25,000 acres. Fluctuation at low flow caused by powerplant on Kootenay River. Flow affected by internationally controlled storage in Kootenay Lake, as well as by natural and controlled regulation in other lakes.

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

Revisions (water years).--WSP 982: 1942. WSP 1216: 1949.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 15		Nov. 16 to Sept. 30			
8.5	30,200	5.5	16,700	25.0	128,000
11.0	41,500	7.0	23,200	30.0	165,000
15.0	61,000	10.0	36,800	37.0	223,000
		15.0	62,500	48.0	342,000
		20.0	92,800		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a33,700	48,800	30,200	27,200	18,400	20,500	29,600	92,700	292,000	211,000	148,000	70,000
2	a34,600	45,100	29,600	27,200	18,000	21,200	29,500	93,500	302,000	205,000	142,000	67,900
3	a34,000	45,100	29,500	25,700	18,000	21,800	29,600	*93,100	309,000	199,000	134,000	65,500
4	a33,500	51,600	29,100	*23,400	17,000	22,300	29,900	92,500	318,000	194,000	128,000	63,200
5	a33,500	54,000	27,700	25,000	17,100	22,200	30,000	91,400	*326,000	190,000	125,000	58,700
6	a32,600	53,300	26,400	27,200	17,700	22,100	30,000	90,300	332,000	187,000	122,000	*56,300
7	a31,400	56,700	26,400	28,200	18,500	21,400	29,900	89,600	*332,000	185,000	118,000	54,600
8	a30,400	56,000	25,100	28,200	20,100	20,200	29,900	90,000	329,000	182,000	113,000	53,100
9	35,600	50,700	24,500	27,900	*20,500	20,200	29,700	90,900	322,000	180,000	107,000	50,900
10	41,000	47,000	24,500	26,200	19,300	20,200	30,200	92,600	315,000	178,000	103,000	48,400
11	42,600	46,500	24,300	25,400	19,000	20,700	31,000	95,400	313,000	176,000	98,900	45,800
12	39,500	45,100	26,600	*24,600	19,300	19,700	31,100	98,000	311,000	176,000	95,300	45,800
13	37,400	42,300	27,900	25,000	19,900	19,400	31,800	100,000	307,000	178,000	90,900	46,400
14	37,800	38,200	25,400	25,400	20,500	19,000	33,000	103,000	299,000	182,000	88,200	43,900
15	35,800	33,100	23,800	24,300	20,100	18,900	35,000	106,000	291,000	184,000	86,900	45,500
16	35,000	30,900	23,100	24,300	18,200	19,100	38,100	110,000	282,000	185,000	85,900	44,600
17	34,600	30,300	22,200	24,200	18,000	19,000	40,600	116,000	274,000	184,000	85,700	44,400
18	35,300	29,600	21,700	23,600	18,200	19,500	43,500	124,000	268,000	182,000	86,200	42,300
19	36,600	29,400	21,800	22,800	17,900	18,400	46,700	137,000	266,000	179,000	86,600	43,800
20	36,500	28,800	21,700	23,300	18,200	19,300	50,700	152,000	265,000	177,000	85,500	*45,000
21	38,300	31,700	21,900	23,600	18,400	20,500	55,500	170,000	263,000	177,000	*85,600	45,200
22	39,600	36,900	24,900	23,500	19,400	21,400	61,500	*190,000	260,000	177,000	85,000	45,100
23	37,400	*34,200	28,200	22,700	21,600	23,000	67,200	207,000	256,000	177,000	84,400	45,200
24	35,400	31,200	27,900	22,600	21,400	25,800	71,700	223,000	252,000	176,000	84,200	45,100
25	35,300	34,000	27,500	23,100	20,600	28,200	76,600	238,000	248,000	175,000	84,400	44,800
26	43,700	35,500	27,600	23,100	20,700	29,300	80,600	249,000	241,000	173,000	85,100	44,300
27	57,800	31,200	28,900	21,800	20,100	28,000	83,800	259,000	234,000	169,000	85,700	47,500
28	58,700	29,200	30,100	20,800	19,200	29,500	86,900	266,000	228,000	169,000	86,200	49,400
29	57,100	30,600	29,000	19,700	19,700	28,300	89,500	272,000	223,000	164,000	85,100	48,500
30	55,500	30,300	27,400	19,800	------	29,200	91,400	278,000	217,000	159,000	84,200	48,900
31	51,200	------	27,200	19,000	------	29,500	------	*284,000	------	153,000	82,300	------
Total	‡1,221.4	‡1,187.3	812,100	748,800	555,000	699,600	‡1,444.5	‡4,694	‡8,475	‡5,583	‡3,062.3	‡1,500.1
Mean	39,400	39,600	26,200	24,200	19,100	22,600	48,200	151,000	282,000	180,000	98,800	50,000
Cfsm	1.16	1.16	0.77	0.71	0.56	0.66	1.42	4.44	8.29	5.29	2.91	1.47
In.	1.34	1.29	0.89	0.82	0.60	0.76	1.58	5.12	9.25	6.10	3.36	1.64
Ac-ft	‡2,423	‡2,355	‡1,611	‡1,485	‡1,101	‡1,388	‡2,865	‡9,310	‡16,810	‡11,070	‡6,074	‡2,975

Calendar year 1955: Max 322,000 Min 16,900 Mean 73,600 Cfsm 2.17 In. 29.39 Ac-ft 53,300,000
Water year 1955-56: Max 332,000 Min 17,000 Mean 81,900 Cfsm 2.41 In. 32.75 Ac-ft 59,470,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for station at Trail, B.C.

German Gulch Creek near Ramsay, Mont.

Location.--Lat 46°00'50", long 112°47'30", in SE¼NW¼ sec. 13, T. 3 N., R. 10 W., about half a mile upstream from mouth and 6½ miles west of Ramsay. Prior to May 6, 1956, at site 300 ft upstream from mouth.
Drainage area.--41 sq mi, approximately.
Records available.--April 1955 to September 1956.
Gage.--Water-stage recorder. Altitude of gage is 5,200 ft (by barometer). Prior to May 6, 1956, staff gage at site 300 ft upstream from mouth at different datum.
Extremes.--Maximum discharge observed during year, 187 cfs May 28 (gage height, 2.60 ft), result of discharge measurement, but probably exceeded 200 cfs about May 25; minimum observed, 1.4 cfs Oct. 26-30.
1955-56: Maximum discharge, that of May 1956; minimum, that of Oct. 26-30, 1955.
Remarks.--Records poor. Prior to May 6, 1956, at site affected by diversions for irrigation of about 250 acres. Measurements of these diversions, in cubic feet per second, for the water year 1956, are listed below. Records for May 6 to Sept. 30 are not affected by diversions.

Ditch No. 1		Ditch No. 2	
Date	Discharge	Date	Discharge
Oct. 7	0.2	Oct. 7	4.6
Nov. 9	0	Nov. 9	0
May 1	0	May 1	0
22	0	22	5.2
28	4.6	28	3.1

Note.--Ditches were operated Oct. 1-31 and after about May 15.

Rating tables, water year 1955-56, except period of backwater from beaver dam (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 9 to May 5)

Oct. 1 to May 5				May 6 to Sept. 30	
0.7	0.5	1.2	28	1.7	8.0
.8	2.0	1.4	48	1.8	12
.9	6.0	1.6	69	1.9	19
1.0	12			2.0	27

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	8.4	8	7	4	7	19	*35			14	10
2	4.0	7.8	7	7	4	7	19	37			13	10
3	4.0	7.8	7	8	5	7	18	34			13	10
4	3.6	7.8	7	9	5	7	17	31			13	10
5	3.8	7.8	7	9	6	7	13	29			13	10
6	3.8	7.8	7	9	6	6	13		130		15	10
7	*4.0	7.2	7	9	6	5	13			25	16	10
8	4.0	8.4	7	9	6	4	10				14	
9	4.0	*9.0	7	9	6	4	8.4				14	
10	4.0	9	7	9	6	4	12				13	10
11	3.6	6	7	9	6	4	11	40			13	
12	3.6	4	8	*8	6	4	14				12	
13	3.6	3	10	8	6	5	13			*21	11	
14	3.6	3	10	7	5	5	18				21	11
15	3.4	3	9	6	5	6	20				21	11
16	3.2	3	7	6	4	7	32		60		21	11
17	3.2	4	7	6	4	10	36				19	18
18	3.6	5	7	6	4	12	38				18	13
19	3.6	7	7	6	4	15	42				18	12
20	3.6	8	8	6	4	20	42	110			17	11
21	3.6	8	*9	7	*5	25	43				17	*10
22	3.6	8	11	7	7	30	41	(*)			16	10
23	2.8	8	11	6	8	40	37				16	9.6
24	2.8	8	10	6	6	*66	37				15	9.6
25	1.6	9	9	6	5	26	36				15	9.6
26	1.4	9	10	6	5	26	40		35		14	11
27	1.4	9	10	5	5	24	38	180			16	12
28	1.4	9	9	5	6	23	34	(*)			16	11
29	1.4	8	7	5	7	23	35				16	11
30	1.4	8	7	5	------	*22	33				15	12
31	9.0	------	7	4	------	21	------		------		15	12	------
Total	104.6	211.0	251	215	156	472	782.4	2,886	2,250	627	378.8	276
Mean	3.37	7.03	8.1	6.9	5.4	15.2	26.1	93.1	75.0	20.2	12.2	9.2
Ac-ft	207	419	498	426	309	936	1,550	5,720	4,460	1,240	751	547

Calendar year 1955: Max - Min - Mean - Ac-ft -
Water year 1955-56: Max - Min 1.4 Mean 23.5 Ac-ft 17,060

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 5, 6, 15, Nov. 10 to Mar. 23 (except scattered readings affected by ice, May 6 to July 12); discharge estimated on basis of 5 discharge measurements, weather records, and records for Boulder River near Boulder and Middle Fork Rock Creek near Philipsburg. Backwater from beaver dam Sept. 8-30; discharge interpolated.

Flint Creek near Southern Cross, Mont.

Location.--Lat 46°14'00", long 113°17'40", in SE¼NW¼ sec. 36, T. 6 N., R. 14 W., on left wing of weir half a mile downstream from powerplant, 2 miles downstream from Georgetown Lake, 3 miles northwest of Southern Cross, and 6 miles south of Philipsburg.

Drainage area.--52.6 sq mi.

Records available.--October 1940 to September 1956.

Gage.--Staff gage and Cippoletti weir; gage read once daily. Altitude of gage is 5,630 ft (from topographic map).

Average discharge.--16 years, 31.5 cfs (22,810 acre-ft per year).

Extremes.--Maximum discharge during year, 32 cfs June 2-17; maximum gage height, 0.86 ft Aug. 27 to Sept. 6, Sept. 11-30; minimum discharge, 6.0 cfs Feb. 22, 23.
1940-56: Maximum discharge, 174 cfs June 13, 1942 (gage height, 1.86 ft); probably no flow for parts of Aug. 20, 1943, May 23, 1952, Oct. 6, 1954, when generator was shut down.

Remarks.--Records good. Flow regulated by Georgetown Lake (see p. 238). Flow may be augmented by transbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake.

Cooperation.--Gage-height record furnished by The Montana Power Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Revisions (water years).--WSP 1216: 1942(M). WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

0.2	3.8	0.5	14
.3	6.5	.7	22
.4	10	.9	32

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	17	16	16	16	6.2	16	*17	31	29	27	27
2	31	16	16	16	16	6.2	16	17	32	29	27	27
3	31	16	16	16	16	6.2	16	18	32	30	27	27
4	31	16	16	16	16	6.2	16	18	32	29	27	27
5	31	17	16	16	16	6.2	16	18	32	29	27	27
6	31	17	16	16	16	6.2	16	18	32	29	27	27
7	*31	17	16	16	16	6.2	16	17	32	28	28	26
8	31	17	16	16	16	11	16	18	32	28	27	26
9	31	*17	16	16	16	15	16	18	32	29	26	26
10	31	17	16	16	16	15	16	18	32	29	27	26
11	31	17	16	16	16	15	16	18	32	29	26	27
12	31	17	16	*16	16	15	16	18	32	28	26	27
13	31	17	16	16	16	15	16	18	32	*28	27	27
14	31	17	16	16	16	16	17	18	32	28	27	27
15	31	16	16	16	16	16	17	18	*32	28	27	27
16	31	16	16	16	16	16	17	18	32	28	27	27
17	31	16	16	16	16	16	17	18	32	28	26	27
18	31	16	22	16	16	16	17	18	31	28	26	*27
19	25	16	22	16	16	16	18	18	31	28	26	27
20	16	16	*16	16	16	16	18	18	31	28	26	27
21	16	16	16	16	*16	16	18	18	31	28	*26	27
22	16	16	16	16	11	16	18	18	31	28	26	27
23	16	16	16	16	6.0	16	18	18	30	28	26	27
24	16	16	16	16	6.2	16	18	*18	30	28	26	27
25	16	16	16	16	6.2	16	18	18	30	28	26	27
26	16	16	16	16	6.2	16	18	18	30	28	26	27
27	16	16	16	16	6.2	16	18	18	30	28	27	27
28	16	16	16	16	6.2	16	18	18	30	28	27	27
29	17	16	16	16	6.2	16	18	18	30	28	27	27
30	17	16	16	16	------	*16	17	18	29	28	27	27
31	17	------	16	16	------	16	------	18	------	28	27	------
Total	778	491	508	496	390.2	417.4	508	555	937	878	825	806
Mean	25.1	16.4	16.4	16.0	13.5	13.5	16.9	17.9	31.2	28.3	26.6	26.9
Ac-ft	1,540	974	1,010	984	774	828	1,010	1,100	1,860	1,740	1,640	1,600

Calendar year 1955: Max 43 Min 4.6 Mean 18.3 Ac-ft 13,280
Water year 1955-56: Max 32 Min 6.0 Mean 20.7 Ac-ft 15,060

* Discharge measurement made on this day.

Flint Creek at Maxville, Mont.

Location.--Lat 46°28'00", long 113°14'30", in NW¼ sec. 9, T. 8 N., R. 13 W., on right bank 0.4 mile west of Maxville and 1 mile upstream from Boulder Creek.

Drainage area.--208 sq mi.

Records available.--August 1941 to September 1956. April 1939 to September 1941 at site half a mile upstream (above Maxville siding), records not equivalent owing to diversions.

Gage.--Water-stage recorder. Datum of gage is 4,828.44 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum discharge during year, 638 cfs Mar. 24 (gage height, 5.16 ft); minimum daily, 35 cfs Jan. 31, Feb. 1.
1941-56: Maximum discharge, 1,680 cfs Mar. 28, 1943 (gage height, 6.79 ft), from rating curve extended above 600 cfs; minimum daily, 25 cfs at times during 1953, 1955.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions for irrigation of about 8,200 acres above station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec. 5, T. 4 N., R. 14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Some regulation by Georgetown Lake (see p.238).

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 26-31)

1.7	40	4.0	360
2.0	66	4.5	469
3.0	180		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	74	b63	b53	a35	49	103	115	196	108	159	114
2	99	73	b62	b53	b37	49	89	106	227	99	149	110
3	97	73	b58	54	b43	43	88	103	194	130	148	98
4	99	77	b60	65	53	40	89	106	197	130	144	97
5	103	85	b60	61	52	b40	85	119	179	126	138	97
6	98	73	b60	49	53	b38	76	106	142	146	138	96
7	*99	71	58	49	52	b38	80	104	115	120	148	100
8	95	70	b58	52	55	b37	81	144	100	107	148	97
9	92	*71	b58	54	46	b37	90	150	98	86	134	83
10	89	80	59	49	51	b37	111	172	89	79	128	79
11	97	74	b59	56	55	b37	123	160	89	77	132	76
12	94	51	b60	*51	57	a37	110	144	84	*83	130	70
13	90	b48	b60	48	51	a38	116	132	76	81	a125	63
14	89	b45	b58	46	51	a39	128	119	68	78	a120	60
15	87	b45	b55	49	49	a40	136	111	*70	88	a115	58
16	85	b45	b53	42	b47	a43	148	122	122	85	a110	59
17	85	b48	b52	50	b48	b48	202	149	158	79	a134	60
18	83	b50	b50	47	50	b51	186	171	159	75	a130	*55
19	84	81	b55	51	52	b55	155	187	162	72	a125	54
20	84	109	*b65	52	51	63	162	183	143	94	a120	54
21	82	81	b70	52	*56	70	177	187	198	107	*115	55
22	83	70	b250	52	61	118	188	*190	166	117	110	60
23	83	65	305	52	62	250	180	202	148	122	102	70
24	81	66	108	50	52	377	202	220	181	122	98	71
25	80	64	93	b46	48	438	179	208	175	119	95	71
26	80	67	103	b45	53	306	152	200	143	126	106	70
27	80	65	82	b42	47	134	141	202	135	131	117	72
28	80	66	70	b40	46	110	140	194	125	141	123	77
29	80	66	b65	b39	49	*117	125	*193	109	147	119	88
30	85	64	b57	b37	------	130	*118	177	106	149	128	90
31	80	------	b55	a35	------	136	------	174	------	144	117	-----
Total	2,745	2,017	2,421	1,521	1,462	3,045	3,960	4,850	4,154	3,368	3,905	2,304
Mean	88.5	67.2	78.1	49.1	50.4	98.2	132	156	138	109	126	76.8
Ac-ft	5,440	4,000	4,800	3,020	2,900	6,040	7,850	9,620	8,240	6,680	7,750	4,570

Calendar year 1955 : Max 464 Min 25 Mean 93.2 Ac-ft 67,450
Water year 1955-56 : Max 438 Min 35 Mean 97.7 Ac-ft 70,910

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated or estimated on basis of weather records.
b Stage-discharge relation affected by ice.

Boulder Creek at Maxville, Mont.

Location.--Lat 46°28'30", long 113°14'00", in SE¼ sec. 4, T. 8 N., R. 13 W., on right bank an eighth of a mile upstream from mouth and three-quarters of a mile north of Maxville.

Drainage area.--71.3 sq mi.

Records available.--April 1939 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 4,750 ft (from topographic map). Apr. 15, 1939, to July 7, 1941, wire-weight gage at site 75 ft upstream at different datum. July 8-20, 1941, staff gage at site 175 ft upstream at datum 1.03 ft higher.

Average discharge.--17 years, 47.4 cfs (34,320 acre-ft per year).

Extremes.--Maximum discharge during year, 388 cfs May 22 (gage height, 3.30 ft); minimum not determined.
1939-56: Maximum discharge, 764 cfs June 13, 1953; maximum gage height, 4.24 ft June 3, 1948; minimum discharge, 4.2 cfs Sept. 12, 13, 1954 (gage height, 0.74 ft).

Remarks.--Records good except those for periods of ice effect, no gage-height record, or backwater from beaver dam, which are poor. Diversions for irrigation of about 350 acres, all of which lie below station.

Rating table, water year 1955-56, except periods of ice effect or backwater from beaver dam (gage height, in feet, and discharge, in cubic feet per second)

0.8	5.0	2.0	88
1.0	11	2.5	169
1.2	20	3.0	305
1.5	39	3.5	487

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	24	10	12	8	16	21	50	299	63	26	
2	16	25	10	10	8	16	21	48	302	62	25	
3	14	27	10	10	8	16	22	46	228	75	24	
4	16	27	11	12	10	16	23	45	220	76	22	
5	18	27	12	13	12	17	24	45	200	68	20	
6	22	26	14	14	14	16	26	45	158	69	20	8
7	*24	25	16	15	16	14	28	51	131	61	22	
8	24	27	18	16	16	13	30	68	126	55	21	
9	25	*26	20	17	15	12	32	81	126	51	19	
10	26	29	20	18	14	11	34	93	123	48	18	
11	27	29	18	19	15	11	38	86	118	44	19	
12	27	19	16	*19	16	10	42	77	109	*42	17	
13	29	14	14	20	17	10	46	72	101	41	16	
14	28	10	12	20	16	11	50	68	98	41	16	
15	27	7	11	20	14	12	54	74	*105	45	16	
16	26	8	11	20	10	12	60	98	165	41	16	
17	26	8	11	20	10	13	64	137	142	37	15	
18	26	10	12	20	16	14	68	190	126	34	15	(*)
19	25	12	15	20	19	15	72	242	106	33	14	
20	26	13	*20	21	*19	16	70	290	108	33	14	6
21	25	13	28	21	18	18	66	315	135	35	*12	
22	26	13	20	21	17	19	64	322	112	32	8.6	
23	26	14	18	20	17	22	66	328	99	29	8.3	
24	25	15	20	16	17	24	68	*342	112	26	7.7	
25	25	15	24	14	16	27	70	296	106	24	9.8	
26	25	14	28	12	16	24	68	278	92	23	9.8	
27	25	13	32	11	16	22	66	287	84	22	11	
28	25	13	32	10	15	21	60	278	77	22	12	
29	26	12	28	10	15	*20	54	*266	69	25	12	
30	27	11	20	10	------	21	*51	257	65	24	12	
31	26	------	14	9	------	21	------	266	------	24	11	------
Total	749	526	545	490	420	510	1,458	5,141	4,042	1,305	489.2	200
Mean	24.2	17.5	17.6	15.8	14.5	16.5	48.6	166	135	42.1	15.8	6.7
Ac-ft	1,490	1,040	1,080	972	833	1,010	2,890	10,200	8,020	2,590	970	397

Calendar year 1955: Max 296 Min 7 Mean 45.3 Ac-ft 32,820
Water year 1955-56: Max 342 Min - Mean 43.4 Ac-ft 31,490

Peak discharge (base, 150 cfs).--May 22 (10:30 p.m.) 388 cfs (3.30 ft); June 16 (8 p.m.) 178 cfs (2.48 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13 to Mar. 19 (no gage-height record Nov. 22 to Dec. 19, Dec. 27 to Jan. 15, Jan. 18-24, Jan. 29 to Feb. 19; discharge estimated on basis of 3 discharge measurements, weather records, and records for Flint Creek at Maxville). No gage-height record Mar. 30 to Apr. 29 and backwater from beaver dam Aug. 27 to Sept. 30; discharge estimated on basis of 2 discharge measurements, weather records, and records for Flint Creek at Maxville.

Middle Fork Rock Creek near Philipsburg, Mont.

Location.--Lat 46°11', long 113°30', in NE¼ sec. 17, T. 5 N., R. 15 W., on right bank a quarter of a mile upstream from East Fork, 2½ miles upstream from West Fork, and 15 miles southwest of Philipsburg. Prior to Oct. 1, 1955, at site 300 ft upstream.

Drainage area.--123 sq mi.

Records available.--September 1937 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 5,450 ft (from topographic map). Sept. 21, 1937, to May 10, 1942, wire-weight gage at site 600 ft upstream at different datum. May 11, 1942, to May 11, 1954, staff or wire-weight gages at site 400 ft downstream at different datum. May 12, 1954, to Sept. 30, 1955, at site 300 ft upstream at 5.74 ft higher datum.

Average discharge.--19 years (1937-56), 122 cfs (88,320 acre-ft per year).

Extremes.--Maximum discharge during year, 1,220 cfs May 25 (gage height, 4.73 ft); minimum daily, 10 cfs Nov. 16, 17.
1937-56: Maximum discharge, 1,430 cfs June 13, 1953 (gage height, 3.92 ft, site and datum then in use); minimum observed, 4.5 cfs Dec. 9, 10, 23, 24, 1944 (gage height, 0.02 ft, site and datum then in use).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. A few small diversions for irrigation above station.

Rating table, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	32	3.5	470
2.0	54	4.0	740
2.5	135	4.7	1,200
3.0	265		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	44	18	20	15	40	41	*180	1,050	218	106	60
2	46	47	17	20	15	45	40	175	1,070	213	97	57
3	44	48	16	22	16	45	38	172	896	256	106	55
4	44	47	18	24	18	40	39	168	866	221	94	55
5	48	54	20	27	25	30	38	168	854	210	88	54
6	49	48	25	30	30	25	37	163	674	197	88	54
7	*49	46	30	32	35	22	40	180	535	184	88	52
8	49	47	32	33	36	20	39	210	495	177	86	50
9	48	*47	35	34	36	20	42	238	535	170	82	50
10	47	58	35	35	38	18	48	268	570	165	82	49
11	50	59	39	33	40	16	55	276	580	163	80	48
12	50	34	25	*31	42	15	59	262	525	158	76	47
13	49	25	20	30	40	15	67	250	470	*149	73	50
14	48	20	15	30	35	17	76	241	435	151	70	48
15	47	15	20	30	30	20	90	241	440	151	70	47
16	46	10	30	32	20	25	110	276	415	140	73	46
17	44	10	45	34	18	30	127	352	420	133	68	46
18	43	15	50	36	15	40	115	490	368	125	66	*44
19	43	20	45	38	20	50	121	*615	344	123	66	46
20	44	25	*45	40	35	60	144	782	384	119	64	46
21	44	27	60	42	*42	70	177	848	384	123	*59	46
22	44	30	70	43	45	85	213	*932	312	115	55	48
23	44	32	70	40	50	250	232	1,030	286	111	55	48
24	43	30	65	35	50	265	244	*1,140	324	104	55	47
25	42	30	60	30	48	232	221	1,140	312	101	55	46
26	43	28	65	26	44	177	210	1,070	272	96	59	44
27	43	25	60	24	42	123	204	1,070	259	97	70	44
28	44	23	50	22	40	74	200	1,000	253	99	68	50
29	46	21	40	20	40	44	192	976	247	106	64	49
30	49	20	30	18	-----	*42	184	908	229	99	66	48
31	48	-----	25	16	-----	42	-----	934	-----	94	64	-----
Total	1,426	985	1,166	927	960	1,997	3,443	16,755	14,904	4,568	2,293	1,474
Mean	46.0	32.8	37.6	29.9	33.1	64.4	115	540	497	147	74.0	49.1
Cfsm	0.374	0.267	0.306	0.243	0.269	0.524	0.935	4.39	4.04	1.20	0.602	0.399
In.	0.43	0.30	0.35	0.28	0.29	0.60	1.04	5.07	4.51	1.38	0.69	0.45
Ac-ft	2,830	1,950	2,310	1,840	1,900	3,960	6,830	33,230	29,560	9,060	4,550	2,920

Calendar year 1955: Max 812 Min 10 Mean 123 Cfsm 1.00 In. 13.59 Ac-ft 89,150
Water year 1955-56: Max 1,140 Min 10 Mean 139 Cfsm 1.13 In. 15.39 Ac-ft 100,900

Peak discharge (base, 450 cfs).--May 25 (2:30 to 4:45 a.m.) 1,220 cfs (4.73 ft); June 2 (7 a.m.) 1,200 cfs (4.70 ft); June 11 (5:30 a.m.) 620 cfs (3.80 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13 to Mar. 22 (no gage-height record Nov. 18-24, Dec. 25, Jan. 15-17, 29, 30, Feb. 11-14; discharge estimated on basis of weather records and records for Flint Creek and Boulder Creek at Maxville).

Nevada Creek above reservoir, near Finn, Mont.

Location.--Lat 46°46'30", long 112°45'20", near south line of sec. 20, T. 12 N., R. 9 W., on right bank a quarter of a mile downstream from Gallagher Creek, 2 miles upstream from Buffalo Creek, and 3 miles west of Finn.

Drainage area.--116 sq mi.

Records available.--April 1939 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 4,660 ft (from river-profile survey). Prior to Apr. 30, 1942, wire-weight gage at site seven-eighths of a mile downstream at different datum. Apr. 30, 1942, to July 26, 1953, water-stage recorder at site 1 mile downstream at different datum.

Average discharge.--17 years, 36.2 cfs (26,210 acre-ft per year).

Extremes.--Maximum discharge during year, 297 cfs May 22 (gage height, 3.82 ft); maximum gage height, about 4.7 ft Mar. 24 (backwater from ice); minimum daily discharge, 4 cfs Nov. 16.

1939-56: Maximum discharge, 1,800 cfs June 2, 1953 (gage height, 6.00 ft, site and datum then in use), from rating curve extended above 400 cfs on basis of inflow-outflow study of Nevada Creek Reservoir; maximum gage height, 7.40 ft May 29, 1953, site and datum then in use (backwater from diversion dam); minimum discharge, probably less than 2 cfs at times in January and February 1944.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 2,500 acres above station.

Rating table, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	6.0	2.5	109
1.3	9.0	3.0	167
1.5	18	3.5	237
1.7	30	4.0	380
2.0	57		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	14	13	11	8	13	40	44	91	22	18	10
2	11	13	13	12	8	13	*30	47	90	24	17	10
3	11	16	13	13	8	13	25	52	70	45	17	10
4	11	17	13	15	9	13	30	54	80	43	16	10
5	14	16	13	15	10	13	40	55	74	42	16	10
6	15	14	13	14	11	12	34	47	60	45	17	10
7	14	13	13	14	11	12	34	43	49	32	17	10
8	14	*16	14	13	10	12	50	59	41	26	17	9
9	14	17	14	12	10	12	126	76	35	25	16	9
10	14	23	14	12	10	11	150	99	34	26	16	9
11	*15	13	15	*12	10	10	100	111	32	64	16	9
12	14	9	15	12	10	10	85	109	26	*31	14	9
13	14	7	14	12	10	11	97	106	29	29	14	9
14	14	6	13	11	10	12	101	88	*28	33	13	9
15	13	5	13	11	9	12	98	81	36	37	11	9
16	13	4	13	11	8	13	98	96	121	28	11	9
17	13	5	14	11	10	15	122	138	82	28	8.7	*9.0
18	13	8	15	11	11	18	83	171	50	32	7.8	9.0
19	13	12	*16	11	12	20	74	215	42	30	7.5	8.7
20	13	17	17	11	*13	25	81	253	46	28	*7.5	9.0
21	14	16	20	11	14	30	94	268	59	26	7	9.0
22	17	15	50	11	13	35	101	283	44	25	7	9.4
23	18	15	100	11	13	40	90	*264	37	25	7	9.8
24	16	15	70	12	12	50	81	259	45	23	7	9.8
25	16	15	40	11	12	60	70	227	36	20	7	10
26	14	15	15	10	12	55	62	203	29	20	10	9.8
27	14	15	12	10	12	50	57	196	26	20	12	10
28	16	14	10	10	12	55	56	162	24	17	11	12
29	17	13	10	10	13	60	52	138	22	20	10	12
30	18	13	10	9	------	70	*49	120	22	18	10	12
31	16	------	11	9	------	60	------	105	------	17	10	------
Total	440	391	626	358	311	835	2,210	4,169	1,460	901	375.5	290.5
Mean	14.2	13.0	20.2	11.5	10.7	26.9	73.7	134	48.7	29.1	12.1	9.68
Ac-ft	873	776	1,240	710	617	1,660	4,380	8,270	2,900	1,790	745	576

Calendar year 1955 : Max 247 Min 3 Mean 30.6 Ac-ft 22,150
Water year 1955-56 : Max 283 Min 4 Mean 33.8 Ac-ft 24,540

Peak discharge (base, 160 cfs).--Apr. 9 (8:30 p.m.) 273 cfs (3.64 ft); May 22 (12 m. to 1 p.m.) 297 cfs (3.82 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 11 to Apr. 5 (no gage-height record Nov. 13-17, Mar. 22-28). No gage-height record Aug. 21 to Sept. 16; discharge estimated on basis of 2 discharge measurements, weather records, and records for Blackfoot River near Ovando.

Blackfoot River near Ovando, Mont.

Location.--Lat 47°01'10", long 113°13'40", in SE¼NW¼ sec. 34, T. 15 N., R. 13 W., on left bank a quarter mile upstream from Monture Creek and 5 miles west of Ovando.

Drainage area.--1,274 sq mi.

Records available.--September 1940 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 3,917.27 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Average discharge.--16 years, 864 cfs (625,500 acre-ft per year).

Extremes.--Maximum discharge during year, 6,340 cfs May 24 (gage height, 5.93 ft); minimum daily, 160 cfs Mar. 11, 12.
1940-56: Maximum discharge, 14,600 cfs June 4, 1953 (gage height, 8.45 ft); minimum daily, 100 cfs Jan. 20, 1954.
Floodmarks indicate a stage of 10 ft reached in recent years.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 25,000 acres above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1941.

Rating table, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.3	345	4.0	2,060
2.5	445	5.0	4,160
3.0	800	6.0	6,560
3.5	1,340		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	350	390	260	280	200	220	548	1,000	5,170	1,420	654	445
2	350	370	250	320	200	210	467	1,010	5,650	1,380	662	435
3	360	370	250	360	210	210	467	1,010	5,360	1,490	702	435
4	360	390	250	370	220	210	506	1,020	5,260	1,610	686	430
5	360	400	240	360	240	210	500	1,020	5,050	1,460	654	425
6	360	410	240	340	260	200	450	1,030	4,330	1,400	630	420
7	360	390	240	330	280	200	445	1,040	3,560	1,330	630	420
8	370	*385	240	320	290	200	425	1,080	3,120	1,240	623	425
9	370	395	240	320	280	200	435	1,380	3,120	1,160	616	420
10	370	415	240	320	270	180	484	1,560	3,260	1,120	609	405
11	*370	410	240	*310	270	160	506	1,760	3,300	1,160	602	395
12	370	180	250	300	280	160	494	1,820	3,060	*1,150	595	395
13	370	180	260	300	270	200	500	1,800	2,800	1,090	581	380
14	365	210	240	290	250	220	536	1,760	*2,600	1,030	565	385
15	360	230	220	290	240	210	574	1,760	2,660	1,010	554	370
16	360	260	220	280	240	200	638	2,030	3,490	1,000	530	360
17	365	280	230	280	250	200	755	2,760	3,780	950	518	*360
18	365	300	250	280	270	210	782	3,700	3,300	910	506	365
19	360	320	*270	290	280	220	782	4,470	2,900	880	494	365
20	360	320	290	290	*290	220	820	5,070	2,720	840	*494	360
21	360	310	300	300	290	260	1,000	5,770	2,620	810	484	360
22	350	300	350	310	280	360	1,200	6,100	2,380	782	478	360
23	350	300	400	320	270	700	1,260	*6,130	2,150	746	462	365
24	350	290	600	300	260	1,100	1,270	6,270	2,150	719	445	370
25	350	300	500	270	260	1,220	1,210	6,200	2,150	694	430	365
26	350	310	400	250	260	1,100	1,160	6,080	1,950	678	440	360
27	360	300	350	230	240	782	1,130	5,910	1,770	670	450	360
28	370	280	300	220	230	588	1,100	5,670	1,670	662	456	365
29	390	270	280	210	220	*542	1,060	5,600	1,590	686	456	375
30	400	260	270	210	------	560	*1,030	5,240	1,490	662	462	385
31	390	-----	270	200	-----	602	-----	5,050	------	654	456	------
Total	11,275	9,525	8,940	9,050	7,400	11,854	22,534	102,100	94,410	31,393	16,924	11,660
Mean	364	318	288	292	255	382	751	3,294	3,147	1,013	546	389
Cfsm	0.286	0.250	0.226	0.229	0.200	0.300	0.589	2.59	2.47	0.795	0.429	0.305
In.	0.33	0.28	0.26	0.26	0.22	0.35	0.66	2.98	2.76	0.92	0.49	0.34
Ac-ft	22,360	18,890	17,730	17,950	14,680	23,510	44,700	202,500	187,300	62,270	33,570	23,130

Calendar year 1955: Max 4,350 Min 160 Mean 782 Cfsm 0.614 In. 8.35 Ac-ft 566,000
Water year 1955-56: Max 6,270 Min 160 Mean 921 Cfsm 0.723 In. 9.85 Ac-ft 668,600

Peak discharge (base, 1,600 cfs).--May 24 (8 to 11 a.m.) 6,340 cfs (5.93 ft); June 17 (1 to 6 a.m.) 3,870 cfs (4.90 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12 to Mar. 23 (no gage-height record Jan. 15 to Feb. 19; discharge estimated on basis of 2 discharge measurements, weather records, and records for nearby stations). No gage-height record Oct. 1-10, Oct. 19 to Nov. 7, Aug. 14; discharge estimated on basis of 2 discharge measurements, weather records, and records for station near Bonner.

Blackfoot River near Bonner, Mont.

Location.--Lat 46°53'50", long 113°45'20", near center sec. 9, T. 13 N., R. 17 W., on right bank 5 miles northeast of Bonner, 5 miles downstream from Union Creek, and 7 miles upstream from mouth. Prior to Oct. 1, 1955, at site 1.3 miles downstream.

Drainage area.--2,290 sq mi.

Records available.--July 1898 to September 1901, May 1903 to October 1905, October 1939 to September 1956. Published as Blackfoot River at Bonner 1898-99 and as Big Blackfoot River near Bonner 1903-5.

Gage.--Water-stage recorder. Datum of gage is 3,344.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. July 7, 1898, to June 30, 1901, May 15, 1903, to Oct. 31, 1905, chain gage at site 7 miles downstream at different datum. Oct. 4, 1939, to Sept. 30, 1955, staff gage at site 1.3 miles downstream at datum 21.82 ft lower.

Average discharge.--20 years (1899-1901, 1903-4, 1939-56), 1,579 cfs (1,143,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,100 cfs May 22 (gage height, 8.69 ft); minimum, 371 cfs Nov. 13 (gage height, 1.77 ft).
1898-1901, 1903-5, 1939-56: Maximum discharge, 18,300 cfs June 4, 1953 (gage height, 11.65 ft, from graph based on gage readings, site and datum then in use); minimum daily, 200 cfs Jan. 4, 5, 1950, but may have been less during periods of no gage-height record.

Remarks.--Records good except those for period of ice effect, which are poor. Diversions for irrigation of about 35,000 acres above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	380	5.0	3,730
2.0	460	6.0	5,480
2.5	720	7.0	7,580
3.0	1,120	8.0	10,100
4.0	2,230	8.6	11,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	654	648	620	660	450	580	1,390	3,550	8,950	2,620	1,130	755
2	648	618	610	680	450	580	1,250	3,440	9,830	2,510	1,140	734
3	642	624	600	720	460	570	1,210	3,380	9,810	2,740	1,170	720
4	630	636	590	*750	480	570	1,280	3,300	*9,310	3,010	1,150	720
5	630	660	580	770	500	560	1,300	3,220	9,050	2,720	1,110	714
6	624	660	570	780	520	560	1,210	3,120	8,010	2,550	1,080	708
7	624	642	570	780	540	550	1,160	3,070	6,790	2,410	1,060	702
8	624	636	560	780	550	550	1,160	3,310	5,940	2,260	1,060	690
9	618	642	560	780	550	540	1,160	3,890	5,620	2,110	1,040	690
10	618	678	570	760	540	540	1,300	4,400	5,760	2,010	1,020	678
11	*630	702	580	750	540	530	1,500	4,800	5,880	1,970	1,010	660
12	624	670	600	750	530	520	1,560	4,890	5,580	1,980	990	660
13	624	612	580	750	530	540	1,680	4,790	5,110	1,860	982	642
14	624	620	550	740	520	550	1,910	4,590	4,750	1,790	958	630
15	618	430	530	720	500	540	2,190	4,480	4,660	1,720	934	618
16	612	440	520	700	490	530	2,640	4,840	5,560	1,710	910	606
17	612	500	520	680	490	530	3,490	5,900	6,400	1,630	886	600
18	606	600	520	660	500	530	3,830	*7,340	5,740	1,560	862	600
19	612	650	530	640	520	540	3,910	8,660	*5,110	1,520	838	600
20	606	650	550	620	560	550	4,140	9,700	4,820	1,480	822	600
21	612	640	580	610	600	600	4,590	*11,000	4,660	1,430	806	595
22	612	630	650	600	620	700	5,090	11,800	4,320	1,370	798	595
23	606	630	700	610	620	998	5,220	11,700	3,940	*1,320	776	595
24	600	630	800	610	*610	1,560	5,200	11,700	3,870	1,260	762	595
25	612	630	850	620	600	2,050	4,960	11,700	3,860	1,230	741	595
26	606	650	800	580	600	2,160	4,620	11,200	3,570	1,190	741	*595
27	600	650	750	*510	600	*1,720	*4,370	10,800	3,280	1,160	*783	595
28	606	*640	700	490	590	1,360	4,180	10,200	3,100	1,140	769	600
29	618	640	670	470	580	1,240	3,940	9,960	2,940	1,160	769	612
30	648	640	660	460	-----	1,270	3,760	9,340	2,770	1,140	776	612
31	660	-----	660	450	-----	1,430	-----	8,900	-----	1,120	769	-----
Total	19,260	18,198	19,130	20,480	15,640	26,048	85,190	212,970	168,990	55,680	28,652	19,316
Mean	621	607	617	661	539	840	2,840	6,870	5,633	1,796	924	644
Cfsm	0.271	0.265	0.269	0.289	0.235	0.367	1.24	3.00	2.46	0.784	0.403	0.281
In.	0.31	0.30	0.31	0.33	0.25	0.42	1.38	3.46	2.74	0.90	0.47	0.31
Ac-ft	38,200	36,100	37,940	40,620	31,020	51,670	169,000	422,400	335,200	110,400	56,830	38,310

Calendar year 1955 : Max 7,060 Min 412 Mean 1,453 Cfsm 0.634 In. 8.60 Ac-ft 1,052,000
Water year 1955-56 : Max 11,800 Min 412 Mean 1,884 Cfsm 0.823 In. 11.18 Ac-ft 1,368,000

Peak discharge (base, 2,500 cfs).--Mar 26 (7 a.m.) 2,510 cfs (4.20 ft); Apr. 23 (3 to 5 a.m.) 5,270 cfs (5.89 ft); May 22 (1:30 p.m.) 12,100 cfs (8.69 ft); June 17 (7 to 8 a.m.) 6,520 cfs (6.52 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14 to Mar. 22.

Clark Fork above Missoula, Mont.

Location.--Lat 46°52'40", long 113°55'40", in NW¼NW¼ sec. 19, T. 13 N., R. 18 W., on right bank 3 miles downstream from Blackfoot River and 3 miles east of Missoula.

Drainage area.--5,999 sq mi.

Records available.--March 1929 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 3,230 ft (from topographic map).

Average discharge.--27 years, 2,768 cfs (2,004,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,200 cfs May 23 (gage height, 10.27 ft); minimum daily, 600 cfs Feb. 1.
1929-56: Maximum discharge, 31,500 cfs May 23, 1948 (gage height, 13.07 ft); minimum, 115 cfs Oct. 25, 1943 (gage height, 0.64 ft, powerplant shutdown); mumimum daily, 340 cfs Sept. 27, 1937.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Diurnal fluctuation caused by powerplant at Bonner. Diversions for irrigation of about 120,000 acres above station.

Revisions (water years).--WSP 1042: 1936. WSP 1152: 1942. WSP 1246: Drainage area, 1929-30, 1935.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 24 to Apr. 23)

Oct. 1 to Apr. 23				Apr. 24 to Sept. 30			
2.0	630	4.0	3,230	2.5	1,200	7.0	10,500
2.5	1,060	7.0	10,000	3.0	1,820	10.5	22,000
3.0	1,680			4.0	3,400		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,610	1,610	1,600	1,700	600	1,400	3,790	6,570	15,300	4,160	2,130	1,650
2	1,610	1,570	1,600	1,750	650	1,500	3,400	6,310	16,400	4,060	2,160	1,620
3	1,570	1,540	1,600	1,850	750	1,480	3,200	6,150	16,600	4,680	2,200	1,570
4	1,540	1,630	1,570	*1,900	900	1,440	3,250	6,040	*15,400	5,230	2,190	1,590
5	1,570	1,760	1,390	1,950	1,100	1,390	3,230	5,990	14,800	4,830	2,100	1,570
6	1,570	1,780	1,350	1,900	1,250	1,420	3,090	5,830	13,400	4,580	2,030	1,570
7	1,590	1,710	1,400	1,800	1,350	1,420	2,940	5,710	11,400	4,330	1,990	1,740
8	1,630	1,650	1,350	1,750	1,300	1,340	2,890	6,310	9,820	4,020	2,030	1,590
9	1,530	1,650	1,350	1,700	1,250	1,340	2,930	7,320	9,090	3,800	2,000	1,340
10	1,570	1,760	1,450	1,650	1,200	1,330	3,150	8,250	9,030	3,590	1,970	1,510
11	1,570	1,850	1,500	1,600	1,250	1,210	3,550	9,000	9,090	3,480	1,930	1,450
12	1,570	1,610	1,760	1,600	1,300	1,160	3,780	9,030	8,660	3,460	1,890	1,460
13	1,570	1,100	1,550	1,600	1,300	*1,210	3,870	8,660	7,960	3,330	1,860	1,440
14	1,590	950	1,430	1,550	1,200	1,390	4,170	8,250	7,360	3,180	1,810	1,430
15	1,570	850	1,300	1,550	1,100	1,280	4,680	7,960	7,220	3,150	1,740	1,420
16	1,530	800	1,200	1,450	950	1,290	5,250	8,350	8,200	3,080	1,720	1,380
17	1,510	850	1,150	1,400	1,000	1,440	6,770	9,680	10,300	3,060	1,680	1,360
18	1,510	1,000	1,150	1,450	1,050	1,630	7,390	11,800	9,090	3,080	1,620	1,360
19	1,490	1,400	1,300	1,450	1,100	2,120	7,300	14,400	*7,940	2,690	1,570	1,360
20	1,510	1,700	1,860	1,450	1,150	2,620	7,330	16,600	7,520	2,600	1,550	1,360
21	1,490	1,900	2,220	1,500	1,250	2,970	8,170	*18,600	7,520	2,380	1,510	1,360
22	1,510	1,850	2,990	1,500	1,350	3,320	9,160	19,800	7,290	2,490	1,480	1,340
23	1,520	1,750	5,310	1,500	1,500	4,860	9,640	20,200	6,310	*2,310	1,450	1,370
24	1,540	1,650	4,800	1,450	1,450	6,720	9,630	20,400	6,240	2,240	1,430	1,370
25	*1,520	1,600	3,790	1,300	1,400	7,430	9,330	20,600	6,400	2,140	1,390	1,340
26	1,510	1,700	3,350	1,000	1,350	7,480	8,640	19,500	5,870	2,140	1,380	*1,330
27	1,520	1,650	3,150	700	1,300	*5,610	*8,060	18,800	5,360	2,070	*1,490	1,320
28	1,510	*1,600	2,900	*850	1,350	4,040	7,720	18,100	5,010	1,990	1,500	1,330
29	1,540	1,550	2,600	850	1,350	3,690	7,320	17,500	4,750	2,090	1,570	1,380
30	1,610	1,550	2,100	800	------	3,780	6,930	16,400	4,470	2,120	1,650	1,420
31	1,630	------	1,800	700	------	4,120	------	15,300	------	2,120	1,680	------
Total	48,110	45,570	63,870	45,200	34,050	83,430	170,560	373,410	273,800	98,480	54,700	43,330
Mean	1,552	1,519	2,060	1,458	1,174	2,691	5,685	12,050	9,127	3,177	1,765	1,444
Ac-ft	95,420	90,390	126,700	89,650	67,540	165,500	338,300	740,600	543,100	195,300	108,500	85,940

Calendar year 1955: Max 11,900 Min 800 Mean 2,908 Ac-ft 2,106,000
Water year 1955-56: Max 20,600 Min 600 Mean 3,646 Ac-ft 2,647,000

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13 to Dec. 3, Dec. 6-11, 15-19, Dec. 27 to Mar. 2.

West Fork Bitterroot River near Conner, Mont.

Location.--Lat 45°44', long 114°17', in NE¼NW¼ sec. 26, T. 1 S., R. 22 W., on right bank half a mile downstream from West Fork Dam, 6 miles upstream from Nez Perce Creek, and 16 miles southwest of Conner.

Drainage area.--317 sq mi.

Records available.--April 1941 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 4,560 ft (by barometer).

Average discharge.--15 years, 297 cfs (215,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,260 cfs May 23 (gage height, 5.52 ft); minimum, 31 cfs Sept. 9 (gage height, 0.88 ft).
1941-56: Maximum discharge, 4,060 cfs May 9, 1947 (gage height, 6.18 ft); minimum, 0.2 cfs Nov. 25, 1942.

Remarks.--Records good. Flow regulated by West Fork Bitterroot River Reservoir (see p. 238). Diversions for irrigation of about 200 acres above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Nov. 1, May 15-19)

1.1	58	2.5	525
1.3	93	3.0	790
1.6	165	4.0	1,560
2.0	295	5.5	3,190

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	75	82	82	82	86	108	838	2,200	331	143	157
2	267	75	82	82	82	86	180	774	2,190	327	136	157
3	264	75	82	82	82	86	198	746	1,970	366	136	157
4	264	75	82	82	82	86	195	752	1,790	340	131	157
5	264	77	82	82	82	86	229	774	*1,590	315	131	157
6	260	77	82	*82	82	86	214	808	1,360	295	131	157
7	260	77	82	82	82	86	198	892	1,150	278	136	157
8	260	77	82	82	82	86	237	1,060	1,020	267	133	157
9	260	77	82	82	84	84	295	1,220	980	257	126	98
10	260	77	82	82	82	84	295	1,370	966	250	121	73
11	187	79	82	82	82	84	295	1,410	938	247	116	73
12	65	79	82	82	82	84	303	1,270	874	250	149	73
13	66	79	82	82	86	84	430	1,130	820	240	131	73
14	66	79	82	82	86	84	590	1,010	762	240	114	73
15	68	79	82	82	86	84	730	959	730	224	131	73
16	68	80	82	82	86	84	880	1,040	762	211	138	73
17	70	80	82	82	86	84	938	1,350	708	198	138	73
18	70	80	82	82	86	84	856	1,900	636	186	136	73
19	72	80	82	82	86	84	850	*2,450	585	183	110	73
20	72	80	82	82	86	84	973	2,830	*590	180	99	73
21	73	80	82	82	86	84	1,270	3,100	575	183	99	73
22	73	80	82	82	86	84	1,480	*3,160	530	174	99	73
23	73	82	82	82	86	84	1,620	3,160	490	162	101	73
24	73	82	82	82	86	84	1,580	3,100	490	*157	101	73
25	73	82	82	82	86	84	1,380	2,800	470	154	101	73
26	*73	82	82	82	*86	84	1,200	2,680	430	146	104	73
27	73	82	82	82	86	84	1,090	2,630	398	146	104	*99
28	73	82	82	82	86	84	1,040	2,390	376	152	*120	124
29	73	*82	82	*82	86	*84	*994	2,200	353	154	143	124
30	75	82	82	82	------	84	917	2,110	335	154	152	124
31	75	------	82	82	------	84	------	2,130	------	149	157	------
Total	4,237	2,373	2,542	2,542	2,448	2,620	21,565	54,043	27,068	6,916	3,867	3,066
Mean	137	79.1	82.0	82.0	84.4	84.5	719	1,743	902	223	125	102
Ac-ft	8,400	4,710	5,040	5,040	4,860	5,200	42,770	107,200	53,690	13,720	7,670	6,080

Calendar year 1955: Max 1,970 Min 50 Mean 263 Ac-ft 190,600
Water year 1955-56: Max 3,160 Min 65 Mean 364 Ac-ft 264,400

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 5 to Jan. 5; no range in stage, discharge constant during period.

East Fork Bitterroot River near Conner, Mont.

Location.--Lat 45°53'00", long 114°03'50", in NE¼ sec. 34, T. 2 N., R. 20 W., on right bank 10 ft below private bridge, 4½ miles southeast of Conner, and 5 miles upstream from confluence with West Fork.

Drainage area.--381 sq mi.

Records available.--April to September 1956.

Gage.--Water-stage recorder. Datum of gage is 4,191.81 ft above mean sea level, datum of 1929, Pacific Northwest supplementary adjustment of 1947.

Extremes.--Maximum discharge during period, 3,000 cfs May 25 (gage height, 6.44 ft); minimum, 88 cfs Sept. 19, 20, 24-27 (gage height, 2.83 ft).

Remarks.--Records excellent except those for period of no gage-height record, which are poor. Some diversion for irrigation above station.

Rating tables, Apr. 1 to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

Apr. 1 to May 24				May 25 to Sept. 30			
3.5	270	5.0	1,300	2.8	82	4.5	695
4.0	485	6.5	3,190	3.1	148	5.0	1,110
4.5	825			3.5	270	6.5	3,100
				4.0	480		

Discharge, in cubic feet per second, April to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							a185	525	2,320	412	181	120
2							a180	500	2,320	440	178	113
3							a175	505	1,950	552	200	109
4							a165	510	1,850	462	181	109
5							a150	515	*1,680	430	173	111
6							a130	520	1,390	408	170	109
7							a145	577	1,170	381	170	106
8							a160	705	1,090	354	163	111
9							a170	825	1,090	333	158	109
10							a200	937	1,080	309	156	106
11							a260	919	1,020	305	153	104
12							280	850	936	302	146	104
13							302	777	867	291	136	106
14							341	721	828	294	129	104
15							394	721	828	280	131	100
16							435	817	1,010	263	126	98
17							480	1,030	880	246	122	96
18							430	1,310	773	232	113	94
19							445	*1,670	713	221	111	92
20							515	2,090	*731	214	109	90
21							630	*2,410	743	224	106	92
22							753	2,640	656	200	102	94
23							793	2,760	612	195	100	90
24							825	2,850	673	*184	100	90
25							729	2,840	629	173	104	90
26							681	*2,640	558	166	106	90
27							651	2,540	520	173	141	*92
28							623	2,360	485	184	*138	109
29							*577	2,240	448	197	129	113
30					------		553	2,120	430	184	143	109
31		-----			-----		-----	2,170	------	173	131	------
Total							12,357	44,594	30,280	8,782	4,306	3,060
Mean							412	1,439	1,009	283	139	102
Cfsm							1.08	3.78	2.65	0.743	0.365	0.268
In.							1.21	4.35	2.96	0.86	0.42	0.30
Ac-ft							24,510	88,450	60,060	17,420	8,540	6,070

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

Peak discharge (base, 700 cfs).--Apr. 24 (7 to 8 a.m.) 850 cfs (4.53 ft); May 10 (2 to 10 a.m.) 946 cfs (4.64 ft); May 25 (9 a.m.) 3,000 cfs (6.44 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for East Fork Bitterroot River at Conner, Mont.

East Fork Bitterroot River at Conner, Mont.

Location.--lat 45°56'00", long 114°07'30", in SE¼SE¼ sec. 7, T. 2 N., R. 20 W., on right bank 200 ft downstream from highway bridge at Conner and half a mile upstream from confluence with West Fork.

Drainage area.--405 sq mi.

Records available.--September 1910 to September 1916, fragmentary (gage heights only during 1916), April 1937 to September 1956. Published as "near Darby" 1910-16.

Gage.--Wire-weight gage read once or twice daily. Datum of gage is 4,014.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Sept. 20, 1910, to Sept. 17, 1916, staff gage at site 2½ miles upstream at different datum. Apr. 4, 1937, to Sept. 30, 1953, wire-weight gages at several sites in immediate vicinity, all at datum 1.00 ft higher.

Average discharge.--19 years (1937-56), 257 cfs (186,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,990 cfs May 25; maximum gage height, 5.47 ft May 24, from graph based on gage readings; minimum daily discharge, 20 cfs Feb. 1. 1910-15, 1937-56: Maximum discharge, 3,760 cfs May 29, 1948; maximum gage height, 6.78 ft May 9, 1947, present datum; minimum discharge observed, 1.4 cfs Aug. 17, 1937.

Remarks.--Records good except those for periods of ice effect and those for May 20 to June 3, which are poor. Diversions for irrigation of about 3,000 acres above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1912.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Mar. 16-31, May 8-19, 21-30, June 1, 2)

Oct. 1 to May 24				May 25 to Sept. 30			
1.6	29	3.0	465	1.3	47	3.0	870
1.9	65	4.0	1,100	1.6	135	4.0	1,580
2.2	130	5.0	1,920	2.0	300	5.6	2,900
2.5	233	6.5	3,270				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	89	100	130	20	70	188	581	2,400	385	132	89
2	96	89	102	135	30	75	181	553	2,350	365	132	83
3	96	112	95	140	45	70	178	542	2,000	543	160	78
4	89	136	85	140	60	70	170	531	1,920	460	146	75
5	94	151	75	120	80	65	160	542	*1,780	422	135	75
6	102	130	115	*100	100	60	133	548	*1,470	395	128	78
7	96	114	115	95	85	65	151	593	1,260	370	124	72
8	96	94	110	90	90	75	160	714	1,170	355	124	80
9	104	112	115	85	90	70	170	812	1,140	335	121	75
10	98	122	110	90	85	65	222	932	1,100	300	97	75
11	104	170	125	90	85	50	284	918	1,040	291	110	72
12	102	87	154	85	80	55	293	851	994	291	100	72
13	96	39	142	90	70	60	306	799	948	273	100	72
14	96	30	91	80	65	70	360	740	890	268	97	72
15	96	27	75	80	60	75	430	728	857	246	94	72
16	91	25	80	90	50	78	509	812	1,120	228	94	70
17	91	55	85	85	60	83	570	981	928	219	92	67
18	89	100	90	80	85	85	504	1,270	838	202	92	67
19	85	145	100	75	85	100	509	*1,690	769	186	86	67
20	89	175	167	75	75	98	564	2,140	*751	182	86	64
21	89	155	352	75	75	100	689	2,600	799	190	83	64
22	89	140	509	75	80	125	832	2,700	625	166	86	67
23	96	125	415	70	80	170	851	2,800	625	166	83	64
24	96	115	365	65	70	210	884	2,910	680	*160	80	62
25	94	110	300	50	70	262	786	2,900	655	160	70	64
26	*91	120	241	30	*70	311	734	2,700	577	146	80	*64
27	94	114	258	35	70	250	708	2,600	532	138	*100	67
28	100	110	215	40	70	178	689	2,400	510	152	94	75
29	100	*109	150	*60	70	*181	*653	2,300	450	152	83	75
30	117	102	115	50	------	195	605	2,200	400	142	100	78
31	117	----	120	25	------	203	------	2,200	------	124	94	------
Total	2,974	3,202	5,171	2,530	2,055	3,624	13,473	45,587	31,578	8,012	3,203	2,155
Mean	95.9	107	167	81.6	70.9	117	449	1,471	1,053	258	103	71.8
Cfsm	0.237	0.264	0.412	0.201	0.175	0.289	1.11	3.63	2.60	0.637	0.254	0.177
In.	0.27	0.29	0.47	0.23	0.19	0.33	1.24	4.19	2.90	0.74	0.29	0.20
Ac-ft	5,900	6,350	10,260	5,020	4,080	7,190	26,720	90,420	62,630	15,890	6,350	4,270

Calendar year 1955: Max 1,450 Min 25 Mean 256 Cfsm 0.632 In. 8.55 Ac-ft 185,000
Water year 1955-56: Max 2,910 Min 20 Mean 338 Cfsm 0.835 In. 11.34 Ac-ft 245,100

Peak discharge (base, 700 cfs).--Apr. 24 (8 a.m.) 918 cfs (3.80 ft); May 10 (7 to 8 a.m.) 953 cfs (3.90 ft); May 25 (9 a.m.) 2,990 cfs (5.40 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-25, 28, Dec. 3-11, 15-18, Dec. 28 to Mar. 15.

Bitterroot River near Darby, Mont.

Location.--Lat 45°58'20", long 114°08'20", in E½ sec. 36, T. 3 N., R. 21 W., on left bank 25 ft downstream from bridge on U. S. Highway 93, a quarter of a mile downstream from Chaffin Creek, and 4 miles southeast of Darby.

Drainage area.--1,049 sq mi.

Records available.--April 1937 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 3,943.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 2, 1939, wire-weight gage at highway bridge 25 ft upstream at same datum.

Average discharge.--19 years, 900 cfs (651,600 acre-ft per year).

Extremes.--Maximum discharge during year, 10,500 cfs May 24 (gage height, 7.85 ft); minimum, 198 cfs Nov. 16, Feb. 1, but may have been less during other periods of ice effect.
1937-56: Maximum discharge, 11,500 cfs May 9, 1947 (gage height, 8.18 ft); minimum observed, about 71 cfs Feb. 9, 1939; minimum gage height observed, 1.06 ft Dec. 9, 1937.

Remarks.--Records good except those for periods of ice effect, which are poor. Some regulation by West Fork Bitterroot River Reservoir (see p. 238). Diversions for irrigation of about 5,000 acres above station. Ditch bypassing station irrigates about 500 acres below.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 17-20)

Oct. 1 to May 23				May 24 to Sept. 30			
1.6	195	4.0	2,200	1.1	205	4.0	2,660
2.0	360	5.0	3,740	1.5	315	5.0	4,260
2.5	675	6.0	5,700	2.0	575	6.0	6,300
3.0	1,080	8.0	10,800	2.5	930	8.0	11,000
				3.0	1,400		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	422	274	315	b370	b200	238	652	2,460	7,570	1,280	510	356
2	422	262	315	b380	b220	242	682	2,280	7,410	1,240	482	342
3	422	282	306	385	b240	238	698	2,230	6,410	1,460	488	338
4	422	302	290	385	b270	234	682	2,230	6,170	1,310	455	333
5	452	355	262	370	286	230	690	2,230	*5,440	1,220	445	333
6	446	294	310	*340	298	223	660	2,290	4,360	1,190	430	333
7	440	290	310	335	278	234	660	2,540	3,590	1,140	460	328
8	440	274	294	330	282	242	660	3,030	3,400	1,080	435	328
9	440	294	298	310	278	234	782	3,390	3,540	1,040	410	312
10	452	544	286	320	266	226	927	3,810	3,630	1,030	395	253
11	452	615	298	315	266	223	1,180	3,740	3,640	1,040	390	248
12	302	395	360	302	262	226	1,290	3,370	3,300	993	385	245
13	282	b290	340	310	254	230	1,490	3,000	3,030	922	380	245
14	278	b270	274	298	246	234	1,840	2,640	2,870	939	351	245
15	270	b250	254	306	b230	234	2,200	2,520	2,900	866	346	240
16	266	b240	b255	315	b220	242	2,630	2,780	3,040	810	365	238
17	258	b280	b260	302	b240	254	2,900	3,540	2,630	735	356	235
18	250	350	b270	294	258	270	2,570	4,980	2,320	687	346	235
19	246	390	320	290	258	298	2,590	*6,730	2,250	661	338	232
20	250	416	350	286	242	340	3,030	8,650	*2,450	635	308	228
21	250	400	410	286	242	375	3,810	*9,340	2,310	674	301	228
22	254	360	735	286	246	470	4,480	9,560	1,980	623	287	228
23	258	335	870	282	246	600	4,860	9,610	1,850	581	284	228
24	258	330	675	270	234	790	4,700	9,930	2,070	*551	277	228
25	250	330	565	238	234	1,010	4,030	9,140	2,010	521	271	225
26	*246	350	524	230	*234	1,110	3,530	8,350	1,750	504	280	223
27	246	350	494	266	234	910	3,270	8,330	1,710	493	360	*223
28	250	330	428	266	234	742	3,160	7,570	1,680	510	*346	268
29	258	*325	370	*266	234	*698	*2,960	7,140	1,620	539	346	277
30	306	310	310	258	------	698	2,690	7,960	1,400	521	420	274
31	306	------	b330	b220	------	690	------	7,110	------	498	385	------
Total	10,094	10,087	11,678	9,411	7,232	12,985	66,303	162,480	98,330	26,293	11,632	8,049
Mean	326	336	377	304	249	419	2,210	5,241	3,278	848	375	268
Ac-ft	20,020	20,010	23,160	18,670	14,340	25,760	131,500	322,300	195,000	52,150	23,070	15,960

Calendar year 1955: Max 6,080 Min 180 Mean 885 Ac-ft 640,500
Water year 1955-56: Max 9,930 Min 200 Mean 1,187 Ac-ft 861,900

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Blodgett Creek near Corvallis, Mont.

Location.--Lat 46°16'10", long 114°14'10", in NW¼NW¼ sec. 21, T. 6 N., R. 21 W., on right bank 4½ miles upstream from mouth and 7 miles southwest of Corvallis.

Drainage area.--26.4 sq mi.

Records available.--December 1946 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 4,050 ft (from topographic map).

Average discharge.--9 years (1947-56), 74.0 cfs (53,570 acre-ft per year).

Extremes.--Maximum discharge during year, 813 cfs May 24 (gage height, 5.79 ft); minimum, 1.6 cfs Mar. 8 (gage height, 1.94 ft).
1946-56: Maximum discharge, 836 cfs May 16, 1949 (gage height, 6.42 ft); minimum, 1.2 cfs Nov. 9, 10, 23, 25, 1952; minimum gage height, 1.93 ft Nov. 9, 10, 1952.

Remarks.--Records good except those for period of ice effect, which are poor. Some regulation for irrigation at low flow by High Lake and Blodgett Lake (combined capacity, 900 acre-ft).

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	4.0	3.5	149
2.3	9.5	4.0	258
2.5	19	5.0	550
2.8	44	5.5	714
3.2	97		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	13	18	b40	b13	9.2	37	127	556	103	23	20
2	5.8	11	18	b38	b13	8.4	34	120	522	100	22	18
3	5.4	12	18	36	b14	6.6	33	113	412	174	20	17
4	5.2	16	16	34	b14	8.5	32	105	427	138	18	16
5	7.4	22	b15	*32	b15	9.2	31	100	346	117	16	15
6	8.8	16	b15	30	17	9.2	29	105	*228	120	16	14
7	8.4	16	16	29	15	8.0	29	135	188	108	16	14
8	9.5	16	16	28	13	5.1	28	192	236	105	32	13
9	15	16	16	25	13	13	31	236	337	103	30	12
10	27	70	15	26	12	8.8	40	266	368	110	28	10
11	20	60	16	25	12	b7	53	233	337	129	28	10
12	16	41	30	23	12	b8	56	188	280	147	27	9.5
13	16	41	28	24	12	8.4	71	157	258	111	25	9.2
14	16	32	22	22	12	8.1	99	138	258	108	24	7.0
15	14	25	b19	22	11	7.8	136	140	253	94	24	5.8
16	13	25	b20	22	b10	6.7	176	188	258	79	24	5.2
17	12	b26	b19	21	b11	8.1	157	298	195	71	22	4.6
18	10	b30	b19	20	12	10	133	442	186	64	11	4.4
19	9.5	34	b20	20	11	13	140	598	219	62	8.4	4.2
20	9.5	34	22	19	10	15	192	*657	263	56	7.8	4.0
21	9.2	29	33	18	10	16	258	707	*203	55	21	7.0
22	8.8	26	120	18	10	20	315	664	160	51	22	13
23	9.2	24	158	18	9.5	29	309	598	168	46	21	13
24	8.4	23	97	17	9.5	42	269	704	206	*40	21	11
25	7.8	22	78	15	*9.5	54	217	*488	190	37	21	10
26	*7.4	22	67	16	9.5	60	206	433	157	34	23	9.5
27	7.4	22	60	18	9.2	51	195	463	178	31	*32	*9.5
28	8.1	20	54	*17	9.2	*44	*180	430	192	28	28	14
29	8.8	*20	50	16	9.2	42	158	451	174	28	24	13
30	17	19	b46	b15	------	41	138	448	129	26	30	14
31	15	------	b43	b14	------	40	------	497	------	24	23	------
Total	341.4	783	1,184	718	337.6	617.1	3,782	10,421	7,884	2,499	688.2	326.9
Mean	11.0	26.1	38.2	23.2	11.6	19.9	126	336	263	80.6	22.2	10.9
Cfsm	0.417	0.989	1.45	0.879	0.439	0.754	4.77	12.7	9.96	3.05	0.841	0.413
In.	0.48	1.10	1.67	1.01	0.48	0.87	5.33	14.68	11.11	3.52	0.97	0.46
Ac-ft	677	1,550	2,350	1,420	670	1,220	7,500	20,670	15,640	4,960	1,370	648

Calendar year 1955: Max 565 Min 5.2 Mean 70.8 Cfsm 2.68 In. 36.38 Ac-ft 51,220
Water year 1955-56: Max 707 Min 4.0 Mean 80.8 Cfsm 3.06 In. 41.68 Ac-ft 58,680

Peak discharge (base, 450 cfs).--May 21 (3 a.m.) 809 cfs (5.78 ft); May 24 (9 a.m.) 813 cfs (5.79 ft); June 1 (3:30 a.m.) 644 cfs (5.29 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Burnt Fork Creek near Stevensville, Mont.

Location.--Lat 46°27'50", long 113°56'40", in NW¼SW¼ sec. 11, T. 8 N., R. 19 W., on right bank 150 ft upstream from county road bridge and 8 miles southeast of Stevensville.

Drainage area.--74.0 sq mi.

Records available.--May 1920 to August 1924, April 1938 to September 1956.

Gage.--Staff gage read once daily except Sundays and holidays. Altitude of gage is 4,270 ft (from topographic map). May 8, 1920, to Aug. 23, 1924, staff gage at site 150 ft downstream at different datum. April 1938 to Mar. 18, 1953, staff gage and Mar. 19, 1953, to Mar. 15, 1955, wire-weight gage, at site 150 ft downstream at datum 2.00 ft lower.

Average discharge.--18 years (1938-56), 49.6 cfs (35,910 acre-ft per year).

Extremes.--Maximum discharge observed during year, 414 cfs May 24 (gage height, 3.72 ft); maximum gage height observed, 4.74 ft Feb. 1 (backwater from ice); minimum daily discharge, 13 cfs Mar. 11.

1920-24, 1938-56: Maximum discharge observed, 641 cfs May 28, 1938 (gage height, 2.92 ft, site and datum then in use); maximum gage height observed, that of Feb. 1, 1956; minimum daily discharge, 2 cfs Mar. 11, 1948.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversion above station for irrigation of about 2,000 acres below station. During irrigation season natural flow of stream is augmented by release from Burnt Fork Lake (capacity, 510 acre-ft).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	12	2.5	110
1.6	19	3.0	214
1.9	38	3.5	342
2.2	68	4.0	490

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	16	20	a23	b20	16	a32	84	331	a85	44	34
2	a22	15	20	a25	b21	15	30	80	359	94	45	a32
3	22	18	20	b26	b22	16	30	78	a340	140	44	a29
4	22	17	a19	b26	b23	a17	28	73	312	a110	44	26
5	20	19	b17	*25	a23	b18	28	73	302	96	a42	25
6	20	a18	b18	b24	b24	b18	26	a80	*258	93	40	25
7	20	24	b18	24	b22	b18	25	88	219	86	38	24
8	20	23	b18	a22	b21	17	a25	144	209	a84	37	24
9	a20	24	b18	b20	b21	17	25	152	209	81	37	a23
10	19	24	b17	b22	20	b15	31	158	a230	76	35	22
11	19	a28	a18	b21	20	a13	42	150	212	72	34	22
12	19	b26	24	20	a19	b14	40	130	198	66	a33	22
13	18	a24	b22	20	17	b16	44	a119	184	57	32	21
14	18	b22	b21	22	b16	b18	54	108	167	58	30	21
15	17	b18	b20	a20	b15	b18	a64	102	167	a55	30	20
16	a17	b18	b19	b20	b14	18	75	134	231	52	30	a20
17	17	b22	b20	b19	b14	18	107	176	a210	51	30	20
18	17	b24	a19	b19	b15	a19	97	233	191	49	30	20
19	17	b26	b19	21	a15	20	91	294	173	48	a29	20
20	17	a26	b20	21	16	21	105	*310	187	46	28	20
21	16	24	25	20	15	21	130	331	*182	44	32	22
22	16	24	55	a20	a15	25	a170	339	161	a48	35	20
23	a16	23	53	20	15	28	165	350	150	53	34	a20
24	17	a22	35	b20	15	34	161	*408	a160	*50	34	20
25	17	21	a32	b19	*15	a40	132	364	142	50	34	20
26	17	21	a28	b22	a15	46	119	348	128	53	a35	20
27	*17	a22	26	b23	15	37	112	a360	121	51	*37	*20
28	17	*22	b24	*b24	15	*35	*108	350	119	49	35	22
29	17	20	b23	a24	15	33	a95	334	108	a48	34	21
30	a17	20	b21	b23	------	32	88	a320	102	47	35	a23
31	17	------	b22	b22	------	34	------	315	------	45	34	------
Total	567	651	731	677	513	707	2,279	6,585	6,062	2,037	1,091	678
Mean	18.3	21.7	23.6	21.8	17.7	22.8	76.0	212	202	65.7	35.2	22.6
Ac-ft	1,120	1,290	1,450	1,340	1,020	1,400	4,520	13,060	12,020	4,040	2,160	1,340

Calendar year 1955: Max 284 Min 12 Mean 53.7 Ac-ft 38,910
Water year 1955-56: Max 408 Min 13 Mean 61.7 Ac-ft 44,760

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated or estimated on basis of records for nearby stations.
b Stage-discharge relation affected by ice.

Lolo Creek above Sleeman Creek, near Lolo, Mont.

Location.--Lat 46°45', long 114°09', in NW¼ sec. 5, T. 11 N., R. 20 W., on left bank 3 miles west (corrected) of Lolo and 4 miles upstream from mouth.

Drainage area.--250 sq mi.

Records available.--November 1950 to September 1956. Prior to October 1954, published as Lolo Creek near Lolo. April 1911 to September 1915 at site 3½ miles upstream, published as "near Lolo"; records not equivalent owing to diversion and tributary inflow.

Gage.--Water-stage recorder. Altitude of gage is 3,290 ft (from topographic map).

Average discharge.--5 years (1951-56), 224 cfs (162,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,430 cfs May 24 (gage height, 6.24 ft); minimum, 28 cfs Nov. 2 (gage height, 1.34 ft).
1950-56: Maximum discharge, that of May 24, 1956; minimum, 6.3 cfs Nov. 9, 1952 (gage height, 1.01 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Numerous small diversions mainly for irrigation of hay meadows above station.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 1, 2)

Oct. 1 to May 24

1.4	32	3.0	405
1.7	64	4.0	880
2.0	112	5.0	1,490
2.5	240	6.0	2,240

May 25 to Sept. 30

1.3	30	2.5	255
1.6	65	3.0	410
2.0	134		

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	52	84	a170	b50	b90	284	836	1,550	303	94	65
2	46	36	81	a180	b65	b90	262	781	1,680	277	91	61
3	45	59	80	a185	b75	b80	246	740	1,410	435	93	58
4	45	68	b80	a185	b85	74	243	710	1,350	386	90	56
5	56	142	b75	*b175	b95	b70	237	675	*1,180	327	83	55
6	56	92	b75	b160	b100	b60	222	655	968	309	80	53
7	51	80	b80	144	b90	b60	222	700	820	288	83	53
8	50	74	b80	131	b85	64	219	836	755	275	82	52
9	52	74	b75	b120	a80	64	225	957	808	263	77	52
10	58	126	b75	b110	a85	b60	290	1,080	864	258	74	50
11	64	149	91	108	a90	b50	388	1,080	825	244	72	50
12	57	80	108	114	a90	b55	429	968	715	228	71	48
13	57	67	b95	118	a85	b55	494	869	645	218	68	46
14	52	b65	b90	112	a80	b60	602	792	611	223	71	46
15	45	b60	b90	b105	a75	b60	745	781	620	208	72	46
16	41	b55	b95	b85	a70	63	908	908	685	191	77	42
17	36	b80	b90	b90	a75	65	957	1,140	602	181	71	39
18	36	b100	b90	b85	a80	71	869	1,440	521	170	62	39
19	36	b115	b90	b95	a85	75	852	1,710	508	161	60	40
20	36	b130	b110	101	a90	84	962	*1,940	*552	154	57	40
21	36	135	b200	103	a80	98	1,150	2,070	548	147	56	44
22	39	107	b350	103	a75	125	1,350	2,090	445	134	55	45
23	40	96	b400	101	a80	174	1,430	2,000	417	124	51	41
24	41	91	a350	b95	a80	259	1,570	*2,220	465	*114	52	38
25	41	89	a300	b80	*b75	350	1,390	1,890	424	101	53	36
26	*40	99	a260	b65	b70	433	1,230	1,670	382	96	58	37
27	40	101	a270	b70	b75	402	1,150	1,590	365	94	*68	*34
28	42	*92	a210	*b75	b80	*336	*1,090	1,410	362	96	70	36
29	48	89	a180	b70	b85	310	1,000	1,420	349	101	68	41
30	65	86	a150	b65	------	310	908	1,390	318	98	82	48
31	71	------	a160	b55	------	316	------	1,440	------	93	72	------
Total	1,470	2,689	4,564	3,455	2,330	4,463	21,924	38,788	21,744	6,297	2,213	1,391
Mean	47.4	89.6	147	111	80.3	144	731	1,251	725	203	71.4	46.4
Ac-ft	2,920	5,330	9,050	6,850	4,620	8,850	43,490	76,930	43,130	12,490	4,390	2,760

Calendar year 1955: Max 1,380 Min 24 Mean 211 Ac-ft 153,000
Water year 1955-56: Max 2,220 Min 34 Mean 304 Ac-ft 220,800

Peak discharge (base, 1,000 cfs).--Apr. 24 (12:30 p.m.) 1,630 cfs (5.24 ft); May 11 (4 to 6 a.m.) 1,120 cfs (4.43 ft); May 24 (12:30 p.m.) 2,430 cfs (6.24 ft); June 2 (11:30 a.m.) 1,840 cfs (5.40 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

b Stage-discharge relation affected by ice.

Clark Fork below Missoula, Mont.

Location.--Lat 46°52'10", long 114°07'30", in NE¼SE¼ sec. 21, T. 13 N., R. 20 W., on right bank 2 miles downstream from Bitterroot River and 5 miles west of Missoula.

Drainage area.--9,003 sq mi.

Records available.--October 1929 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 3,090 ft (from topographic map).

Average discharge.--27 years, 5,087 cfs (3,683,000 acre-ft per year).

Extremes.--Maximum discharge during year, 44,600 cfs May 25 (gage height, 10.75 ft); minimum daily, 1,100 cfs Feb. 1.
1929-56: Maximum discharge, 52,800 cfs May 23, 1948 (gage height, 12.08 ft); minimum, 388 cfs Jan. 18, 1933 (gage height, 0.58 ft, backwater from ice).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some diurnal fluctuation at low flow caused by powerplant at Bonner. Diversions for irrigation of about 235,000 acres above station.

Revisions (water years).--WSP 1042: 1931. WSP 1246: Drainage area. WSP 1316: 1932(M), 1935(M), 1946(M).

Rating table, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.4	1,050	4.0	8,750
1.0	1,810	6.0	16,100
2.0	3,510	8.0	26,400
3.0	5,760	11.0	46,500

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,760	2,740	3,020	a3,200	a1,100	2,410	6,070	13,100	34,000	8,680	3,300	2,800
2	2,780	2,650	2,980	a3,300	a1,300	2,830	5,480	12,300	37,200	8,010	3,400	2,780
3	2,740	2,600	2,940	*b3,400	a1,600	3,090	5,200	11,900	37,200	9,000	3,420	2,720
4	2,710	2,670	2,850	3,760	a1,800	2,710	5,200	11,600	*33,800	10,700	3,450	2,720
5	2,720	2,900	2,550	4,200	a2,150	2,460	5,150	11,400	32,000	9,730	3,340	2,690
6	2,760	3,050	2,390	3,840	2,380	2,310	4,930	11,200	28,500	9,100	3,220	2,630
7	2,780	2,960	2,710	3,450	2,550	2,250	4,710	11,200	23,400	8,610	3,210	2,700
8	2,830	2,810	2,600	3,320	2,500	2,310	4,640	12,400	19,600	8,010	3,220	2,760
9	2,710	2,800	2,530	3,290	2,390	2,330	4,600	14,500	18,600	7,600	3,220	2,280
10	2,740	2,940	2,670	3,020	2,360	2,280	4,950	16,400	19,600	7,200	3,170	2,440
11	2,780	3,420	2,710	3,070	2,390	2,020	5,860	17,900	20,800	6,850	3,090	2,380
12	2,780	3,600	3,020	3,050	2,500	1,950	6,490	17,500	19,900	6,790	3,020	2,330
13	2,760	2,650	2,980	2,940	2,580	2,120	6,820	16,300	17,800	6,540	2,940	2,300
14	2,670	2,130	2,460	2,890	2,510	2,200	7,720	15,100	16,400	6,210	2,850	2,250
15	2,620	1,920	a2,300	2,900	b2,000	2,190	9,200	14,000	16,000	6,160	2,720	2,200
16	2,560	a1,700	a2,200	2,720	a1,400	2,190	11,000	14,300	17,400	5,890	2,620	2,120
17	2,500	a1,800	a2,150	2,670	a1,600	2,550	13,300	16,800	19,800	5,530	2,550	2,080
18	2,460	a2,200	a2,100	2,710	1,920	2,980	14,300	21,400	17,400	5,320	2,430	2,020
19	2,430	2,550	a2,100	2,800	2,120	3,490	13,700	26,500	*15,500	4,710	2,380	2,000
20	2,430	3,430	a3,000	2,850	2,270	3,980	14,000	30,900	15,300	4,420	2,330	1,960
21	2,410	3,720	a5,500	2,890	2,380	4,420	15,700	36,100	15,900	4,080	2,270	1,960
22	2,430	3,570	a8,500	2,850	2,600	5,080	18,200	40,400	14,700	4,060	2,200	1,960
23	2,440	3,320	a10,000	2,850	2,890	6,650	20,100	*41,600	13,100	*3,980	2,140	2,010
24	2,460	3,190	a9,000	2,760	*2,740	8,860	20,400	42,200	12,800	3,680	2,080	2,040
25	*2,460	3,150	a7,500	2,560	2,580	10,200	20,400	43,700	13,400	3,470	2,060	*2,010
26	2,410	3,360	a6,500	2,020	2,410	10,900	18,200	42,600	12,500	3,380	2,070	2,040
27	2,440	*3,450	a6,000	*1,710	2,350	*9,310	*16,700	39,000	11,600	3,240	*2,200	2,020
28	2,440	3,300	a5,500	a2,000	2,350	6,910	15,700	38,200	11,000	3,110	2,330	2,060
29	2,510	3,130	a4,500	a2,000	2,330	6,160	14,900	36,800	10,500	3,210	2,500	2,220
30	2,630	3,090	a3,600	a1,800	------	6,020	14,000	35,100	9,700	3,300	2,650	2,360
31	2,720	------	a3,400	a1,300	------	6,400	------	33,500	------	3,290	2,760	------
Total	80,870	86,800	122,260	88,120	64,050	131,560	327,620	745,900	585,400	183,860	85,140	68,840
Mean	2,609	2,893	3,944	2,843	2,209	4,244	10,920	24,060	19,510	5,931	2,746	2,295
Ac-ft	160,400	172,200	242,500	174,800	127,000	260,900	649,800	‡1,479	‡1,161	364,700	168,900	136,500

Calendar year 1955: Max 27,300 Min 1,300 Mean 5,528 Ac-ft 4,003,000
Water year 1955-56: Max 43,700 Min 1,100 Mean 7,023 Ac-ft 5,098,000

Peak discharge (base, 12,000 cfs).--Apr. 25 (3 a.m.) 21,000 cfs (7.01 ft); May 25 (8:30 p.m.) 44,600 cfs (10.75 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

a No gage-height record; discharge estimated on basis of records for station above Missoula and at St. Regis.

b Stage-discharge relation affected by ice.

Clark Fork at St. Regis, Mont.

Location.--Lat 47°18'05", long 115°05'15", in center of SW¼ sec. 19, T. 18 N., R. 27 W., on left bank at St. Regis, half a mile downstream from St. Regis River.

Drainage area.--10,709 sq mi.

Records available.--October 1910 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 2,600 ft (by barometer). Prior to Nov. 29, 1933, staff gage at same site and datum.

Average discharge.--46 years, 7,352 cfs (5,323,000 acre-ft per year).

Extremes.--Maximum discharge during year, 62,000 cfs May 24 (gage height, 18.98 ft); minimum, 1,770 cfs Feb. 2 (gage height, 4.32 ft).
1910-56: Maximum discharge observed, 68,900 cfs May 24, 1948 (gage height, 19.96 ft); minimum, 1,000 cfs Dec. 17, 1940 (gage height, 3.36 ft), but may have been less during period of ice effect Feb. 19-22, 1929.

Remarks.--Records excellent. Some diurnal fluctuation at low flow caused by powerplant at Bonner. Diversions for irrigation of about 244,000 acres above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 24				May 25 to Sept. 30			
4.5	1,940	11.0	18,500	4.8	2,710	11.0	19,400
5.0	2,520	14.0	32,200	5.0	2,980	14.0	32,700
6.0	4,200	19.0	62,100	6.0	4,680	19.0	62,100
8.0	8,870			8.0	9,300		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	3,570	4,020	5,170	2,380	3,160	9,390	21,000	46,900	12,200	4,460	3,630
2	3,580	3,530	3,920	5,130	2,000	3,250	8,840	19,700	47,900	11,300	4,480	3,660
3	3,580	3,480	3,890	5,410	2,200	3,620	8,280	18,800	48,800	12,500	4,540	3,650
4	3,550	3,570	3,830	5,620	2,620	3,770	8,180	18,100	46,500	13,800	4,580	3,610
5	3,580	4,060	3,680	5,910	2,860	3,420	8,180	17,600	*42,700	13,400	4,540	3,610
6	3,580	4,080	3,410	6,010	3,320	3,210	8,020	17,200	39,300	12,400	4,400	3,600
7	3,600	4,100	3,340	5,570	3,490	3,090	7,780	17,200	33,800	11,800	4,370	3,560
8	3,600	3,940	3,510	5,210	*3,580	3,060	7,580	19,200	28,900	11,100	4,310	3,610
9	3,830	*3,810	3,420	4,950	3,530	3,110	7,530	23,000	26,600	10,500	4,330	3,580
10	4,000	4,000	3,370	4,660	3,410	3,090	7,950	26,200	27,100	10,000	4,250	3,220
11	4,080	4,470	3,510	*4,470	3,420	2,980	9,230	28,000	28,100	9,660	4,180	3,320
12	*3,900	4,770	3,920	4,470	3,480	2,760	10,700	27,600	27,600	9,300	4,100	3,260
13	3,810	4,520	4,280	4,410	3,550	*2,820	11,600	25,600	25,400	9,150	4,010	3,200
14	3,750	3,770	3,920	4,280	3,490	2,880	12,900	*23,600	23,400	8,800	3,940	3,160
15	3,660	3,090	3,370	4,280	3,440	2,950	14,900	22,400	22,600	8,400	3,840	3,110
16	3,570	2,560	3,290	4,260	2,820	2,940	17,500	23,200	22,800	8,120	3,730	3,050
17	3,490	2,390	3,030	3,960	2,370	3,000	19,800	26,800	24,600	7,740	3,630	2,980
18	3,410	2,470	3,030	3,900	2,420	3,320	*22,200	32,700	24,400	7,330	3,550	*2,920
19	3,370	3,190	3,000	3,900	2,900	3,810	22,100	39,500	22,000	7,040	3,450	2,880
20	3,320	4,450	3,000	3,960	3,210	4,490	22,400	47,200	21,200	6,400	3,360	2,840
21	3,300	4,910	4,070	4,020	3,440	5,170	24,800	53,400	*21,200	6,130	3,330	2,810
22	3,270	4,990	7,100	4,020	3,550	5,870	28,900	*57,400	20,300	5,710	*3,260	2,830
23	3,290	4,660	13,000	4,000	3,660	7,170	31,700	60,000	18,900	5,650	3,180	2,810
24	3,270	4,350	15,000	3,960	3,830	9,580	34,000	61,400	17,100	5,440	3,150	2,830
25	3,290	4,220	11,400	3,810	3,600	11,900	33,200	60,600	17,400	5,100	3,120	2,850
26	3,290	4,350	9,310	3,440	3,420	13,500	30,400	59,400	17,100	4,880	3,120	2,840
27	3,250	4,520	8,480	3,060	3,240	13,100	27,800	54,800	15,700	*4,680	3,160	2,850
28	3,270	4,470	7,980	2,830	3,190	10,700	25,900	51,300	14,900	4,500	3,260	2,910
29	3,300	4,240	7,310	3,140	3,170	9,390	24,400	50,400	14,200	4,400	3,330	2,940
30	3,440	*4,080	6,170	3,170	------	9,030	22,700	48,800	13,300	4,440	3,520	3,150
31	3,580	------	5,280	3,050	------	9,290	------	47,200	------	4,480	3,580	------
Total	109,390	118,610	165,840	134,030	91,590	169,430	528,860	‡1,099.3	800,700	256,350	118,060	95,270
Mean	3,529	3,954	5,350	4,324	3,158	5,465	17,630	35,460	26,690	8,269	3,808	3,176
Ac-ft	217,000	235,300	328,900	265,800	181,700	336,100	‡1,049	‡2,180	‡1,588	508,500	234,200	189,000

Calendar year 1955: Max 35,900 Min 2,030 Mean 7,495 Ac-ft 5,426,000
Water year 1955-56: Max 61,400 Min 2,000 Mean 10,070 Ac-ft 7,314,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Flathead River at Flathead, British Columbia

(International gaging station)

Location.--Lat 49°00', long 114°29', on left bank at highway bridge, 0.2 mile north of international boundary, 0.2 mile northwest of Flathead, British Columbia, and 7 miles northwest of Trail Creek, Mont.

Drainage area.--450 sq mi, approximately.

Records available.--March 1929 to September 1956 (no winter records prior to 1952). Prior to October 1934, published as "near Trail Creek, Mont."

Gage.--Water-stage recorder. Altitude of gage is 3,980 ft (from topographic map). Prior to Sept. 1, 1949, staff gage at same site and datum.

Average discharge.--5 years (1951-56), 1,043 cfs (755,100 acre-ft per year).

Extremes.--Maximum discharge during year, 13,300 cfs May 21 (gage height, 7.05 ft); minimum daily, 101 cfs Feb. 1.
1929-56: Maximum discharge, 14,600 cfs May 23, 1948 (gage height, 9.1 ft, from floodmark), from rating curve extended above 8,000 cfs; minimum observed, 65 cfs Apr. 9, 1929, but may have been less during periods of no record in winter.

Remarks.--Records good except those for period of ice effect, which are poor. No regulation or diversion above station.

Cooperation.--This station is maintained by Canada under agreement with the United States.

Revisions (water years).--WSP 1092: 1933 (maximum gage height only).

Rating tables, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 21		May 22 to Sept. 30			
0.5	165	0.7	205	3.0	2,280
.7	190	1.0	300	3.5	3,030
1.0	290	1.3	450	4.0	3,930
Note.--Same as following table above 1.0 ft.		1.6	645	5.0	6,450
		2.0	1,020	6.0	9,600
		2.5	1,620	7.0	13,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	696	332	250	101	156	243	1,040	8,860	1,740	542	280
2	*236	610	323	295	111	*156	236	970	9,640	1,620	549	276
3	232	645	310	288	128	155	232	890	7,540	1,610	530	268
4	232	*820	299	294	157	152	240	*880	7,010	1,740	516	264
5	243	1,260	284	304	166	143	236	840	7,690	1,650	492	260
6	243	1,050	270	286	173	135	*218	*870	*5,420	1,590	462	254
7	236	870	260	282	178	136	215	1,140	3,930	1,520	450	251
8	240	775	249	272	163	147	210	1,670	3,420	1,450	432	251
9	325	713	*236	254	158	144	210	2,260	3,690	1,410	426	248
10	530	696	225	245	164	134	222	2,850	4,560	1,380	450	245
11	624	582	205	250	167	125	229	3,080	4,890	*1,380	444	242
12	504	330	214	238	168	127	250	2,790	3,890	1,310	414	239
13	432	307	226	225	164	137	282	2,480	3,370	1,250	396	239
14	390	294	212	218	155	143	370	2,450	3,130	1,380	375	236
15	396	283	194	210	103	152	510	2,890	3,080	1,270	365	233
16	444	275	206	178	103	154	730	3,890	3,300	1,190	360	230
17	456	267	225	178	111	153	1,050	5,920	4,630	1,100	350	230
18	450	304	209	187	124	163	1,240	7,970	3,990	1,020	340	*228
19	480	357	217	200	132	174	1,470	8,990	3,570	950	324	228
20	582	410	242	*208	164	186	1,880	10,200	3,500	910	320	233
21	582	388	280	203	168	192	2,420	12,500	3,270	870	308	242
22	536	382	330	200	177	210	2,530	11,500	2,870	830	308	236
23	498	381	385	194	175	220	2,220	9,540	2,640	784	308	230
24	492	380	368	190	162	240	1,970	9,380	2,560	748	304	230
25	1,150	380	360	154	160	270	1,700	8,640	2,350	713	304	233
26	2,240	402	350	114	159	300	1,560	8,640	2,180	670	308	225
27	1,720	368	355	123	158	320	1,490	7,940	2,040	645	300	251
28	1,310	338	320	134	157	280	1,360	7,840	2,030	*617	296	251
29	1,060	350	282	123	157	260	1,260	8,160	2,000	596	304	248
30	940	343	240	111	------	242	1,130	*8,260	1,870	568	308	308
31	811	-----	200	102	-----	258	-----	8,000	------	549	296	-----
Total	18,857	15,256	8,408	6,510	4,363	5,764	27,913	164,470	122,920	35,060	11,881	7,389
Mean	608	509	271	210	150	186	930	5,310	4,100	1,130	383	246
Cfsm	1.35	1.13	0.60	0.47	0.33	0.41	2.07	11.80	9.11	2.51	0.85	0.55
In.	1.56	1.26	0.69	0.54	0.36	0.47	2.31	13.61	10.17	2.89	0.98	0.61
Ac-ft	37,400	30,260	16,680	12,910	8,650	11,430	55,360	326,200	243,800	69,540	23,570	14,660

Calendar year 1955: Max 7,720 Min 116 Mean 938 Cfsm 2.08 In. 28.40 Ac-ft 679,200
Water year 1955-56: Max 12,500 Min 101 Mean 1,170 Cfsm 2.60 In. 35.45 Ac-ft 850,500

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13 to Mar. 30.

Flathead River near Columbia Falls, Mont.

Location.--Lat 48°28'20", long 114°05'20", in NE¼NE¼ sec. 12, T. 31 N., R. 20 W., on right bank 1 mile upstream from Middle Fork and 8 miles northeast of Columbia Falls.

Drainage area.--1,553 sq mi.

Records available.--September 1910 to September 1917, April 1929 to September 1956. Published as North Fork Flathead River near Columbia Falls September 1910 to September 1914.

Gage.--Water-stage recorder. Datum of gage is 3,109.70 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). September 1910 to September 1917 staff gage at site 1,000 ft downstream at different datum.

Average discharge.--25 years (1910-12, 1913-15, 1935-56), 2,875 cfs (2,081,000 acre-ft per year).

Extremes.--Maximum discharge during year, 29,700 cfs May 22 (gage height, 11.97 ft); minimum recorded, 448 cfs Jan. 30 (gage height, 1.45 ft), but may have been less during periods of ice effect or of no gage-height record.
1910-17, 1929-56: Maximum discharge, 31,500 cfs May 21, 1954 (gage height, 12.25 ft); minimum, 198 cfs Jan. 8, 1953 (gage height, 0.86 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. A few small diversions from tributaries for irrigation of hay meadows above station. No regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1911, 1912(M), 1915-17(M), 1929(M), 1938-39(M), 1946(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 10-26)

Oct. 1 to May 21				May 22 to Sept. 30			
1.2	330	6.0	6,160	2.4	875	8.0	11,600
1.5	475	8.0	11,800	3.0	1,350	10.0	19,400
2.0	775	10.0	19,600	4.0	2,540	12.0	29,900
3.0	1,560	12.0	30,100	6.0	6,140		
4.0	2,720						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	973	2,290	1,500	1,100	450	704	1,320	3,960	22,400	6,240	2,500	1,360
2	938	2,040	1,450	1,350	480	698	1,270	3,710	24,900	5,760	2,470	1,300
3	917	2,140	1,400	1,300	570	698	1,270	3,450	23,000	5,620	2,410	1,270
4	917	2,360	1,350	1,350	700	680	1,340	3,340	20,800	5,900	2,360	1,230
5	952	3,250	1,300	1,410	750	644	1,460	3,240	21,300	5,640	2,230	1,190
6	973	3,150	1,250	1,330	780	602	1,360	3,160	18,400	5,570	2,100	1,160
7	*952	2,800	1,150	1,310	*808	614	1,310	3,300	14,100	5,510	2,000	1,120
8	945	2,520	1,100	1,260	730	656	1,280	3,700	11,700	5,240	1,930	1,090
9	1,180	2,380	1,050	1,130	710	644	1,270	4,500	11,600	5,090	1,870	1,080
10	1,960	2,440	950	1,090	730	590	1,370	6,500	13,600	5,040	1,870	1,040
11	2,770	2,330	900	1,110	768	550	1,490	8,200	15,300	5,240	1,950	1,030
12	2,550	1,730	1,000	1,080	768	580	1,660	8,000	13,400	5,330	1,870	1,000
13	2,210	1,470	1,100	1,030	749	620	1,920	7,200	11,400	5,150	1,770	990
14	1,980	1,380	1,000	1,000	704	*638	2,450	6,600	10,500	5,330	1,700	968
15	1,870	1,270	850	931	b450	644	3,230	7,000	*10,100	5,150	1,660	945
16	1,880	1,230	1,000	801	450	632	*4,320	9,500	10,600	4,800	1,640	931
17	1,900	1,200	1,100	827	500	620	5,940	*13,700	13,800	4,500	1,580	910
18	1,880	*b1,380	1,000	903	550	626	6,590	17,800	13,500	4,250	1,580	903
19	1,950	1,650	1,050	945	570	638	6,710	20,800	11,900	4,050	1,530	896
20	2,390	1,830	1,150	938	*723	680	7,560	24,200	11,400	3,880	1,480	903
21	2,540	1,750	1,350	910	742	692	9,070	27,800	11,400	3,800	1,440	960
22	2,460	1,720	1,500	896	782	742	9,820	29,100	10,400	3,700	1,400	975
23	2,320	1,700	*b1,700	*882	762	854	8,650	26,900	9,510	3,590	1,360	938
24	2,170	1,700	b1,620	854	736	1,000	7,580	*25,100	9,340	3,500	*1,340	924
25	2,450	1,700	1,540	b700	723	1,170	6,470	*25,000	8,640	*3,360	1,350	938
26	3,520	1,800	1,490	b500	730	1,490	5,680	23,600	7,830	3,240	1,340	924
27	3,740	1,600	1,530	b550	698	1,570	5,300	22,600	7,150	3,110	1,390	945
28	3,280	1,500	1,410	b600	704	1,450	4,860	22,000	7,000	2,950	1,360	1,040
29	2,970	1,570	1,240	b550	710	1,380	4,570	22,200	7,100	2,820	1,350	1,060
30	2,770	1,550	1,020	b480	------	1,350	4,280	21,900	6,740	2,710	1,430	1,230
31	2,520	-----	924	b450	-----	1,380	-----	21,600	------	2,580	*1,400	------
Total	62,827	57,430	37,974	29,567	19,527	25,836	121,400	429,660	388,810	138,650	53,660	31,250
Mean	2,027	1,914	1,225	954	673	833	4,047	13,860	12,960	4,473	1,731	1,042
Cfsm	1.31	1.23	0.789	0.614	0.433	0.536	2.61	8.92	8.35	2.88	1.11	0.671
In.	1.50	1.38	0.91	0.71	0.47	0.62	2.91	10.29	9.31	3.32	1.29	0.75
Ac-ft	124,600	113,900	75,320	58,650	38,730	51,240	240,800	852,200	771,200	275,000	106,400	61,980

Calendar year 1955: Max 18,600 Min 350 Mean 3,002 Cfsm 1.93 In. 26.25 Ac-ft 2,173,000
Water year 1955-56: Max 29,100 Min 450 Mean 3,816 Cfsm 2.46 In. 33.46 Ac-ft 2,770,000

Peak discharge (base, 11,000 cfs).--May 22 (7 a.m.) 29,700 cfs (11.97 ft); June 11 (2 to 4 p.m.) 15,700 cfs (9.09 ft); June 17 (7 to 8 p.m.) 14,700 cfs (8.85 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 17, Nov. 21 to Dec. 22, Jan. 1-3, Feb. 1-6, 16-19, Mar. 11, 12, May 7-16; discharge estimated on basis of records for Middle Fork Flathead River near West Glacier and summation study of the 3 forks of Flathead River as compared with Flathead River at Columbia Falls.

Middle Fork Flathead River at Essex, Mont.

Location.--Lat 48°16'30", long 113°36'10", in NE¼SW¼ sec. 14, T. 29 N., R. 16 W., on right bank 0.6 mile upstream from Ole Creek, 0.7 mile southeast of Essex, and 4 miles downstream from Bear Creek.

Drainage area.--510 sq mi.

Records available.--October 1939 to September 1953, June to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 3,730 ft (from river-profile map).

Average discharge.--14 years (1939-53), 1,032 cfs (747,100 acre-ft per year).

Extremes.--Maximum discharge during period June to September 1956, 13,500 cfs June 2 (gage height, 10.9 ft, from graph based on gage readings); minimum, 205 cfs Sept. 27 (gage height, 2.22 ft).

1939-53, 1956: Maximum discharge, 14,500 cfs May 22, 1948 (gage height, 10.95 ft, from partly estimated gage-height record); minimum daily, 30 cfs Jan. 22, 1940.

Flood in May 1954 reached a stage of 12.7 ft (discharge, 18,000 cfs, from rating curve extended above 12,000 cfs). Flood of May 21 or 22, 1956, reached a stage of 11.7 ft, from floodmark (discharge, 15,400 cfs, from rating curve extended above 12,000 cfs).

Remarks.--Records excellent except those for June 1-11, which are good.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1940, 1941(m).

Rating table, June 1 to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

2.2	200	6.0	3,330
2.6	325	7.0	4,950
3.0	500	9.0	9,080
4.0	1,140	11.0	13,700
5.0	2,070		

Discharge, in cubic feet per second, June to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									g10,200	1,670	505	318
2									g12,800	1,600	530	300
3									g10,000	1,740	570	290
4									g8,970	1,970	515	283
5									g8,620	1,810	470	283
6									g6,180	1,750	446	276
7									g4,660	1,660	436	269
8									g4,090	1,570	436	262
9									g4,950	1,500	414	252
10									g5,840	1,440	405	249
11									g6,300	1,400	397	243
12									*5,040	*1,330	385	240
13									4,250	1,260	*373	237
14									4,010	1,260	361	231
15									4,200	1,150	349	225
16									4,960	1,050	341	220
17									4,880	983	337	*218
18									4,010	927	325	215
19									3,820	878	318	212
20									3,930	837	311	215
21									3,370	798	304	234
22									2,930	759	294	240
23									2,740	714	283	225
24									2,740	684	280	220
25									2,560	648	286	215
26									2,280	618	294	210
27									2,120	590	329	210
28									2,200	565	322	231
29									2,140	550	322	234
30					-----				1,870	535	369	300
31		-----			-----		-----	†8,700	-----	510	357	-----
Total									146,660	34,756	11,664	7,357
Mean									4,889	1,121	376	245
Cfsm									9.59	2.20	0.737	0.480
In.									10.69	2.53	0.85	0.54
Ac-ft									290,900	68,940	23,140	14,590

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft	
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft	

* Discharge measurement made on this day.
† Result of discharge measurement.
g Computed from once-daily staff-gage readings.

Middle Fork Flathead River near West Glacier, Mont.

Location.--Lat 48°29'50", long 114°00'30", in SW¼NE¼ sec. 34, T. 32 N., R. 19 W., on left bank three-quarters of a mile downstream from McDonald Creek, 1¼ miles west of West Glacier (formerly Belton), and 3½ miles upstream from mouth.

Drainage area.--1,128 sq mi.

Records available.--October 1939 to September 1956. Prior to October 1947, published as "near Belton."

Gage.--Water-stage recorder. Altitude of gage is 3,130 ft (from river-profile map). Prior to Nov. 22, 1950, staff gage at same site and datum.

Average discharge.--17 years, 2,846 cfs (2,060,000 acre-ft per year).

Extremes.--Maximum discharge during year, 28,300 cfs May 22 (gage height, 11.28 ft); minimum, 338 cfs Feb. 15 (gage height, 1.03 ft).
1939-56: Maximum discharge, 34,500 cfs May 20, 1954 (gage height, 13.01 ft); minimum, less than 173 cfs Nov. 27, 1952 (stage below intake pipe).

Remarks.--Records excellent except those for periods of ice effect, which are fair.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	380	4.0	4,630
1.5	665	6.0	10,300
2.0	1,140	8.0	16,900
3.0	2,600	11.0	27,300

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	641	1,670	1,050	1,290	536	487	1,120	3,560	20,800	5,300	2,010	1,300
2	609	1,520	1,010	1,420	522	459	1,070	3,360	24,400	4,860	2,020	1,160
3	617	1,600	960	1,340	564	459	1,060	3,130	21,600	4,860	2,230	1,070
4	649	1,950	921	1,390	649	432	1,130	2,960	19,400	5,560	2,100	1,010
5	699	3,360	912	1,470	682	386	1,190	2,820	19,600	5,220	1,880	960
6	*699	3,110	903	1,290	665	490	1,110	2,710	15,500	5,280	1,730	912
7	674	2,730	885	1,210	649	508	1,060	*2,850	12,100	5,100	1,650	867
8	665	2,480	858	1,270	601	529	1,040	3,440	10,500	4,910	1,590	849
9	1,070	2,290	831	1,200	593	515	1,030	4,400	11,400	4,880	1,530	840
10	3,560	2,580	813	1,070	593	480	1,110	6,150	14,000	4,930	1,510	822
11	4,810	2,890	813	1,080	585	452	1,240	7,290	15,200	5,030	1,470	822
12	3,480	2,410	1,100	1,070	585	480	1,380	7,030	12,700	4,790	1,420	804
13	2,890	2,180	1,180	1,020	578	487	1,660	6,260	10,900	4,630	1,360	786
14	2,570	2,010	950	990	557	480	2,260	5,830	10,300	4,880	1,320	759
15	2,450	1,880	b800	795	419	480	3,340	6,120	*10,400	4,420	1,300	742
16	2,510	1,720	b900	813	426	473	*4,720	8,620	11,300	4,070	1,270	716
17	2,380	1,560	b1,000	930	480	487	5,560	*14,100	12,600	3,830	1,270	708
18	2,280	*1,620	b850	970	543	487	5,740	18,500	10,900	3,640	1,250	708
19	2,290	1,760	b900	930	550	508	6,070	20,500	10,500	3,480	1,160	708
20	2,940	1,700	b1,000	903	*557	*543	7,060	22,900	11,100	3,380	1,110	708
21	2,710	1,580	b1,250	858	550	550	8,530	26,800	10,100	3,320	1,060	786
22	2,450	1,460	b1,600	849	564	578	8,890	26,800	8,860	3,240	1,040	804
23	2,240	1,360	*b2,450	*831	564	657	7,810	23,800	8,140	3,150	1,030	768
24	2,080	1,310	b2,350	804	529	804	6,680	*21,600	8,050	3,000	*1,010	*733
25	2,150	1,310	2,040	768	529	990	5,740	21,000	7,720	*2,850	1,020	733
26	2,120	1,320	1,880	649	508	1,240	5,180	*20,800	6,910	2,740	1,020	716
27	2,080	1,120	1,890	665	508	1,260	4,680	20,200	6,260	2,570	1,140	742
28	2,000	1,080	1,700	690	515	1,150	4,310	19,900	6,630	2,430	1,190	849
29	1,900	1,100	1,480	641	522	1,130	4,050	20,800	6,860	2,330	1,270	858
30	1,880	1,080	1,240	564	------	1,120	3,790	19,600	5,990	2,230	1,620	1,110
31	1,790	-----	1,150	543	------	1,150	-----	19,100	------	2,100	1,470	------
Total	61,883	55,740	37,666	30,313	16,123	20,251	109,610	392,930	360,720	123,010	44,050	25,350
Mean	1,996	1,858	1,215	978	556	653	3,654	12,680	12,020	3,968	1,421	845
Cfsm	1.77	1.65	1.08	0.867	0.493	0.579	3.24	11.2	10.7	3.52	1.26	0.749
In.	2.04	1.84	1.24	1.00	0.53	0.67	3.61	12.95	11.89	4.06	1.45	0.84
Ac-ft	122,700	110,600	74,710	60,120	31,980	40,170	217,400	779,400	715,500	244,000	87,370	50,280

Calendar year 1955: Max 16,900 Min 232 Mean 2,861 Cfsm 2.54 In. 34.44 Ac-ft 2,071,000
Water year 1955-56: Max 26,800 Min 386 Mean 3,491 Cfsm 3.09 In. 42.12 Ac-ft 2,534,000

Peak discharge (base, 8,700 cfs).--Apr. 22 (12:30 a.m.) 9,020 cfs (5.58 ft); May 22 (10 a.m.) 28,300 cfs (11.28 ft); June 2 (4:30 p.m.) 25,500 cfs (10.48 ft); June 11 (9 a.m.) 15,800 cfs (7.68 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

South Fork Flathead River at Spotted Bear ranger station, near Hungry Horse, Mont.

Location.--Lat 47°55'20", long 113°31'25", in SE¼SW¼ sec. 17, T. 25 N., R. 15 W., on left bank 600 ft south of Spotted Bear ranger station, 1,000 ft upstream from Spotted Bear River, and 40 miles southeast of Hungry Horse.

Drainage area.--958 sq mi.

Records available.--August 1948 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 3,670 ft (from river-profile map).

Average discharge.--8 years, 1,995 cfs (1,444,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,200 cfs June 2 (gage height, 12.52 ft); minimum daily, 170 cfs Feb. 16.
1948-56: Maximum discharge, that of June 2, 1956; maximum gage height, 12.75 ft May 20, 1954; minimum discharge, less than 121 cfs Dec. 26, 1952 (stage dropped below intake pipes).
Flood of May to June 1948 reached a stage of 14.00 ft about May 22 (discharge, 22,000 cfs, by slope-area determination of peak flow).

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 16-22)

Oct. 1 to May 21				May 22 to Sept. 30			
0.4	159	4.0	2,700	0.8	295	6.0	6,230
.6	209	6.0	5,770	1.5	600	8.0	10,500
1.0	339	8.0	9,680	2.0	885	10.0	15,000
2.0	800	10.0	14,100	3.0	1,660	12.5	21,200
3.0	1,550	12.0	19,100	4.0	2,810		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	339	473	240	520	*220	*320	590	2,800	16,000	3,330	970	525
2	328	447	230	530	230	310	591	2,690	20,200	3,030	976	505
3	324	460	220	540	240	300	591	2,530	16,600	3,120	1,020	486
4	324	530	220	530	260	300	625	2,390	14,900	3,120	950	468
5	328	730	220	500	300	290	630	2,260	14,200	2,980	885	460
6	328	655	210	470	320	290	600	2,160	10,400	2,920	840	446
7	320	586	210	480	310	300	595	2,280	7,820	2,820	820	437
8	320	544	200	470	300	310	581	2,920	7,190	2,680	802	424
9	379	526	200	440	320	320	581	4,470	8,780	2,590	778	414
10	612	725	200	400	320	300	675	5,660	10,700	2,530	772	406
11	828	850	220	400	310	290	800	5,910	11,400	2,530	744	394
12	680	670	250	410	300	290	951	5,250	9,220	2,470	705	390
13	610	550	210	410	270	300	1,250	4,520	7,780	2,320	678	382
14	572	400	200	400	220	310	1,820	4,070	7,420	2,350	656	374
15	548	*335	180	380	180	320	2,530	4,200	7,900	2,170	635	366
16	530	310	190	340	170	320	3,340	5,930	10,100	1,970	620	358
17	512	300	190	340	220	320	3,640	9,180	9,710	1,800	605	350
18	495	320	180	340	250	320	3,650	12,000	*7,860	1,700	585	346
19	499	360	180	340	280	330	3,940	*13,500	7,120	1,600	580	338
20	*558	330	200	350	300	340	4,660	16,100	7,540	1,530	555	334
21	553	310	600	350	310	360	5,790	18,600	6,670	1,480	535	354
22	562	300	915	350	320	400	6,310	18,500	5,460	1,420	520	354
23	544	290	1,470	350	330	430	5,390	*16,600	4,980	*1,360	505	346
24	517	280	1,350	340	330	480	4,580	15,800	5,050	1,300	*500	338
25	526	280	1,090	320	330	540	3,900	15,000	5,130	1,240	505	334
26	522	280	1,020	300	320	680	3,520	14,000	4,590	1,190	510	326
27	508	250	982	290	320	650	3,300	14,000	4,160	1,140	540	330
28	495	230	838	270	330	610	3,150	*12,900	4,400	1,100	540	366
29	486	240	715	250	330	*590	*3,020	12,900	4,400	1,050	555	370
30	517	250	600	220	------	590	2,910	12,700	3,810	1,030	575	484
31	504	-----	500	220	-----	580	-----	13,400	------	982	555	------
Total	15,168	12,811	14,230	11,850	8,240	12,090	74,510	275,220	261,490	62,852	21,016	11,805
Mean	489	427	459	382	284	390	2,484	8,878	8,716	2,027	678	394
Cfsm	0.510	0.446	0.479	0.399	0.296	0.407	2.59	9.27	9.10	2.12	0.708	0.411
In.	0.59	0.50	0.55	0.46	0.32	0.47	2.89	10.68	10.15	2.44	0.82	0.46
Ac-ft	30,090	25,410	28,220	23,500	16,340	23,980	147,800	545,900	518,700	124,700	41,680	23,410

Calendar year 1955: Max 13,300 Min 170 Mean 1,689 Cfsm 1.76 In. 23.94 Ac-ft 1,223,000
Water year 1955-56: Max 20,200 Min 170 Mean 2,135 Cfsm 2.23 In. 30.33 Ac-ft 1,550,000

Peak discharge (base, 7,500 cfs).--May 22 (3 a.m.) 19,500 cfs (11.93 ft); June 2 (3 p.m.) 21,200 cfs (12.52 ft); June 11 (7:30 a.m.) 12,000 cfs (8.68 ft); June 16 (6 p.m.) 11,100 cfs (8.28 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13 to Dec. 21, Dec. 30 to Apr. 1.

Spotted Bear River near Hungry Horse, Mont.

Location.--Lat 47°55'40", long 113°31'10", near center of sec. 17, T. 25 N., R. 15 W., on left bank a third of a mile upstream from mouth and 40 miles southeast of Hungry Horse.

Drainage area.--184 sq mi.

Records available.--October 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,690 ft (from river-profile map).

Average discharge.--8 years, 380 cfs (275,100 acre-ft per year).

Extremes.--Maximum discharge during year, 4,690 cfs May 21 (gage height, 7.00 ft); minimum daily, 28 cfs Feb. 16.
1948-56: Maximum discharge, 5,480 cfs May 20, 1954 (gage height, 7.40 ft); minimum, 20 cfs Jan. 5, 1953 (gage height, 0.67 ft), but may have been less during periods of ice effect.
Flood of May to June 1948 reached a stage of 7.24 ft about May 22 (discharge, 4,010 cfs, by slope-area determination of peak flow).

Remarks.--Records good except those for Apr. 15 to June 15, which are fair, and those for periods of ice effect and no gage-height record, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 16 to May 18, May 22-24, May 27 to June 1)

Oct. 1 to June 1				June 2 to Sept. 30			
0.8	28	2.5	550	1.5	50	3.0	660
1.0	52	3.0	825	1.7	94	4.0	1,440
1.3	113	4.0	1,560	2.0	178	5.0	2,400
1.6	198	5.0	2,490	2.5	375	6.5	4,020
2.0	340	7.0	4,690				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	82	68	90	*51	*35	113	528	2,940	486	166	102
2	59	71	66	95	50	35	108	510	3,540	458	163	92
3	59	84	65	95	47	35	113	474	2,650	508	172	87
4	59	104	63	93	48	35	116	456	2,530	513	157	84
5	60	186	61	*91	48	32	113	440	2,390	480	148	82
6	60	142	58	89	49	33	106	424	1,730	469	142	77
7	60	121	57	88	50	33	106	464	1,340	447	142	75
8	60	108	56	87	50	33	104	595	1,270	420	169	72
9	84	106	55	85	47	32	104	858	1,520	400	145	70
10	126	131	55	83	45	30	123	1,080	1,820	390	140	68
11	136	156	62	81	46	30	136	1,100	1,780	375	134	68
12	102	108	70	78	47	35	165	968	1,420	357	128	66
13	92	95	63	72	45	34	227	832	1,190	344	123	66
14	88	85	57	70	42	32	352	753	1,120	352	117	64
15	84	78	55	65	35	31	510	808	1,150	330	112	64
16	82	*71	56	65	28	32	688	1,300	1,650	298	110	62
17	77	70	57	65	30	35	741	2,360	1,540	277	107	62
18	73	80	55	67	33	45	747	*2,970	1,280	257	104	60
19	*71	100	55	67	34	46	832	3,530	*1,200	245	99	60
20	75	97	55	67	35	55	1,010	3,920	1,210	234	97	58
21	77	95	100	66	37	69	1,250	4,290	1,020	228	94	64
22	86	90	200	66	36	84	1,280	3,840	851	220	92	62
23	84	85	300	65	35	108	1,060	*3,360	781	*214	89	60
24	82	83	265	63	35	99	896	3,240	802	207	*92	58
25	88	80	230	60	35	116	777	3,050	753	200	97	58
26	104	77	210	60	35	148	700	2,800	666	191	105	56
27	99	75	190	60	35	145	656	2,970	614	188	120	58
28	92	73	170	59	35	131	605	*2,750	628	178	107	70
29	88	72	150	58	35	*123	*575	2,650	595	172	107	68
30	90	70	110	55	------	121	550	2,590	524	169	131	126
31	90	------	85	53	------	121	------	2,660	------	163	115	------
Total	2,547	2,875	3,199	2,258	1,178	1,973	14,863	58,570	42,504	9,770	3,824	2,119
Mean	82.2	95.8	103	72.8	40.6	63.6	495	1,889	1,417	315	123	70.6
Cfsm	0.447	0.521	0.560	0.396	0.221	0.346	2.69	10.3	7.70	1.71	0.668	0.384
In.	0.51	0.58	0.65	0.46	0.24	0.40	3.00	11.84	8.59	1.97	0.77	0.43
Ac-ft	5,050	5,700	6,350	4,480	2,340	3,910	29,480	116,200	84,310	19,380	7,580	4,200

Calendar year 1955: Max 3,170 Min 30 Mean 333 Cfsm 1.81 In. 24.55 Ac-ft 240,800
Water year 1955-56: Max 4,290 Min 28 Mean 398 Cfsm 2.16 In. 29.44 Ac-ft 289,000

Peak discharge (base, 1,500 cfs).--May 21 (2 a.m.) 4,690 cfs (7.00 ft); June 2 (8 a.m.) 3,910 cfs (6.35 ft); June 11 (12:30 to 3 a.m.) 1,990 cfs (4.59 ft); June 16 (1 to 8:30 p.m.) 1,820 cfs (4.41 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13 to Mar. 20 (no gage-height record Dec. 4 to Jan. 4, Jan. 6-31; discharge estimated on basis of weather records and records for nearby stations).

Twin Creek near Hungry Horse, Mont.

Location.--Lat 47°59'10", long 113°33'30", in E½ sec. 25, T. 26 N., R. 16 W., on left bank 300 ft upstream from road bridge, 0.1 mile upstream from mouth, and 36 miles southeast of Hungry Horse.

Drainage area.--47.0 sq mi.

Records available.--August 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,610 ft (from river-profile map).

Average discharge.--8 years, 119 cfs (86,150 acre-ft per year).

Extremes.--Maximum discharge during year, 1,560 cfs May 21 (gage height, 7.54 ft); minimum recorded, 7.8 cfs Mar. 10 (gage height, 1.52 ft).

1948-56: Maximum discharge, 2,790 cfs May 19, 1954 (gage height, 8.33 ft), from rating curve extended above 1,000 cfs on basis of slope-area determination at gage height 8.1 ft; minimum, 3.9 cfs Mar. 8, Nov. 26, 1952 (gage height, 1.77 ft), but may have been less during periods of ice effect.

Flood of May to June 1948 reached a stage of 8.1 ft about May 22 (discharge, 2,410 cfs, by slope-area determination of peak flow).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 26 to June 2)

1.7	10	4.0	232
1.9	15	5.0	425
2.2	26	6.0	716
2.5	47	7.0	1,190
3.0	93	7.5	1,580

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	37	31	b45	b17	18	61	*192	764	97	32	19
2	12	34	30	b50	b17	17	59	174	924	95	36	18
3	12	39	29	52	*b17	18	58	156	681	108	33	18
4	12	68	28	49	18	16	64	148	605	106	30	18
5	13	115	27	47	20	16	64	136	537	97	27	17
6	13	79	28	48	20	17	59	141	361	96	26	17
7	12	63	27	*b47	20	17	56	192	293	91	26	16
8	12	57	27	40	19	18	54	286	295	85	27	15
9	21	54	26	b39	19	17	55	424	351	80	25	15
10	50	114	25	b39	19	12	69	495	393	76	24	15
11	66	106	26	40	19	16	78	514	374	72	23	14
12	48	80	b32	41	19	20	106	384	296	69	22	14
13	42	b66	b29	b37	18	17	167	311	260	66	22	14
14	38	b50	b27	34	16	16	258	287	243	66	21	13
15	36	b38	b25	27	15	16	347	353	253	61	20	13
16	33	*b33	b25	b27	16	16	418	608	325	57	20	12
17	31	b32	b25	b27	17	17	442	910	298	53	19	12
18	28	b36	b25	b28	18	19	435	*1,090	*253	50	18	12
19	29	b44	b25	28	19	22	463	1,180	237	48	18	12
20	*30	b42	b24	27	20	25	528	1,290	230	45	18	12
21	28	b40	b40	27	20	25	617	1,340	200	43	17	14
22	32	b39	94	27	20	31	563	*1,140	174	41	16	14
23	28	38	130	27	20	42	402	966	159	38	*16	13
24	30	38	95	26	19	62	331	910	164	*37	16	13
25	39	38	85	26	18	83	277	849	148	36	16	13
26	45	38	72	b22	18	110	258	801	133	34	20	12
27	45	35	68	b22	18	93	248	747	122	33	20	13
28	45	b33	61	b23	18	*78	230	733	120	31	18	15
29	41	32	55	b23	*18	71	218	*730	114	30	21	15
30	43	31	b48	b20	------	68	205	700	104	29	24	28
31	41	------	b45	b18	------	67	------	686	------	28	20	------
Total	967	1,549	1,334	1,033	532	1,080	7,190	18,873	9,391	1,898	691	446
Mean	31.2	51.6	43.0	33.3	18.3	34.8	240	609	313	61.2	22.3	14.9
Cfsm	0.664	1.10	0.915	0.709	0.389	0.740	5.11	13.0	6.66	1.30	0.474	0.317
In.	0.77	1.23	1.06	0.82	0.42	0.85	5.69	14.93	7.43	1.50	0.55	0.35
Ac-ft	1,920	3,070	2,650	2,050	1,060	2,140	14,260	37,430	18,630	3,760	1,370	885

Calendar year 1955: Max 1,110 Min 10 Mean 107 Cfsm 2.28 In. 30.82 Ac-ft 77,210
Water year 1955-56: Max 1,340 Min 12 Mean 123 Cfsm 2.62 In. 35.60 Ac-ft 89,220

Peak discharge (base, 480 cfs).--Apr. 21 (11:30 p.m.) 673 cfs (5.91 ft); May 11 (3 a.m.) 566 cfs (5.59 ft); May 21 (10 p.m.) 1,560 cfs (7.54 ft); June 2 (5 a.m.) 1,080 cfs (6.92 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Feb. 4-28; discharge estimated on basis of weather records and records for nearby stations.

Lower Twin Creek near Hungry Horse, Mont.

Location.--Lat 47°59'40", long 113°33'20", in SE¼ sec. 24, T. 26 N., R. 16 W., on left bank half a mile upstream from mouth and 35 miles southeast of Hungry Horse.

Drainage area.--22.4 sq mi.

Records available.--August 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,630 ft (from river-profile map).

Average discharge.--8 years, 69.4 cfs (50,240 acre-ft per year).

Extremes.--Maximum discharge during year, 909 cfs May 21, from rating curve extended above 550 cfs on basis of slope-area determination at gage height 5.25 ft; maximum gage height, 4.49 ft June 2 (from gage-relation curve); minimum discharge recorded, 8.0 cfs Oct. 1, 2.

1948-56: Maximum discharge, that of May 21, 1956; maximum gage height, that of June 2, 1956; minimum discharge, 0.8 cfs Jan. 28, 1952 (gage height, 0.79 ft, caused by temporary storage behind ice jam upstream).

Flood of May to June 1948 reached a stage of 5.25 ft (from outside gage) about May 22 (discharge, 1,200 cfs, by slope-area determination of peak flow).

Remarks.--Records poor.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 12, May 30 to June 2)

Oct. 1 to May 22				May 23 to Sept. 30			
1.1	8.0	2.5	182	0.6	8.0	2.0	162
1.2	11	3.0	312	.8	16	2.5	252
1.4	22	3.5	470	1.0	27	3.0	351
1.6	38	4.0	700	1.3	57	3.5	480
1.9	76	4.5	980	1.6	97	4.0	700
2.2	126						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	36	31	b34	b14	12	39	*100	513	90	23	14
2	8.0	35	30	35	b13	12	38	92	572	85	22	14
3	8.6	36	29	34	b14	12	38	87	417	92	22	14
4	9.2	50	29	34	b14	12	38	84	422	90	20	14
5	10	64	28	33	b15	11	38	76	390	84	20	14
6	10	57	28	31	15	11	37	76	250	85	20	14
7	10	53	28	*30	16	11	36	95	199	79	20	14
8	12	50	27	30	15	11	34	135	206	74	20	13
9	16	49	26	28	15	11	33	194	269	73	19	13
10	24	68	26	27	15	9	38	265	323	73	19	12
11	64	67	27	26	16	9	41	270	301	70	18	12
12	54	b60	36	25	16	12	50	230	202	64	18	12
13	48	b56	b32	25	15	11	70	189	183	61	18	12
14	45	b52	b28	24	14	10	102	164	184	61	18	12
15	41	b48	b26	b21	12	10	153	189	199	51	16	12
16	41	*b42	b26	b22	10	10	189	290	273	45	16	11
17	40	b40	b25	b23	11	10	246	428	224	42	16	11
18	38	b42	b25	22	11	11	246	*518	*195	39	15	11
19	38	b48	b24	21	12	12	235	656	188	37	14	11
20	*39	45	b26	21	13	14	265	728	190	36	14	11
21	38	42	34	21	14	15	292	750	167	34	14	11
22	40	40	49	21	13	18	309	*630	147	33	13	11
23	37	37	76	21	12	23	252	610	143	32	*13	11
24	36	37	62	20	12	31	191	535	147	*31	13	11
25	40	36	60	20	12	39	162	524	138	29	13	11
26	44	36	55	b19	12	47	148	468	122	26	14	10
27	45	34	53	18	12	42	140	462	117	26	14	10
28	45	34	47	18	12	*39	131	462	125	23	14	11
29	44	33	42	17	*12	39	122	*456	117	23	14	11
30	44	32	b35	16	------	44	112	439	98	22	15	15
31	40	-----	b32	*b15	-----	42	-----	430	------	20	14	------
Total	1,016.8	1,359	1,102	752	387	600	3,827	10,632	7,021	1,630	519	363
Mean	32.8	45.3	35.5	24.3	13.3	19.4	128	343	234	52.6	16.7	12.1
Cfsm	1.46	2.02	1.58	1.08	0.594	0.866	5.71	15.3	10.4	2.35	0.746	0.540
In.	1.69	2.26	1.83	1.25	0.64	1.00	6.35	17.65	11.66	2.71	0.86	0.60
Ac-ft	2,020	2,700	2,190	1,490	768	1,190	7,590	21,090	13,930	3,230	1,030	720

Calendar year 1955: Max 538 Min 7.8 Mean 71.1 Cfsm 3.17 In. 43.12 Ac-ft 51,500
Water year 1955-56: Max 750 Min 8.0 Mean 79.8 Cfsm 3.56 In. 48.50 Ac-ft 57,950

Peak discharge (base, 300 cfs).--Apr. 22 (3 a.m.) 332 cfs (3.07 ft); May 21 (11 p.m.) 909 cfs (4.38 ft); June 2 (3 a.m.) 804 cfs (4.49 ft); June 10 (11 p.m.) 388 cfs (3.17 ft); June 16 (3:30 p.m.) 323 cfs (2.86 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Jan. 27-30, Feb. 6-28, Mar. 10-21; discharge estimated on basis of weather records and records for nearby stations.

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Sullivan Creek near Hungry Horse, Mont.

Location.--Lat 48°01'45", long 113°42'10", in W½ sec. 12, T. 26 N., R. 17 W., on left bank a quarter of a mile downstream from Quintonkon Creek, 1 mile upstream from Hungry Horse Reservoir flow line, and 30 miles southeast of Hungry Horse.

Drainage area.--71.3 sq mi.

Records available.--September 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,740 ft (from topographic map).

Average discharge.--8 years, 213 cfs (154,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,250 cfs June 2 (gage height, 4.96 ft); minimum daily, 25 cfs Feb. 16.
1948-56: Maximum discharge, 2,750 cfs May 19, 1954 (gage height, 5.29 ft); minimum daily, 10 cfs Nov. 26, 1952.
Flood of May to June 1948 reached a discharge of 2,280 cfs about May 22, by slope-area determination of peak flow at a point 1,300 ft upstream.

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions --WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 26-29)

1.0	22	3.0	550
1.2	35	3.5	835
1.4	53	4.0	1,170
1.7	95	4.5	1,650
2.0	160	5.0	2,310
2.5	320		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	163	99	120	45	39	87	328	1,360	231	64	41
2	41	153	93	125	*45	*38	84	297	1,980	221	70	39
3	41	158	90	125	40	39	82	272	1,340	244	69	38
4	46	226	87	110	45	38	90	254	1,230	228	63	37
5	50	320	84	100	45	38	89	241	1,080	212	60	37
6	45	261	82	95	50	37	85	237	793	215	57	36
7	41	221	82	*90	55	38	82	275	649	195	55	35
8	45	203	78	85	50	38	78	387	632	183	53	35
9	159	195	76	85	45	38	82	627	745	173	51	34
10	414	312	73	80	45	35	103	787	842	165	52	34
11	387	290	78	80	50	30	132	874	775	158	49	33
12	272	254	158	80	55	35	165	688	632	150	48	32
13	225	225	136	80	45	35	215	556	561	146	46	32
14	200	190	100	75	40	40	297	505	540	146	44	31
15	189	*170	80	75	35	42	423	600	566	132	44	29
16	176	140	80	70	25	40	535	900	782	123	43	29
17	163	135	75	70	30	38	594	1,270	1,000	116	42	29
18	150	145	70	70	35	40	600	1,560	757	110	40	29
19	*165	165	70	71	35	43	616	*1,640	*644	104	39	29
20	178	160	80	68	40	49	693	1,850	622	99	39	32
21	168	150	206	65	52	49	805	1,990	525	93	38	53
22	181	143	588	65	44	59	799	*1,790	475	89	37	39
23	165	134	492	64	45	71	654	1,540	405	*87	36	34
24	165	129	264	63	41	104	556	1,530	410	82	36	33
25	195	129	225	60	41	125	480	1,500	369	79	*36	32
26	203	127	200	60	40	141	446	1,400	332	76	40	31
27	198	112	186	60	40	125	432	1,400	305	73	44	34
28	192	108	168	60	40	112	405	*1,390	293	71	45	43
29	183	103	150	55	40	103	387	1,320	278	71	62	44
30	192	101	130	50	------	*97	*360	1,230	250	68	52	103
31	178	------	115	50	------	93	------	1,230	------	65	43	------
Total	5,049	5,322	4,495	2,406	1,238	1,849	10,456	30,468	21,172	4,205	1,497	1,117
Mean	163	177	145	77.6	42.7	59.6	349	983	706	136	48.3	37.2
Cfsm	2.29	2.48	2.03	1.09	0.599	0.836	4.89	13.8	9.90	1.91	0.677	0.522
In.	2.63	2.78	2.34	1.25	0.65	0.96	5.45	15.89	11.04	2.19	0.78	0.58
Ac-ft	10,010	10,560	8,920	4,770	2,460	3,670	20,740	60,430	41,990	8,340	2,970	2,220

Calendar year 1955: Max 1,480 Min 26 Mean 206 Cfsm 2.89 In. 39.21 Ac-ft 149,200
Water year 1955-56: Max 1,990 Min 25 Mean 244 Cfsm 3.42 In. 46.54 Ac-ft 177,100

Peak discharge (base, 700 cfs).--Apr. 21 (11 p.m.) 861 cfs (3.46 ft); May 11 (12:30 to 3 a.m.) 926 cfs (3.57 ft); May 21 (9 p.m.) 2,220 cfs (4.94 ft); June 2 (9 a.m.) 2,250 cfs (4.96 ft); June 10 (6 to 7 p.m.) 906 cfs (3.61 ft); June 17 (2 to 4 a.m.) 1,120 cfs (3.95 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13-21, Dec. 14-20, 30, 31, Jan. 1-18, Jan. 26 to Feb. 20, Mar. 10-14.

Graves Creek near Hungry Horse, Mont.

Location.--lat 48°07'30", long 113°49'10", in SE¼ sec. 1, T. 27 N., R. 18 W., on left bank 500 ft upstream from Hungry Horse Reservoir flow line and 22 miles southeast of Hungry Horse.

Drainage area.--27.0 sq mi.

Records available.--August 1948 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,600 ft (from topographic map). Prior to Oct. 1, 1951, at site 2½ miles downstream at different datum.

Average discharge.--8 years, 134 cfs (97,010 acre-ft per year).

Extremes.--Maximum discharge during year, 1,160 cfs June 2 (gage height, 5.00 ft); minimum, 16 cfs Sept. 18-20 (gage height, 1.98 ft).
1948-56: Maximum discharge, 1,520 cfs June 22, 1950 (gage height, 5.70 ft, site and datum then in use); minimum daily, 4.5 cfs Nov. 26, 1952.
Flood of May to June 1948 reached a stage of 5.33 ft about May 22 (discharge, 1,440 cfs, by slope-area determination of peak flow), at former site and datum.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12 to Mar. 21)

1.9	12	3.5	285
2.0	17	4.0	505
2.3	40	4.5	795
2.6	73	5.0	1,160
3.0	143		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	108	51	b58	b32	27	38	104	937	172	43	33
2	34	98	50	b59	b33	*27	37	98	1,110	158	44	30
3	34	101	47	80	33	26	37	88	888	158	46	29
4	38	106	46	60	33	26	38	82	840	154	44	27
5	47	120	45	62	32	25	38	79	789	145	41	26
6	47	118	45	*58	31	24	37	76	485	147	38	25
7	43	109	46	57	30	24	37	84	348	141	36	24
8	44	101	44	56	30	24	36	106	328	135	34	23
9	126	96	44	b54	30	b23	35	158	425	130	34	23
10	414	124	43	b52	30	b22	38	224	621	128	34	22
11	400	128	44	50	31	b23	41	260	651	124	31	21
12	254	120	63	48	31	b23	45	224	470	118	30	20
13	190	115	b52	47	30	24	54	188	392	120	29	19
14	161	104	b47	46	b29	24	72	172	387	126	28	18
15	147	*94	b45	b45	b27	23	101	196	400	115	26	18
16	143	88	b43	b44	b28	23	137	296	600	104	26	17
17	135	80	b42	b44	b29	22	170	490	916	93	25	17
18	126	78	b42	44	b29	22	185	687	576	85	24	16
19	*139	80	b42	43	29	22	190	*783	440	80	24	16
20	158	78	b45	42	27	23	210	895	480	74	23	20
21	154	70	63	40	26	24	250	1,040	396	70	23	32
22	154	66	101	40	28	25	264	*930	316	66	22	26
23	137	62	152	40	29	28	224	808	299	*60	21	22
24	128	60	141	39	29	31	188	808	288	58	*20	20
25	137	59	122	38	28	34	165	972	264	55	20	19
26	143	59	108	b37	27	39	143	847	*231	52	21	18
27	141	56	101	b36	27	42	130	795	212	49	28	19
28	137	54	90	b34	27	41	122	*847	224	47	33	26
29	126	52	80	b33	27	40	118	847	228	45	48	33
30	122	51	b63	b32	------	*40	113	771	198	44	46	44
31	115	-----	b56	b32	-----	40	-----	783	------	43	37	------
Total	4,210	2,635	2,003	1,430	852	861	3,293	14,738	14,739	3,096	979	703
Mean	136	87.8	64.6	46.1	29.4	27.8	110	475	491	99.9	31.6	23.4
Cfsm	5.04	3.25	2.39	1.71	1.09	1.03	4.07	17.6	18.2	3.70	1.17	0.867
In.	5.80	3.63	2.76	1.97	1.17	1.19	4.54	20.30	20.30	4.26	1.35	0.97
Ac-ft	8,350	5,230	3,970	2,840	1,690	1,710	6,530	29,230	29,230	6,140	1,940	1,390

Calendar year 1955: Max 904 Min 14 Mean 126 Cfsm 4.67 In. 63.30 Ac-ft 91,150
Water year 1955-56: Max 1,110 Min 16 Mean 135 Cfsm 5.00 In. 68.24 Ac-ft 98,250

Peak discharge (base, 500 cfs).--May 21 (10 to 11 p.m.) 1,100 cfs (4.97 ft); May 25 (3 to 6 a.m.) 1,020 cfs (4.85 ft); June 2 (8 a.m.) 1,160 cfs (5.00 ft); June 11 (1 a.m.) 717 cfs (4.37 ft); June 17 (5 a.m.) 1,050 cfs (4.86 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Hungry Horse Reservoir near Hungry Horse, Mont.

Location.--Lat 48°20'30", long 114°00'50", in NE¼NE¼NW¼ sec. 27, T. 30 N., R. 19 W., in block 14 of Hungry Horse Dam, 3 miles southeast of Hungry Horse.

Drainage area.--1,654 sq mi.

Records available.--September 1951 to September 1956.

Gage.--Water-stage recorder equipped with remote indicator in powerhouse. Datum of gage is at mean sea level (levels by Bureau of Reclamation). During construction and prior to May 1, 1953, various types of nonrecording gages were used.

Extremes.--Maximum contents observed during year, 3,461,000 acre-ft Aug. 6 (elevation, 3,561.37 ft); minimum observed, 1,822,000 acre-ft Apr. 18 (elevation, 3,477.60 ft).
1951-56: Maximum contents observed, 3,461,000 acre-ft July 3, 4, 1955, Aug. 6, 1956; maximum elevation observed, 3,561.40 ft July 3, 4, 1955; minimum contents observed since normal low operating level reached in May 1952, 607,700 acre-ft Jan. 13, 1953 (elevation, 3,362.50 ft).

Remarks.--Reservoir formed by concrete dam; construction of dam began in 1948, completed in 1952. Storage began Sept. 21, 1951. Capacity, 3,428,000 acre-ft between 3,560 ft (controlled spillway elevation) and 3,196 ft. Dead storage, 40,140 acre-ft. Normal operating low level 3,336 ft for on-site power generation (contents, 445,900 acre-ft exclusive of dead storage). Figures given herein represent usable contents above elevation 3,196 ft. Water is used for power production, flood control, and irrigation.

Cooperation.--Daily elevations furnished by Bureau of Reclamation.

Capacity table, water year 1955-56 (elevation, in feet, and usable contents, in acre-feet)

3,470	1,707,000	3,540	2,974,000
3,480	1,859,000	3,560	3,428,000
3,500	2,186,000	3,565	3,548,000
3,520	2,560,000		

Elevations, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	559.96	559.33	559.00	555.92	541.86	521.16	493.02	485.62	536.39	559.79	561.17	561.17
2	559.96	559.43	559.05	556.05	541.16	520.56	491.95	486.05	539.32	559.70	561.25	561.12
3	559.95	559.58	559.10	556.17	540.48	519.73	490.85	486.33	541.75	559.82	561.30	561.10
4	559.95	559.73	559.17	556.34	539.79	519.00	489.76	486.57	543.72	559.94	561.34	561.08
5	559.97	559.95	559.09	556.45	539.11	518.13	488.75	487.04	545.57	560.05	561.35	561.08
6	559.92	560.12	559.12	556.17	538.43	517.33	487.63	487.47	546.84	560.14	561.37	561.07
7	559.81	560.23	559.14	555.62	537.75	516.57	486.50	487.88	547.86	560.21	561.00	561.06
8	559.64	560.34	558.68	555.08	537.02	515.73	485.35	488.54	548.74	560.28	560.75	561.06
9	559.62	560.55	558.08	554.48	536.35	514.83	484.23	489.51	549.80	560.37	560.76	561.06
10	559.82	560.75	557.52	553.87	535.66	513.84	483.08	490.70	551.09	560.42	560.82	560.85
11	559.92	560.97	557.05	553.29	535.00	512.85	481.98	491.82	552.46	560.48	560.88	560.53
12	559.94	560.99	556.62	552.68	534.29	511.90	480.90	493.00	553.54	560.59	560.91	560.25
13	560.07	560.76	556.44	552.12	533.59	510.93	479.89	494.00	554.33	560.70	560.95	559.97
14	560.17	560.16	556.41	551.56	532.83	509.93	479.04	494.71	554.95	560.77	560.98	559.86
15	560.26	559.60	556.40	551.15	532.13	508.93	478.41	495.62	555.79	560.81	560.99	559.88
16	560.35	559.03	556.15	550.76	531.32	507.92	478.03	497.00	557.12	560.80	561.01	559.90
17	560.23	558.48	555.84	550.30	530.58	506.90	477.82	499.05	558.38	560.83	561.00	559.90
18	559.93	558.02	555.43	549.86	529.88	505.88	477.60	501.48	559.25	560.85	561.02	559.90
19	559.73	558.23	554.94	549.40	529.15	504.98	477.90	504.20	559.76	560.88	561.02	559.91
20	559.51	558.34	554.43	548.94	528.39	504.25	478.66	507.20	560.19	560.90	561.03	559.85
21	559.52	558.32	554.28	548.51	527.63	503.50	480.03	510.54	560.35	561.02	561.02	559.80
22	559.64	558.34	554.53	548.03	526.95	502.74	481.53	513.75	560.35	561.11	561.03	559.54
23	559.65	558.40	554.78	547.57	526.26	501.79	482.57	516.52	560.28	561.20	561.03	559.22
24	559.46	558.53	555.00	546.91	525.52	500.84	483.50	519.15	560.25	560.95	561.03	558.93
25	559.00	558.64	555.22	546.26	524.76	499.87	484.11	521.62	560.17	560.59	561.03	558.91
26	558.73	558.74	555.40	545.60	524.02	499.02	484.40	523.95	560.04	560.70	561.07	558.93
27	558.81	558.80	555.55	545.23	523.26	498.07	484.68	526.17	559.86	560.80	561.12	558.96
28	558.93	558.83	555.62	544.56	522.52	497.09	484.90	528.27	559.86	560.90	561.14	559.01
29	559.06	558.88	555.71	543.92	521.76	496.09	485.13	530.30	559.88	560.98	561.21	559.07
30	559.18	558.94	555.76	543.25	-------	495.07	485.33	532.21	559.86	561.06	561.22	559.18
31	559.26	-------	555.83	542.54	-------	494.05	-------	534.19	-------	561.11	561.22	-------
(†)	3,411	3,404	3,331	3,029	2,595	2,084	1,942	2,850	3,425	3,455	3,457	3,409
(‡)	-16,000	-7,000	-73,000	-302,000	-434,000	-511,000	-142,000	+908,000	+575,000	+30,000	+2,000	-48,000

Calendar year 1955..... ‡ +225,000
Water year 1955-56..... ‡ -18,000

† Contents, in thousands of acre-feet, at end of month.
‡ Change in contents in acre-feet.
Note.--Add 3,000 ft to obtain elevation above mean sea level.

South Fork Flathead River near Columbia Falls, Mont.

Location.--Lat 48°21'30", long 114°02'15", in SW¼SE¼SW¼ sec. 16, T. 30 N., R. 19 W., on right bank 1½ miles downstream from Hungry Horse Dam, 3½ miles upstream from mouth, and 7 miles east of Columbia Falls.

Drainage area.--1,663 sq mi.

Records available.--September 1910 to September 1916, April 1923 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 3,040.0 ft above mean sea level (levels by Bureau of Reclamation). September 1910 to September 1916 chain gage and Apr. 23, 1923, to Sept. 30, 1928, water-stage recorder, at site 3 miles downstream at different datum. Oct. 1, 1928, to Sept. 30, 1952, water-stage recorder at site 1½ miles downstream at several different datums.

Average discharge.--28 years (1928-56), 3,388 cfs (2,453,000 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 11,700 cfs June 21 (gage height, 10.91 ft); minimum, 96 cfs Sept. 19 (gage height, 2.45 ft); minimum daily, 152 cfs Oct. 30. 1910-16, 1923-56: Maximum discharge observed, 46,200 cfs June 19, 1916 (gage height, 16.6 ft, site and datum then in use), from rating curve extended above 20,000 cfs; minimum observed, 7.3 cfs Sept. 24, 1951 (gage height, 0.52 ft, site and datum then in use); minimum daily, 7.3 cfs Sept. 24, 1951.

Remarks.--Records excellent. Flow regulated since Sept. 21, 1951, by Hungry Horse Reservoir (see preceding page).

Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1923-24(M), 1926-27(M), 1932(M), 1935-36(M).

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

2.7	147	5.0	1,510
3.0	230	6.0	2,630
3.5	422	8.0	5,490
4.0	685	10.0	9,520
4.5	1,050	11.0	12,000

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	404	224	472	396	8,620	7,080	11,000	3,080	3,420	6,780	780	1,030
2	632	338	382	382	8,490	7,010	10,800	2,090	2,570	5,980	855	1,420
3	655	348	400	*679	8,420	8,740	11,100	2,400	2,830	4,440	1,030	750
4	838	209	387	626	8,380	8,760	11,000	2,340	2,780	4,080	1,010	*718
5	795	157	2,090	536	8,420	9,110	11,100	386	4,090	3,830	1,030	718
6	1,260	242	682	4,440	8,450	8,880	11,200	398	3,840	4,070	1,050	698
7	2,100	164	2,200	8,200	8,490	8,830	11,200	1,130	2,400	4,010	5,380	685
8	3,260	366	6,300	8,230	8,450	8,810	11,000	707	*2,440	3,700	4,580	685
9	3,340	194	8,250	8,230	8,490	9,570	11,200	1,000	2,600	3,460	1,090	685
10	1,720	365	8,200	8,200	8,490	10,300	11,200	2,230	2,760	3,490	500	3,060
11	2,140	610	7,700	8,180	8,530	10,300	11,300	2,360	2,920	3,510	470	4,370
12	1,950	1,010	6,840	8,180	8,530	10,300	11,400	469	2,470	2,900	525	4,190
13	409	4,190	3,300	8,180	8,490	10,300	11,400	402	3,380	3,000	570	4,040
14	404	8,470	1,070	7,240	8,530	10,300	11,400	*2,090	4,760	3,180	598	1,740
15	427	8,160	1,290	6,150	8,900	10,500	11,400	648	3,230	3,200	631	326
16	418	8,190	4,050	5,970	9,040	10,500	11,400	633	1,640	3,470	655	172
17	3,040	*8,120	5,020	6,410	8,830	10,500	11,400	1,690	2,230	2,530	930	468
18	4,790	7,810	6,110	6,370	8,530	10,500	11,100	*3,520	2,970	2,530	649	469
19	4,080	418	8,260	6,270	8,530	9,240	7,370	3,270	6,150	2,330	655	629
20	4,430	332	8,270	6,240	8,940	*7,920	5,150	3,430	7,730	2,360	661	1,700
21	*1,240	2,170	3,310	6,190	8,580	7,940	2,390	3,410	9,230	914	839	*1,290
22	172	1,140	1,260	6,580	8,720	8,460	2,130	3,360	9,400	1,040	679	3,800
23	1,080	561	487	6,600	*8,650	10,000	3,210	3,360	9,360	1,100	679	4,050
24	4,520	378	387	8,360	8,720	10,400	2,160	3,490	9,310	5,210	719	4,400
25	6,730	378	387	8,380	8,690	10,400	3,300	3,600	9,290	6,050	700	810
26	4,990	387	382	*8,380	8,720	10,700	4,870	2,120	9,290	*451	661	291
27	447	419	694	5,430	8,780	10,600	5,120	3,090	9,290	422	757	558
28	167	568	760	8,360	8,720	10,800	4,680	2,580	7,000	555	757	190
29	154	452	765	8,380	8,720	10,900	4,560	2,580	6,760	581	799	180
30	152	603	686	8,450	-------	10,900	4,560	3,100	6,760	649	841	183
31	378	-------	440	8,600	-------	10,900	-------	3,730	-------	712	855	-------
Total	57,122	56,937	90,831	192,819	249,850	299,450	251,100	68,693	152,900	90,534	31,935	44,305
Mean	1,843	1,898	2,930	6,220	8,616	9,660	8,370	2,216	5,097	2,920	1,030	1,477
Ac-ft	113,300	112,900	180,200	382,500	495,600	594,000	498,000	136,300	303,300	179,600	63,340	87,880
(†)	-16,000	-7,000	-73,000	-302,000	-434,000	-511,000	-142,000	+908,000	+575,000	+30,000	+2,000	-48,000

Adjusted for change in contents in Hungry Horse Reservoir

Mean	1,582	1,780	1,743	1,309	1,071	1,350	5,983	16,980	14,760	3,409	1,063	670
Cfsm	0.951	1.07	1.05	0.787	0.644	0.812	3.60	10.21	8.88	2.05	0.639	0.403
In.	1.10	1.19	1.21	0.91	0.69	0.94	4.01	11.77	9.90	2.36	0.74	0.45
Ac-ft	97,300	105,900	107,200	80,500	61,600	83,000	356,000	1,044,000	878,300	209,600	65,340	39,880

Observed

Calendar year 1955:	Max	12,200	Min	152	Mean	3,209	Ac-ft	2,323,000
Water year 1955-56:	Max	11,400	Min	152	Mean	4,335	Ac-ft	3,147,000

Adjusted

Calendar year 1955:	Mean	3,520	Cfsm	2.12	In.	28.72	Ac-ft	2,548,000
Water year 1955-56:	Mean	4,310	Cfsm	2.59	In.	35.27	Ac-ft	3,129,000

* Discharge measurement made on this day.

† Change in contents in Hungry Horse Reservoir, in acre-feet; furnished by Bureau of Reclamation.

Flathead River at Columbia Falls, Mont.

Location.--Lat 48°21'50", long 114°11'10", in NW¼SE¼ sec. 17, T. 30 N., R. 20 W., on right bank 200 ft downstream from county bridge at Columbia Falls and 5 miles downstream from South Fork.
Drainage area.--4,464 sq mi.
Records available.--May 1922 to September 1923 (fragmentary), June 1928 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,978.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 12, 1928, wire-weight gage on bridge 200 ft upstream at datum 0.19 ft higher.
Average discharge.--28 years (1928-56), 9,408 cfs (6,811,000 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 66,200 cfs May 21 (gage height, 15.34 ft); minimum, 1,920 cfs Sept. 19 (gage height, 1.34 ft).
1922-23, 1928-56: Maximum discharge, 102,000 cfs May 23, 1948 (gage height, 19.08 ft); minimum, 798 cfs Dec. 8, 1929 (gage height, -0.08 ft).
Maximum stage known, 22.7 ft in June 1894, from floodmarks (discharge, 135,000 cfs, from rating curve extended above 85,000 cfs by logarithmic plotting).
Remarks.--Records excellent. South Fork Flathead River which contributes about one-third of flow completely regulated by Hungry Horse Dam since Sept. 21, 1951 (see p. 218).
Revisions (water years).--WSP 1092: 1923. WSP 1216: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.4	1,990	8.0	20,000
2.0	2,800	10.0	29,800
4.0	6,580	12.0	41,700
6.0	12,200	15.0	63,500

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,280	4,660	3,140	2,900	9,900	8,700	13,200	11,200	46,900	18,900	5,680	4,020
2	2,400	4,260	3,000	3,290	9,900	8,250	12,900	9,760	52,200	17,400	*5,700	4,200
3	2,420	4,420	2,830	3,580	9,900	9,930	13,200	9,420	49,400	15,500	5,940	3,400
4	2,500	4,650	2,740	3,620	9,900	9,900	13,400	9,160	44,000	16,000	5,810	3,260
5	2,760	7,120	4,260	3,760	9,900	10,100	13,600	7,080	45,900	15,400	5,460	3,130
6	*2,950	7,220	3,000	6,340	9,900	9,930	13,500	6,800	39,900	15,400	5,180	3,060
7	3,970	6,320	3,100	10,600	9,900	9,930	13,400	7,770	30,300	15,200	8,700	2,950
8	4,810	5,880	7,920	10,700	9,870	9,990	13,200	8,900	*25,700	14,400	8,780	2,860
9	5,680	5,400	9,900	10,500	9,900	10,600	13,200	11,600	25,800	14,000	4,790	2,820
10	7,140	5,790	9,960	10,400	9,900	11,300	13,500	16,300	30,400	14,000	4,200	4,750
11	10,000	6,430	9,580	10,400	9,900	11,100	13,800	18,900	33,900	14,200	4,170	6,540
12	9,080	5,680	9,190	10,400	9,930	11,200	14,100	16,800	30,200	13,600	4,110	6,320
13	6,120	7,480	6,840	10,300	9,870	11,200	14,700	15,000	26,600	13,400	4,060	6,140
14	5,440	11,700	3,280	9,580	9,850	11,300	15,700	15,500	26,200	13,800	3,950	3,890
15	5,200	11,500	3,010	8,100	9,740	11,400	17,600	14,600	24,600	13,500	3,910	2,480
16	5,180	11,200	5,260	7,800	9,860	11,400	20,100	18,200	23,800	13,100	3,880	1,890
17	7,280	*11,000	7,310	8,240	9,580	11,400	22,600	28,200	29,300	11,500	4,080	2,260
18	9,320	11,300	7,440	8,660	9,680	11,400	23,800	39,400	28,200	10,900	3,790	2,240
19	8,080	4,580	9,760	8,410	9,820	10,400	20,500	45,500	28,700	10,300	3,680	2,320
20	10,300	4,600	9,960	8,380	10,000	9,090	20,100	50,800	31,300	10,100	3,580	3,440
21	7,220	5,840	6,920	8,150	9,870	9,090	20,200	58,900	31,600	8,620	3,640	2,940
22	5,610	4,880	4,570	8,340	10,000	*9,500	21,300	61,400	29,700	8,470	3,440	5,560
23	5,840	3,880	5,350	8,420	*9,990	11,200	20,200	55,800	27,700	8,370	3,370	6,050
24	8,600	3,580	5,020	*10,000	9,990	11,900	17,100	*51,500	27,300	11,700	3,360	6,560
25	11,300	3,610	4,450	9,930	9,960	12,300	16,100	*51,000	26,400	12,900	3,370	2,960
26	11,300	3,720	4,090	9,650	9,930	13,200	16,200	47,500	24,800	7,400	3,340	2,040
27	7,030	3,580	4,500	6,770	10,100	13,100	*15,500	46,900	23,400	6,540	3,580	2,480
28	6,140	3,180	*4,180	9,620	9,930	13,200	14,200	45,600	21,300	6,290	3,610	2,230
29	5,590	3,220	3,840	9,650	9,990	13,200	13,700	46,100	21,300	6,120	3,720	2,280
30	5,300	3,320	3,260	9,540	-------	13,200	13,300	45,900	20,200	5,940	4,130	2,550
31	5,080	-------	2,770	9,620	-------	13,200	-------	45,500	-------	5,790	*4,070	-------
Total	191,930	180,000	170,430	255,650	286,860	341,610	483,900	916,990	927,000	368,740	139,080	107,720
Mean	6,191	6,000	5,498	8,247	9,892	11,020	16,130	29,580	30,900	11,890	4,486	3,591
Ac-ft	380,700	357,000	338,000	507,100	569,000	677,600	959,800	‡1,819	‡1,839	731,400	‡75,900	213,700
(†)	-16,000	-7,000	-73,000	-302,000	-434,000	-511,000	-142,000	+908,000	+575,000	+30,000	+2,000	-48,000

Adjusted for change in contents in Hungry Horse Reservoir

Mean	5,931	5,882	4,310	3,336	2,347	2,709	13,740	44,350	40,570	12,380	4,520	2,785
Cfsm	1.33	1.32	0.966	0.747	0.526	0.607	3.08	9.94	9.09	2.77	1.01	0.624
In.	1.53	1.47	1.11	0.86	0.57	0.70	3.43	11.45	10.14	3.20	1.17	0.70
Ac-ft	364,700	350,000	265,000	205,100	135,000	166,600	817,800	‡2,727	‡2,414	761,400	277,900	165,700

Observed

Calendar year 1955: Max 40,000 Min 1,730 Mean 9,465 Ac-ft 6,853,000
Water year 1955-56: Max 61,400 Min 1,990 Mean 11,940 Ac-ft 8,668,000

Adjusted

Calendar year 1955: Mean 9,776 Cfsm 2.19 In. 29.71 Ac-ft 7,078,000
Water year 1955-56: Mean 11,920 Cfsm 2.67 In. 36.33 Ac-ft 8,650,000

* Discharge measurement made on this day.
† Change in contents in Hungry Horse Reservoir, in acre-feet; furnished by Bureau of Reclamation.
‡ Expressed in thousands.

Swan River near Bigfork, Mont.

Location.--Lat 48°01'30", long 113°58'40", in SE¼SW¼ sec. 11, T. 26 N., R. 19 W., on left bank at outlet of Swan Lake, about 1,000 ft downstream from Johnson Creek and 5 miles southeast of Bigfork.

Drainage area.--671 sq mi.

Records available.--October 1910 to May 1911 (gage heights only), April 1922 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 3,062.6 ft above mean sea level (river-profile survey). Oct. 10, 1910, to May 22, 1911, staff gage at site 10 miles upstream at different datum. Apr. 28, 1922, to Oct. 14, 1930, staff gage at site 800 ft upstream at datum 1.9 ft higher.

Average discharge.--34 years (1922-56), 1,100 cfs (796,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6,790 cfs June 4 (gage height, 6.42 ft); minimum, 371 cfs Mar. 12 (gage height, 2.22 ft).
1922-56: Maximum discharge, 8,400 cfs May 24, 1948 (gage height, 7.12 ft, from graph based on gage readings); minimum observed, 193 cfs Jan. 26-29, 1930 (gage height, 0.04 ft, site and datum then in use).

Remarks.--Records excellent. Diversions for irrigation of about 360 acres above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1923-24(M), 1930.

Rating table, water year 1955-56 (gage height, in feet, and and discharge, in cubic feet per second)

2.2	365	4.0	2,290
2.5	560	5.0	3,920
3.0	1,020	6.5	6,970

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	470	600	608	640	407	419	970	2,410	4,940	2,200	*900	632
2	470	592	592	640	389	432	1,000	2,290	5,340	2,130	900	616
3	464	600	584	658	377	425	1,020	2,180	6,200	2,080	920	600
4	451	592	560	667	389	419	1,050	2,070	6,660	2,130	910	584
5	451	624	553	676	401	407	1,110	1,990	6,420	2,110	880	*584
6	458	676	*525	658	413	407	1,120	1,920	5,980	2,060	860	560
7	458	676	504	624	425	407	1,100	1,810	5,340	1,990	840	553
8	458	649	511	616	432	401	1,060	1,780	4,610	1,930	811	546
9	497	632	497	608	432	401	1,040	1,960	3,960	1,860	802	539
10	546	632	497	568	432	401	1,060	2,360	3,640	1,780	766	*518
11	584	694	504	546	432	389	1,150	2,720	3,640	1,720	757	511
12	624	712	511	539	432	383	1,310	2,940	3,760	1,690	739	497
13	640	658	525	532	432	389	1,460	2,940	3,690	1,660	730	490
14	624	632	518	525	432	389	1,640	2,780	3,540	1,640	712	484
15	616	600	477	532	425	389	1,870	2,590	3,320	1,610	685	477
16	616	592	451	511	413	383	2,160	2,460	3,430	1,580	676	470
17	600	539	451	504	395	383	2,520	2,520	3,690	1,530	658	458
18	592	546	458	497	395	389	2,880	2,850	3,850	1,470	649	451
19	592	560	477	490	407	389	3,130	3,400	3,690	1,410	624	438
20	592	649	504	484	413	395	3,230	4,060	3,500	1,340	616	444
21	600	685	560	484	407	413	3,330	4,820	3,420	1,290	608	464
22	600	694	667	490	425	*444	3,520	5,590	3,280	1,240	592	470
23	608	685	811	490	451	470	3,740	*6,130	3,070	1,200	576	477
24	600	667	940	484	451	511	3,760	6,220	2,880	1,150	568	464
25	600	667	990	470	444	560	3,550	6,180	*2,750	1,120	568	464
26	584	676	990	458	438	658	*3,320	*6,070	2,640	1,060	592	458
27	*584	658	980	*432	*432	766	3,050	5,780	2,530	1,040	616	444
28	584	640	940	432	432	830	2,830	5,500	2,410	1,010	632	470
29	592	624	870	432	425	860	2,690	5,280	2,340	990	640	477
30	592	624	784	438	------	900	2,560	5,100	2,280	960	640	518
31	592	------	685	425	------	950	------	4,960	------	920	649	------
Total	17,339	19,075	19,524	16,550	12,178	15,359	64,230	111,660	116,800	47,900	22,116	15,158
Mean	559	636	630	534	420	495	2,141	3,602	3,893	1,545	713	505
Cfsm	0.833	0.948	0.959	0.796	0.626	0.738	3.19	5.37	5.80	2.30	1.06	0.753
In.	0.96	1.06	1.08	0.92	0.67	0.85	3.56	6.19	6.47	2.65	1.23	0.84
Ac-ft	34,390	37,830	38,750	32,830	24,150	30,460	127,400	221,500	231,700	95,010	43,870	30,070

Calendar year 1955: Max 5,000 Min 332 Mean 1,038 Cfsm 1.55 In. 21.00 Ac-ft 751,700
Water year 1955-56: Max 6,660 Min 377 Mean 1,306 Cfsm 1.95 In. 26.48 Ac-ft 947,900

* Discharge measurement made on this day.

Flathead Lake at Somers, Mont.

Location.--Lat 48°04'30", long 114°13'30", in SE¼NE¼ sec. 26, T. 27 N., R. 21 W., at steamboat dock at Somers.

Drainage area.--7,086 sq mi.

Records available.--April 1922 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Somers datum). July 1 to Dec. 12, 1923, staff gage at same site and datum.

Extremes.--Maximum contents during year, 1,814,000 acre-ft July 6 (elevation, 2,893.18 ft); minimum, 819,700 acre-ft Mar. 9 (elevation, 2,885.08 ft).
1922-56: Maximum contents, 2,208,000 acre-ft June 19, 1933 (elevation, 2,896.26 ft); minimum, 347,000 acre-ft Dec. 5, 1936 (elevation, 2,881.07 ft).

Remarks.--Since April 1938, lake elevation has been subject to regulation by Kerr Dam, 4 miles below outlet.

Capacity table, water year 1955-56 (elevation, in feet, and usable contents, in acre-feet)

2,885	810,100	2,890	1,417,000
2,886	930,300	2,891	1,541,000
2,887	1,051,000	2,892	1,665,000
2,888	1,172,000	2,893	1,791,000
2,889	1,294,000	2,894	1,917,000

Elevation, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90.22	89.90	88.96	86.77	85.95	85.35	85.55	87.18	92.11	92.75	92.65	92.98
2	90.14	89.90	88.84	86.73	85.92	85.29	85.58	87.07	92.27	92.73	92.65	92.95
3	90.07	89.93	88.71	86.61	85.86	85.28	85.62	86.97	92.50	92.89	92.65	92.90
4	89.99	89.86	88.62	86.53	85.82	85.25	85.63	86.90	92.60	93.03	92.65	92.90
5	89.92	89.95	88.49	86.43	85.81	85.23	85.68	86.80	92.62	93.14	92.68	92.92
6	89.80	90.02	88.40	86.34	85.79	85.22	85.69	86.65	92.65	93.16	92.73	92.92
7	89.73	90.10	88.25	86.30	85.80	85.20	85.69	86.56	92.51	93.11	92.75	92.91
8	89.67	90.12	88.20	86.45	85.77	85.20	85.74	86.46	92.28	93.07	92.84	92.89
9	89.66	90.11	88.20	86.45	85.74	85.12	85.75	86.44	92.04	92.98	92.86	92.81
10	89.66	90.10	88.16	86.45	85.75	85.16	85.72	86.49	91.84	92.95	92.90	92.73
11	89.72	90.12	88.28	86.49	85.70	85.15	85.76	86.57	91.77	92.95	92.95	92.68
12	89.79	90.17	88.15	86.49	85.67	85.16	85.81	86.64	91.77	93.00	92.99	92.67
13	89.83	90.10	88.12	86.52	85.67	85.16	85.85	86.71	91.83	93.03	92.99	92.67
14	89.85	90.12	87.97	86.45	85.67	85.19	85.91	86.75	91.95	93.05	92.95	92.60
15	89.86	90.18	87.85	86.48	85.66	85.16	86.00	86.78	92.14	93.03	92.97	92.48
16	89.87	90.15	87.74	86.38	85.64	85.17	86.14	86.84	92.39	93.01	92.96	92.37
17	89.88	90.17	87.65	86.35	85.60	85.16	86.28	87.01	92.58	92.98	92.87	92.29
18	89.87	90.22	87.60	86.35	85.57	85.17	86.49	87.35	92.72	92.97	92.86	92.18
19	89.90	90.15	87.50	86.30	85.55	85.17	86.64	87.80	92.88	92.95	92.89	92.10
20	89.92	90.10	87.54	86.25	85.52	85.15	86.75	88.27	93.04	92.94	92.88	92.10
21	89.92	90.10	87.58	86.24	85.51	85.12	86.81	88.84	93.01	92.93	92.88	91.97
22	89.88	89.98	87.48	86.26	85.53	85.13	87.00	89.44	92.84	92.93	92.87	91.87
23	89.89	89.92	87.45	86.30	85.53	85.15	87.11	90.02	92.73	92.89	92.88	91.83
24	89.86	89.88	87.33	86.25	85.53	85.15	87.19	90.48	92.78	92.89	92.90	91.78
25	89.87	89.72	87.30	86.23	85.51	85.20	87.26	90.83	92.82	92.94	92.85	91.69
26	89.93	89.56	87.40	86.23	85.47	85.31	87.29	91.13	92.86	92.35	92.95	91.62
27	89.93	89.50	87.24	86.16	85.41	85.33	87.31	91.36	92.89	92.80	93.05	91.53
28	89.95	89.36	87.18	86.07	85.40	85.35	87.31	91.55	92.87	92.76	93.05	91.40
29	89.98	89.25	87.08	86.05	85.40	85.43	87.22	91.68	92.83	92.72	93.07	91.32
30	90.01	89.10	86.98	86.02	-------	85.48	87.23	91.85	92.83	92.66	93.02	91.28
31	89.92	-------	86.88	85.96	-------	85.51	-------	91.97	-------	92.62	93.02	-------
(†)	††1,407	††1,306	††1,037	925,500	858,200	871,400	††1,079	††1,661	††1,770	††1,743	††1,794	††1,576
(‡)	-51,000	-101,000	-269,000	-111,500	-67,300	+13,200	+207,600	+582,000	+109,000	-27,000	+51,000	-218,000

Calendar year 1955..... ‡ -246,000
Water year 1955-56..... ‡ +118,000

† Contents, in acre-feet, at end of month, above 2,878 ft.
‡ Change in contents in acre-feet.
†† Expressed in thousands.
Note.--Add 2,800 ft to obtain elevation above mean sea level.

Flathead River near Polson, Mont.

Location.--Lat 47°40'50", long 114°15'10", in NW¼SE¼ sec. 11, T. 22 N., R. 21 W., on left bank half a mile downstream from Kerr Dam, 4 miles west of Polson, and 5 miles downstream from Flathead Lake.
Drainage area.--7,096 sq mi.
Records available.--July 1907 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,693.70 ft above mean sea level (levels by Montana Power Co.). Prior to Oct. 1, 1941, staff and chain gages or water-stage recorder at several sites near highway bridge at old site of Michell's ferry 6 miles downstream from present site, all at datum 2,689.80 ft above mean sea level (river-profile survey).
Average discharge.--49 years, 11,500 cfs (8,326,000 acre-ft per year), adjusted since Oct. 1, 1952, for change in contents in Hungry Horse Reservoir and Flathead Lake.
Extremes.--Maximum discharge during year, 58,200 cfs June 7 (gage height, 16.89 ft); minimum, about 250 cfs July 29, Aug. 12; minimum daily, 2,080 cfs Aug. 26.
1907-56: Maximum discharge, 82,800 cfs May 29, 1928 (gage height, 17.2 ft, site and datum then in use); minimum, probably less than 5 cfs Apr. 13, 1938; minimum daily, 32 cfs Apr. 12, 1938.
Remarks.--Records excellent. Diversion above station for irrigation of about 10,000 acres. Flathead project pumps can divert up to 12,000 acre-ft per month when required for irrigation of lands downstream from station. Flow regulated by Kerr Dam since April 1938 and Hungry Horse Reservoir since September 1951 (see p. 218).
Revisions (water years).--WSP 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1938(M).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,650	6,330	11,800	8,300	12,800	12,200	11,900	21,500	49,400	26,600	6,850	5,420
2	8,000	5,550	10,600	10,300	13,100	12,000	13,200	21,100	49,600	24,200	7,740	4,080
3	8,620	5,410	11,400	11,100	12,400	11,300	13,700	20,600	51,100	15,600	6,470	3,650
4	8,800	5,380	9,500	11,000	11,900	11,900	13,500	20,300	51,800	10,900	4,630	3,630
5	7,290	3,680	12,000	10,900	10,700	11,900	14,000	19,600	52,200	13,900	3,330	3,790
6	7,620	2,300	11,800	10,900	11,800	12,300	14,200	19,000	*52,500	18,000	3,820	3,230
7	9,980	5,410	11,600	10,100	11,500	12,100	14,400	18,700	52,000	22,600	6,040	4,190
8	10,000	5,530	11,600	7,100	11,800	11,600	13,600	18,200	51,200	20,900	5,630	5,320
9	5,400	6,310	*11,900	11,900	12,200	11,300	14,800	17,900	49,700	23,200	2,720	8,460
10	9,920	5,180	12,000	11,300	12,400	12,000	14,800	17,500	48,100	18,700	2,390	8,840
11	6,110	5,480	9,970	11,200	11,900	11,900	14,800	17,900	45,200	17,800	2,300	9,390
12	5,470	5,990	11,200	11,300	10,700	12,200	14,600	18,500	38,600	14,300	4,460	8,970
13	4,820	8,680	11,300	11,400	11,500	12,100	15,800	18,900	29,700	16,500	5,380	9,210
14	5,540	12,200	12,500	11,100	11,800	12,000	14,400	19,200	26,400	17,100	5,710	9,640
15	4,840	12,200	13,800	10,800	12,200	11,900	15,200	19,400	22,500	16,400	5,280	9,130
16	5,230	12,000	12,600	13,000	12,700	12,000	16,000	19,900	21,900	17,500	5,010	8,220
17	7,350	10,800	13,200	12,400	12,300	11,900	16,700	20,300	20,600	15,500	5,040	8,270
18	10,000	11,000	13,100	12,300	12,300	11,600	17,500	21,600	25,200	14,800	5,040	9,670
19	9,380	11,300	13,600	11,600	12,100	*11,800	18,300	23,600	26,800	13,900	3,830	9,040
20	9,250	10,500	12,900	11,200	12,300	12,300	18,700	25,800	30,400	*13,400	4,860	9,710
21	9,600	10,200	12,200	10,700	*11,800	12,000	19,300	28,500	39,900	12,500	4,490	10,400
22	7,350	10,400	11,100	7,550	11,800	11,700	19,600	31,600	47,200	9,930	4,180	9,380
23	5,720	11,200	11,300	11,200	11,600	11,700	20,800	34,600	40,200	12,700	2,830	8,340
24	10,200	10,300	10,200	10,700	12,300	11,800	21,000	37,300	30,000	12,300	4,260	10,600
25	10,000	11,100	6,700	*11,600	13,100	8,580	*21,200	39,800	29,600	11,700	2,990	10,100
26	*10,500	10,700	5,940	12,400	13,300	11,700	21,300	41,600	27,500	12,100	2,080	8,360
27	8,780	9,990	9,460	12,100	12,100	12,800	21,800	43,300	27,600	12,100	2,610	10,700
28	5,350	13,000	10,600	12,700	12,000	12,700	22,100	45,100	27,800	12,000	2,940	9,760
29	5,680	12,900	10,900	12,400	12,300	12,500	21,700	46,100	26,800	9,530	*3,340	8,730
30	4,190	12,800	11,100	12,300	-------	12,400	21,900	46,900	24,800	9,140	4,910	6,160
31	7,620	-------	11,900	12,900	-------	12,700	-------	47,900	-------	8,370	5,460	-------
Total	237,260	263,820	349,770	345,750	350,700	368,880	510,800	842,200	‡1,116.3	474,170	136,620	234,390
Mean	7,654	8,794	11,280	11,150	12,090	11,900	17,030	27,170	37,210	15,300	4,407	7,813
Ac-ft	470,600	523,300	693,800	685,800	695,600	731,700	‡1,013	‡1,670	‡2,214	940,500	271,000	464,900
(†)	-67,000	-108,000	-342,000	-413,500	-501,300	-497,800	+65,600	‡+1,490	+684,000	+3,000	+53,000	-266,000

Adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake

Mean	6,564	6,979	5,721	4,429	3,378	3,804	18,130	51,390	48,700	15,340	5,289	3,343
Cfsm	0.925	0.984	0.806	0.624	0.476	0.536	2.55	7.24	6.86	2.16	0.743	0.471
In.	1.07	1.10	0.93	0.72	0.51	0.62	2.85	8.35	7.68	2.49	0.86	0.53
Ac-ft	403,600	415,300	351,800	272,300	194,300	233,900	‡1,079	‡3,160	‡2,900	943,500	324,000	198,900

Observed

Calendar year 1955: Max 41,700 Min 2,190 Mean 11,470 Ac-ft 8,303,000
Water year 1955-56: Max 52,500 Min 2,080 Mean 14,290 Ac-ft 10,370,000

Adjusted

Calendar year 1955: Mean 11,440 Cfsm 1.61 In. 21.90 Ac-ft 8,282,000
Water year 1955-56: Mean 14,430 Cfsm 2.03 In. 27.69 Ac-ft 10,470,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Hungry Horse Reservoir (furnished by Bureau of Reclamation) and in Flathead Lake (furnished by The Montana Power Co.).
‡ Expressed in thousands.

Clark Fork near Plains, Mont.

Location.--Lat 47°25'50", long 114°51'20", SW¼ sec. 1, T. 19 N., R. 26 W., on right bank 2 miles southeast of Plains and 6 miles downstream from Flathead River.

Drainage area.--19,958 sq mi.

Records available.--October 1910 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,449.34 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 28, 1911, wire-weight gage at site 50 ft upstream at same datum.

Average discharge.--46 years, 19,380 cfs (14,030,000 acre-ft per year).

Extremes.--Maximum discharge during year, 106,000 cfs May 26 (gage height, 16.05 ft); minimum, 6,220 cfs Aug. 28 (gage height, 3.66 ft).
1910-56: Maximum discharge, 134,000 cfs June 5, 1948 (gage height, 19.17 ft); minimum, 3,800 cfs Feb. 8, 1938, Dec. 10, 1940; minimum gage height, 2.35 ft Dec. 10, 1940.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by Flathead Lake (see p. 222) and by Hungry Horse Reservoir (see p. 218). Diversions for irrigation of about 335,000 acres above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.7	6,380
5.0	11,800
8.0	28,000
11.0	52,000
16.0	105,000

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13,800	11,000	17,400	b17,000	b13,500	16,600	25,200	46,800	100,000	39,600	14,400	10,200
2	13,600	11,000	16,900	14,500	b13,000	16,600	23,300	45,100	102,000	39,200	12,800	10,100
3	12,600	10,100	16,600	16,000	b13,500	16,400	24,400	43,400	104,000	34,000	13,500	9,010
4	13,200	9,770	16,400	17,300	b14,500	16,600	24,000	42,200	103,000	30,700	12,400	8,350
5	13,400	10,300	14,400	17,500	17,000	16,200	23,800	41,000	99,900	26,300	10,500	8,230
6	11,800	8,880	16,200	17,800	16,500	16,600	23,900	40,000	96,600	28,700	9,470	8,310
7	12,600	7,860	16,000	17,200	b16,500	16,500	23,800	39,200	91,400	32,800	9,140	7,900
8	14,800	9,730	15,900	16,400	b17,000	16,000	23,600	40,400	85,400	34,400	11,400	8,180
9	14,500	10,400	16,000	13,100	*b17,000	15,700	23,000	44,500	80,800	32,300	11,200	10,700
10	10,600	*11,000	16,000	17,200	b17,000	15,800	24,100	47,800	79,000	33,200	8,600	12,100
11	14,600	10,800	16,300	16,600	b17,200	16,200	25,300	49,700	78,800	29,100	7,820	12,800
12	*11,200	10,800	*14,800	*16,400	17,600	15,400	26,600	50,300	74,800	26,500	7,460	13,200
13	10,300	b11,000	b15,500	16,500	16,300	15,900	27,700	48,800	62,200	25,000	8,270	12,900
14	9,680	b11,500	b15,000	16,400	17,000	15,900	30,400	47,000	54,500	27,200	10,100	13,100
15	9,980	b13,500	b15,500	16,400	16,600	15,900	30,800	*45,500	47,800	26,300	10,700	13,600
16	9,510	b12,500	b16,500	16,400	15,100	16,000	34,800	46,200	45,400	25,400	10,300	13,000
17	9,850	b12,000	b15,000	17,600	14,400	16,000	38,600	49,700	48,400	25,600	9,680	11,800
18	11,200	b11,500	b14,000	17,000	15,600	16,400	*42,200	56,800	46,700	23,600	9,680	11,800
19	14,200	b13,000	b13,500	16,800	17,000	16,200	43,600	66,000	48,300	*22,100	9,640	13,100
20	13,600	b15,000	b15,000	16,400	17,600	17,400	44,400	75,800	49,400	20,900	8,640	*12,600
21	13,600	b17,000	b17,000	16,000	17,600	18,400	47,200	85,200	*55,700	20,300	9,010	13,300
22	14,000	17,600	b21,000	15,600	18,500	19,100	52,000	92,200	65,900	18,700	*8,930	13,900
23	11,700	17,900	26,300	12,600	17,400	20,800	56,100	97,500	67,500	16,500	8,470	13,100
24	10,200	17,800	27,500	b14,500	17,400	25,500	59,500	*101,000	55,300	18,500	7,380	11,800
25	13,900	16,200	24,100	b15,000	17,600	29,500	59,800	*104,000	48,500	18,200	8,180	14,100
26	14,200	16,600	17,800	b15,500	17,900	27,500	57,000	105,000	46,400	17,500	7,460	13,200
27	14,000	16,600	15,700	b15,500	17,400	31,000	54,200	104,000	44,800	17,800	6,860	12,300
28	13,200	16,000	18,000	b14,000	16,500	28,500	52,500	101,000	43,700	17,600	6,700	14,100
29	9,980	18,300	18,800	b15,500	16,600	25,900	50,800	101,000	43,100	17,200	7,580	13,600
30	10,100	18,000	17,900	b14,500	------	24,300	49,000	100,000	40,500	14,400	7,700	12,900
31	8,880	------	b17,000	b14,000	------	25,100	------	99,700	------	14,900	9,220	------
Total	378,780	393,640	534,000	493,200	476,800	599,900	‡1,121.6	‡2,056.8	‡2,009.8	774,500	292,990	353,280
Mean	12,220	13,120	17,230	15,910	16,440	19,350	37,390	66,350	66,990	24,980	9,451	11,780
Ac-ft	751,300	780,800	‡1,059	978,200	945,700	‡1,190	‡2,225	‡4,080	‡3,986	‡1,536	581,100	700,700

Calendar year 1955: Max 74,200 Min 6,980 Mean 19,680 Ac-ft 14,250,000
Water year 1955-56: Max 105,000 Min 6,700 Mean 25,920 Ac-ft 18,810,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Thompson River near Thompson Falls, Mont.

Location.--Lat 47°35'35", long 115°13'40", in NE¼ sec. 7, T. 21 N., R. 28 W., on right bank 1 mile upstream from mouth and 6 miles east of Thompson Falls.

Drainage area.--642 sq mi.

Records available.--October 1911 to September 1916 (occasional gage heights, discharges, and discharge measurements), April to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,410 ft (from topographic map). October 1911 to September 1916, staff gage at site a quarter of a mile upstream at different datum.

Extremes.--Maximum discharge during period, 4,960 cfs May 21 (gage height, 7.77 ft); minimum, 222 cfs Sept. 27 (gage height, 1.64 ft).
1911-16, 1956: Maximum discharge, that of May 21, 1956; minimum not determined.
Flood in May-June 1948 reached a discharge of 6,190 cfs, by slope-area determination at site a quarter of a mile downstream.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Cooperation.--Water-stage-recorder graph and one discharge measurement furnished by the Washington Water Power Co.

Rating table, Apr. 1 to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 11 to May 2)

1.6	198	4.0	1,270
2.0	324	6.0	2,960
3.0	700	8.0	5,260

Discharge, in cubic feet per second, April to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							840	1,910	2,830	700	330	275
2							830	1,830	2,780	660	330	272
3							820	1,710	2,460	718	320	272
4							840	1,620	2,310	691	320	265
5							860	1,580	2,160	664	310	269
6							850	1,510	*1,940	664	300	265
7							840	1,500	1,710	647	290	262
8							820	1,630	1,560	631	285	259
9							800	2,180	1,510	623	290	256
10							840	2,700	1,540	615	290	253
11							885	2,790	1,540	615	290	250
12							972	2,550	1,440	603	285	250
13							1,090	2,230	1,350	570	280	250
14							1,340	2,050	1,280	530	280	247
15							1,700	*1,980	1,210	510	275	244
16							2,130	2,220	1,190	500	275	240
17							*2,400	2,930	1,160	480	270	240
18							2,640	3,740	1,120	*470	270	244
19							2,660	4,340	1,080	450	270	*240
20							2,770	4,740	*1,090	440	270	237
21							3,180	4,900	1,070	420	*272	247
22							3,700	4,510	1,010	410	265	247
23							3,600	*4,040	962	400	265	237
24							3,240	3,880	950	390	269	231
25							2,870	3,800	900	380	272	228
26							2,560	*3,380	860	370	278	225
27							2,350	3,070	830	360	298	228
28							2,250	2,880	800	350	294	231
29							2,200	2,840	760	350	294	231
30					------		2,060	2,730	740	340	288	259
31		-----			-----		-----	2,670	------	330	278	------
Total							54,937	86,440	42,122	15,881	8,903	7,454
Mean							1,831	2,788	1,404	512	287	248
Cfsm							2.85	4.34	2.19	0.798	0.447	0.386
In.							3.18	5.01	2.44	0.92	0.52	0.43
Ac-ft							109,000	171,500	83,550	31,500	17,660	14,780

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

Peak discharge (base, 2,000 cfs).--Apr. 22 (5:30 p.m.) 3,810 cfs (6.63 ft); May 11 (4 to 6 a.m.) 2,840 cfs (5.86 ft); May 21 (12 m.) 4,960 cfs (7.77 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Apr. 1-10, June 24 to July 2, July 13 to Aug. 20; discharge estimated on basis of 1 discharge measurement and records for nearby stations.

Prospect Creek at Thompson Falls, Mont.

Location.--Lat 47°35'15", long 115°21'20", in lot 12, SE¼SE¼SE¼ sec. 7, T. 21 N., R. 29 W., on right bank 500 ft downstream from Dry Creek, half a mile upstream from mouth, and half a mile south of Thompson Falls.

Drainage area.--182 sq mi.

Records available.--April to September 1956. October 1911 to September 1916 (fragmentary) at site 500 ft upstream, records not equivalent owing to inflow.

Gage.--Water-stage recorder. Altitude of gage is 2,400 ft (from topographic map).

Extremes.--Maximum discharge during period, 2,860 cfs May 21 (gage height, 7.60 ft); minimum, 66 cfs Sept. 26 (gage height, 1.10 ft).
Flood in May-June 1948 reached a discharge of 2,800 cfs, from contracted-opening determination of peak flow at site above Dry Creek 500 ft upstream.

Remarks.--Records good.

Cooperation.--Water-stage-recorder graph furnished by the Washington Water Power Co.

Rating table, Apr. 1 to Sept. 30, 1956 (gage height, in feet, and discharge, in cubic feet per second)

1.1	66	4.0	685
1.5	100	5.0	1,160
2.0	163	6.0	1,760
3.0	374	8.0	3,140

Discharge, in cubic feet per second, April to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							a680	1,080	1,730	262	113	79
2							a700	1,000	1,540	250	111	78
3							a680	930	1,330	277	109	78
4							a670	882	1,230	256	107	77
5							a700	819	1,080	244	103	76
6							a690	770	891	238	101	76
7							a680	828	765	226	99	75
8							a670	1,130	697	213	96	75
9							a680	1,580	705	204	98	74
10							a720	1,720	761	196	98	74
11							783	1,660	761	200	97	74
12							a900	1,420	682	194	96	72
13							a1,100	1,170	615	182	94	72
14							a1,300	1,040	577	175	93	71
15							a1,500	*1,080	587	168	92	70
16							a1,650	1,430	570	162	92	70
17							*1,770	1,950	531	156	90	70
18							1,720	2,370	491	*151	89	69
19							1,700	2,620	470	147	88	*69
20							1,850	2,710	*473	142	87	70
21							2,170	2,750	434	140	*86	70
22							2,450	2,430	398	134	84	69
23							2,360	*2,200	377	131	82	68
24							2,280	2,140	358	128	83	67
25							2,010	1,940	336	125	84	67
26							1,740	*1,790	318	122	86	67
27							1,590	1,700	295	120	88	68
28							1,530	1,560	286	118	85	68
29							1,400	1,610	279	116	86	68
30					------		1,230	1,560	269	113	83	71
31		-----			-----		-----	1,580	------	111	80	------
Total							39,903	49,449	19,836	5,401	2,880	2,152
Mean							1,330	1,595	661	174	92.9	71.7
Cfsm							7.31	8.76	3.63	0.956	0.510	0.394
In.							8.15	10.10	4.05	1.10	0.59	0.44
Ac-ft							79,150	98,080	39,340	10,710	5,710	4,270

Calendar year	: Max		Min		Mean		Cfsm	In.	Ac-ft
Water year	: Max		Min		Mean		Cfsm	In.	Ac-ft

Peak discharge (base, 1,000 cfs).--Apr. 22 (1:30 p.m.) 2,530 cfs (7.13 ft); May 10 (1 a.m.) 1,740 cfs (5.97 ft); May 21 (6 a.m.) 2,860 cfs (7.60 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

Clark Fork at Thompson Falls, Mont.

Location.--Lat 47°35'50", long 115°21'50", in SE¼NW¼ sec. 7, T. 21 N., R. 29 W., on right bank a quarter of a mile downstream from The Montana Power Co. dam, a quarter of a mile downstream from Prospect Creek, and half a mile west of Thompson Falls.

Drainage area.--21,113 sq mi.

Records available.--October 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,340 ft (from topographic map).

Average discharge.--5 years, 21,910 cfs (15,860,000 acre-ft per year).

Extremes.--Maximum discharge during year, 109,000 cfs May 26 (gage height, 53.21 ft); minimum daily, 6,560 cfs Aug. 28.
1951-56: Maximum discharge, that of May 26, 1956; minimum daily, 4,020 cfs Sept. 1, 1952.
Flood of May 31, 1948, reached a stage of 58.4 ft, from floodmarks (from The Montana Power Co. records).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow regulated by Flathead Lake (see p. 222), Hungry Horse Reservoir (see p. 218) and Thompson Falls powerplant (reservoir capacity, 15,000 acre-ft). Diversions for irrigation of about 340,000 acres above station.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

32.9	6,390	46.0	58,500
34.0	8,800	49.0	78,000
37.0	16,700	53.5	111,000
41.0	31,300		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13,500	10,500	18,200	17,300	a13,800	17,900	27,300	51,700	103,000	40,900	15,100	9,940
2	13,600	11,700	17,200	16,100	a13,500	17,400	26,100	49,500	104,000	41,300	13,900	10,700
3	12,800	10,600	16,800	15,700	a14,500	17,200	25,900	47,800	106,000	38,900	13,800	10,100
4	13,200	10,400	16,400	18,200	a15,500	16,700	25,900	46,300	106,000	33,300	13,600	8,860
5	13,100	9,860	14,800	19,200	a17,500	16,700	25,700	45,300	103,000	29,200	12,000	8,340
6	12,700	10,300	16,000	18,800	16,700	16,600	25,600	43,800	99,000	29,700	11,000	8,190
7	11,800	9,380	15,900	18,100	17,000	16,800	25,600	42,800	94,400	32,600	9,080	8,680
8	13,900	8,500	16,000	17,300	17,600	16,600	25,500	43,900	88,200	36,400	10,700	8,100
9	15,200	10,400	16,000	15,200	17,200	16,300	24,700	48,400	83,000	34,500	12,200	8,890
10	12,700	*10,500	15,800	16,000	17,500	16,000	25,900	52,800	80,500	35,500	10,600	12,600
11	12,700	11,000	16,100	17,600	17,900	16,200	28,200	55,000	80,200	31,900	8,940	12,600
12	12,600	10,900	15,600	*17,200	18,000	*16,100	30,000	55,500	77,400	29,800	7,320	13,500
13	10,400	11,200	16,100	17,200	17,600	16,100	31,500	54,000	69,100	25,800	8,840	13,400
14	10,700	11,900	15,600	17,300	16,800	15,900	34,000	51,900	58,700	27,100	9,210	13,400
15	9,210	14,500	15,700	17,000	16,900	16,100	35,800	50,400	53,600	28,000	10,200	13,500
16	9,860	13,400	17,300	16,700	a15,500	16,000	39,700	50,800	49,000	26,800	11,100	13,500
17	11,000	12,500	15,700	18,200	a15,000	16,200	44,000	54,900	50,400	26,700	10,400	12,700
18	9,600	12,000	14,400	17,700	a16,000	16,300	47,600	61,700	a49,000	24,700	9,980	12,200
19	13,500	13,600	14,100	17,300	a17,500	16,800	49,600	70,000	a51,000	*23,100	9,500	*12,900
20	13,800	16,100	15,300	17,200	a18,000	16,900	50,300	79,500	a52,000	21,100	10,000	13,100
21	13,700	17,600	18,700	16,800	18,000	18,400	53,300	89,400	55,200	20,000	8,760	13,400
22	14,000	18,200	22,400	16,100	18,500	19,300	58,000	96,300	63,800	20,000	9,510	14,000
23	12,400	18,300	28,100	13,800	18,200	21,200	61,500	101,000	68,700	17,500	9,190	13,500
24	11,700	18,000	30,500	15,100	17,600	26,400	64,200	105,000	61,200	18,800	8,350	12,800
25	11,900	17,800	28,200	15,600	18,000	30,800	64,800	108,000	51,400	19,000	7,280	13,600
26	14,100	17,700	22,100	15,700	18,600	32,600	62,300	*109,000	50,100	18,200	7,860	14,200
27	14,500	17,400	17,500	16,000	18,600	33,400	59,300	108,000	47,300	18,200	8,080	12,200
28	14,400	16,300	19,100	14,600	17,800	32,400	57,500	105,000	46,200	18,200	6,560	14,100
29	11,100	18,200	20,200	16,300	17,600	29,100	55,900	105,000	45,200	18,200	7,340	13,900
30	10,500	18,400	19,200	15,800	------	26,900	53,800	104,000	43,600	15,400	7,710	13,600
31	9,480	------	17,400	14,400	------	26,700	------	103,000	------	15,100	8,890	------
Total	383,650	407,140	562,400	515,500	492,900	628,000	‡1,239.5	‡2,189.7	‡2,090.2	815,900	307,000	360,500
Mean	12,380	13,570	18,140	16,630	17,000	20,260	41,320	70,640	69,670	26,320	9,903	12,020
Ac-ft	761,000	807,600	‡1,116	‡1,022	977,700	‡1,246	‡2,459	‡4,343	‡4,146	‡1,618	608,900	715,000

Calendar year 1955: Max 78,800 Min 6,460 Mean 20,720 Ac-ft 15,000,000
Water year 1955-56: Max 109,000 Min 6,560 Mean 27,300 Ac-ft 19,820,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for Clark Fork near Plains and record of outflow from Thompson Falls powerplant as furnished by The Montana Power Co.

Clark Fork at Whitehorse Rapids, near Cabinet, Idaho

Location.--Gage at lat 48°05'25", long 116°03'50", in NE¼SW¼ sec. 27, T. 55 N., R. 3 E., on left bank at Cabinet, 0.4 mile downstream from Cabinet Gorge Dam, 1.7 miles downstream from Blue Creek, and 6.5 miles southeast of Clark Fork. Measuring cableway 0.4 mile downstream. Discharge computed at Whitehorse Rapids, 2.7 miles downstream.

Drainage area.--22,067 sq mi, based on revised area of 22,006 sq mi for site near Heron.

Records available.--September 1928 to September 1956. Prior to October 1952, published as Clark Fork near Heron, Mont.

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947, levels by Washington Water Power Co. Prior to Oct. 30, 1928, staff gage and Oct. 30, 1928, to Apr. 8, 1952, water-stage recorder, at site near Heron, 4 miles upstream at datum 88.00 ft higher prior to Jan. 2, 1931, and 78.00 ft higher thereafter. Apr. 9 to Sept. 30, 1952, staff gage just upstream from present site at approximately same datum.

Average discharge.--28 years, 21,010 cfs (15,210,000 acre-ft per year).

Extremes.--Maximum discharge during year, 121,000 cfs May 26 (gage height, 88.02 ft); minimum, 944 cfs Oct. 30 (gage height, 64.13 ft); minimum daily, 4,510 cfs Oct. 16.
1928-56: Maximum discharge, 153,000 cfs May 29 to June 1, 1948; maximum gage height, 50.97 ft May 31, 1948, site and datum then in use; minimum discharge observed, 270 cfs Aug. 12, 1952 (discharge measurement), at present site during filling of Cabinet Gorge Reservoir; minimum daily discharge since reservoir filled, 980 cfs Jan. 17, 1954.
Maximum discharge known, 195,000 cfs June 1894 (elevation at point an eighth of a mile below "near Heron" site, 2,137.1 ft, from floodmark).

Remarks.--Records excellent. Flow regulated by Hungry Horse Reservoir (see p. 218) and Flathead Lake (see p. 222). Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres. Discharge measurements show that there is approximately 1,000 cfs ground-water inflow between Cabinet Gorge Dam and Whitehorse Rapids, and it has been observed that approximately 600 cfs of this inflow occurs in the reach (2.3 miles) from the measuring cableway to Whitehorse Rapids. Published records give flow at Whitehorse Rapids, computed by adding 600 cfs to observed flows at the measuring cableway, and are considered to be comparable to records at former site near Heron, except for surface flow from additional drainage area. To determine flow through the turbines and over the spillway at Cabinet Gorge Dam, 1,000 cfs should be deducted from flows published herein.

Cooperation.--Gage-height record furnished by Washington Water Power Co. and one discharge measurement made in collaboration with that company.

Revisions (water years).--WSP 1182: 1936.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

66.0	3,350	75.0	37,000
67.0	5,500	79.0	57,900
68.0	8,140	83.0	83,600
69.0	11,200	86.0	105,000
71.0	18,600	88.0	121,000

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,590	12,300	20,200	16,800	15,000	21,900	27,100	57,700	113,000	43,600	15,400	13,400
2	11,000	13,100	23,200	15,100	14,700	21,500	33,200	54,900	113,000	43,600	16,700	11,100
3	14,300	13,900	19,600	18,100	14,700	17,700	29,600	52,900	114,000	42,600	20,100	9,240
4	13,700	14,600	15,600	21,600	17,600	14,500	29,100	50,500	115,000	36,500	14,200	9,640
5	14,800	11,600	16,100	23,000	*17,100	16,500	28,800	*49,500	112,000	33,600	10,900	9,420
6	14,400	6,680	16,600	23,000	18,400	17,200	*28,900	48,000	107,000	32,200	11,200	9,380
7	14,000	12,400	15,700	20,800	20,400	18,100	26,400	47,000	102,000	34,700	11,300	8,700
8	13,600	13,500	17,600	18,100	17,200	17,500	27,900	49,400	94,800	38,200	12,100	10,500
9	16,100	14,600	21,100	17,000	18,500	21,000	31,500	54,500	89,100	36,900	12,600	10,300
10	16,800	15,000	18,700	19,000	18,100	18,000	27,400	60,000	87,000	37,400	11,800	13,100
11	14,200	15,200	14,200	19,600	19,800	13,900	31,800	62,700	85,900	36,600	12,000	14,400
12	15,000	11,400	17,100	20,600	20,100	16,500	32,200	62,600	83,300	33,000	9,490	13,200
13	13,700	6,080	21,900	20,300	20,400	18,000	34,900	60,300	76,800	31,800	9,880	14,700
14	19,600	16,400	*19,100	19,000	16,400	16,900	38,000	57,200	64,200	26,100	10,300	15,200
15	12,600	17,600	14,900	16,500	17,600	20,200	41,500	55,700	59,500	30,500	11,800	14,600
16	4,510	17,800	20,900	19,600	16,900	18,600	45,200	57,400	53,700	32,900	12,000	12,100
17	15,000	16,100	21,000	19,800	14,900	17,300	50,000	63,100	54,000	29,900	11,900	14,600
18	16,200	14,900	14,700	19,500	17,200	14,600	53,200	71,000	54,000	29,100	11,300	12,900
19	15,100	12,600	17,400	20,100	16,600	16,800	56,400	80,800	54,700	27,900	11,500	14,300
20	14,800	10,500	18,100	*20,400	17,800	19,100	57,000	91,400	*54,600	26,300	11,000	13,400
21	14,800	16,500	22,500	19,500	21,100	22,100	60,900	102,000	56,900	25,100	11,000	15,200
22	13,500	18,200	23,900	15,000	21,200	21,600	66,700	105,000	64,900	*17,800	9,860	14,600
23	9,660	19,800	26,200	16,600	18,100	23,800	70,800	109,000	71,400	20,600	10,300	12,300
24	14,800	15,900	32,200	16,700	17,800	23,200	73,900	115,000	67,000	19,600	10,300	13,900
25	14,700	22,400	32,100	17,600	20,600	26,800	74,700	119,000	54,800	21,900	9,510	15,400
26	14,700	19,600	30,000	18,900	18,500	35,500	71,400	118,000	53,000	19,500	8,680	15,200
27	15,100	20,900	26,800	17,300	19,900	35,300	67,600	118,000	50,400	20,600	9,760	15,400
28	15,000	20,600	23,500	18,800	19,900	35,500	65,000	115,000	48,600	19,500	*8,280	14,100
29	12,500	17,400	24,400	13,700	*20,200	34,500	62,800	114,000	47,800	21,000	8,340	13,500
30	6,600	18,000	25,600	16,800	------	31,400	60,200	*113,000	46,400	19,000	9,140	13,000
31	*11,900	------	22,600	14,600	------	29,200	------	112,000	------	15,300	10,000	------
Total	422,260	455,560	653,500	573,400	526,700	674,700	‡1,404.1	‡2,426.6	‡2,248.8	903,300	352,640	386,780
Mean	13,620	15,190	21,080	18,500	18,160	21,760	46,800	78,280	74,960	29,140	11,380	12,890
Ac-ft	837,500	903,600	‡1,296	‡1,137	‡1,045	‡1,338	‡2,785	‡4,813	‡4,460	‡1,792	699,500	767,200

Calendar year 1955: Max 81,800 Min 3,250 Mean 22,780 Ac-ft 16,490,000
Water year 1955-56: Max 119,000 Min 4,510 Mean 30,130 Ac-ft 21,870,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Pend Oreille Lake at Hope, Idaho

Location.--Lat 48°15', long 116°18', in lot 2, sec. 35, T. 57 N., R. 1 E., at floating dock near Northern Pacific Railway station at Hope.

Drainage area.--22,900 sq mi, approximately.

Records available.--March 1914 to September 1956. Published as "at Sandpoint," 1914-22. Records published for both sites September 1921 to September 1922.

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947; gage readings have been reduced to elevations above mean sea level. Mar. 18, 1914, to Sept. 30, 1922, staff gage 11 miles west across lake at Sandpoint at datum 42.18 ft higher. Sept. 17, 1921, to Oct. 7, 1929, staff gage at present site at datum 45.47 ft higher than present datum. Oct. 8, 1929, to Sept. 30, 1950, water-stage recorder at present site at datum 0.20 ft lower than present datum.

Extremes.--Maximum contents during year, 1,807,000 acre-ft June 5 (elevation, 2,065.06 ft); minimum, 1,163,000 acre-ft May 8 (elevation, 2,058.22 ft).

1921-56: Maximum contents, 2,462,000 acre-ft June 9, 1948 (elevation, 2,071.62 ft, present datum); minimum, 117,700 acre-ft Feb. 17, 1936 (elevation, 2,046.27 ft, present datum).

Maximum contents known, 2,905,000 acre-ft June 1894 (elevation, 2,075.88 ft, present datum).

Remarks.--Regulation at Albeni Falls Dam beginning June 4, 1952. Contents shown is that above elevation 2,044.8 ft.

Revisions (water years).--WSP 1122: 1946.

Capacity table, water year 1955-56 (elevation, in feet, and contents in acre-feet)

2,058.0	1,143,000	2,063.0	1,609,000
2,059.0	1,235,000	2,064.0	1,704,000
2,060.0	1,327,000	2,065.0	1,801,000
2,061.0	1,420,000	2,066.0	1,898,000
2,062.0	1,514,000		

Elevation, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61.03	60.67	59.64	61.48	61.72	59.89	58.74	59.15	64.80	62.25	62.30	62.44
2	60.85	60.84	59.66	61.50	61.49	59.91	58.69	58.90	64.88	62.30	62.30	62.42
3	60.69	61.07	59.61	61.57	61.24	59.93	58.61	58.76	64.97	62.33	62.39	62.41
4	60.52	61.35	59.59	61.82	61.03	59.82	58.52	58.67	65.05	62.19	62.38	62.40
5	60.29	61.46	59.48	61.92	60.78	59.68	58.40	58.54	65.02	62.12	62.31	62.37
6	60.02	61.51	59.39	61.96	60.61	59.63	58.42	58.38	64.88	62.15	62.26	62.39
7	59.75	61.65	59.36	61.96	60.55	59.67	58.47	58.26	64.65	62.19	62.19	62.45
8	59.59	61.80	59.40	61.91	60.42	59.66	58.50	58.24	64.33	62.32	62.19	62.54
9	59.52	62.03	59.48	61.84	60.31	59.71	58.64	58.36	63.97	62.42	62.21	62.51
10	59.43	62.22	59.55	61.89	60.19	59.79	58.61	58.54	63.63	62.42	62.22	62.52
11	59.45	62.24	59.74	61.95	60.13	59.79	58.63	58.65	63.32	62.38	62.28	62.49
12	59.50	62.31	59.77	62.02	60.07	59.73	58.66	58.67	62.97	62.30	62.32	62.42
13	59.56	62.27	59.86	62.10	59.99	59.74	58.75	58.62	62.59	62.29	62.30	62.37
14	59.82	62.08	59.82	62.09	59.85	59.73	58.90	58.51	62.24	62.17	62.29	62.35
15	59.84	61.67	59.73	62.09	59.68	59.77	59.12	58.40	62.30	62.18	62.32	62.15
16	59.66	61.13	59.77	62.11	59.51	59.78	59.28	58.37	62.42	62.27	62.34	61.88
17	59.67	60.61	59.87	62.06	59.51	59.90	59.25	58.52	62.43	62.33	62.36	61.65
18	59.75	60.24	59.84	62.00	59.71	59.95	59.07	58.81	62.38	62.36	62.35	61.37
19	59.80	59.88	59.92	61.94	59.88	59.87	58.94	59.30	62.35	62.38	62.39	61.11
20	59.84	59.52	59.98	61.88	59.88	59.92	58.83	59.90	62.40	62.38	62.39	60.84
21	59.91	59.40	60.08	61.88	59.91	60.04	58.84	60.64	62.47	62.37	62.39	60.61
22	60.02	59.41	60.24	61.84	59.94	60.08	58.98	61.32	62.56	62.23	62.38	60.42
23	60.03	59.48	60.36	61.84	59.92	60.07	59.20	61.97	62.58	62.17	62.39	60.27
24	60.14	59.50	60.57	61.85	59.87	60.05	59.43	62.63	62.40	62.14	62.40	60.10
25	60.12	59.65	60.79	61.82	59.92	59.99	59.62	63.19	62.10	62.22	62.44	59.98
26	60.10	59.66	61.04	61.82	59.93	59.99	59.70	63.65	62.07	62.19	62.46	59.89
27	60.17	59.72	61.16	61.83	59.89	59.86	59.69	64.05	62.07	62.24	62.41	59.91
28	60.32	59.77	61.20	61.85	59.92	59.67	59.63	64.27	62.12	62.24	62.38	59.92
29	60.48	59.71	61.22	61.81	59.88	59.49	59.52	64.45	62.18	62.25	62.42	59.98
30	60.50	59.73	61.33	61.82	-------	59.28	59.35	64.58	62.23	62.30	62.40	60.04
31	60.59	-------	61.43	61.82	-------	59.03	-------	64.68	-------	62.30	62.40	-------
(†)	2,060.59	2,059.73	2,061.43	2,061.82	2,059.88	2,059.03	2,059.35	2,064.68	2,062.23	2,062.30	2,062.40	2,060.04
(‡)	-61,000	-80,000	+159,000	+86,000	-181,000	-79,000	+30,000	+503,000	-234,000	+6,000	+10,000	-221,000

Calendar year 1955..... ‡ +110,000
Water year 1955-56..... ‡ -112,000

† Elevation, in feet, at end of month.
‡ Change in contents in acre-feet.
Note.--Add 2,000 ft to obtain elevation above mean sea level.

Priest Lake at outlet, near Coolin, Idaho

Location.--Lat 48°29'30", long 116°53'00", in SE¼ sec. 5, T. 59 N., R. 4 W., half a mile east of outlet and 1¾ miles northwest of Coolin.

Drainage area.--572 sq mi.

Records available.--June 1911 to September 1913 (fragmentary gage-height records at Coolin, published as part of records for Priest River at outlet of Priest Lake, at Coolin), April 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,434.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. June 18, 1911, to Sept. 30, 1913, staff gages at Coolin at different datums. Apr. 21, 1928, to Oct. 18, 1939, staff gage at site 400 ft from lake outlet at present datum.

Extremes.--Maximum gage height during year, 6.23 ft May 26, 27; minimum, 0.18 ft Mar. 20. 1928-56: Maximum gage height, 6.46 ft May 29, 30, 1948; minimum, -0.17 ft Mar. 28, 1955.

Remarks.--Flow from Priest Lake is regulated to hold lake at heights desirable for recreation interests during summer months and storage is released for power use downstream during winter months. Storage began Aug. 9, 1950. Prior to Aug. 9, 1950, some regulation resulted from logging operations in the outlet channel.

Gage height, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.11	2.62	0.93	0.81	0.44	0.37	0.45	3.69	6.00	3.08	2.93	3.08
2	3.08	2.52	.90	.80	.42	.37	.47	3.67	5.99	3.05	2.94	3.05
3	3.06	2.45	.85	.88	.40	.38	.47	3.63	5.87	3.02	2.98	3.04
4	3.05	2.37	.81	.90	.39	.39	.49	3.57	5.82	3.01	3.00	3.02
5	3.04	2.33	.80	.90	.38	.37	.52	3.52	5.70	3.01	3.01	3.01
6	3.00	2.23	.78	.88	.36	.35	.54	3.49	5.52	3.04	3.02	3.00
7	2.96	2.13	.75	.88	.34	.36	.57	3.45	5.31	3.03	3.03	3.00
8	3.00	2.03	.72	.86	.34	.34	.58	3.50	5.11	3.02	3.05	2.99
9	3.13	1.99	.70	.84	.32	.34	.60	3.56	4.94	3.01	3.05	2.98
10	3.26	1.92	.69	.82	.31	.32	.63	3.72	4.81	3.01	3.06	2.98
11	3.28	1.87	.73	.80	.33	.30	.67	3.83	4.68	3.01	3.06	2.97
12	3.26	1.75	.74	.78	.31	.28	.74	3.87	4.52	2.99	3.07	2.96
13	3.20	1.65	.70	.78	.30	.28	.81	3.87	4.35	3.06	3.07	2.95
14	3.14	1.56	.66	.75	.29	.26	.92	3.84	4.25	3.11	3.08	2.95
15	3.09	1.47	.66	.75	.27	.24	1.08	3.86	4.18	3.11	3.08	2.95
16	3.04	1.42	.64	.75	.25	.23	1.27	3.98	4.13	3.08	3.08	2.95
17	3.00	1.33	.62	.74	.24	.21	1.46	4.19	4.07	3.06	3.08	2.95
18	2.95	1.34	.61	.71	.23	.21	1.63	4.49	3.97	3.03	3.08	2.95
19	2.93	1.30	.65	.70	.24	.19	1.82	4.80	3.87	3.01	3.08	2.95
20	2.91	1.24	.69	.67	.27	.19	2.05	5.17	3.79	2.98	3.08	2.96
21	2.88	1.18	.74	.67	.34	.19	2.33	5.49	3.68	2.97	3.07	2.96
22	2.88	1.13	.75	.66	.33	.20	2.68	5.69	3.57	2.97	3.07	2.95
23	2.88	1.13	.75	.66	.32	.23	2.98	5.82	3.44	2.97	3.07	2.96
24	2.93	1.14	.75	.64	.33	.24	3.19	6.07	3.33	2.98	3.06	2.95
25	3.02	1.10	.77	.62	.33	.26	3.33	6.20	3.21	2.97	3.06	2.96
26	3.12	1.10	.86	.58	.32	.31	3.46	6.23	3.13	2.97	3.05	2.97
27	3.19	1.04	.88	.57	.33	.33	3.53	6.16	3.12	2.95	3.05	2.97
28	3.15	1.00	.86	.56	.38	.34	3.60	6.13	3.12	2.95	3.03	2.98
29	3.05	.96	.84	.53	.37	.36	3.63	6.07	3.12	2.94	3.11	3.04
30	2.88	.95	.83	.50	-------	.41	3.66	6.04	3.10	2.94	3.11	3.05
31	2.75	-------	.80	.48	-------	.44	-------	6.01	-------	2.94	3.09	-------

Priest River near Coolin, Idaho

Location.--Lat 48°26'50", long 116°53'50", in SE¼ sec. 19, T. 59 N., R. 4 W., on left bank 190 ft downstream from Dickensheet Bridge, 2½ miles downstream from Binarch Creek, 3 miles southwest of Coolin, and 5 miles downstream from outlet of Priest Lake.

Drainage area.--611 sq mi.

Records available.--October 1948 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,338.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--8 years, 1,398 cfs (1,012,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,130 cfs May 27 (gage height, 8.15 ft); minimum, 123 cfs Sept. 26 (gage height, 1.89 ft).
1948-56: Maximum discharge, that of May 27, 1956; minimum recorded, 36 cfs Aug. 1, 1951 (gage height, 1.32 ft), but may have been less Sept. 11, 1953, when stage was below intake.

Remarks.--Records excellent except those computed from estimated gage heights, which are good. Flow partly regulated by Priest Lake (see preceding page).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	135	4.0	1,410
2.2	190	5.0	2,670
2.6	355	6.0	4,240
3.0	575	7.0	6,000
3.5	925	8.1	8,130

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	407	2,360	1,060	976	b714	654	756	g4,380	7,650	1,760	283	405
2	635	2,240	1,040	968	b694	642	763	g4,390	7,610	1,730	245	380
3	680	2,170	1,010	1,000	687	654	778	g4,340	7,470	1,650	218	355
4	720	2,280	976	1,060	674	668	800	*g4,260	7,330	1,600	222	375
5	861	2,420	950	1,060	668	661	830	4,160	7,200	1,530	218	319
6	845	2,320	934	1,050	661	648	838	4,070	6,970	1,490	211	274
7	697	2,200	901	1,040	654	648	*853	4,010	6,700	1,430	211	274
8	427	2,110	885	1,020	635	642	861	4,040	6,360	1,370	214	274
9	410	2,030	885	1,000	635	635	877	4,140	6,080	1,280	222	274
10	710	1,980	861	984	g623	623	917	4,260	5,860	1,220	222	274
11	959	1,930	877	968	g617	b611	950	4,410	5,680	1,200	222	249
12	1,250	1,820	901	950	g623	605	1,030	4,530	5,480	1,150	229	237
13	1,480	1,710	885	942	g617	599	1,100	4,560	5,230	1,150	237	237
14	1,430	1,640	869	934	g611	587	1,200	4,530	5,030	1,170	241	218
15	1,400	1,560	*845	917	g605	581	1,360	4,500	4,890	1,170	245	200
16	1,340	1,490	838	925	g593	575	1,530	4,580	4,820	1,170	245	181
17	1,310	1,410	815	917	g581	563	1,680	4,800	4,750	1,160	245	181
18	1,270	1,390	808	901	581	557	1,830	5,140	4,630	1,150	241	175
19	1,240	1,380	822	893	575	551	2,020	5,570	4,480	1,140	241	178
20	1,230	1,340	861	877	581	545	2,240	6,040	4,380	1,010	249	190
21	937	1,290	893	*861	617	551	2,560	6,610	*4,220	*800	257	178
22	674	1,230	909	861	642	557	3,020	7,040	4,070	642	270	155
23	668	1,200	925	869	629	575	3,400	7,330	3,940	575	292	152
24	507	1,200	917	853	*629	587	3,750	7,630	3,770	521	301	150
25	270	1,210	909	838	629	605	g3,930	*7,950	3,620	504	*310	150
26	292	1,190	976	815	623	642	g4,070	8,050	3,220	504	274	135
27	612	1,160	1,030	808	623	668	g4,190	8,030	2,230	498	265	142
28	1,730	1,120	1,030	792	642	674	g4,260	7,950	1,740	471	265	142
29	2,780	1,080	1,010	b770	661	680	g4,310	7,850	1,740	438	324	145
30	2,630	1,060	993	b756	------	707	g4,360	7,710	1,750	400	370	145
31	*2,470	------	984	b735	------	742	------	7,690	------	337	395	------
Total	32,871	49,520	28,599	28,340	18,324	19,237	61,063	174,550	148,900	32,220	7,984	6,744
Mean	1,060	1,651	923	914	632	621	2,035	5,631	4,963	1,039	258	225
Ac-ft	65,200	98,220	56,730	56,210	36,350	38,160	121,100	346,200	295,300	63,910	15,840	13,380

Calendar year 1955: Max 6,520 Min 214 Mean 1,443 Ac-ft 1,044,000
Water year 1955-56: Max 8,050 Min 135 Mean 1,662 Ac-ft 1,207,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
g Computed from gage heights estimated on basis of recorder record for Priest Lake near Coolin.

Priest River near Priest River, Idaho

Location.--Lat 48°13', long 116°55', in NE¼SE¼ sec. 11, T. 56 N., R. 5 W., on right bank 500 ft downstream from Saddler Creek, a quarter of a mile downstream from Lower West Branch, 2½ miles north of Priest River, and 3½ miles upstream from mouth.

Drainage area.--902 sq mi.

Records available.--June 1903 to April 1905, November 1910 to April 1911, May to December 1923, February 1929 to September 1956. Prior to October 1930, published as "at Priest River."

Gage.--Water-stage recorder. Altitude of gage is 2,090 ft (from river-profile map). Prior to May 15, 1929, and Sept. 18, 1929, to Apr. 28, 1930, staff gages at site 3 miles downstream at altitude about 40 ft lower. June 4 to Sept. 17, 1929, and Apr. 29 to Sept. 11, 1930, staff gages at or near present site at present datum.

Average discharge.--28 years (1903-4, 1929-56), 1,630 cfs (1,180,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,690 cfs May 26 (gage height, 8.64 ft); minimum, 276 cfs Sept. 27 (gage height, 0.79 ft).
1903-5, 1910-11, 1923, 1929-56: Maximum discharge, 10,500 cfs May 29, 30, 1948; maximum gage height, 8.97 ft May 29, 1948; minimum discharge, 170 cfs Sept. 13, 1953 (gage height, 0.48 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good. No diversion above station. Some regulation on tributary and, since Aug. 9, 1950, by low buttress and stoplog dam on Priest River three-quarters of a mile downstream from lake outlet.

Revisions (water years).--WSP 572: 1903-5.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 24 to May 11, May 22-24)

Oct. 1 to May 24				May 25 to Sept. 30			
1.2	462	4.0	2,820	0.8	280	4.0	3,000
1.5	638	6.0	5,400	1.0	375	6.0	5,640
2.0	979	8.0	8,400	1.5	680	8.0	8,670
3.0	1,820	8.6	9,390	2.0	1,040	8.7	9,790
				3.0	1,910		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	462	2,670	1,360	b1,680	b920	1,000	2,160	5,920	8,930	2,260	514	544
2	632	2,530	1,340	1,610	b940	972	2,120	5,890	8,910	2,220	484	538
3	814	2,570	1,300	1,630	b960	1,040	2,120	5,720	8,780	2,240	466	502
4	814	2,680	1,250	1,910	b980	1,020	2,230	*5,540	8,650	2,140	478	496
5	1,020	2,910	1,210	2,010	b1,000	987	2,290	5,390	8,510	2,080	442	514
6	1,040	2,740	1,200	1,850	1,000	b950	*2,130	5,220	8,190	1,990	419	424
7	987	2,610	1,170	1,800	994	942	2,160	5,130	7,820	1,880	408	408
8	734	2,500	1,150	1,750	987	935	2,070	5,200	7,440	1,800	397	408
9	727	2,420	1,140	1,660	b950	920	2,080	5,400	7,090	1,670	397	402
10	1,110	2,410	1,110	1,590	b980	905	2,280	5,620	6,820	1,570	397	397
11	1,460	2,320	1,170	1,540	972	b830	2,560	5,820	6,580	1,520	386	402
12	1,350	2,160	1,600	1,510	957	b860	2,790	5,890	6,360	1,470	386	375
13	1,800	2,020	b1,380	1,490	935	877	3,000	5,850	6,070	1,480	392	370
14	1,760	1,950	b1,320	1,450	b910	855	3,330	5,780	5,850	1,650	397	365
15	1,690	1,830	b1,300	1,420	b850	848	3,820	5,740	5,810	1,580	397	355
16	1,630	b1,730	*b1,280	1,420	b810	855	4,300	5,830	5,790	1,480	408	340
17	1,590	b1,670	b1,240	1,400	b850	884	4,370	6,160	5,640	1,450	402	320
18	1,530	1,660	b1,210	1,350	b880	912	4,380	6,690	5,440	1,430	392	320
19	1,490	1,650	b1,260	*1,330	b890	957	4,570	7,300	5,290	1,410	392	316
20	1,470	1,600	1,400	1,300	884	1,020	4,850	7,820	5,190	*1,380	392	320
21	1,430	1,560	1,690	1,260	912	1,050	5,300	8,400	*5,010	1,200	397	335
22	905	1,500	2,230	1,260	1,020	1,160	5,960	8,780	4,830	965	408	320
23	884	1,470	2,140	1,330	1,020	1,470	6,480	8,930	4,630	862	419	302
24	884	1,480	1,890	1,280	*957	1,670	6,620	9,270	4,440	778	448	298
25	663	1,690	1,700	1,200	927	1,850	6,500	*9,580	4,270	729	460	294
26	601	1,730	1,900	1,160	912	2,240	6,380	9,650	4,080	708	*472	298
27	620	1,580	2,370	1,190	905	2,090	6,270	9,580	3,260	708	436	289
28	1,120	1,480	2,200	b1,150	927	1,950	6,170	9,440	2,340	687	424	289
29	2,980	1,420	2,000	b1,100	1,040	1,900	6,100	9,260	2,260	667	484	302
30	*3,000	1,390	b1,860	b1,050	------	2,040	6,000	9,090	2,250	622	544	330
31	2,830	------	b1,770	b960	------	2,200	------	8,990	------	596	544	------
Total	40,027	59,930	47,140	44,640	27,269	38,189	121,390	218,880	176,530	43,222	13,382	11,173
Mean	1,291	1,998	1,521	1,440	940	1,232	4,046	7,061	5,884	1,394	432	372
Ac-ft	79,390	118,900	93,500	88,540	54,090	75,750	240,800	434,100	350,100	85,730	26,540	22,160

Calendar year 1955: Max 7,540 Min 338 Mean 1,880 Ac-ft 1,361,000
Water year 1955-56: Max 9,650 Min 289 Mean 2,300 Ac-ft 1,670,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Pend Oreille River at Newport, Wash.

Location.--Lat 48°11', long 117°02', in SE¼SW¼ sec. 24, T. 56 N., R. 6 W., on left bank at Newport, 0.2 mile upstream from bridge on U. S. Highway 2, a quarter of a mile east of Idaho-Washington State line, and 1.6 miles downstream from Albeni Falls Dam.

Drainage area.--24,200 sq mi, approximately.

Records available.--June 1903 to September 1941, October 1952 to September 1956. Prior to October 1921, published as Clark Fork at Newport, Wash., October 1921 to September 1937 as Clark Fork at Priest River, Idaho, and October 1937 to September 1941, as Pend Oreille River at Priest River, Idaho.

Gage (revised).--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 22, 1928, staff or wire-weight gages at Priest River, Newport, or Metaline Falls at various datums (see description, WSP 532, p. 92). Sept. 22, 1928, to Sept. 30, 1935, water-stage recorder at Priest River at datum 2,040.14 ft above mean sea level, and Oct. 1, 1935, to Sept. 30, 1941, at datum 2,000 ft above mean sea level, datum of 1929. Since December 1952, auxiliary water-stage recorder 2.74 miles downstream from base gage.

Average discharge.--42 years (1903-41, 1952-56), 25,140 cfs (18,200,000 acre-ft per year).

Extremes.--Maximum discharge during year, 127,000 cfs June 4-7; maximum gage height, 51.73 ft June 6; minimum discharge, 5,710 cfs Sept. 8 (gage height, 28.55 ft).
1903-41, 1952-56: Maximum discharge, 136,000 cfs June 15, 1913, June 21, 1933; minimum, 2,200 cfs Dec. 12, 1919.
Maximum elevation known, about 2,064 ft in June 1894, present datum, from water-surface profiles (discharge, about 200,000 cfs).

Remarks.--Records excellent. Flow regulated at Albeni Falls Dam and affected by storage in Pend Oreille Lake (see p. 229), Flathead Lake (see p. 222), Hungry Horse Reservoir (see p. 218), and several smaller reservoirs (see p. 238). Diversions above station for irrigation of about 337,600 acres (1946).

Revisions (water years).--WSP 532: 1903-11.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20,900	11,100	25,300	19,800	20,800	22,300	47,400	79,500	124,000	47,800	16,800	*11,500
2	21,000	10,100	24,700	18,700	26,100	22,200	41,900	78,000	125,000	48,000	16,200	10,700
3	22,000	10,300	24,300	20,500	30,700	20,200	39,500	70,500	*126,000	47,900	16,600	9,430
4	26,400	10,200	19,200	20,500	30,500	22,500	41,000	*66,100	126,000	47,700	15,400	10,100
5	26,700	9,200	23,500	21,700	31,400	25,100	38,300	66,200	127,000	42,700	15,500	10,000
6	26,700	9,300	23,000	25,700	28,200	20,100	33,300	66,200	127,000	36,500	15,500	9,260
7	27,000	10,300	19,200	26,100	25,000	19,200	*31,100	63,800	125,000	34,500	14,500	6,210
8	27,100	9,950	19,400	26,200	25,000	18,700	31,400	63,200	123,000	34,000	13,200	6,510
9	27,600	9,990	18,600	25,200	25,000	19,800	31,300	63,400	120,000	34,600	11,500	11,100
10	28,700	10,300	19,100	21,000	25,200	15,400	33,500	65,000	118,000	38,200	11,000	13,500
11	19,500	15,600	15,200	20,900	24,800	15,700	36,800	69,700	113,000	41,300	8,750	15,500
12	15,800	11,800	21,400	20,800	25,300	20,800	38,000	73,800	111,000	40,100	9,070	16,900
13	14,200	10,500	19,800	20,800	25,000	20,600	39,500	73,700	105,000	36,100	10,900	17,000
14	10,400	25,200	23,000	22,000	24,700	19,300	40,900	73,700	91,400	33,100	10,500	16,600
15	14,900	38,900	23,800	20,600	27,000	19,400	43,100	72,600	72,300	30,900	10,300	24,200
16	15,500	45,200	*22,100	23,300	26,400	19,200	49,600	72,000	62,700	29,200	10,400	25,700
17	17,100	44,900	19,000	24,900	17,600	12,800	62,900	72,200	64,800	28,900	10,900	26,000
18	15,700	39,900	19,100	25,300	8,400	14,500	73,400	73,300	66,400	27,100	10,400	26,700
19	15,600	34,000	20,000	25,700	10,000	21,400	75,900	76,000	66,200	24,400	10,100	26,800
20	15,800	31,600	22,200	25,600	20,900	18,400	76,600	79,600	*63,300	24,700	10,700	27,300
21	13,200	25,900	26,000	23,300	22,500	19,800	75,700	82,400	62,300	*26,400	10,900	25,200
22	10,400	19,900	23,900	*20,900	22,600	26,100	76,000	89,700	67,600	25,400	10,600	21,600
23	10,200	20,900	28,400	20,100	21,800	29,500	78,900	94,200	77,700	24,100	9,720	21,700
24	13,000	20,000	27,500	19,000	23,300	31,300	80,600	98,900	84,700	22,000	9,480	21,600
25	18,200	20,500	27,200	20,900	*18,900	37,300	81,800	104,000	77,200	19,900	7,500	21,600
26	18,900	22,600	27,700	20,800	19,700	44,700	82,400	*111,000	63,600	20,100	9,400	20,100
27	13,900	20,800	27,200	20,500	23,700	48,600	82,200	115,000	57,800	19,700	11,700	15,900
28	10,600	20,400	27,000	19,700	22,200	51,100	81,900	118,000	53,000	20,100	10,200	13,800
29	10,200	23,200	27,300	18,000	22,000	50,400	82,100	120,000	50,400	20,000	9,750	11,700
30	*10,300	22,900	25,500	17,500	------	48,400	81,100	121,000	48,000	18,300	9,840	11,300
31	10,600	------	22,700	17,200	------	47,800	------	123,000	------	16,100	10,300	------
Total	548,100	615,440	712,300	673,200	674,700	822,600	‡1,708.1	‡2,595.7	‡2,699.4	959,800	357,610	505,510
Mean	17,680	20,510	22,980	21,720	23,270	26,540	56,940	83,730	89,980	30,960	11,540	16,850
Ac-ft	‡1,087	‡1,221	‡1,413	‡1,335	‡1,338	‡1,632	‡3,388	‡5,148	‡5,354	‡1,904	709,300	‡1,003

Calendar year 1955: Max 78,500 Min 7,020 Mean 26,400 Ac-ft 19,110,000
Water year 1955-56: Max 127,000 Min 6,210 Mean 35,170 Ac-ft 25,530,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--No gage-height record at one or both gages Feb. 4-13, 16-25; discharge based on flow through Albeni Falls Dam and powerplant as furnished by Corps of Engineers.

Calispell Creek near Dalkena, Wash.

Location.--Lat 48°14'40", long 117°20'30", in SW¼ sec. 26, T. 32 N., R. 43 E., on left bank 2 miles upstream from Calispell Lake, 4.8 miles west of Dalkena, and 9 miles upstream from mouth.

Drainage area.--67.8 sq mi.

Records available.--August 1950 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,070 ft (from topographic map).

Average discharge.--6 years, 80.1 cfs (57,990 acre-ft per year).

Extremes.--Maximum discharge during year, 904 cfs Apr. 22 (gage height, 6.78 ft); minimum, 4.6 cfs Sept. 26 (gage height, 2.30 ft); minimum daily, 9.2 cfs July 27, 28. 1950-56: Maximum discharge, that of Apr. 22, 1956; minimum, that of Sept. 26, 1956.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Some diversion above station for irrigation. Some regulation by Power Lake.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 14, 15)

Oct. 1 to Apr. 15		Apr. 16 to Sept. 30			
2.7	13	2.3	4.6	3.5	108
3.0	35	2.5	19	4.0	183
3.5	93	2.7	27	5.0	403
4.0	173	3.0	50	6.8	910
6.1	642				

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18.5	22	22	150	81	36	188	408	174	41	13.5	17.5
2	17.5	24	22	76	78	35	177	372	166	42	22	16
3	17.5	29	23	75	73	40	177	336	156	47	28	*15.5
4	17.5	41	23	84	66	42	206	313	153	56	36	16
5	24	40	*24	119	63	37	222	292	150	*46	26	15.5
6	23	33	22	125	60	b35	202	271	141	48	24	14.5
7	19.5	22	21	96	42	33	198	278	135	44	23	14.5
8	19.5	27	30	85	37	33	190	343	131	40	22	15.5
9	55	25	43	78	37	33	200	441	128	39	21	14.5
10	78	29	46	*75	40	32	242	462	127	36	20	13.5
11	*42	28	47	73	42	b32	303	446	121	35	20	13.5
12	30	28	48	70	39	b32	353	391	120	35	20	13.5
13	25	28	b41	69	37	32	406	336	117	38	19.5	11.5
14	24	28	b35	67	b36	31	516	*299	122	76	21	11.5
15	22	28	b30	66	35	31	635	287	128	48	19.5	11
16	21	26	b27	66	34	32	*723	315	114	39	19	11
17	20	27	b24	60	33	35	694	408	84	38	19	11
18	22	29	b20	57	32	39	642	490	69	35	18.5	11
19	22	32	b20	55	32	45	636	530	69	34	18	13.5
20	22	40	b20	54	32	53	*683	533	79	31	17.5	10
21	24	35	18.5	53	36	56	796	509	63	28	17	10
22	28	30	60	54	41	58	883	451	58	30	16	11
23	28	28	130	57	41	89	853	396	58	32	16	12.5
24	24	27	99	54	36	145	838	381	52	31	17	20
25	21	26	69	b52	34	186	761	341	49	34	17.5	25
26	33	25	86	b52	32	222	660	308	47	*22	19.5	16
27	29	25	242	b54	32	*214	568	285	46	9.2	21	23
28	21	24	182	b54	*33	186	538	244	43	9.2	20	24
29	22	24	155	b56	37	173	506	218	41	11.5	21	26
30	24	23	232	b58	------	186	451	199	41	22	23	21
31	18	------	364	b62	------	208	------	185	------	23	20	------
Total	812.0	853	2,225.5	2,206	1,251	2,441	14,447	11,068	2,982	1,099.9	635.5	459.0
Mean	26.2	28.4	71.8	71.2	43.1	78.7	482	357	99.4	35.5	20.5	15.3
Ac-ft	1,610	1,690	4,410	4,380	2,480	4,840	28,660	21,950	5,910	2,180	1,260	910

Calendar year 1955: Max 408 Min 15.5 Mean 67.3 Ac-ft 48,690
Water year 1955-56: Max 883 Min 9.2 Mean 111 Ac-ft 80,280

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 16 to Dec. 4; Dec. 14-19; Feb. 3-5, 10-13, 15-19; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Pend Oreille River below Box Canyon, near Ione, Wash.

Location.--Lat 48°46'50", long 117°24'40", in SE¼NE¼ sec. 19, T. 38 N., R. 43 E., on left bank 1,000 ft downstream from Box Canyon Dam and 4 miles north of Ione.

Drainage area.--25,000 sq mi, approximately.

Records available.--October 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 29, 1954, staff gage at site 300 ft upstream at same datum. Mar. 29 to Aug. 25, 1954, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 125,700 cfs June 6 (elevation, 2,011.74 ft); minimum, 3,400 cfs Oct. 18 (elevation, 1,980.82 ft).
1952-56: Maximum discharge, that of June 6, 1956; minimum, that of Oct. 18, 1955, but may have been less sometime during period of no gage-height record Sept. 6, 7, 1953.
Flood in June 1948 reached elevation of 2,018.0 ft, from floodmarks (discharge, 167,000 cfs).

Remarks.--Records excellent. In 1946 there were diversions for irrigation of about 340,000 acres, and there probably has not been any appreciable change since that time. Flow affected by natural storage in Pend Oreille Lake (see p. 229), some regulation by Flathead Lake (see p. 222), Hungry Horse Reservoir (see p. 218), Box Canyon Dam, and by smaller reservoirs in Pend Oreille River basin in Montana (see p. 238).

Rating table, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

1,982.4	6,580	1,995.0	47,400
1,983.0	7,900	1,998.0	59,400
1,984.0	10,300	2,002.0	77,400
1,986.0	15,900	2,006.0	97,000
1,989.0	25,400	2,012.0	127,000
1,992.0	35,900		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20,300	10,300	24,000	21,100	18,100	22,000	52,100	82,300	122,200	48,400	16,100	10,300
2	20,500	9,470	25,100	19,000	21,300	22,600	49,300	81,100	123,000	47,000	16,800	11,400
3	20,400	8,750	25,100	19,300	25,700	18,600	42,700	79,100	123,500	48,200	16,900	*10,500
4	22,700	8,800	24,400	17,100	27,600	22,000	42,100	73,300	124,600	49,000	16,300	9,800
5	25,400	9,920	*20,200	20,300	28,100	22,500	42,200	70,100	125,200	47,500	15,400	10,100
6	25,700	9,110	22,100	22,700	28,200	19,700	39,600	68,800	125,000	42,800	15,400	9,610
7	26,600	8,630	21,800	27,500	27,300	22,400	36,700	65,000	124,800	39,600	15,000	8,160
8	27,400	8,840	17,900	26,400	26,900	19,700	34,700	67,400	123,800	37,500	13,800	6,780
9	27,700	8,840	19,400	25,900	25,400	18,900	*33,800	*66,300	121,900	*36,100	11,300	7,790
10	27,700	12,200	18,300	*23,000	24,100	18,600	33,800	66,700	119,500	35,900	10,200	11,700
11	25,100	15,400	17,900	27,000	24,900	16,100	35,600	68,100	*116,800	38,500	9,400	15,400
12	20,700	14,200	17,300	27,000	24,800	15,600	37,700	72,100	113,800	40,200	9,280	17,700
13	16,500	10,200	18,900	24,300	25,200	17,800	40,500	76,100	111,100	39,300	10,200	18,100
14	11,400	14,300	21,200	19,400	26,300	18,900	43,200	75,600	105,200	37,500	10,900	16,900
15	11,800	28,800	21,400	23,400	25,400	18,000	42,900	73,400	93,200	32,100	11,000	17,800
16	13,200	39,500	23,100	21,800	22,500	18,300	49,000	74,200	74,200	31,200	10,500	19,800
17	15,000	43,000	19,400	19,400	23,000	17,600	55,000	74,400	66,700	29,200	10,600	23,700
18	12,400	44,200	18,800	19,600	15,300	14,300	67,200	75,200	66,200	30,100	10,800	25,600
19	18,400	40,000	19,000	22,500	10,800	15,700	73,600	76,500	67,000	28,300	10,500	26,000
20	17,300	35,500	20,000	22,200	12,700	19,400	76,400	78,800	66,200	27,100	14,400	26,500
21	13,200	29,500	23,300	22,500	21,000	16,300	74,300	83,600	62,900	28,600	7,370	25,300
22	11,000	23,200	28,200	22,600	22,000	21,100	81,000	87,800	63,000	24,100	11,000	23,200
23	10,900	20,500	28,000	21,400	22,600	27,100	78,700	91,800	67,800	24,600	10,400	20,700
24	*11,200	21,200	28,000	21,800	22,900	28,800	*81,400	97,200	77,800	22,900	9,680	19,900
25	14,300	19,900	28,100	21,600	23,000	32,900	86,800	102,000	80,600	18,200	9,640	20,000
26	18,300	21,300	28,100	21,100	18,100	40,700	84,200	106,800	72,700	23,000	9,400	19,900
27	16,700	21,200	27,500	20,100	22,800	*46,400	84,100	110,800	*62,400	20,700	10,700	18,500
28	12,400	20,200	29,900	19,400	*23,300	52,200	83,800	*114,100	53,900	*20,700	9,780	15,100
29	11,300	21,000	29,400	18,000	23,000	54,200	83,500	116,900	52,200	20,800	9,350	13,100
30	10,500	23,800	28,000	15,900	------	52,200	83,000	119,200	51,700	20,300	9,490	11,600
31	10,200	------	28,800	16,200	------	53,900	------	120,800	------	16,300	10,100	------
Total	546,200	601,760	722,600	669,500	662,300	804,500	‡1,748.9	‡2,615.5	‡2,758.9	‡1,006	361,690	490,940
Mean	17,620	20,060	23,310	21,600	22,840	25,950	58,300	84,370	91,960	32,450	11,670	16,360
Ac-ft	‡1,083	‡1,194	‡1,433	‡1,328	‡1,314	‡1,596	‡3,469	‡5,188	‡5,472	‡1,995	717,400	973,800

Calendar year 1955: Max 77,700 Min 6,320 Mean 26,620 Ac-ft 19,270,000
Water year 1955-56: Max 125,200 Min 6,780 Mean 35,490 Ac-ft 25,760,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Sullivan Creek at Metaline Falls, Wash.

Location.--Lat 48°51'40", long 117°21'50", in SW¼SW¼ sec. 22, T. 39 N., R. 43 E., on right bank 100 ft downstream from State highway bridge, half a mile upstream from mouth, and half a mile east of Metaline Falls. Prior to Aug. 24, 1956, at site 120 ft upstream.

Drainage area.--142 sq mi.

Records available.--October 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from topographic map). Prior to Aug. 24, 1956, staff gage at site 120 ft upstream at datum 3.70 ft higher.

Extremes.--Maximum daily discharge during year, 2,500 cfs May 22; minimum discharge, 58 cfs Sept. 30, but may have been less during period of no gage-height record.
1953-56: Maximum discharge observed, 3,550 cfs June 12, 1955 (gage height, 3.90 ft); maximum gage height observed, 4.48 ft May 19, 1954, site and datum then in use; minimum discharge, that of Sept. 30, 1956.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Flow regulated at low stages by storage in Sullivan Lake. Small diversions above station for municipal and mine water supply.

Cooperation.--Prior to Aug. 24, 1956, gage-height record furnished by Lehigh Cement Co.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						100	253	635	1,300	410	120	63
2						105	240	620	1,200	370	115	62
3						110	234	605	1,050	335	113	62
4						120	234	590	940	325	111	*62
5						130	246	570	840	319	111	62
6						120	240	560	765	319	102	62
7						115	240	550	730	319	102	61
8						115	246	570	695	319	84	61
9						*116	240	*620	660	*291	84	60
10						121	240	700	660	273	80	60
11						121	265	800	660	259	75	60
12						118	259	950	*660	245	84	60
13						111	265	900	650	245	77	60
14						111	279	860	630	300	77	60
15						114	367	820	472	270	75	59
16						128	415	800	430	232	73	59
17						121	452	850	400	198	71	59
18						118	452	1,000	360	188	68	59
19						114	520	1,300	335	188	66	59
20						114	533	1,700	320	180	66	59
21						118	686	2,300	300	170	66	59
22						121	942	2,500	290	170	64	59
23						125	942	2,200	280	165	63	59
24						132	890	1,800	275	158	62	59
25						132	772	1,550	*273	148	62	59
26						135	*725	1,340	310	139	65	59
27						196	694	1,160	390	*120	66	59
28						*253	669	1,110	370	120	64	59
29						246	703	*1,020	352	125	67	62
30						246	652	1,050	335	130	66	63
31						253		1,160		120	63	
Total	2,945	2,700	3,100	4,340	2,900	4,279	13,895	33,190	16,932	7,150	2,462	1,806
Mean	95	90	100	140	100	138	463	1,071	564	231	79.4	60.2
Ac-ft	5,840	5,360	6,150	8,610	5,750	8,490	27,560	65,830	33,580	14,180	4,880	3,580

Calendar year 1955: Max 3,350 Min 77 Mean 252 Ac-ft 182,100
Water year 1955-56: Max 2,500 Min 59 Mean 261 Ac-ft 189,800

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Mar. 8, May 5-8, 10-24, 30, June 1-4, 7, 9-11, 13, 16-18, 20-24, 26, July 4, 6, 14, 15, 20-23, 28, 29, Aug. 3, 19, 22; discharge interpolated or estimated on basis of weather records and records for stations on nearby streams.

Pend Oreille River below Z Canyon, near Metaline Falls, Wash.

(International gaging station)

Location.--Lat 48°58'50", long 117°20'40", in lot 2, sec. 11, T. 40 N., R. 43 E., on right bank three-quarters of a mile downstream from Z Canyon, 1½ miles south of international boundary, 5 miles downstream from Slate Creek, and 10 miles downstream from town of Metaline Falls.

Drainage area.--25,200 sq mi, approximately.

Records available.--November 1908 to September 1910 (gage heights only), October 1912 to September 1956. Prior to October 1928, published as Clark Fork at Metaline Falls and October 1928 to September 1937 as Clark Fork below Z Canyon, near Metaline Falls.

Gage.--Water-stage recorder. Datum of gage is 1,721.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Corps of Engineers). Prior to Dec. 19, 1928, staff gages at Metaline Falls 10 miles upstream at datum approximately 262.2 ft higher.

Average discharge.--44 years (1912-56), 26,560 cfs (19,230,000 acre-ft per year).

Extremes.--Maximum discharge during year, 129,800 cfs June 5 (gage height, 50.90 ft); minimum, 4,470 cfs Aug. 22 (gage height, 9.43 ft); minimum daily, 7,500 cfs Sept. 9.
1912-56: Maximum discharge, 171,300 cfs June 13, 1948 (gage height, 60.25 ft); minimum, 2,500 cfs Dec. 12, 1919 (gage height, -2.4 ft, site and datum then in use).
Maximum stage known, 69.0 ft in June 1894, from floodmarks.

Remarks.--Records excellent. In 1946 there were diversions for irrigation of about 340,000 acres, and there probably has not been any appreciable change since that time. Flow regulated at Albeni Falls and Box Canyon Dams and affected by storage in Pend Oreille Lake (see p. 229), Flathead Lake (see p. 222), Hungry Horse Reservoir (see p. 218), and by smaller reservoirs in Pend Oreille River basin in Montana (see following page).

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

Revisions (water years).--WSP 442: 1913.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

11.0	7,300	30.0	65,900
13.0	12,200	40.0	96,400
16.0	22,600	51.0	130,100
20.0	35,400		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21,700	11,400	26,200	23,200	19,000	24,500	54,300	86,600	126,500	49,500	16,600	10,700
2	21,900	10,900	27,100	21,300	23,000	24,500	51,500	85,500	127,200	47,500	17,400	11,900
3	21,900	9,680	26,500	21,500	27,000	22,100	45,300	83,300	127,800	48,400	17,600	12,000
4	23,600	10,700	26,300	19,200	29,200	24,200	44,000	77,400	128,800	50,000	17,100	*10,300
5	26,900	11,100	22,300	22,300	29,700	24,500	44,200	73,900	129,500	48,500	16,200	10,800
6	27,200	10,300	*24,100	23,800	29,800	22,800	42,100	72,100	129,300	44,300	16,000	10,700
7	27,900	9,500	23,300	29,800	29,100	25,200	39,000	68,100	129,000	41,000	15,900	9,040
8	28,700	9,850	20,400	28,400	28,800	22,400	37,000	70,300	128,000	38,700	14,900	7,560
9	28,800	9,900	20,200	28,100	27,300	21,500	36,100	*69,300	126,400	37,000	12,200	7,500
10	29,100	13,300	20,200	25,400	26,300	21,200	36,000	69,600	124,000	*36,500	10,400	11,100
11	27,900	17,100	20,000	*28,600	27,000	18,900	37,700	71,000	121,200	38,900	9,900	15,900
12	22,600	16,000	18,400	29,100	26,700	17,700	40,100	74,600	*118,000	40,800	9,450	18,600
13	19,700	11,600	20,400	27,300	27,100	20,100	42,400	79,400	115,200	40,300	9,980	19,700
14	13,500	15,100	22,600	21,200	28,100	21,500	46,200	79,400	109,800	38,400	11,500	18,200
15	12,700	30,700	23,300	26,000	27,400	20,900	45,700	76,900	98,200	33,200	11,800	18,900
16	14,600	40,600	24,500	24,100	24,400	20,500	51,400	77,200	79,400	32,600	10,900	20,400
17	16,500	44,200	22,100	21,900	24,400	20,600	57,100	77,800	69,400	30,600	11,300	24,500
18	15,000	44,000	19,400	21,600	18,000	17,600	70,200	78,500	68,300	30,600	11,400	26,700
19	17,900	40,100	19,800	24,400	12,300	17,200	77,100	79,800	68,900	29,500	11,100	27,200
20	19,600	35,900	21,200	24,800	13,400	22,700	80,600	82,200	68,300	27,900	13,700	27,700
21	15,000	30,200	23,800	24,400	22,500	21,800	78,300	87,000	65,200	29,500	10,200	26,800
22	12,100	24,800	29,300	25,000	23,700	23,300	84,800	91,700	64,600	25,200	10,400	25,000
23	11,800	22,200	29,400	23,700	24,500	29,100	82,700	95,600	69,100	26,200	11,200	22,200
24	12,000	22,900	29,500	23,800	24,600	30,700	84,700	101,000	79,000	27,200	10,100	21,000
25	14,600	21,600	29,500	24,000	25,200	34,700	*91,200	105,900	83,000	18,400	10,000	21,200
26	*19,400	22,900	29,600	23,300	21,300	41,400	88,800	110,300	*75,500	23,800	9,280	21,100
27	19,000	22,800	29,000	22,400	24,800	49,700	88,600	114,400	65,000	*21,800	11,900	20,100
28	14,600	21,800	31,000	21,700	25,300	*53,700	88,400	117,800	55,600	*21,500	10,400	16,800
29	12,700	22,500	31,600	20,300	*25,300	56,200	87,900	*120,900	52,600	21,600	10,000	14,800
30	11,700	25,100	29,000	18,000	------	53,800	87,300	123,200	52,600	21,400	9,800	13,000
31	11,200	------	31,900	17,800	------	56,000	------	125,000	------	17,500	10,700	------
Total	591,800	638,730	771,900	736,400	715,200	881,000	‡1,840.7	‡2,725.7	‡2,855.4	‡1,038.3	379,310	521,400
Mean	19,090	21,290	24,900	23,750	24,660	28,420	61,360	87,930	95,180	33,490	12,240	17,380
Ac-ft	‡1,174	‡1,267	‡1,531	‡1,461	‡1,419	‡1,747	‡3,651	‡5,406	‡5,664	‡2,059	752,400	‡1,034

Calendar year 1955: Max 81,000 Min 6,180 Mean 28,020 Ac-ft 20,290,000
Water year 1955-56: Max 129,500 Min 7,500 Mean 37,420 Ac-ft 27,170,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Smaller Reservoirs in Pend Oreille River basin, in Montana

Georgetown Lake on Flint Creek, 2 miles west of Southern Cross. Storage began about 1905 for pumpage into Warm Springs Creek for use of reduction works of Anaconda Copper Mining Co. at Anaconda, or for release through Flint Creek for power development. Usable capacity, 31,000 acre-ft. Records furnished by The Montana Power Co.

East Fork Rock Creek Reservoir on East Fork Creek, 14 miles southwest of Philipsburg. Storage began in 1936 for irrigation in Flint Creek Valley; usable capacity, 16,000 acre-ft. Records furnished by Montana State Water Conservation Board.

Nevada Creek Reservoir on Nevada Creek, 7 miles west of Finn. Storage began in 1939 for irrigation; usable capacity, 12,600 acre-ft. Records furnished by Montana State Water Conservation Board.

West Fork Bitterroot River Reservoir on West Fork Bitterroot River, 7 miles upstream from Nez Perce Creek and 23 miles south of Darby. Storage began in 1940 for irrigation; usable capacity, 31,700 acre-ft. Records furnished by Montana State Water Conservation Board.

Como Lake on Rock Creek, 4 miles northwest of Darby. Storage began in 1909 for irrigation; usable capacity, 34,800 acre-ft. Records furnished by Bitterroot Irrigation District.

Camas Reservoirs comprise a group of four reservoirs in Little Bitterroot River basin, which are operated for irrigation. Records furnished by Office of Indian Affairs. Little Bitterroot Lake on Little Bitterroot River, 2 miles southwest of Marion; storage began in 1918; usable capacity, 24,000 acre-ft. Hubbart Reservoir on Little Bitterroot River, 9 miles northwest of Niarada; storage began in 1924; usable capacity, 12,100 acre-ft. Upper Dry Fork Reservoir on Dry Fork Creek, 4 miles northwest of Lonepine; storage began in 1940; usable capacity, 2,700 acre-ft. Dry Fork Reservoir on Dry Fork Creek, 1 mile west of Lonepine; storage began in 1921; usable capacity, 4,000 acre-ft.

Mission Valley Reservoirs comprise a group of eight reservoirs in the area east of and tributary to Flathead River between Flathead Lake and Jocko River, which are operated for irrigation. Records furnished by Office of Indian Affairs. Twin Reservoir, fed entirely by canals, 4 miles southeast of Polson; storage began in 1932; usable capacity, 1,210 acre-ft. Pablo Reservoir, fed entirely by canals, 3 miles south of Polson; storage began in 1914; usable capacity, 25,000 acre-ft. Lower Crow Reservoir on Crow Creek, 6 miles west of Ronan; storage began in 1933; usable capacity, 10,350 acre-ft. Kicking Horse Reservoir, fed entirely by canals, 5 miles south of Ronan; storage began in 1930; usable capacity, 8,350 acre-ft. Ninepipe Reservoir, fed entirely by canals, 2 miles northeast of Charlo; storage began in 1911; usable capacity, 14,870 acre-ft. McDonald Reservoir on Post Creek, 9 miles east of Charlo; storage began in 1919; usable capacity, 8,220 acre-ft. Mission Reservoir on Mission Creek, 4 miles east of St. Ignatius; storage began in 1935; usable capacity, 7,250 acre-ft. Tabor Reservoir on Dry Creek, 8 miles southeast of St. Ignatius; storage began in 1919; usable capacity, 23,000 acre-ft.

Lower Jocko Lake on Middle Fork Jocko River, 15 miles east of Arlee. Storage began in 1937; usable capacity, 7,600 acre-ft. Records furnished by Office of Indian Affairs.

Thompson Falls Reservoir on Clark Fork, at Thompson Falls, for power development; usable capacity, 15,000 acre-ft. Records furnished by The Montana Power Co.

Other reservoirs of small capacity, principally on tributaries of Bitterroot River, are operated for irrigation.

Month-end contents, in acre-feet, water year October 1955 to September 1956

Date	Georgetown Lake	East Fork Rock Creek Reservoir	Nevada Creek Reservoir	West Fork Bitterroot River Reservoir	Como Lake	Camas Reservoirs	Mission Valley Reservoirs	Lower Jocko Lake	Thompson Falls Reservoir
Sept.30....	27,800	2,620	7,500	31,700	2,320	32,200	11,870	120	13,520
Oct. 31....	27,800	2,620	-	-	1,830	33,120	16,470	245	11,130
Nov. 30....	27,500	2,620	-	-	3,080	33,730	21,780	-	13,810
Dec. 31....	25,880	2,620	-	-	10,000	33,170	26,810	-	13,250
Jan. 31....	23,770	2,620	-	-	13,350	33,800	28,640	-	13,110
Feb. 29....	21,690	2,620	-	20,000	15,350	34,340	27,180	-	13,810
Mar. 31....	19,150	2,620	-	20,000	17,380	37,580	29,240	-	4,640
Apr. 30....	18,050	2,620	-	20,000	20,290	41,840	47,280	-	4,230
May 31....	21,050	a14,460	a12,740	31,700	34,770	42,760	86,800	5,810	8,430
June 30....	23,050	a14,520	10,000	31,700	36,310	41,970	101,100	5,120	2,700
July 31....	23,770	12,220	a10,050	31,700	28,850	38,440	81,530	2,650	15,120
Aug. 31....	22,940	a6,090	b6,600	31,700	8,300	31,810	38,320	572	11,780
Sept.30....	21,800	3,830	3,500	31,700	1,200	29,610	16,750	789	14,390

a Interpolated on basis of readings made weekly or less frequently.
b Figure of contents for first day of following month.

Columbia River at international boundary

(International gaging station)

Location.--Lat 49°00'03", long 117°37'40", in SE¼ sec. 4, T. 40 N., R. 41 E., on left bank at international boundary, half a mile downstream from Pend Oreille River.

Drainage area.--59,700 sq mi, approximately.

Records available.--October 1937 to September 1956. Prior to March 1938 monthly discharge only, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation 1937 datum). Prior to Apr. 27, 1939, staff gage at same site and datum. Since May 31, 1942, auxiliary water-stage recorder 2.2 miles downstream from base gage. Jan. 1 to May 30, 1942, auxiliary staff gage at same site.

Average discharge.--19 years, 97,190 cfs (70,360,000 acre-ft per year).

Extremes.--Maximum discharge during year, 463,900 cfs June 6 (elevation, 1,333.16 ft); minimum, 28,000 cfs Feb. 19 (elevation, 1,291.64 ft).

1937-56: Maximum discharge, 550,100 cfs June 12, 1948 (elevation, 1,338.13 ft); minimum, 18,000 cfs Feb. 7, 1954 (elevation, 1,289.38 ft).

Flood in June 1894 reached a stage of 1,346 ft, from information by Bureau of Reclamation (discharge, 680,000 cfs).

Flow of about 12,900 cfs occurred Jan. 30 or 31, 1937, based on information from other gaging stations (elevation, 1,287.9 ft), from rating curve extended below 1,291.6 ft; may have been as low sometime in January 1930.

Remarks.--Records excellent. Many diversions above station for irrigation. It was estimated that 346,700 acres were under irrigation in the United States in 1946. Water is diverted for the irrigation of an additional 25,000 acres in Canada. The flow is affected by internationally controlled storage in Kootenay Lake as well as by natural and controlled regulation in other lakes and reservoirs in Kootenay and Pend Oreille River basins. Records of chemical analyses and water temperatures for the water year 1956 are given in WSP 1453.

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

Revisions (water years).--WSP 932: 1937(m), 1938(M), 1939(m).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59,700	62,500	57,400	50,200	36,900	43,800	83,200	179,900	*419,800	264,600	168,800	83,000
2	59,600	57,700	57,000	48,000	39,400	44,000	80,200	179,800	430,400	256,600	163,000	80,700
3	59,100	55,700	55,400	46,700	44,900	43,000	74,800	177,100	437,400	250,900	155,400	79,100
4	58,100	53,900	57,000	41,100	46,200	46,100	73,300	170,500	447,600	247,000	149,100	74,600
5	62,500	67,500	53,100	45,900	46,900	45,200	73,900	165,400	457,000	242,500	145,000	70,700
6	62,000	66,100	51,000	*49,200	47,400	43,600	71,900	162,600	461,000	235,600	141,800	68,500
7	61,700	67,800	*49,100	57,500	47,500	46,000	68,900	158,700	461,400	230,400	138,300	*64,700
8	62,600	67,900	44,100	56,200	48,900	41,300	67,000	161,200	456,700	225,200	132,600	62,100
9	63,400	63,200	44,800	56,000	47,500	40,200	65,800	162,000	448,300	222,000	123,300	59,900
10	69,100	60,400	44,800	51,300	45,200	40,400	66,300	*163,900	440,500	219,100	116,100	60,700
11	72,000	65,900	45,200	52,900	45,800	38,700	68,900	168,400	436,200	*220,000	110,600	62,900
12	62,900	63,000	43,800	*52,700	45,600	36,300	71,700	173,800	429,700	221,800	106,500	66,100
13	58,000	56,000	49,200	52,000	47,000	38,000	74,300	180,400	424,000	223,700	101,400	66,800
14	52,400	53,000	48,400	45,100	48,400	39,100	80,600	183,100	412,300	223,800	101,200	60,500
15	48,800	60,000	47,000	52,300	47,500	38,800	82,800	184,000	*395,800	220,600	98,700	64,600
16	49,400	69,000	47,700	47,600	42,500	38,200	91,400	188,700	372,500	220,600	97,800	65,600
17	51,100	75,000	44,500	46,000	41,900	38,700	99,200	197,900	350,800	218,000	98,100	67,500
18	51,400	74,000	41,000	44,500	36,700	36,200	114,600	208,200	342,100	215,000	98,800	68,800
19	53,400	73,000	41,600	46,000	29,300	33,400	127,000	222,400	339,400	212,400	97,600	70,600
20	57,100	65,000	42,900	46,400	*29,700	40,700	134,700	239,500	338,700	209,600	98,400	74,500
21	53,500	63,000	45,400	46,200	39,300	40,800	137,900	261,000	333,600	210,500	97,100	70,800
22	53,000	64,000	53,700	48,500	41,600	43,200	151,900	282,100	329,000	205,700	97,100	70,300
23	50,400	58,000	57,700	46,400	44,900	50,400	155,100	302,100	329,100	207,100	96,900	68,100
24	48,200	55,000	57,500	45,800	45,200	55,200	160,100	324,200	334,600	207,400	94,700	66,600
25	49,000	56,000	57,500	46,400	46,300	61,600	170,500	344,700	333,300	199,300	96,100	66,100
26	63,100	60,000	57,800	46,300	41,100	69,600	171,400	358,900	*320,600	200,900	96,200	65,700
27	78,500	57,000	57,400	43,800	44,000	77,300	*174,000	371,900	304,200	195,800	99,000	65,600
28	*75,300	52,000	62,400	42,400	43,500	81,000	176,900	382,700	288,600	*195,600	98,400	65,400
29	71,300	53,000	59,500	39,600	43,800	*83,500	178,700	392,100	279,000	190,900	97,500	63,900
30	69,400	55,000	56,200	37,600	------	82,000	179,400	400,300	273,100	185,000	96,000	64,000
31	64,100	-----	58,600	36,500	-----	84,300	-----	408,200	------	175,800	94,500	------
Total	‡1,850.1	‡1,859.6	‡1,588.7	‡1,467.1	‡1,252.9	‡1,540.6	‡3,326.4	‡7,455.7	‡11,426.7	‡6,753.4	‡3,506	‡2,038.4
Mean	59,680	61,990	51,250	47,330	43,200	49,700	110,900	240,500	380,900	217,900	113,100	67,950
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	‡3,670	‡3,688	‡3,151	‡2,910	‡2,485	‡3,056	‡6,598	‡14,790	‡22,660	‡13,400	‡6,954	‡4,043

Calendar year 1955: Max 401,600 Min 27,700 Mean 103,800 Cfsm - In. - Ac-ft 75,180,000
Water year 1955-56: Max 461,400 Min 29,300 Mean 120,400 Cfsm 2.02 In. 27.45 Ac-ft 87,400,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--No auxiliary gage-height record Nov. 12-30; discharge computed on basis of base gage-height record and stage-fall-discharge relation immediately before and after. No base gage-height record Mar. 2, 3; discharge computed on basis of auxiliary gage-height record.

Kettle River near Ferry, Wash.

(International gaging station)

Location.--Lat 48°58'40", long 118°46'10", in lot 7, sec. 10, T. 40 N., R. 32 E., on right bank 1¼ miles south of international boundary and Ferry and 3 miles upstream from Toroda Creek.

Drainage area.--2,220 sq mi, approximately.

Records available.--August 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,836.8 ft above mean sea level, international joint adjustment of 1947. Prior to Nov. 23, 1928, staff gage at present site and datum.

Average discharge.--28 years, 1,472 cfs (1,066,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,100 cfs May 21 (gage height, 19.60 ft); minimum not determined, occurred during period of ice effect.
1928-56: Maximum discharge, 21,200 cfs May 29, 1948 (gage height, 21.15 ft); minimum, 14 cfs (discharge measurement) Jan. 23, 1930, but may have been less during period of ice effect Jan. 18-23, 1930.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are poor. Several small diversions above station for irrigation. No regulation.

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

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 14		Mar. 15 to Sept. 30			
9.6	149	9.5	140	13.0	2,890
10.0	290	10.0	300	15.0	6,140
10.5	540	10.5	540	17.0	10,300
11.0	860	11.0	865	19.6	17,100
11.5	1,260	12.0	1,740		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	326	*673	395	240	160	200	468	*5,970	10,200	2,240	479	293
2	312	624	400	250	160	200	474	5,600	10,400	2,140	463	278
3	299	576	405	260	160	200	484	5,170	8,790	2,130	453	257
4	*290	600	390	260	160	200	534	4,920	8,620	2,240	442	250
5	304	692	385	270	160	200	600	4,870	10,800	2,340	432	244
6	348	738	380	278	170	190	600	5,020	*9,240	2,620	413	240
7	390	699	380	290	170	190	600	5,630	7,200	2,530	413	233
8	376	660	370	294	170	190	600	6,620	6,200	2,170	389	*230
9	380	648	*366	294	170	180	630	7,740	5,720	1,950	362	224
10	415	654	366	286	170	180	746	8,520	6,060	1,780	340	208
11	452	686	353	290	170	180	925	8,860	8,270	1,690	328	201
12	480	390	366	290	170	180	1,130	7,780	7,140	1,610	316	192
13	446	204	371	294	180	190	1,400	6,750	5,780	1,470	308	189
14	415	201	246	*282	190	200	1,870	6,180	5,270	1,420	296	183
15	410	194	200	270	180	224	2,650	6,370	5,710	1,380	289	180
16	430	190	190	274	180	240	3,520	7,480	5,840	1,400	316	174
17	480	190	200	270	180	237	3,880	9,500	5,600	1,440	312	168
18	480	200	210	270	*180	244	4,230	*11,800	4,990	1,260	312	168
19	502	230	220	270	180	244	4,960	*13,800	4,730	1,130	300	165
20	540	260	230	266	180	268	5,840	15,500	5,780	*1,040	286	165
21	680	300	240	274	190	275	7,380	16,900	5,350	964	271	168
22	618	350	250	274	190	278	9,150	15,500	4,650	895	257	171
23	570	400	250	270	190	336	9,830	13,100	4,090	844	247	177
24	512	450	260	270	190	371	10,100	12,800	3,940	788	240	195
25	502	463	270	240	190	432	9,680	15,000	3,260	725	237	204
26	564	480	270	190	200	512	8,980	13,000	2,970	666	247	237
27	1,030	529	280	170	200	501	8,420	12,200	2,920	624	244	282
28	867	415	270	170	200	490	7,760	11,200	2,790	576	240	296
29	797	400	260	170	200	468	7,080	10,000	2,570	558	257	328
30	764	395	240	170	------	468	6,460	9,720	2,390	518	261	312
31	718	------	230	160	------	479	------	9,610	------	*506	271	------
Total	15,697	13,491	9,243	7,856	5,190	8,747	120,981	293,110	177,270	43,644	10,021	6,612
Mean	506	450	298	253	179	282	4,033	9,455	5,909	1,408	323	220
Ac-ft	31,130	26,760	18,330	15,580	10,290	17,350	240,000	581,400	351,600	86,570	19,880	13,110

Calendar year 1955: Max 14,200 Min 177 Mean 1,631 Ac-ft 1,181,000
Water year 1955-56: Max 16,900 Min 160 Mean 1,945 Ac-ft 1,412,000

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 16-24, Dec. 7, 8, Dec. 15 to Jan. 4, Jan. 24 to Mar. 14 (no gage-height record Nov. 16-20, Dec. 16-25, Dec. 30 to Jan. 3, Jan. 27 to Feb. 20; discharge estimated on basis of 1 discharge measurement, weather records, and records for Kettle River near Laurier).

Curlew Lake near Malo, Wash.

Location.--Lat 48°45'20", long 118°39'30", in NE¼ sec. 29, T. 38 N., R. 33 E., on east shore 1 mile uplake from outlet and 3½ miles southeast of Malo.

Drainage area.--65.9 sq mi.

Records available.--July 1953 to September 1956 (fragmentary), discontinued.

Gage.--Staff gage generally read once daily. Datum of gage is 2,337.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum gage height observed during year, 3.04 ft Apr. 24, 27; minimum observed, 0.22 ft Sept. 24.
1953-56: Maximum gage height observed, that of Apr. 24, 27, 1956; minimum observed, that of Sept. 24, 1956.

Remarks.--No known diversions. Some regulation from small dam at outlet. At times during high water and irrigation season, water is diverted from Sanpoil River into this basin. At extreme stages there may be some flow into Sanpoil River basin.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	0.50		-	-	-	0.82	2.88		-		-
2	-			-	-	-	-	2.87		-		-
3	0.44			-	-	-	-	-		-		-
4	-			-	-	-	.88	2.74		-		-
5	-			-	-	0.60	-	-		-		-
6	-			-	0.52	-	-	-		-		-
7	-			-	.52	-	-	2.55		-		-
8	-			0.63	-	-	-	-		-		0.28
9	-		0.46	-	-	-	1.01	-		-		.28
10	.46			-	-	.62	-	-		-		-
11	-			-	-	-	-	-		-		-
12	-			-	.52	-	-	2.46		-		-
13	.46			-	-	-	1.44	2.46		-		-
14	-			.60	-	-	1.79	-		-		.26
15	-			-	-	-	-	-		-		-
16	-			-	-	-	2.02	-		-		-
17	-			-	-	.60	2.23	2.34		-		-
18	.47			-	-	-	-	-		-		.24
19	-			-	.54	.61	2.46	2.28		0.88		-
20	-			-	-	-	2.56	-		-		-
21	-			-	-	-	2.66	-		-		-
22	-			-	-	.64	2.77	-		-		-
23	.48			-	-	-	2.92	-		-		-
24	-			-	-	-	3.04	-		-		.22
25	-			-	-	-	-	-		-		-
26	-			-	-	-	-	-		-		-
27	-			-	-	.74	3.04	-		-		-
28	-			-	-	-	3.01	-		-		-
29	-			-	-	-	2.98	2.20		-		-
30	.52			-	-------	-	-	-		-		-
31	-	-------		-	-------	.80	-------	-	-------	.58		-------

Kettle River near Laurier, Wash.

(International gaging station)

Location.--Lat 48°59'10", long 118°13'00", in NW¼ sec. 11, T. 40 N., R. 36 E., on right bank 500 ft downstream from Deep Creek, 1½ miles southeast of Laurier, and 12 miles upstream from Boulder Creek.

Drainage area.--3,800 sq mi, approximately.

Records available.--September 1929 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,425.5 ft above mean sea level, international joint adjustment of 1947. Prior to Jan. 3, 1930, staff gage at same site and datum.

Average discharge.--27 years, 2,858 cfs (2,069,000 acre-ft per year).

Extremes.--Maximum discharge during year, 31,700 cfs May 22 (gage height, 16.15 ft); minimum, 337 cfs Sept. 21 (gage height, 2.88 ft).

1929-56: Maximum discharge, 35,000 cfs May 29, 1948 (gage height, 17.25 ft); minimum, 88 cfs Dec. 1, 1936 (gage height 2.20 ft), but was probably less during winter of 1929-30.

Maximum stage known, about 22 ft in May or June 1894, from information by local residents.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are poor. North Fork regulated by reservoir at Grand Forks, British Columbia. Numerous diversions for irrigation of about 720 acres in the United States (for 1946 from United States reports), and 2,090 acres in Canada from the Canada Year Book for 1940. Some diversion for domestic use.

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

Revisions (water years).--WSP 737: 1930-31. WSP 862: 1937. WSP 882: 1938.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.8	305	8.0	6,650
3.5	660	10.0	11,300
4.0	1,010	13.0	20,200
5.0	1,930	16.0	31,100
6.0	3,180		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	505	1,170	818	600	390	510	1,190	11,800	19,000	4,700	1,070	530
2	525	1,110	797	600	380	500	1,200	*11,200	20,600	4,500	1,010	530
3	520	1,070	776	600	380	500	1,240	10,400	18,300	4,400	962	525
4	510	1,020	769	600	380	520	1,330	9,740	16,400	4,400	938	510
5	505	1,080	741	620	370	540	1,510	9,420	*19,300	4,600	923	490
6	510	1,200	741	640	370	520	1,630	9,450	18,400	5,200	895	480
7	552	1,220	727	660	380	500	1,640	10,400	13,900	5,000	860	475
8	600	1,160	*684	660	380	540	1,660	12,300	11,700	4,700	832	*460
9	594	1,150	660	670	390	560	1,700	14,200	10,600	4,300	790	445
10	624	1,140	720	680	400	530	1,920	15,800	10,800	3,800	755	435
11	678	1,230	720	700	410	520	2,500	16,800	13,600	3,500	720	425
12	714	1,110	660	690	410	500	3,150	15,300	13,600	3,300	696	410
13	734	700	600	*680	400	520	3,850	12,900	10,800	3,100	672	400
14	702	500	560	680	390	500	4,870	11,800	9,640	3,000	648	395
15	666	480	520	670	390	490	6,450	11,800	9,950	2,800	618	386
16	654	470	490	670	390	500	8,290	13,400	11,000	2,900	624	381
17	684	480	460	660	390	495	9,350	*16,700	10,600	3,100	642	372
18	741	500	450	660	400	515	9,900	*21,000	9,800	2,900	654	354
19	762	600	450	650	*410	515	11,000	25,000	9,000	2,600	636	345
20	811	700	490	650	420	546	12,400	28,000	10,500	*2,400	606	345
21	909	800	610	640	440	564	14,500	30,300	10,000	2,120	570	341
22	1,020	850	700	600	460	600	17,300	30,300	9,000	1,960	535	341
23	962	900	720	590	480	648	20,400	25,800	8,000	1,830	515	345
24	909	950	730	580	500	790	20,900	24,000	7,200	1,710	500	354
25	860	970	720	560	500	874	19,200	26,400	6,600	1,610	490	363
26	923	950	690	520	500	1,070	17,600	26,100	6,200	1,500	490	381
27	1,280	938	700	450	490	1,210	16,100	22,800	5,800	1,400	495	405
28	*1,530	867	700	440	500	1,170	15,000	21,500	5,600	1,300	495	470
29	1,410	832	670	420	510	1,150	14,000	19,500	5,400	1,230	495	525
30	1,350	832	650	410	------	1,140	12,800	18,400	5,000	1,170	510	546
31	1,260	------	620	400	------	1,150	------	18,200	------	*1,120	525	------
Total	25,004	26,979	20,343	18,650	12,210	20,687	254,580	550,710	336,290	92,150	21,171	12,764
Mean	807	899	656	602	421	667	8,486	17,760	11,210	2,973	683	425
Ac-ft	49,590	53,510	40,350	36,990	24,220	41,030	505,000	‡1,092	667,000	182,800	41,990	25,320

Calendar year 1955: Max 23,600 Min 415 Mean 3,099 Ac-ft 2,243,000
Water year 1955-56: Max 30,300 Min 341 Mean 3,802 Ac-ft 2,760,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--Stage-discharge relation affected by ice Nov. 13-26, Dec. 13-20, Dec. 28 to Mar. 14 (no gage-height record Nov. 15-19, Dec. 13-20, Dec. 28 to Jan. 12, Jan. 29 to Mar. 3; discharge estimated on basis of 1 discharge measurement and weather records). No gage-height record Dec. 9-12, 21-27, June 16 to July 20; discharge estimated on basis of weather records, recorded range in stage, results of Telemark readings, and records for station near Ferry.

Deer Lake near Loon Lake, Wash.

Location.--Lat 48°06'25", long 117°36'10", on line between secs. 11 and 14, T. 30 N., R. 41 E., an eighth of a mile upstream from outlet and about 3 miles northeast of town of Loon Lake.

Drainage area.--17.8 sq mi.

Records available.--November 1952 to September 1956 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,480 ft (from topographic map). Prior to Oct. 1, 1953, staff gage at same site at datum 4.00 ft higher.

Extremes.--Maximum gage height observed during year, 9.30 ft Apr. 25, 26; minimum observed, 4.32 ft Dec. 17.
1952-56: Maximum gage height observed, that of Apr. 25, 26, 1956; minimum observed, 3.60 ft Jan 1, 1955.

Remarks.--Intermediate stages of lake controlled for recreational purposes by flashboards. No diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-	-	7.70	9.06	-	-	-	5.54
2	-	-	-	-	-	-	7.76	9.00	7.78	-	-	-
3	-	-	4.33	-	-	-	7.80	8.96	-	7.08	-	-
4	-	-	-	5.20	5.68	-	7.87	8.91	-	-	6.24	-
5	-	4.38	-	-	-	-	7.92	8.86	-	-	-	-
6	-	-	-	-	-	6.12	8.00	8.80	7.66	7.00	-	-
7	-	-	-	5.26	-	-	8.06	8.74	-	-	-	-
8	4.43	-	-	-	5.72	-	8.12	8.69	-	-	-	5.30
9	-	-	-	-	-	-	8.18	8.64	7.58	-	-	-
10	-	-	4.33	-	-	6.18	-	8.59	-	-	-	-
11	4.50	-	-	-	-	6.20	8.28	8.53	7.50	-	6.04	-
12	-	4.36	-	-	-	-	8.40	8.48	-	-	-	5.22
13	-	-	-	5.38	-	6.13	8.50	8.43	-	-	-	-
14	-	-	-	-	5.77	-	8.60	8.37	-	6.82	-	-
15	4.38	-	4.52	-	-	-	8.75	8.32	7.42	-	-	-
16	-	-	-	5.38	-	-	8.84	8.28	-	-	-	-
17	-	-	4.32	-	-	-	8.96	8.24	-	-	-	-
18	-	-	-	-	-	-	9.02	8.20	-	-	5.86	-
19	-	4.35	-	-	-	6.24	9.04	8.17	7.38	-	-	-
20	-	-	-	-	5.84	-	9.07	8.14	-	-	-	-
21	-	-	-	5.49	-	6.32	9.09	8.11	-	6.64	-	-
22	4.34	-	-	-	-	6.40	9.13	8.08	-	-	-	4.94
23	-	-	-	-	-	-	9.15	8.04	7.32	-	-	-
24	-	-	4.40	5.64	-	-	9.27	-	-	-	-	-
25	-	-	-	-	-	-	9.30	8.00	-	-	5.70	-
26	-	4.34	-	-	-	7.00	9.30	7.96	7.24	-	-	-
27	-	-	4.88	-	-	7.20	9.27	-	-	6.43	-	-
28	-	-	-	-	5.93	-	9.22	-	-	6.42	-	-
29	4.39	-	-	-	-	7.40	9.16	7.90	-	-	-	4.82
30	-	-	-	-	-------	7.52	9.11	7.88	7.16	-	-	-
31	-	-------	4.96	5.70	-------	7.62	-------	-	-------	-	-	-------

Loon Lake near Loon Lake, Wash.

Location.--Lat 48°01'45", long 117°36'15", in NW¼ sec. 11, T. 29 N., R. 41 E., at south end of Loon Lake, 2.7 miles southeast of town of Loon Lake.

Drainage area.--33.4 sq mi.

Records available.--April 1950 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, unadjusted. Prior to Sept. 29, 1951, at site 0.2 mile north at present datum.

Extremes.--Maximum elevation during year, 2,381.78 ft Apr. 17; minimum, 2,380.28 ft Oct. 8.

1950-56: Maximum elevation, 2,382.71 ft May 3, 1950, but may have been higher sometime in 1951 water year while water-stage recorder was not operating; minimum recorded, 2,379.86 ft Dec. 1, 1952.

Remarks.--Elevation controlled by dam at lake outlet. Some small diversions for irrigation of lawns and gardens.

Revisions (water years).--WSP 1216: 1950.

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80.32	80.40	80.63	-	-	-	81.43	81.65	81.51	81.33	80.92	80.67
2	80.32	80.41	80.64	-	-	-	81.47	81.65	81.49	81.31	80.91	80.65
3	80.31	80.45	80.64	-	-	-	81.53	81.65	81.48	81.31	80.93	80.62
4	80.31	80.46	80.64	81.43	-	-	81.57	81.64	81.47	81.30	80.94	80.60
5	80.32	80.45	80.64	81.43	-	-	81.58	81.64	81.46	81.31	80.93	80.58
6	80.31	80.45	80.66	81.41	-	-	81.60	81.65	81.44	81.32	80.92	80.57
7	80.29	80.44	80.66	81.37	-	-	81.63	81.64	81.44	81.32	80.91	80.56
8	80.30	80.44	80.67	81.33	80.60	-	81.64	81.64	81.43	81.30	80.91	80.55
9	80.36	80.44	80.70	81.30	-	-	81.67	81.65	81.42	81.30	80.90	80.54
10	80.41	80.44	80.71	81.25	-	-	81.68	81.68	81.41	81.29	80.89	80.53
11	80.49	80.44	80.76	81.19	-	-	81.69	81.67	81.40	81.28	80.88	80.52
12	80.40	80.43	80.79	81.14	-	-	81.70	81.67	81.39	81.27	80.88	80.52
13	80.40	80.42	80.79	81.12	-	-	81.72	81.66	81.38	81.26	80.87	80.50
14	80.39	80.42	80.79	81.12	-	-	81.73	81.65	81.39	81.25	80.86	80.49
15	80.39	80.41	80.80	81.09	-	-	81.75	81.65	81.41	81.24	80.85	80.48
16	80.39	80.40	-	81.09	-	-	81.76	81.64	81.43	81.23	80.82	80.46
17	80.38	80.38	-	81.07	-	-	81.78	81.63	81.43	81.22	80.81	80.44
18	80.38	80.42	-	81.06	-	80.73	81.77	81.63	81.42	81.20	80.78	80.43
19	80.38	80.46	-	81.04	-	80.76	81.76	81.62	81.43	81.19	80.76	80.43
20	80.38	80.45	80.96	81.03	-	80.73	81.74	81.61	81.44	81.18	80.75	80.43
21	80.38	80.44	80.97	81.01	-	80.62	81.72	81.59	81.43	81.16	80.73	80.41
22	80.37	80.44	81.03	80.99	-	80.58	81.72	81.58	81.43	81.15	80.71	80.39
23	80.37	80.46	81.05	80.98	-	80.59	81.71	81.57	81.42	81.13	80.69	80.38
24	80.36	80.48	81.06	80.96	-	80.67	81.72	81.57	81.41	81.12	80.68	80.37
25	80.38	80.57	81.07	-	-	80.77	81.69	81.56	81.39	81.10	80.67	80.36
26	80.39	80.58	81.14	-	-	80.89	81.66	81.57	81.38	81.08	80.70	80.36
27	80.39	80.58	81.20	-	-	81.00	81.64	81.57	81.37	81.05	80.71	80.35
28	80.40	80.58	81.22	-	-	81.12	81.63	81.56	81.37	81.02	80.70	80.34
29	80.42	80.58	-	-	-	81.22	81.64	81.56	81.36	81.00	80.71	80.34
30	80.43	80.61	-	-	-------	81.30	81.65	81.54	81.34	80.97	80.69	80.34
31	80.41	-------	-	-	-------	81.37	-------	81.52	-------	80.95	80.68	-------

Note.--Add 2,300 ft to obtain elevation above mean sea level.

Sheep Creek at Loon Lake, Wash.

Location.--Lat 48°03'35", long 117°39'10", in NE¼ sec. 32, T. 30 N., R. 41 E., on right bank 0.7 mile downstream from outlet of Loon Lake and 1 mile west of town of Loon Lake.

Drainage area.--36.2 sq mi.

Records available.--April to September 1950, October 1951 to September 1956.

Gage.--Water-stage recorder and wooden control. Altitude of gage is 2,370 ft (from topographic map). April to September 1950 water-stage recorder at site a quarter of a mile upstream at different datum.

Average discharge.--5 years, 2.54 cfs (1,840 acre-ft per year).

Extremes.--Maximum discharge during year, 43 cfs Apr. 23 (gage height, 2.84 ft); no flow for long periods.
1950, 1951-56: Maximum discharge, that of Apr. 23, 1956; maximum gage height, 3.43 ft Feb. 4, 1954 (ice jam); no flow at times each year.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Flow regulated by dam at outlet of Loon Lake. Some small diversions for irrigation.

Revisions (water years).--WSP 1396: 1954.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.72	0	2.4	17.5
1.8	.4	2.6	29
2.0	2.4	2.8	41
2.2	8.2		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	4.0	16.5	21	5.6	2.4			
2				0	9.0	16	21	*5.6	2.0			
3				0	18	7.3	22	5.6	1.6			
4				0	17	11.5	*26	5.6	1.4			
5				0	16	a19	29	5.6	1.2			
6				12	8.0	a19	29	5.6	1.0	(*)		
7				6.0	8.0	a19	30	5.0	.7			
8				0	*16.5	a19	29	4.7	.6			
9				0	16	a19	29	4.7	.5			
10				0	15	a10	28	5.9	.4			
11	(*)			0	14.5	a10	29	5.6	.1			
12				0	14	a11	28	5.3	0			(*)
13				*7.0	3.0	*11.5	28	4.7	0			
14				18	9.0	8.6	28	4.4	0			
15				35	14	4.7	27	*5.0	.2			
16				35	13	4.7	27	5.3	.5			
17		(*)		34	13	2.2	*29	5.0	.4			
18				34	13	0	32	4.7	.2			
19				33	5.0	0	41	4.4	.5			
20				16	9.0	0	*39	4.1	.6			
21				1.0	14.5	0	22	3.6	.5			
22				16	16	0	31	3.2	.4			
23				33	16	*.1	39	3.0	.2			
24				32	15.5	.2	40	3.6	.1			
25				31	15	.4	38	3.4	0			
26				30	7.2	.4	37	3.4	0			
27				28	8.4	.2	12.5	3.8	0	(*)		
28				27	16.5	9.1	5.3	3.2	0			
29				14	17.5	24	5.3	3.0	0		(*)	
30				13	------	20	5.6	3.0	0			
31		------		5.0	------	21	------	2.8	------			------
Total	0	0	0	460.0	361.6	284.4	807.7	138.4	15.5	0	0	0
Mean	0	0	0	14.8	12.5	9.17	26.9	4.46	0.52	0	0	0
Ac-ft	0	0	0	912	717	564	1,600	275	31	0	0	0

Calendar year 1955: Max 3.2 Min 0 Mean 0.25 Ac-ft 178
Water year 1955-56: Max 41 Min 0 Mean 5.65 Ac-ft 4,100

* Discharge measurement or observation of no flow made on this day.
Note.--Stage-discharge relation affected by ice Jan. 6, 7, 13-20, 22-28, Feb. 13-20. No gage-height record Jan. 6 to Feb. 7, Feb. 12-20; discharge estimated on basis of 1 discharge measurement, gate-tender's notes, and records for station at Springdale.

Sheep Creek at Springdale, Wash.

Location.--Lat 48°03'30", long 117°45'00", in SE¼NW¼ sec. 34, T. 30 N., R. 40 E., on right bank 15 ft upstream from bridge on State Highway 3, half a mile west of Springdale, and 4½ miles upstream from mouth.

Drainage area.--46.9 sq mi.

Records available.--January 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,980 ft (from topographic map).

Extremes.--Maximum discharge during year, 72 cfs Mar. 30 (gage height, 2.40 ft); maximum gage height recorded, 5.22 ft sometime during period Jan. 30 to Feb. 7 (backwater from ice); minimum discharge, 3.4 cfs Dec. 5 (gage height, 1.12 ft).
1953-56: Maximum discharge, that of Mar. 30, 1956; maximum gage height recorded, that which occurred sometime during period Jan. 30 to Feb. 7, 1956; minimum discharge, 1.6 cfs Jan. 21, 1955.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Some small diversions for domestic use. Flow partly regulated by dam at outlet of Loon Lake.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 26-28)

1.2	5.8	1.6	21
1.3	9.6	2.0	43
1.4	13.1	2.4	72

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	7.2	6.5	20	13	30	59	21	15	14.5	16.5	16.5
2	6.5	7.2	6.5	20	20	33	56	20	15	14.5	17	16.5
3	6.5	8.8	6.5	23	30	17	55	20	15	15	18	16.5
4	6.2	8.8	6.2	26	38	23	*58	20	15	15.5	17.5	16.5
5	6.5	8.0	6.0	30	36	30	62	20	15	15	16.5	16.5
6	6.2	7.2	6.2	45	20	35	62	20	14	*15	16.5	16.5
7	6.2	7.2	6.2	35	20	34	65	19	14	15	16.5	16.5
8	6.8	7.2	6.5	30	**30	33	63	19	14	15	16.5	16.5
9	8.4	8.0	7.6	25	28	32	62	18.5	14	15	16.5	16.5
10	8.8	7.6	5.8	22	27	25	62	20	13.5	15	16.5	16.5
11	*7.2	7.2	7.2	20	25	22	60	19.5	14	15	16.5	16.5
12	7.2	7.0	8.8	23	22	21	59	19	13.5	15	16.5	*16.5
13	7.2	6.5	8.5	*30	15	*20	*58	19	13.5	15.5	16.5	16.5
14	7.2	6.0	8.0	25	23	18	58	18.5	14	16.5	16	16.5
15	7.2	6.0	*7.5	45	23	15	55	*17.5	15	16	16	16.5
16	7.2	6.0	7.0	47	22	13	53	18.5	16	15.5	16.5	16.5
17	7.2	*6.3	6.5	45	21	13	*52	18.5	14.5	16	16.5	16
18	7.2	7.0	6.0	44	20	14	54	17.5	14	15.5	16	16
19	7.2	8.0	6.0	42	15	15	58	17.5	15	15.5	16	16
20	7.2	9.0	7.0	37	20	17	*57	17.5	15	15.5	16	16
21	7.2	8.0	9.0	15.5	25	20	49	16.5	15	16.5	16	16
22	7.2	7.0	20	18.5	25	23	35	16.5	15.5	16	16	16
23	7.2	8.0	25	42	25	*27	55	16.5	14	16	16	16
24	7.2	10	22	42	24	39	61	17	14	16	16.5	16
25	8.0	13	25	40	23	41	55	17	14	16.5	16.5	16
26	7.6	8.0	30	38	17	45	52	17	14	16.5	17.5	15.5
27	7.2	6.8	35	35	20	*41	41	18	14	*16.5	17.5	15.5
28	8.0	6.8	40	30	25	35	23	16.5	14	16	16.5	15.5
29	8.4	6.8	32	20	27	64	22	16	14	16.5	17	16
30	8.4	6.5	25	17	------	66	22	15	14.5	16	16.5	15.5
31	7.6	-----	22	15	-----	64	-----	15.5	------	16.5	16.5	------
Total	224.9	227.1	421.5	947.0	679	925	1,583	562.0	432.0	484.5	513.0	486.0
Mean	7.25	7.57	13.6	30.5	23.4	29.8	52.8	18.1	14.4	15.6	16.5	16.2
Cfsm	0.155	0.161	0.290	0.650	0.499	0.635	1.13	0.386	0.307	0.333	0.352	0.345
In.	0.18	0.18	0.33	0.75	0.54	0.73	1.26	0.45	0.34	0.38	0.41	0.39
Ac-ft	446	450	836	1,880	1,350	1,830	3,140	1,110	857	961	1,020	964

Calendar year 1955: Max 40 Min 5.5 Mean 8.35 Cfsm 0.178 In. 2.41 Ac-ft 6,040
Water year 1955-56: Max 66 Min 5.8 Mean 20.5 Cfsm 0.437 In. 5.94 Ac-ft 14,840

* Discharge measurement made on this day.
** Field estimate made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12-25, Dec. 13-20, Dec. 29 to Jan. 2, Jan. 25 to Feb. 29. No gage-height record Nov. 12-17, Dec. 15 to Jan. 13, Jan. 29 to Mar. 23; discharge estimated on basis of 6 discharge measurements, weather records, and records for stations on nearby streams.

Mill Creek near Colville, Wash.

Location.--Lat 48°34'45", long 117°51'50", in SW¼NW¼ sec. 35, T. 36 N., R. 39 E., on right bank 3 miles northeast of Colville and 5 miles downstream from North Fork.

Drainage area.--82 sq mi, approximately.

Records available.--October 1939 to September 1956. Prior to February 1940 monthly discharge only, published in WSP 1316.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 1,950 ft (from topographic map). Prior to Nov. 2, 1952, water-stage recorder (now used as supplementary gage) at site half a mile upstream at different datum.

Average discharge.--17 years, 49.3 cfs (35,690 acre-ft per year).

Extremes.--Maximum discharge during year, 609 cfs Apr. 22 (gage height, 7.16 ft); minimum observed, 9.6 cfs Sept. 17-19 (gage height, 3.77 ft), but may have been less during period of ice effect Nov. 14-17.
1939-56: Maximum discharge, that of Apr. 22, 1956; minimum, 3.6 cfs Aug. 28, 31, Sept. 1, 1940, but may have been less during period of no gage-height record Feb. 1-4, 1940.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 50 acres above station. No regulation.

Revisions (water years).--WSP 1042: 1940, 1942.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30			
4.0	9.5	5.0	130	3.7	7.0	5.0	138
4.2	22	6.0	337	4.0	20	6.0	340
4.4	40	7.1	592	4.3	38	7.1	592
4.7	78			4.6	73		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	16	15	28	b16	17	91	296	87	35	16.5	14
2	14	16.5	15	26	b16	18	91	270	87	35	18	13.5
3	14	18	14	26	b18	21	92	256	80	*34	18	13.5
4	14	18	14	30	21	21	119	252	84	37	20	13
5	18	17	14	33	21	19.5	126	240	81	34	19	*13
6	16	18	14	31	26	19.5	120	228	79	37	18	12.5
7	14	18	13.5	31	19	17	130	226	73	36	18	11.5
8	14	16.5	*13.5	31	18	14.5	126	236	70	33	16	10.5
9	24	17	13	29	22	14.5	140	244	66	31	15	10.5
10	22	19.5	13	26	22	15	184	236	65	30	14.5	10.5
11	22	16.5	14.5	26	19.5	14	231	234	64	29	14	10.5
12	20	13	18	24	19.5	14.5	257	222	60	27	13.5	10
13	18	11	b16	26	19	16.5	*289	204	58	26	13.5	10
14	16.5	b10	b15	*25	b18	15	356	191	58	29	13.5	10
15	15	b10	14	24	b17	15	422	187	65	27	13.5	10
16	15	b10	13.5	26	b16	15	*472	187	73	25	13.5	10
17	15	b10	14	24	b16	19.5	500	193	66	25	13.5	9.6
18	14.5	10.5	b14	24	b16	22	*462	*198	56	24	13.5	9.6
19	14.5	11.5	14.5	24	b18	24	469	196	54	23	13	10
20	14.5	13	16	23	21	30	512	185	55	23	12.5	10
21	14.5	14	19.5	22	*19.5	31	552	174	50	22	12	10
22	14	13.5	26	22	21	33	578	157	48	22	11.5	10
23	14	14	28	25	19.5	46	570	146	46	21	11.5	10
24	14	15	28	24	18	50	502	157	42	20	11.5	10
25	14	16	28	21	18	56	421	153	41	19.5	12.5	10
26	15	19.5	29	b20	16.5	59	398	138	40	19	13.5	10
27	*15	15	40	20	16.5	61	373	127	38	18	15	10.5
28	16.5	15	44	19	18	67	356	113	37	17	13.5	10.5
29	18	14	36	b18	18	70	344	108	35	*17.5	14.5	11.5
30	21	14	34	b17	------	*81	*318	100	35	17	14	12.5
31	19.5	-----	b30	b16	------	106	-----	93	------	16.5	14	------
Total	505.5	440.0	631.0	761	544.0	1,022.5	9,601	5,947	1,793	809.5	450.5	327.2
Mean	16.3	14.7	20.4	24.5	18.8	33.0	320	192	59.8	26.1	14.5	10.9
Cfsm	0.199	0.179	0.249	0.299	0.229	0.402	3.90	2.34	0.729	0.318	0.177	0.133
In.	0.23	0.20	0.29	0.35	0.25	0.46	4.35	2.70	0.81	0.37	0.20	0.15
Ac-ft	1,000	873	1,250	1,510	1,080	2,030	19,040	11,800	3,560	1,610	894	649

Calendar year 1955: Max 265 Min 10 Mean 46.2 Cfsm 0.563 In. 7.66 Ac-ft 33,470
Water year 1955-56: Max 578 Min 9.6 Mean 62.4 Cfsm 0.761 In. 10.36 Ac-ft 45,300

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Colville River at Kettle Falls, Wash.

Location.--Lat 48°35'40", long 118°03'30", in sec. 29, T. 36 N., R. 38 E., on right bank 600 ft downstream from Washington Water Power Co.'s plant (revised) at foot of Meyers Falls, half a mile south of town of Kettle Falls, and 2 miles upstream from Franklin D. Roosevelt Lake.

Drainage area.--1,050 sq mi, approximately.

Records available.--October 1922 to September 1956. Published as "at Meyers Falls" 1922-38.

Gage.--Water-stage recorder. Altitude of gage is 1,500 ft (from topographic map). Prior to Oct. 21, 1932, staff gage at site 500 ft upstream at different datum. Oct. 21, 1932, to Sept. 19, 1938, staff gages at site 200 ft upstream at different datum. Sept. 20, 1938, to Mar. 20, 1949, staff gage at present site and datum.

Average discharge.--34 years, 287 cfs (207,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3,230 cfs Apr. 23 (gage height, 10.17 ft); minimum, 41 cfs Nov. 13 (gage height, 4.51 ft); minimum daily, 81 cfs Nov. 13.
1922-56: Maximum discharge, that of Apr. 23, 1956; minimum observed, 0.5 cfs Aug. 15, 1930.

Remarks.--Records good except those for period of shifting control, which are fair, and those for periods of ice effect, which are poor. Several ditches above station divert water for irrigation. Slight regulation for power by small reservoir above falls.

Cooperation.--Gage-height record furnished by Washington Water Power Co.

Revisions (water years).--WSP 1316: 1938(M), 1941(M), 1948(M).

Rating tables, water year 1955-56, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30			
4.8	73	7.0	800	5.0	104	7.0	1,010
5.0	98	8.0	1,380	5.5	219	8.0	1,680
5.5	188	10.0	2,920	6.0	440	10.0	3,300
6.0	355						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	154	162	325	225	443	1,610	2,240	528	241	134	147
2	126	150	160	332	230	447	1,540	2,020	506	241	142	144
3	124	139	164	340	230	520	1,490	1,850	496	*241	147	140
4	124	139	158	379	247	560	1,480	1,690	470	263	151	138
5	124	158	154	459	254	546	1,510	1,580	475	275	160	136
6	132	158	152	507	261	510	1,500	1,460	470	267	153	*134
7	130	152	150	533	270	507	1,460	1,380	455	263	151	134
8	129	148	*148	528	274	427	1,470	1,330	430	248	149	134
9	134	142	150	499	274	391	1,460	1,320	410	233	138	134
10	150	142	154	441	261	367	1,490	1,320	395	223	136	132
11	183	146	156	407	278	340	1,570	1,320	390	210	134	129
12	171	139	166	383	281	306	1,680	1,270	370	200	132	129
13	156	81	154	371	281	325	*1,760	1,200	350	197	132	130
14	148	109	106	*367	220	325	1,810	1,130	345	213	125	129
15	139	97	105	359	200	325	1,900	1,070	360	237	127	129
16	130	97	104	344	200	340	*2,040	1,020	395	226	129	129
17	137	98	100	340	200	383	2,330	980	420	197	127	127
18	129	100	100	340	205	427	*2,550	956	400	194	121	127
19	127	110	130	332	220	487	2,590	*932	375	180	119	123
20	130	121	171	328	240	569	2,680	926	365	178	118	125
21	134	130	196	325	*255	636	2,800	902	370	172	119	125
22	132	139	267	321	270	710	2,910	878	355	160	119	129
23	124	139	351	321	290	845	2,970	850	336	160	119	129
24	127	141	391	260	383	1,110	2,970	800	313	158	118	129
25	127	158	383	210	387	1,320	2,910	818	300	153	127	130
26	130	194	351	200	359	1,430	2,840	776	287	147	134	134
27	*134	208	330	200	328	1,500	2,770	728	279	144	153	129
28	137	186	315	200	313	1,530	2,700	699	267	138	149	130
29	141	169	310	200	371	1,570	2,600	655	251	140	149	130
30	152	164	312	210	------	*1,620	*2,440	611	244	*140	151	132
31	158	------	320	220	------	1,650	------	562	------	136	151	------
Total	4,253	4,208	6,370	10,581	7,807	22,466	63,830	35,253	11,407	6,175	4,214	3,947
Mean	137	140	205	341	269	725	2,128	1,137	380	199	136	132
Ac-ft	8,440	8,350	12,630	20,990	15,480	44,560	126,600	69,920	22,630	12,250	8,360	7,830

Calendar year 1955: Max 984 Min 78 Mean 275 Ac-ft 199,400
Water year 1955-56: Max 2,970 Min 81 Mean 493 Ac-ft 358,000

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 15-19, Dec. 15-19, Dec. 27 to Jan. 1, Jan. 24 to Feb. 3, Feb. 14-23, Mar. 6. Shifting-control method used Apr. 11-27.

Coeur d'Alene River above Shoshone Creek, near Prichard, Idaho

Location.--Lat 47°42', long 115°59', in NE¼SW¼ sec. 5, T. 50 N., R. 4 E., on left bank at Shoshone Creek ranger station, 0.2 mile downstream from Uranus Creek, 0.4 mile upstream from Shoshone Creek, and 3½ miles north of Prichard.

Drainage area.--335 sq mi.

Records available.--December 1950 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,485 ft (from river-profile map).

Average discharge.--5 years (1951-56), 790 cfs (571,900 acre-ft per year).

Extremes.--Maximum discharge during year, 7,110 cfs Apr. 22 (gage height, 6.52 ft); minimum, 88 cfs Mar. 11 (gage height, 0.92 ft), result of freezeup, but may have been less during period of ice effect.
1950-56: Maximum discharge, 9,610 cfs Feb. 11, 1951 (gage height, 7.17 ft), from rating curve extended above 5,500 cfs by logarithmic plotting; minimum, 34 cfs Dec. 26, 1952.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 23 to June 1)

0.9	76	3.0	1,400
1.1	126	4.0	2,670
1.3	193	5.0	4,290
1.6	331	6.4	7,040
2.0	576		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	583	*576	1,300	270	260	1,410	2,960	1,430	326	148	129
2	110	504	530	1,150	290	270	1,340	2,720	1,270	316	154	121
3	104	543	485	1,020	310	270	1,300	2,540	1,100	370	164	118
4	112	1,260	447	1,090	350	260	1,330	2,460	1,090	359	171	115
5	218	2,640	417	1,200	370	250	1,310	2,450	1,000	316	161	115
6	205	1,800	420	1,070	370	240	1,240	2,520	898	353	151	112
7	151	1,260	410	1,010	360	240	1,290	3,050	829	311	145	110
8	142	1,000	359	953	330	240	1,230	4,150	739	280	138	110
9	544	875	376	852	310	240	*1,150	4,940	717	266	135	107
10	1,180	929	337	799	300	230	1,640	4,560	695	262	132	104
11	1,120	1,010	399	747	300	180	2,740	4,650	667	262	129	104
12	754	977	3,110	710	320	190	3,340	3,760	610	257	123	102
13	550	883	3,340	688	310	230	3,760	2,860	569	243	121	99
14	441	859	2,140	*652	270	220	4,420	2,480	543	266	118	94
15	370	659	1,780	645	260	220	5,250	2,600	667	243	118	94
16	316	617	1,520	638	250	230	5,720	3,450	688	226	121	92
17	280	659	1,300	590	290	240	4,790	4,420	*652	214	118	92
18	252	688	1,110	550	320	260	4,650	4,790	610	*205	115	92
19	248	799	1,050	530	290	310	4,920	4,890	583	197	115	92
20	230	703	1,200	510	270	410	5,420	4,790	563	193	115	94
21	214	583	2,030	497	270	520	6,220	4,490	517	189	112	107
22	201	523	4,540	497	*270	695	6,890	3,590	491	182	*112	110
23	186	497	5,540	497	270	1,130	6,830	3,110	460	171	110	102
24	189	517	3,530	466	260	1,460	6,470	*3,050	447	168	112	97
25	243	645	2,440	405	260	1,620	*5,960	2,670	417	161	123	97
26	275	977	2,040	353	250	2,350	4,980	2,270	399	157	154	94
27	300	867	2,120	410	250	1,980	4,490	2,210	376	154	161	94
28	*321	747	2,040	420	250	1,540	4,190	1,930	353	151	145	99
29	381	667	1,800	380	250	1,350	3,760	1,760	331	151	157	104
30	610	617	1,590	350	------	1,330	3,290	1,660	331	148	189	129
31	667	-----	1,400	270	------	1,480	------	1,530	------	145	145	------
Total	11,032	25,888	50,376	21,249	8,470	20,445	111,330	99,310	20,042	7,242	4,212	3,129
Mean	356	863	1,625	685	292	660	3,711	3,204	668	234	136	104
Cfsm	1.06	2.58	4.85	2.04	0.872	1.97	11.1	9.56	1.99	0.699	0.406	0.310
In.	1.22	2.87	5.59	2.36	0.94	2.27	12.36	11.02	2.22	0.80	0.47	0.35
Ac-ft	21,880	51,350	99,920	42,150	16,800	40,550	220,800	197,000	39,750	14,360	8,350	6,210

Calendar year 1955: Max 5,540 Min 90 Mean 813 Cfsm 2.43 In. 32.94 Ac-ft 588,700
Water year 1955-56: Max 6,890 Min 92 Mean 1,046 Cfsm 3.12 In. 42.47 Ac-ft 759,100

Peak discharge (base, 3,600 cfs).--Dec. 12 (10:30 p.m.) 4,540 cfs (5.16 ft); Dec. 23 (2:30 a.m.) 6,280 cfs (6.03 ft); Apr. 22 (1 p.m.) 7,110 cfs (6.52 ft); May 9 (1 p.m.) 5,120 cfs (5.57 ft); May 19 (11 a.m.) 5,040 cfs (5.53 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 6, 7, 19, 20, Dec. 31 to Jan. 2, Jan. 27 to Mar. 21.

Coeur d'Alene River at Enaville, Idaho

Location.--Lat 47°34', long 116°15', in NW¼ sec. 30, T. 49 N., R. 2 E., on right bank 800 ft upstream from highway bridge, a quarter of a mile northwest of Enaville Post Office, 1.1 miles upstream from South Fork, and 3.5 miles downstream from North Fork.

Drainage area.--895 sq mi.

Records available.--March 1911 to April 1913 (fragmentary), October 1939 to September 1956. Published as North Fork of Coeur d'Alene River at Enaville 1911-13.

Gage.--Water-stage recorder. Datum of gage is 2,100.00 ft above mean sea level, referenced to benchmark near mouth of North Fork, elevation, 2,204.880 ft (Geological Survey Bull. 567, p. 82). Mar. 3, 1911, to Apr. 12, 1913, staff gage at site a quarter of a mile downstream at different datum. Oct. 18 to Dec. 22, 1939, staff gage at present site and datum.

Average discharge.--17 years (1939-56), 1,930 cfs (1,397,000 acre-ft per year).

Extremes.--Maximum discharge during year, 19,100 cfs Apr. 22 (gage height, 72.62 ft); minimum, 244 cfs Sept. 20; minimum gage height, 60.97 ft Sept. 19, 20.
1911-13, 1939-56: Maximum discharge, 28,100 cfs Dec. 15, 1946, from rating curve extended above 13,000 cfs by logarithmic plotting; maximum gage height, 74.93 ft Feb. 11, 1951; minimum discharge, 104 cfs Dec. 26, 1952 (gage height, 60.10 ft).
From local information concerning high-water marks, flood in December 1933 reached a stage of 79.47 ft and that in April 1938 a stage of 78.16 ft.

Remarks.--Records good except those for periods of backwater from logging operations and periods of ice effect, which are fair. No appreciable regulation or diversion above station.

Revisions (water years).--WSP 1396: 1945.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	370	1,560	*1,870	3,230	b900	840	4,370	7,420	4,130	1,100	542	353
2	323	1,370	1,710	2,920	b950	854	4,010	6,720	3,690	1,080	548	328
3	295	1,360	1,570	2,660	b1,000	896	3,760	6,240	3,220	1,250	554	314
4	315	1,860	1,450	2,840	b1,150	868	3,720	6,050	3,050	1,200	548	310
5	550	5,250	1,380	3,550	b1,250	826	3,750	6,100	2,800	1,080	530	304
6	628	4,270	1,360	3,320	b1,250	778	3,550	6,120	2,470	1,060	502	296
7	518	3,040	1,320	3,100	1,200	778	3,590	7,060	2,260	1,060	480	287
8	510	2,440	1,220	2,900	1,120	771	3,470	9,500	2,030	966	462	287
9	975	2,180	1,190	2,600	1,050	*791	*3,310	12,000	1,930	917	450	287
10	2,590	2,340	1,130	2,380	1,010	771	4,140	11,600	1,940	889	438	282
11	2,860	2,630	1,240	2,220	1,000	698	6,680	11,700	1,920	868	426	282
12	1,930	2,580	6,520	2,080	1,060	672	8,340	9,880	1,820	861	410	278
13	1,440	2,250	8,510	2,040	1,030	764	9,460	7,530	1,720	819	398	272
14	1,160	2,110	5,380	1,950	903	737	11,300	6,360	1,640	847	383	266
15	1,000	1,740	3,920	*1,890	b850	718	13,500	6,240	1,900	826	378	260
16	868	b1,600	3,420	1,890	b850	744	14,900	7,810	*2,080	757	363	253
17	785	b1,700	2,890	1,830	1,040	771	13,200	10,100	2,040	757	354	255
18	718	1,820	2,400	1,710	1,050	847	11,900	11,400	1,900	724	348	250
19	730	1,950	2,310	1,640	987	1,010	12,500	11,800	1,820	*692	338	250
20	711	1,960	2,540	1,580	924	1,280	13,800	11,700	1,790	672	338	250
21	659	1,770	3,870	1,560	917	1,490	16,000	11,000	1,680	659	332	272
22	622	1,650	11,900	1,560	*931	1,930	18,400	9,000	1,580	647	*321	282
23	591	1,570	15,700	1,600	910	3,020	18,400	7,850	1,510	634	310	274
24	572	1,570	10,200	1,560	882	3,900	16,500	7,660	1,450	628	310	260
25	647	2,000	6,790	1,480	847	4,580	*14,800	*6,900	1,380	603	338	255
26	737	3,550	5,350	1,320	819	6,660	12,400	5,900	1,330	591	410	255
27	812	3,360	5,170	1,420	812	6,290	11,200	5,780	1,290	585	430	255
28	*875	2,670	5,030	1,410	798	4,760	10,500	5,110	1,230	564	383	272
29	1,000	2,250	4,500	1,310	826	4,100	9,640	4,700	1,180	548	432	296
30	1,510	2,020	3,920	b1,100	------	3,930	8,450	4,460	1,150	542	472	333
31	1,750	-----	3,500	b900	-----	4,440	-----	4,270	------	532	376	------
Total	29,051	68,420	129,260	63,550	28,316	61,514	289,540	245,960	59,930	24,958	12,904	8,418
Mean	937	2,281	4,170	2,050	976	1,984	9,651	7,934	1,998	805	416	281
Cfsm	1.05	2.55	4.66	2.29	1.09	2.22	10.8	8.86	2.23	0.899	0.465	0.314
In.	1.21	2.84	5.37	2.64	1.18	2.56	12.03	10.22	2.49	1.04	0.54	0.35
Ac-ft	57,620	135,700	256,400	126,000	56,160	122,000	574,300	487,900	118,900	49,500	25,590	16,700

Calendar year 1955: Max 15,700 Min 240 Mean 2,174 Cfsm 2.43 In. 32.98 Ac-ft 1,574,000
Water year 1955-56: Max 18,400 Min 250 Mean 2,792 Cfsm 3.12 In. 42.47 Ac-ft 2,027,000

Peak discharge (base, 8,000 cfs).--Dec. 12 (12 p.m.) 10,300 cfs (68.79 ft); Dec. 23 (8:30 a.m.) 16,700 cfs (71.72 ft); Apr. 22 (9 p.m.) 19,100 cfs (72.62 ft); May 9 (5 p.m.) 12,500 cfs (69.72 ft); May 19 (1 p.m.) 12,000 cfs (69.48 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from logging operations Oct. 1-12, July 10 to Sept. 30.

Coeur d'Alene River near Cataldo, Idaho

Location.--Lat 47°34', long 116°18', in sec. 26, T. 49 N., R. 1 E., on left bank 1½ miles upstream from Cataldo and 3 miles downstream from South Fork.

Drainage area.--1,220 sq mi, approximately.

Records available.--April 1911 to December 1912, July 1920 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,100 ft above mean sea level, referenced to benchmark "2143 S" (Geological Survey Bull. 567, p. 82). Datum of 1929, supplementary adjustment of 1947, is 2.84 ft higher. Apr. 25, 1911, to Dec. 31, 1912, staff gage at site 300 ft downstream at different datum. July 29, 1920, to Oct. 10, 1925, staff gage at present site and datum.

Average discharge.--37 years, 2,491 cfs (1,803,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,200 cfs Dec. 23 (gage height, 49.06 ft); minimum daily, 376 cfs Sept. 18-20; minimum gage height, 38.55 ft Sept. 28.
1911-12, 1920-56: Maximum discharge, 55,300 cfs Dec. 22 or 23, 1933 (gage height, 56.9 ft, from floodmark), from rating curve extended above 24,000 cfs by logarithmic plotting; minimum, 122 cfs Dec. 4, 1929; minimum gage height, 37.03 ft Sept. 6, 1931.

Remarks.--Records good except those for periods of ice effect or backwater from logs, which are fair. No appreciable regulation or diversion above station. Records of chemical analyses and water temperatures for the water year 1956 are given in WSP 1453.

Cooperation.--Water-stage recorder graph furnished by Washington Water Power Co.

Revisions (water years).--WSP 1396: 1945.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	595	2,140	2,470	4,110	b1,100	1,080	5,690	9,630	6,410	1,610	700	542
2	506	1,840	2,270	3,740	b1,200	b1,100	5,250	8,780	5,790	1,550	732	500
3	452	1,830	2,050	3,430	b1,300	b1,150	4,980	8,170	5,080	1,850	764	482
4	458	2,810	1,860	3,890	b1,500	b1,100	5,010	7,860	4,810	1,790	756	470
5	704	6,110	1,740	4,870	b1,600	b1,050	5,050	7,810	4,380	1,610	724	464
6	732	5,210	1,740	4,410	b1,600	1,020	4,720	7,770	3,880	1,590	672	452
7	630	4,000	1,690	4,140	b1,500	1,000	4,850	8,850	3,530	1,520	658	440
8	554	3,280	1,530	3,900	1,370	1,000	*4,650	11,900	3,210	1,400	637	440
9	1,420	2,910	1,490	3,500	1,260	*1,010	4,440	15,200	3,090	1,300	623	435
10	4,040	3,150	1,390	3,220	1,210	949	5,530	14,800	3,180	1,270	609	430
11	4,150	3,530	1,620	2,980	1,230	868	8,750	14,700	3,140	1,270	595	430
12	2,750	3,410	8,360	2,820	1,320	804	11,000	12,600	2,910	1,250	581	420
13	2,050	b2,950	10,300	2,750	1,270	932	12,300	9,660	2,650	1,160	574	415
14	1,660	2,760	6,610	2,640	1,130	876	14,300	8,170	2,510	1,120	554	410
15	1,410	b2,100	5,010	*2,550	b1,100	860	17,300	8,130	2,870	1,100	548	400
16	1,210	b2,200	4,350	2,550	b1,050	916	19,200	10,100	3,010	1,020	548	390
17	1,070	b2,400	3,720	2,450	b1,300	1,050	17,000	13,100	*2,870	958	530	381
18	949	b2,600	3,180	2,260	b1,300	1,260	15,300	15,000	2,670	*949	512	376
19	958	b2,600	3,090	2,140	b1,250	1,650	16,000	15,700	2,570	908	500	376
20	916	b2,600	3,660	2,080	b1,200	2,150	17,800	15,800	2,530	892	506	376
21	820	2,400	5,790	2,040	1,170	2,460	20,400	15,100	2,400	932	506	410
22	772	2,190	17,300	2,060	1,230	3,460	23,000	12,600	2,290	884	500	430
23	693	2,050	22,400	2,140	*1,160	4,850	23,000	11,000	2,180	844	*482	415
24	679	2,060	13,800	2,120	1,130	5,890	21,100	10,800	2,100	836	506	400
25	748	2,780	8,880	1,970	1,060	6,560	*18,900	*9,760	2,020	836	530	390
26	892	4,720	7,070	1,730	1,040	9,220	16,000	8,460	1,960	796	693	400
27	1,010	4,470	7,130	1,860	1,030	8,290	14,400	8,290	1,850	772	708	400
28	*1,120	3,580	6,630	1,840	976	6,250	13,700	7,330	1,790	756	630	420
29	1,290	3,010	5,770	1,680	1,040	5,410	12,500	6,980	1,690	740	616	452
30	2,020	*2,690	4,980	1,580	------	5,270	10,900	6,650	1,660	708	658	512
31	2,370	------	4,440	b1,200	------	5,830	------	6,560	------	700	630	------
Total	39,628	90,180	172,320	84,650	35,626	85,315	373,020	327,260	91,030	34,921	18,782	12,858
Mean	1,278	3,006	5,559	2,731	1,228	2,752	12,430	10,560	3,034	1,126	606	429
Cfsm	1.05	2.46	4.56	2.24	1.01	2.26	10.2	8.66	2.49	0.923	0.497	0.352
In.	1.21	2.75	5.25	2.58	1.09	2.60	11.37	9.98	2.77	1.06	0.57	0.39
Ac-ft	78,600	178,900	341,800	167,900	70,660	169,200	739,900	649,100	180,600	69,260	37,250	25,500

Calendar year 1955: Max 22,400 Min 395 Mean 2,852 Cfsm 2.34 In. 31.74 Ac-ft 2,065,000
Water year 1955-56: Max 23,000 Min 376 Mean 3,731 Cfsm 3.06 In. 41.62 Ac-ft 2,709,000

Peak discharge (base, 11,100 cfs).--Dec. 12 (11 p.m.) 12,100 cfs (45.54 ft); Dec. 23 (2:30 a.m.) 24,200 cfs (49.06 ft); Apr. 22 (12 p.m.) 23,900 cfs (48.96 ft); May 9 (5 p.m.) 15,900 cfs (46.77 ft); May 20 (11:30 a.m.) 16,000 cfs (46.80 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from logs Oct. 1-12, June 26 to July 4, Aug. 7 to Sept. 30.

St. Joe River at Calder, Idaho

Location.--Lat 47°16', long 116°11', in sec. 3, T. 45 N., R. 2 E., on right bank 150 ft southwest of Chicago, Milwaukee, St. Paul & Pacific Railway station at Calder.
Drainage area.--1,030 sq mi, approximately.
Records available.--April 1911 to September 1912 (published as "near Calder"), July 1920 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,096.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947, or 2,100 ft above mean sea level, datum of Geological Survey as given in Bulletin 567. Apr. 14, 1911, to Sept. 30, 1912, staff gage at site 2½ miles downstream at different datum. July 13 to Dec. 21, 1920, staff gage at present site and datum.
Average discharge.--37 years (1911-12, 1920-56), 2,319 cfs (1,679,000 acre-ft per year).
Extremes.--Maximum discharge during year, 20,600 cfs May 21 (gage height, 88.66 ft); minimum daily, 398 cfs Sept. 26; minimum gage height, 79.53 ft Sept. 18.
1911-12, 1920-56: Maximum discharge, 53,000 cfs Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 93.1 ft Apr. 18, 1938, from floodmark; minimum discharge, 91 cfs Nov. 27, 1952; minimum gage height, 78.43 ft Dec. 5, 1928.
Remarks.--Records good except those for periods of ice effect and those for Oct. 1 to Nov. 2, July 17 to Sept. 30, which are fair. No diversion above gage.
Cooperation.--Water-stage-recorder graph furnished by Washington Water Power Co.
Revisions.-- WSP 1182: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Oct. 1, 8, 9, Oct. 19 to Nov. 2, Mar. 21 to Apr. 9, May 22-24, July 17 to Sept. 30)

79.6	380	83.0	4,070
80.0	575	85.0	7,730
80.5	925	86.0	10,200
81.0	1,380	87.0	13,200
82.0	2,580	88.8	20,900

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	531	1,130	1,530	3,000	800	950	3,020	8,340	13,100	2,440	877	605
2	505	976	1,440	2,850	750	1,100	2,860	7,950	11,600	2,320	877	575
3	505	942	1,360	2,710	1,000	1,200	2,850	7,750	10,200	2,800	869	558
4	520	1,380	1,270	2,820	1,200	1,100	2,970	7,770	9,340	2,520	885	553
5	893	3,180	1,170	2,820	1,300	1,000	3,080	7,470	8,340	2,210	822	542
6	770	2,350	1,210	2,520	1,300	950	3,000	7,730	7,050	2,080	785	575
7	587	1,860	1,200	2,470	1,250	900	3,480	9,290	6,160	1,980	756	480
8	553	1,620	1,080	2,400	1,200	950	3,120	13,900	5,710	1,870	728	470
9	1,570	1,600	1,100	2,180	1,100	900	3,080	16,500	5,850	1,810	728	448
10	2,510	3,890	1,050	2,090	1,050	*810	4,390	15,900	6,230	1,780	707	443
11	1,990	3,750	1,250	2,030	1,050	800	7,070	14,800	6,140	2,010	700	438
12	1,320	2,860	3,990	1,910	1,200	800	8,360	12,100	5,420	1,790	680	461
13	1,140	2,050	3,440	*1,940	1,100	820	9,440	9,990	4,940	1,640	648	456
14	1,030	1,850	2,580	1,860	1,050	820	11,100	9,020	4,720	1,580	648	443
15	934	1,400	2,200	1,870	950	780	12,900	9,600	5,130	1,440	648	434
16	853	1,200	2,000	1,940	800	780	13,500	12,000	5,180	1,380	611	434
17	800	1,300	1,900	1,870	850	850	11,300	15,200	4,700	*1,340	605	430
18	756	1,500	1,750	1,730	900	1,000	11,300	17,700	*4,360	1,230	587	425
19	742	1,600	1,850	1,690	900	1,200	12,400	19,000	4,210	1,210	581	425
20	707	2,000	2,440	1,630	900	1,450	14,300	20,000	4,210	1,160	570	407
21	642	1,930	4,150	1,600	900	1,630	16,200	19,800	3,930	1,150	*548	448
22	635	1,730	15,100	1,610	1,000	2,360	17,700	18,300	3,630	1,110	564	485
23	635	1,580	15,100	1,640	1,050	3,260	17,400	*17,300	3,460	1,060	564	443
24	605	1,570	8,360	1,580	1,000	3,560	*16,700	17,700	3,270	1,030	570	416
25	605	1,740	5,900	1,460	950	3,890	14,200	15,700	3,090	984	599	407
26	668	2,470	5,080	1,260	930	4,870	12,700	14,300	2,930	959	845	398
27	*735	2,310	5,140	1,200	900	3,930	12,400	13,900	2,800	942	1,060	402
28	845	1,920	4,570	1,350	900	3,120	11,900	12,300	2,750	925	861	505
29	1,060	1,730	4,050	1,380	900	*2,870	10,500	12,400	2,690	909	721	536
30	1,460	*1,600	3,500	1,150	-------	2,960	9,160	12,100	2,570	893	830	770
31	1,380	-------	3,150	925	-------	3,220	-------	12,400	-------	877	648	-------
Total	28,486	57,018	109,910	59,485	29,180	54,830	282,380	408,210	163,710	47,429	22,122	14,412
Mean	919	1,901	3,545	1,919	1,006	1,769	9,413	13,170	5,457	1,530	714	480
Cfsm	0.892	1.85	3.44	1.86	0.977	1.72	9.14	12.8	5.30	1.49	0.693	0.466
In.	1.03	2.06	3.97	2.15	1.05	1.98	10.20	14.74	5.91	1.71	0.80	0.52
Ac-ft	56,500	113,100	218,000	118,000	57,880	108,800	560,100	809,700	324,700	94,070	43,880	28,590

Calendar year 1955: Max 17,500 Min 390 Mean 2,597 Cfsm 2.52 In. 34.24 Ac-ft 1,880,000
Water year 1955-56: Max 20,000 Min 398 Mean 3,490 Cfsm 3.39 In. 46.12 Ac-ft 2,533,000

Peak discharge (base, 8,500 cfs).--Dec. 22 (10 p.m.) 19,900 cfs (88.60 ft); Apr. 22 (5 to 7 a.m.) 18,100 cfs (88.21 ft); May 9 (5:30 to 8:30 a.m.) 17,000 cfs (87.91 ft); May 21 (6 a.m.) 20,600 cfs (88.66 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13-20, Dec. 15-19, Dec. 30 to Jan. 2, Jan. 27, 28, Feb. 1 to Mar. 20.

St. Maries River at Lotus, Idaho

Location.--Lat 47°14'40", long 116°37'30", in sec. 17, T. 45 N., R. 2 W., on left bank 1 mile northwest of Lotus, 1 mile downstream from Carlton Creek, and 5½ miles southwest of St. Maries.
Drainage area.--437 sq mi.
Records available.--July 1911 to October 1912, July 1920 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,140.19 ft above mean sea level, referenced to benchmark "U.S.G.S. 2155 1911 35" (Geological Survey Bull. 567, p. 45). Datum of 1929, supplementary adjustment of 1947, is 3.17 ft higher. Prior to Oct. 1, 1945, staff gages at sites 0.8 to 1.3 miles upstream at different datums. Oct. 1, 1945, to Feb. 21, 1949, staff gage at present site and datum.
Average discharge.--36 years (1920-56), 513 cfs (371,400 acre-ft per year).
Extremes.--Maximum discharge during year, 8,500 cfs Dec. 22, computed on basis of unit runoff from nearby streams; maximum gage height, 9.8 ft about Nov. 16 (ice jam); minimum discharge, 64 cfs Sept. 18 (gage height, 1.20 ft).
1911-12, 1920-56: Maximum discharge observed, 23,800 cfs Dec. 22, 23, 1933, from rating curve extended above 4,000 cfs by logarithmic plotting; maximum gage height, 13.4 ft probably Feb. 9, 1951, from floodmark (ice jam); minimum discharge, 11 cfs Nov. 23, 1952 (gage height, 0.98 ft).
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.
Cooperation.--Water-stage-recorder graph and one discharge measurement furnished by Washington Water Power Co.
Revisions (water years).--WSP 1062: Drainage area. WSP 1346: 1912.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 21				Dec. 22 to Sept. 30			
1.2	61	3.0	1,060	1.2	64	3.0	1,070
1.4	107	4.0	2,240	1.4	112	4.0	2,060
1.7	205	4.5	2,930	1.7	222	5.0	3,340
2.0	350	5.3	4,280	2.0	380	6.0	5,110
2.5	655			2.5	710		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	275	551	800	350	500	2,080	1,540	745	222	96	91
2	80	214	513	650	300	600	1,830	1,400	710	214	99	86
3	72	197	441	550	380	800	1,720	1,330	640	265	102	82
4	74	325	383	900	550	700	1,870	1,410	710	286	104	79
5	110	782	300	*1,210	520	550	2,000	1,790	689	232	99	77
6	154	441	375	950	480	500	1,730	1,630	605	218	94	77
7	100	383	340	878	440	500	1,860	1,660	564	205	89	75
8	87	330	240	892	400	500	1,920	3,560	492	188	89	75
9	323	315	280	766	390	450	1,870	4,430	446	184	86	75
10	880	592	260	703	390	430	2,500	3,300	410	176	84	75
11	755	603	479	*633	410	400	3,580	3,100	380	180	82	73
12	340	440	3,460	598	450	400	4,090	2,480	369	201	79	71
13	241	260	2,000	605	480	400	4,120	2,020	340	173	79	71
14	182	240	1,000	591	430	400	4,430	1,640	323	165	77	71
15	151	220	800	598	350	400	4,840	1,470	453	162	75	68
16	135	200	600	899	300	430	5,070	1,440	808	154	77	66
17	124	250	500	1,190	320	550	4,420	1,530	*717	*143	77	66
18	115	380	450	988	340	650	3,580	1,610	538	137	75	64
19	118	500	600	857	400	750	3,440	1,630	472	131	73	66
20	118	600	1,500	780	420	950	3,780	1,610	512	128	71	66
21	115	550	4,000	724	420	1,200	4,270	1,480	446	128	*71	68
22	110	500	7,000	745	480	1,500	4,600	1,320	392	124	71	75
23	104	420	5,000	892	480	1,800	4,430	1,200	357	118	71	73
24	100	360	3,000	857	470	2,000	*3,700	1,420	334	112	71	71
25	100	700	2,000	752	450	2,300	3,030	1,210	312	112	75	68
26	110	1,600	*1,490	544	440	2,500	2,600	1,170	286	107	121	66
27	*148	1,300	2,040	668	430	2,300	2,430	1,420	275	104	180	68
28	164	898	1,400	550	420	1,800	2,280	1,120	251	102	162	79
29	232	*697	1,000	560	420	*1,900	2,000	980	236	102	118	86
30	465	577	650	500	------	2,180	1,760	871	227	99	124	104
31	400	-----	750	450	-----	2,430	-----	794	------	99	112	------
Total	6,287	15,129	43,402	23,280	12,110	32,770	91,830	53,565	14,039	4,971	2,883	2,232
Mean	203	504	1,400	751	418	1,057	3,061	1,728	468	160	93.0	74.4
Cfsm	0.465	1.15	3.20	1.72	0.957	2.42	7.00	3.95	1.07	0.366	0.213	0.170
In.	0.54	1.29	3.69	1.98	1.03	2.79	7.82	4.56	1.19	0.42	0.25	0.19
Ac-ft	12,470	30,010	86,090	46,180	24,020	65,000	182,100	106,200	27,850	9,860	5,720	4,430

Calendar year 1955: Max 7,000 Min 61 Mean 563 Cfsm 1.29 In. 17.49 Ac-ft 407,600
Water year 1955-56: Max 7,000 Min 64 Mean 826 Cfsm 1.89 In. 25.75 Ac-ft 599,900

Peak discharge (base, 2,200 cfs).--Dec. 12 (10:30 a.m.) 4,340 cfs (5.34 ft); Dec. 22 (time unknown) about 8,500 cfs; Dec. 27 (4:30 a.m.) 2,240 cfs (4.15 ft); Mar. 26 (time and discharge unknown); Mar. 31 (4 a.m.) 2,550 cfs (4.41 ft); Apr. 16 (1 p.m.) 5,200 cfs (6.04 ft); Apr. 22 (2 p.m.) 4,760 cfs (5.83 ft); May 9 (5 a.m.) 5,070 cfs (5.98 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 12-20, Dec. 5-10, Dec. 28 to about Jan. 3, Jan. 29 to about Mar. 24. No gage-height record Nov. 15-27, Dec. 13-25, Jan. 2-4, Feb. 1-7, 17-20, Mar. 11-18, 22-28; discharge estimated on basis of weather records and records for Potlatch Creek at Kendrick, St. Joe River at Calder, and other nearby streams.

Coeur d'Alene Lake at Coeur d'Alene, Idaho

Location.--Lat 47°40', long 116°46', in sec. 24, T. 50 N., R. 4 W., 500 ft southwest of south end of Eleventh Street, Coeur d'Alene.

Drainage area.--3,700 sq mi, approximately.

Records available.--April 1903 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,100.00 ft above mean sea level, referred to originally accepted elevation (2,157.40 ft) of Geological Survey benchmark in southeast corner of Merriam Building (see WSP 882). Gage heights reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 3.00 ft higher. Apr. 26, 1903, to Feb. 14, 1905, staff gage at mouth of St. Joe River at datum about 18.7 ft higher. Feb. 15, 1905, to Mar. 23, 1921, staff gage and Mar. 24, 1921, to Dec. 22, 1930, water-stage recorder, at Johnson Wharf 800 ft southeast of railroad station and 1 mile northwest of present site at datum 19.75 ft higher. Dec. 23, 1930, to Feb. 9, 1931, staff gage at present site and datum.

Extremes.--Maximum contents during year, 636,900 acre-ft Apr. 26 (elevation, 2,135.50 ft); minimum, 85,800 acre-ft Mar. 18 (elevation, 2,123.19 ft).
1903-56: Maximum contents, 834,900 acre-ft Dec. 25, 1933 (elevation, 2,139.05 ft); minimum, 2,700 acre-ft below zero of contents table Oct. 10-12, 1904, Sept. 24, 25, 1905, Oct. 14 to Nov. 3, 1906 (elevation, 2,119.9 ft).
Maximum contents known prior to 1903, 753,300 acre-ft May 31, 1894 (elevation, 2,137.6 ft, from high-water marks).

Remarks.--The Washington Water Power Co. stores water in Coeur d'Alene Lake by regulation at Post Falls Dam for power generation at Post Falls and other plants on Spokane River. Storage is within natural range of lake stage. Contents given herein are those above elevation 2,120.0 ft. Capacity of lake between elevations 2,120 and 2,140 ft, 889,000 acre-ft.

Cooperation.--Water-stage-recorder graph furnished by Washington Water Power Co.

Revisions.--WSP 1182: Drainage area.

Capacity table, water year 1955-56 (elevation, in feet, and contents, in acre-feet)

2,123.0	80,700	2,131.0	392,500
2,125.0	135,200	2,133.0	500,000
2,127.0	195,300	2,135.0	609,300
2,129.0	288,100	2,137.0	719,800

Elevation, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27.48	26.97	27.85	29.91	26.84	24.28	28.41	34.14	32.38	27.37	27.96	27.90
2	27.44	26.99	27.83	29.51	26.71	24.27	28.41	33.72	32.13	27.49	27.95	27.90
3	27.40	26.94	27.78	29.17	26.58	24.26	28.34	33.30	31.89	27.61	27.96	27.89
4	27.36	26.93	27.73	28.95	26.50	24.24	28.29	32.95	31.61	27.74	27.96	27.90
5	27.31	27.18	27.67	28.73	26.42	24.20	28.23	32.60	31.24	27.80	27.98	27.90
6	27.27	27.38	27.62	28.50	26.35	24.12	28.15	32.30	30.88	27.81	27.99	27.90
7	27.23	27.50	27.52	28.28	26.26	24.07	28.15	32.07	30.48	27.82	27.99	27.93
8	27.22	27.58	27.45	28.09	26.13	23.97	28.10	32.07	30.08	27.90	27.99	27.98
9	27.41	27.63	27.33	27.87	26.03	23.89	28.02	32.39	29.68	27.91	27.99	27.97
10	27.69	27.80	27.24	27.70	25.96	23.80	28.03	32.85	29.36	27.93	27.98	27.93
11	27.80	27.90	27.48	27.49	25.89	23.70	28.36	33.19	29.08	27.94	27.97	27.91
12	27.83	28.02	28.01	27.32	25.82	23.59	28.86	33.38	28.79	27.94	27.98	27.89
13	27.85	28.01	28.19	27.30	25.77	23.52	29.39	33.32	28.47	27.92	27.98	27.85
14	27.84	27.94	28.11	27.22	25.69	23.42	30.00	33.09	28.18	27.99	27.97	27.81
15	27.82	27.86	27.91	27.19	25.58	23.32	30.68	32.79	28.04	28.02	27.95	27.76
16	27.78	27.73	27.82	27.26	25.43	23.24	31.50	32.59	27.89	27.98	27.94	27.71
17	27.71	27.62	27.84	27.30	25.32	23.20	32.18	32.59	27.71	27.98	27.92	27.67
18	27.67	27.64	27.83	27.31	25.22	23.21	32.58	32.78	27.50	27.97	27.91	27.64
19	27.61	27.61	27.90	27.29	25.11	23.33	32.89	33.13	27.30	27.98	27.93	27.62
20	27.52	27.63	27.84	27.27	25.08	23.55	33.23	33.53	27.11	28.00	27.93	27.60
21	27.43	27.61	28.02	27.31	25.02	23.91	33.71	33.90	26.90	28.00	27.92	27.55
22	27.34	27.55	29.04	27.38	24.92	24.48	34.31	34.14	26.68	27.97	27.91	27.50
23	27.26	27.53	30.53	27.48	24.87	25.18	34.91	34.24	26.47	27.97	27.92	27.46
24	27.19	27.52	31.54	27.51	24.80	25.81	35.29	34.20	26.50	27.98	27.91	27.43
25	27.11	27.66	31.81	27.42	24.69	26.50	35.46	34.13	26.56	27.97	27.93	27.39
26	27.02	27.81	31.80	27.32	24.60	27.29	35.48	33.98	26.67	27.94	27.97	27.34
27	26.97	27.82	31.64	27.29	24.52	27.80	35.33	33.77	26.77	27.94	27.90	27.33
28	26.90	27.78	31.43	27.24	24.44	28.01	35.16	33.49	26.93	27.98	27.91	27.30
29	26.90	27.77	31.11	27.20	24.38	28.13	34.90	33.20	27.07	28.01	27.94	27.30
30	26.91	27.85	30.72	27.12	-------	28.26	34.57	32.88	27.22	28.00	27.93	27.28
31	26.92	-------	30.32	26.99	-------	28.37	-------	32.61	-------	27.99	27.91	-------
(†)	192,300	231,400	356,500	194,900	118,300	256,400	585,600	478,900	203,700	238,000	234,200	206,100
(‡)	-23,100	+39,100	+125,100	-161,600	-76,600	+138,100	+329,200	-106,700	-275,200	+34,300	-3,800	-28,100

Calendar year 1955..... ‡ +296,300
Water year 1955-56..... ‡ -9,300

† Contents, in acre-feet, at end of month.
‡ Change in contents in acre-feet.
Note.--Add 2,100 ft to obtain elevation above mean sea level.

Hayden Lake at Hayden Lake, Idaho

Location.--Lat 47°46', long 116°45', in sec. 18, T. 51 N., R. 3 W., at Avondale and Hayden Lake pumping plants, a quarter of a mile north of Bozanta Tavern at Hayden Lake.

Records available.--May 1920 to September 1956.

Gage.--Staff gage read once daily. Datum of gage is 2,200.21 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1925, at datum 30.35 ft higher. Oct. 1, 1925, to Mar. 26, 1931, at datum 21.60 ft higher.

Extremes.--Maximum gage height observed during year, 42.46 ft Apr. 22; minimum observed, 34.39 ft Sept. 29.
1920-56: Maximum gage height observed, that of Apr. 22, 1956; minimum observed, 19.38 ft Dec. 16, 1931.

Remarks.--Water is pumped from lake for irrigation and domestic supply. Lake has no natural surface outlet, but, due to the permeability of the lakebed, a considerable part of the total inflow leaves the lake by infiltration to the ground water of Rothdrum Prairie. A dike at southwest corner of the lake failed Apr. 22 and flow through the breach, which seeped rapidly into the ground, was measured to be 105 cfs June 16 and was estimated at about 100 cfs on May 8, 19, and 27. Breach in the dike was closed June 28.

Revisions (water years).--WSP 962: 1921(M). WSP 1216: 1950.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35.52	35.50	35.93	38.22	39.35	39.30	40.54	41.30	38.90	37.28	36.28	35.30
2	35.50	35.50	35.93	38.37	39.35	39.30	40.58	41.16	38.84	37.26	36.22	35.27
3	35.48	35.52	35.94	38.30	39.35	39.33	40.60	41.04	48.76	37.26	36.18	35.23
4	35.46	35.54	35.94	38.42	39.34	39.30	40.64	40.92	38.72	37.62	36.14	35.19
5	35.48	35.54	35.94	38.46	39.37	39.29	40.64	40.82	38.66	37.24	36.12	35.16
6	35.48	35.54	35.94	38.48	39.37	39.30	40.66	40.70	38.58	37.23	36.10	35.12
7	35.46	35.54	35.95	38.56	39.37	39.28	40.66	40.60	38.50	37.20	36.04	35.08
8	35.46	35.54	35.95	38.62	39.36	39.29	40.72	40.50	38.44	37.17	36.02	35.05
9	35.56	35.54	35.98	38.66	39.36	39.27	40.72	40.44	38.38	37.15	36.00	35.02
10	35.66	35.54	35.98	38.70	39.35	39.27	40.74	40.40	38.30	37.12	35.96	34.98
11	35.66	35.56	36.02	38.74	39.36	39.25	40.76	40.34	38.24	37.08	35.92	34.95
12	35.64	35.56	36.10	38.77	39.37	39.24	40.88	40.26	38.16	37.06	35.88	34.92
13	35.62	35.56	36.36	38.82	39.34	39.24	41.00	40.22	38.10	37.02	35.84	34.88
14	35.62	35.54	36.42	38.85	39.33	39.23	41.16	40.14	38.02	37.00	35.80	34.84
15	35.62	35.52	36.48	38.89	39.34	39.22	41.38	30.06	38.02	36.98	35.78	34.80
16	35.60	35.52	36.52	38.94	39.30	39.20	41.60	39.97	38.04	36.92	35.72	34.75
17	35.58	35.54	36.56	39.02	39.31	39.19	41.78	39.90	37.98	36.88	35.68	34.72
18	35.56	35.58	36.56	39.04	39.30	39.18	41.90	39.82	37.93	36.85	35.64	34.70
19	35.56	35.62	36.60	39.08	39.28	39.18	42.00	39.75	37.88	36.82	35.60	34.66
20	35.54	35.62	36.70	39.10	39.28	39.20	42.10	39.70	37.84	36.77	35.56	34.63
21	35.52	35.64	36.74	39.12	39.30	39.25	42.26	39.62	37.80	36.74	35.52	34.60
22	35.50	35.64	36.94	39.16	39.28	39.32	42.44	39.56	37.72	36.70	35.48	34.57
23	35.48	35.64	37.24	39.20	39.28	39.45	42.32	39.48	37.66	36.66	35.46	34.55
24	35.48	35.66	37.38	39.23	39.28	39.60	42.23	39.46	37.60	36.62	35.42	34.52
25	35.48	35.70	37.55	39.24	39.28	39.76	42.13	39.38	37.52	36.58	35.39	34.50
26	35.48	35.80	37.66	39.26	39.26	40.00	41.98	39.30	37.46	36.52	35.58	34.47
27	35.50	35.82	37.82	39.30	39.29	40.20	41.84	39.26	37.44	36.48	35.42	34.44
28	35.50	35.84	37.95	39.32	39.29	40.30	41.70	39.20	37.38	36.44	35.38	34.41
29	35.52	35.86	38.04	39.33	39.32	40.36	41.58	39.14	37.34	36.38	35.37	34.39
30	35.52	35.88	38.12	39.34	------	40.40	41.46	39.06	37.30	36.36	35.36	34.40
31	35.50	------	38.18	39.35	------	40.48	------	38.98	------	36.32	35.33	------

Rathdrum Prairie Canal at Huetter, Idaho

Location.--Lat 47°43', long 116°52', in sec. 6, T. 50 N., R. 4 W., on left bank 450 ft downstream from outlet of discharge pipe, five-eighths of a mile north of pumping plant, and three-quarters of a mile northwest of Huetter.

Records available.--April 1946 to September 1956.

Gage.--Water-stage recorder.

Extremes.--1946-56: Maximum daily discharge, 66 cfs June 29 to July 2, 1947; no flow for long periods each year.

Remarks.--Records good. Canal carries water which is pumped from Spokane River in sec. 7, T. 50 N., R. 4 W., for irrigation of first unit of Rathdrum Prairie project.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0	0	50	55	56	47
2			(*)				0	0	52	54	56	47
3							0	a14	51	55	50	51
4							0	0	29	55	57	53
5							0	0	0	55	*58	53
6							0	0	0	55	56	52
7							0	a28	0	55	58	54
8							0	*24	19	55	58	53
9							0	27	40	55	58	52
10							0	30	46	57	58	52
11							0	30	47	57	57	52
12							0	30	47	57	56	52
13							0	29	48	44	56	52
14							0	28	34	44	56	52
15							0	28	0	58	56	49
16							0	27	*0	58	56	48
17							0	26	0	58	56	48
18							0	39	0	58	57	48
19							0	*46	.9	58	57	47
20							0	47	0	*57	57	47
21							0	49	0	57	53	39
22							0	50	0	57	57	12
23							0	55	0	56	*41	0
24							0	53	0	56	a43	0
25							0	50	32	56	*.2	0
26							0	50	50	56	23	0
27							0	*0	52	56	0	0
28							a11	28	53	56	.6	0
29	(*)						0	46	55	56	8.1	0
30					------		0	49	55	56	0	0
31		------			------		------	49	------	56	37	------
Total	0	0	0	0	0	0	11	932	760.9	1,718	1,391.9	1,060
Mean	0	0	0	0	0	0	0.37	30.1	25.4	55.4	44.9	35.3
Ac-ft	0	0	0	0	0	0	22	1,850	1,510	3,410	2,760	2,100

Calendar year 1955: Max 58 Min 0 Mean 15.0 Ac-ft 10,860
Water year 1955-56: Max 58 Min 0 Mean 16.0 Ac-ft 11,650

* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of records of pump operation and records for adjacent periods.

Spokane Valley Farms Co.'s canal at Post Falls, Idaho

Location.--Lat 47°43', long 116°57', in sec. 3, T. 50 N., R. 5 W., on left bank 300 ft downstream from headgate and half a mile northwest of Post Falls.

Records available.--May 1911 to September 1917, September 1919 to September 1956.

Gage.--Water-stage recorder. Prior to Apr. 22, 1938, staff gages at several sites within 1,000 ft of present site at various datums.

Extremes.--1911-17, 1919-56: Maximum daily discharge, 312 cfs May 22-24, 26, 28, 1956; no flow or small amount of leakage during non-irrigation seasons.

Remarks.--Records good except those below 5 cfs, which are poor. Canal diverts water for irrigation from Spokane River in SE¼ sec. 3, T. 50 N., R. 5 W.

Cooperation.--Water-stage recorder inspected by employee of Spokane Valley Farms Co. Three discharge measurements furnished by Washington Water Power Co.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3						0	108	296	281	260	228
2	3		(*)				0	108	301	280	257	227
3	3						0	156	300	279	259	219
4	2						0	173	299	277	259	g207
5	0						0	175	295	273	*259	g198
6	0						0	175	288	270	254	g198
7	0						0	178	287	258	251	g196
8	0						*0	*185	293	257	*250	g194
9	0						0	190	298	255	249	g184
10	0						0	191	296	255	248	g184
11	0						0	192	299	254	247	*182
12	0						0	190	305	260	246	180
13	0						0	190	299	264	249	180
14	0						0	189	309	264	251	180
15	0						0	216	308	264	253	179
16	0						0	243	*304	262	252	9
17	0			(*)			0	272	307	263	251	3
18	0						0	280	297	263	250	3
19	0						0	292	303	244	249	3
20	0						0	300	303	*221	249	3
21	0						0	303	301	257	248	3
22	0						0	312	291	256	248	1
23	0				(*)		34	312	285	254	246	0
24	0						54	312	259	255	*246	0
25	0						54	310	235	262	249	0
26	0						54	312	263	262	248	0
27	0						96	*309	289	257	238	0
28	0						106	312	287	257	233	0
29	*0						107	283	286	253	233	0
30	0						107	293	284	253	*234	0
31	0	------			------		------	289	------	263	231	------
Total	11	0	0	0	0	0	612	7,350	8,767	8,073	7,697	2,961
Mean	0.35	0	0	0	0	0	20.4	237	292	260	248	98.7
Ac-ft	22	0	0	0	0	0	1,210	14,580	17,390	16,010	15,270	5,870

Calendar year 1955: Max 300 Min 0 Mean 87.0 Ac-ft 62,950
Water year 1955-56: Max 312 Min 0 Mean 96.9 Ac-ft 70,350

* Discharge measurement or observation of no flow made on this day.
g Computed from twice-daily staff-gage readings.

Spokane River near Post Falls, Idaho

Location.--Lat 47°42'10", long 116°58'40", in SW¼SW¼ sec. 4, T. 50 N., R. 5 W., on right bank 1 mile downstream from powerplant of Washington Water Power Co., 1½ miles downstream from intake of Spokane Valley Farms Co.'s canal, and 1½ miles southwest of Post Falls.

Drainage area.--3,840 sq mi, approximately, of which about 122 sq mi in the vicinity of Hayden Lake is noncontributing to this station.

Records available.--January 1913 to September 1956. Prior to October 1949, published as "at Post Falls."

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, referenced to same datum as gage on Coeur d'Alene Lake at Coeur d'Alene (see p.). Datum of 1929, supplementary adjustment of 1947, is 3.00 ft higher. Jan. 1, 1913, to Nov. 21, 1920, staff gage and Sept. 16, 1934, to Nov. 15, 1949, water-stage recorder, at site 0.8 mile upstream. Nov. 22, 1920, to Sept. 15, 1934, water-stage recorder at site 0.6 mile upstream. All gages at present datum.

Average discharge.--River only, 43 years, 6,096 cfs (4,413,000 acre-ft per year); river, Spokane Valley Farms Co.'s canal, and Rathdrum Prairie Canal, 43 years, 6,203 cfs (4,491,000 acre-ft per year).

Extremes.--Maximum discharge during year, 38,600 cfs Apr. 27 (gage height, 73.85 ft); minimum, 133 cfs Sept. 7 (gage height, 55.19 ft); minimum daily, 139 cfs Sept. 6, 7.
1913-56: Maximum discharge, 50,100 cfs when recorder was not operating Dec. 25, 1933 (determined from unpublished records collected by Washington Water Power Co. for station at Liberty Bridge); minimum daily, 120 cfs Aug. 27, 28, Sept. 5, 9, 10, 1955.

Remarks.--Records excellent. Spokane Valley Farms Co.'s canal (see preceding page) and Rathdrum Prairie Canal (see p. 256) divert water above gage for irrigation. Figures of daily discharge do not include water diverted by these canals. Flow regulated by dam at Post Falls and affected by storage in Coeur d'Alene Lake (see p. 254).

Cooperation.--Water-stage-recorder graph furnished by Washington Water Power Co.

Revisions.--WSP 1182: Drainage area.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	3,680	6,140	20,600	5,800	4,880	15,700	33,400	26,900	263	1,080	825
2	1,450	4,040	*6,460	19,400	5,730	4,850	16,000	31,700	26,200	977	840	458
3	2,280	4,320	6,080	18,300	5,830	4,850	15,800	30,500	25,400	1,940	1,100	420
4	2,200	4,380	6,080	17,700	5,670	4,830	15,700	29,300	24,700	1,330	1,060	224
5	2,210	4,470	5,880	17,100	5,690	4,860	15,500	28,300	23,700	2,620	301	166
6	2,260	4,640	5,890	16,600	5,660	4,860	15,400	27,200	22,700	2,910	765	139
7	2,270	4,850	5,300	16,000	5,660	4,830	15,200	26,400	21,400	2,940	772	139
8	2,060	4,600	5,730	15,500	5,590	4,850	*15,200	25,800	20,300	1,480	780	142
9	1,130	4,510	6,130	13,400	5,280	4,760	15,000	26,000	19,100	2,500	825	242
10	2,680	4,650	5,900	12,900	4,820	4,720	14,800	27,200	17,700	2,440	840	1,050
11	5,140	5,060	5,880	12,500	4,760	4,690	15,200	28,400	17,000	2,870	643	1,010
12	4,470	5,580	10,300	10,100	4,820	4,670	16,100	29,400	16,100	2,960	247	1,220
13	3,530	6,040	15,500	8,760	4,820	4,520	17,400	29,600	15,400	3,270	832	1,380
14	3,570	6,060	15,300	8,710	4,820	4,480	18,900	29,300	14,700	1,230	825	1,450
15	3,590	6,060	14,900	8,690	4,820	4,470	20,900	28,400	*14,200	1,200	855	1,420
16	3,580	5,960	10,900	8,220	4,820	4,460	23,200	27,600	13,900	3,090	832	1,460
17	3,570	5,920	8,260	*7,730	4,820	4,410	25,700	27,100	13,300	1,920	810	1,460
18	3,590	6,240	6,980	7,680	4,780	4,360	27,500	27,200	13,200	1,610	173	1,350
19	3,620	6,780	6,730	7,680	4,640	4,370	28,600	28,000	12,400	*1,490	222	1,050
20	3,620	6,670	10,900	6,780	3,880	4,380	29,700	28,800	12,000	1,620	848	1,490
21	3,770	6,600	14,300	5,760	4,760	4,830	30,900	30,400	11,500	2,240	402	1,480
22	3,690	6,540	16,000	5,730	4,780	5,320	32,500	31,400	11,200	2,050	402	1,480
23	3,480	6,490	16,700	5,790	*4,790	7,100	34,600	31,900	9,120	1,200	305	1,510
24	3,680	6,330	20,100	6,300	4,820	8,830	35,800	32,200	5,120	1,400	*535	1,490
25	3,720	6,700	22,800	7,770	4,740	10,300	36,600	32,000	4,130	1,410	439	1,490
26	3,720	9,570	22,900	7,730	4,760	12,400	*36,900	*31,700	2,960	1,400	2,080	1,510
27	3,740	11,800	22,900	6,730	4,820	14,000	36,900	31,100	2,760	877	2,520	1,500
28	3,720	10,500	23,100	5,890	4,760	14,700	36,200	30,400	1,200	210	840	1,470
29	*3,690	7,720	22,500	5,840	4,820	15,000	35,600	29,800	1,220	231	818	1,480
30	3,720	6,140	21,700	5,730	-------	15,400	34,600	28,500	380	1,130	1,070	1,480
31	3,690	-------	21,400	5,840	-------	15,600	-------	27,700	-------	919	1,050	-------
Total	98,880	182,900	389,640	323,460	145,760	216,580	728,100	906,500	419,890	53,727	25,111	31,985
Mean	3,190	6,097	12,570	10,430	5,026	6,986	24,270	29,240	14,000	1,733	810	1,066
Ac-ft	196,100	362,800	772,800	641,600	289,100	429,600	‡1,444	‡1,798	832,800	106,600	49,810	63,440
(†)	22	0	0	0	0	0	1,232	16,430	18,900	19,420	18,030	7,970

Adjusted for diversion

Mean	3,190	6,097	12,570	10,430	5,026	6,986	24,290	29,510	14,310	2,049	1,103	1,200
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	196,100	362,800	772,800	641,600	289,100	429,600	‡1,445	‡1,814	851,700	126,000	67,830	71,420

Observed

Calendar year 1955: Max	25,300	Min	120	Mean	6,640	Ac-ft 4,807,000
Water year 1955-56: Max	36,900	Min	139	Mean	9,624	Ac-ft 6,987,000

Adjusted

Calendar year 1955: Mean	6,724	Cfsm	1.75	In.	23.83	Ac-ft	4,881,000
Water year 1955-56: Mean	9,737	Cfsm	2.54	In.	34.52	Ac-ft	7,068,000

* Discharge measurement made on this day.
† Diversion in acre-feet through Spokane Valley Farms Co.'s canal and Rathdrum Prairie Canal.
‡ Expressed in thousands.

Spokane River above Liberty Bridge, near Otis Orchards, Wash.

Location.--Lat 47°40'55", long 117°05'05", in NW¼ sec. 11, T. 25 N., R. 45 E., on left bank 1.2 miles upstream from Liberty Bridge, 1¾ miles southeast of Otis Orchards, and 3.3 miles northeast of Greenacres.

Drainage area.--3,880 sq mi, approximately.

Records available.--October 1950 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level (levels by Washington Water Power Co.).

Average discharge.--6 years, 6,782 cfs (4,910,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 38,800 cfs Apr. 26 (gage height, 20.43 ft); minimum daily, 105 cfs Sept. 9.
1950-56: Maximum discharge, that of Apr. 26, 1956; minimum, 61 cfs Aug. 7, 1951; minimum gage height observed, 7.67 ft Sept. 2, 1955.
Maximum stage known since 1932, 22.24 ft Dec. 25, 1933 (discharge, 50,100 cfs), determined from unpublished records collected by Washington Water Power Co. at this station.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow partly regulated by powerplant at Post Falls, Idaho, and by Coeur d'Alene Lake (see p. 254). Spokane Valley Farms Co.'s canal (see p. 257) and Rathdrum Prairie Canal (see p. 256) divert water above station for irrigation.

Cooperation.--Gage-height record collected in cooperation with Washington Water Power Co.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 21				Apr. 22 to Sept. 30			
9.5	1,130	14.0	10,200	7.8	99	11.0	3,000
10.0	1,640	16.0	17,600	8.0	171	13.0	7,160
11.0	3,000	19.0	30,700	8.5	425	16.0	17,600
12.0	4,800			9.0	745	20.1	37,200
				10.0	1,670		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,350	3,470	5,850	20,800	5,760	4,800	16,000	32,400	26,300	275	954	795
2	1,350	3,820	6,280	19,600	5,640	4,760	16,000	31,100	25,600	*970	860	514
3	2,130	4,130	5,900	18,400	5,730	4,780	15,900	29,800	24,800	1,820	997	385
4	2,110	4,190	5,900	17,800	5,570	4,760	15,800	28,600	24,200	1,240	997	235
5	2,130	4,230	5,680	17,100	5,570	4,760	15,600	27,800	23,200	2,560	419	167
6	2,180	4,420	5,660	16,600	5,550	4,780	15,400	26,900	22,200	2,760	687	119
7	2,110	4,660	5,150	16,000	5,530	4,760	15,200	26,000	21,000	2,910	766	116
8	2,000	4,460	5,530	15,400	5,480	4,760	15,200	25,500	19,990	1,620	759	a110
9	1,210	4,300	5,950	13,200	5,310	4,760	15,000	25,700	18,800	2,380	794	a105
10	*2,450	4,460	5,680	12,600	a5,130	4,680	14,800	26,700	17,900	2,420	815	*1,000
11	5,010	4,740	5,660	12,300	a4,890	4,640	15,000	27,800	17,000	2,740	753	914
12	4,510	5,370	9,530	10,000	4,700	4,620	16,100	29,300	15,900	2,910	197	1,110
13	3,400	5,830	15,500	8,510	4,780	4,480	17,700	28,900	15,400	3,300	733	1,240
14	3,460	5,850	15,300	8,450	4,760	*4,420	19,300	28,600	14,600	1,330	787	1,350
15	3,440	5,830	a15,100	8,450	4,800	4,400	21,000	27,800	14,100	1,110	815	1,330
16	3,400	5,780	a11,400	7,970	4,980	4,380	*23,000	*27,000	13,700	2,990	815	1,360
17	3,370	*5,730	a8,600	7,440	4,800	4,340	25,400	26,400	13,200	1,940	794	1,350
18	3,390	6,040	a7,520	7,410	4,760	4,320	27,000	26,600	13,000	1,570	255	1,350
19	3,420	6,540	a6,740	7,410	4,740	4,340	28,100	27,200	12,300	1,430	132	*883
20	3,420	6,460	a10,800	6,560	a4,000	4,340	28,800	27,900	11,900	1,560	883	1,370
21	3,540	6,360	14,300	5,550	4,700	4,660	30,100	29,500	11,400	2,020	418	1,350
22	3,460	6,330	15,900	5,530	4,700	5,150	32,000	30,500	11,100	2,080	388	1,350
23	3,320	6,280	16,500	5,590	4,680	6,590	34,400	31,000	9,170	1,150	312	1,370
24	3,440	6,120	*20,000	*6,020	4,660	8,480	35,800	31,300	5,080	1,320	398	1,360
25	3,490	6,330	22,600	7,550	4,620	10,000	36,800	31,100	4,210	1,320	481	1,380
26	3,520	9,130	23,300	7,520	4,660	11,900	37,000	30,900	2,710	*1,310	1,560	1,390
27	3,510	11,500	23,300	6,640	4,680	13,700	*36,800	30,400	2,750	979	2,670	1,390
28	3,510	10,500	23,000	5,730	4,660	14,700	36,200	29,600	1,300	230	845	1,380
29	3,490	7,360	22,300	a5,770	4,700	15,200	35,400	28,800	1,210	225	787	1,380
30	3,520	6,020	21,800	a5,770	------	15,500	34,500	27,800	602	995	997	1,390
31	3,510	------	21,400	5,780	------	15,800	------	27,000	------	852	970	------
Total	94,150	176,240	388,130	319,450	144,480	213,560	725,300	885,900	414,532	52,316	24,038	29,542
Mean	3,037	5,875	12,520	10,300	4,982	6,889	24,180	28,580	13,820	1,688	775	985
Ac-ft	186,700	349,600	769,800	633,600	286,600	423,600	‡1,439	‡1,757	822,200	103,800	47,680	58,600

Calendar year 1955: Max 24,500 Min 100 Mean 6,511 Ac-ft 4,714,000
Water year 1955-56: Max 37,000 Min 105 Mean 9,474 Ac-ft 6,878,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of gage-height record for stations near Post Falls, Idaho, and other Spokane River stations.

Liberty Lake at Liberty Lake, Wash.

Location.--Lat 47°39'10", long 117°05'20", in NE¼ sec. 22, T. 25 N., R. 45 E., on right wall of concrete outlet flume at town of Liberty Lake, 15 miles east of Spokane.

Drainage area.--13.7 sq mi.

Records available.--December 1950 to September 1956 (fragmentary).

Gage.--Staff gage read once daily. Datum of gage is 2,046.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Apr. 11, 1952, staff gages at various locations within a few feet of present site at same datum.

Extremes.--Maximum gage height observed during year, 3.20 ft Apr. 25-28; minimum observed, 0.50 ft Oct. 5.
1950-56: Maximum gage height observed, 4.42 ft May 1, 3, 1952; minimum observed, -0.12 ft Aug. 30, 1951.

Remarks.--Stage controlled by gate at outlet. No known diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	1.10	2.44	2.50	1.90	2.78	3.10	2.44	2.26	1.68	1.08
2	-	-	-	-	2.50	1.90	2.80	3.06	2.42	2.22	1.66	1.08
3	-	0.68	-	2.46	2.44	1.92	2.80	3.04	2.42	2.22	1.64	1.04
4	-	-	1.10	-	2.40	1.92	2.80	2.98	2.42	2.22	1.60	1.04
5	0.50	-	-	2.58	2.40	1.94	2.80	2.98	2.42	2.22	1.58	1.00
6	-	-	-	2.64	2.38	1.94	2.84	2.94	2.42	2.20	1.56	.96
7	-	-	1.14	2.70	2.36	1.94	2.80	2.90	2.40	2.20	1.54	.94
8	-	-	1.10	2.74	2.32	1.94	2.84	2.88	2.38	2.18	1.50	.94
9	-	-	-	2.74	2.30	1.94	2.82	2.86	2.38	2.16	1.48	.90
10	.64	-	1.16	2.74	2.28	1.92	2.82	2.84	2.38	2.14	1.46	.90
11	-	-	-	2.74	2.24	1.88	2.82	2.82	2.36	2.12	1.44	.88
12	-	-	1.28	2.68	2.20	1.88	2.82	2.80	2.34	2.10	1.42	.86
13	.62	-	1.38	2.68	2.16	1.88	2.84	2.80	2.32	2.08	1.42	.84
14	-	-	-	2.68	2.14	1.86	2.86	2.76	2.32	2.06	1.38	.84
15	-	.69	-	2.70	2.10	1.84	2.90	2.76	2.34	2.04	1.36	.82
16	-	-	-	2.74	2.08	1.84	2.94	2.68	2.38	2.04	1.34	.78
17	.60	-	1.48	2.74	2.08	1.80	2.96	2.66	2.42	2.00	1.30	.78
18	-	-	-	2.70	2.04	1.80	2.98	2.60	2.42	1.98	1.28	.78
19	-	-	-	2.70	2.02	1.80	3.04	2.54	2.44	1.96	1.26	.74
20	.60	-	-	2.68	1.98	1.80	3.08	2.50	2.46	1.96	1.22	.70
21	-	-	1.54	2.66	1.96	1.86	3.08	2.48	2.44	1.96	1.20	.70
22	-	-	1.70	2.68	2.00	1.90	3.10	2.48	2.40	1.94	1.18	.70
23	-	-	-	2.67	1.98	1.98	3.14	2.48	2.40	1.92	1.16	.70
24	-	-	1.88	2.66	1.86	2.10	3.18	2.48	2.38	1.90	1.14	.68
25	-	.94	2.08	2.66	1.84	2.20	3.20	2.50	2.36	1.86	1.12	.68
26	.64	-	2.10	2.64	1.90	2.36	3.20	2.54	2.36	1.83	1.12	.66
27	-	-	2.30	2.64	1.90	2.44	3.20	2.54	2.34	1.80	1.12	.64
28	-	-	2.40	2.62	1.94	2.50	3.20	2.54	2.32	1.78	1.14	.62
29	-	1.00	2.40	2.60	1.90	2.60	3.18	2.50	2.30	1.74	1.10	.60
30	.68	-	-	2.58	-------	2.66	3.14	2.46	2.28	1.70	1.08	-
31	-	-------	2.42	2.54	-------	2.70	-------	2.44	-------	1.68	1.08	-------

Spokane River at Spokane, Wash.

Location.--Lat 47°39'35", long 117°26'50", in SW¼ sec. 13, T. 25 N., R. 42 E., on right bank at Cochran Street in Spokane, half a mile upstream from Latah Creek.

Drainage area.--4,290 sq mi, approximately.

Records available.--April 1891 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,696.6 ft above mean sea level, datum of 1929 (river-profile survey). Prior to July 1, 1921, water-stage recorders and staff or wire-weight gages at several sites within 4 miles of present site at various datums.

Average discharge.--65 years, 6,819 cfs (4,937,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 37,800 cfs Apr. 27 (gage height, 27.95 ft); minimum, 95 cfs Sept. 19 (gage height, 15.60 ft); minimum daily, 1,100 cfs Sept. 9. 1891-1956: Maximum discharge, 49,000 cfs (estimated) May 31, 1894 (see WSP 532); minimum, that of Sept. 19, 1956; minimum daily, 740 cfs Sept. 7, 1947.

Remarks.--Records good. Flow partly regulated by powerplant of Washington Water Power Co. at Post Falls, Idaho, and at Spokane, and by Coeur d'Alene Lake (see p. 254). Spokane Valley Farms Co.'s canal (see p. 257) and Rathdrum Prairie Canal (see p. 256) divert water above station for irrigation. In 1946, approximately 22,600 acres were under irrigation upstream from Spokane, of which about 15,000 acres utilized surface water.

Cooperation.--Gage-height record collected in cooperation with Washington Water Power Co.

Revisions (water years).--WSP 532: 1891-1904. WSP 1246: Drainage area. WSP 1286: 1907-9.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

17.3	1,020	21.0	8,020
18.0	1,840	23.0	14,400
19.0	3,520	25.0	22,500
20.0	5,560	28.0	38,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,220	3,940	6,330	20,300	6,330	5,400	15,500	33,700	27,200	1,970	1,910	1,870
2	1,970	4,150	6,930	19,300	6,330	5,380	15,600	32,200	26,400	2,560	*1,970	1,560
3	2,380	4,530	6,350	18,400	6,350	5,420	15,500	30,800	25,600	2,820	2,140	1,240
4	2,620	4,550	6,400	17,900	6,260	5,350	15,500	29,500	25,000	2,890	1,840	1,330
5	2,750	4,640	6,330	17,200	6,260	5,380	15,300	28,600	24,200	3,480	1,810	1,200
6	2,690	4,720	6,180	16,700	6,160	5,400	15,200	27,400	23,300	3,900	1,500	1,130
7	2,690	4,980	5,920	16,100	6,180	5,380	15,000	26,600	22,100	4,090	1,740	1,130
8	2,800	4,850	5,940	15,600	6,140	5,380	15,000	26,000	21,000	3,380	1,710	1,120
9	2,430	4,680	6,540	14,000	5,940	5,350	14,900	26,200	20,000	*3,110	1,700	1,100
10	*2,270	4,830	6,260	13,200	5,440	5,310	14,700	27,300	19,000	3,810	1,710	1,680
11	4,740	4,980	6,330	12,800	*5,380	5,290	14,900	28,400	18,000	3,500	1,700	*1,650
12	5,020	5,700	8,540	11,300	5,380	5,260	15,800	29,300	17,000	3,940	1,380	1,870
13	3,860	6,020	14,800	9,420	5,380	5,090	17,100	29,600	16,300	4,220	1,480	1,970
14	3,800	6,090	14,700	9,200	5,400	5,110	18,400	29,600	15,700	3,090	1,690	2,080
15	3,940	*6,140	14,400	9,250	5,350	*5,020	19,900	28,700	15,200	2,360	1,700	2,160
16	3,820	6,110	11,700	8,940	5,400	4,960	*22,100	27,900	14,800	3,620	1,680	2,120
17	3,920	6,110	8,520	8,360	5,380	5,000	24,400	*27,200	14,200	3,200	1,650	2,140
18	3,860	6,230	7,790	8,300	5,310	4,890	26,400	27,400	14,100	2,800	1,360	2,360
19	3,900	6,810	6,690	8,270	5,330	4,980	*27,600	28,000	13,500	2,600	1,150	*1,740
20	3,860	6,710	9,840	7,810	4,510	4,980	28,600	28,600	13,000	2,600	1,520	2,120
21	4,070	6,590	14,000	6,660	5,400	5,240	30,000	30,000	12,500	2,730	1,350	2,120
22	3,920	6,620	*15,300	6,620	5,380	5,700	31,500	31,200	12,100	3,360	1,360	2,190
23	3,940	6,570	15,800	6,570	5,330	6,980	33,500	32,100	11,100	2,270	1,420	2,240
24	3,840	6,450	18,600	6,690	5,350	8,640	35,300	32,200	7,020	2,400	1,210	2,190
25	3,980	6,470	21,400	8,220	5,290	9,930	36,200	32,100	6,330	2,360	1,300	2,200
26	4,010	8,550	22,500	8,130	5,330	11,800	36,700	31,900	*4,510	*2,330	1,920	2,170
27	4,030	10,900	22,700	7,660	5,380	13,300	*36,800	31,400	4,550	2,220	3,620	2,240
28	4,030	10,400	22,400	6,620	5,380	14,300	36,400	30,700	3,560	1,600	1,990	2,240
29	4,000	8,240	21,900	6,620	5,290	14,600	35,600	29,800	3,030	1,400	1,760	2,120
30	3,980	6,690	21,200	6,540	------	15,000	34,800	28,800	2,660	1,770	1,880	2,200
31	4,000	------	20,900	6,640	------	15,300	------	28,000	------	1,940	1,940	------
Total	109,340	184,250	383,190	339,320	162,340	225,120	714,200	911,200	452,960	88,320	53,080	55,480
Mean	3,527	6,142	12,360	10,950	5,598	7,262	23,810	29,390	15,100	2,849	1,712	1,849
Ac-ft	216,900	365,500	760,000	673,000	322,000	446,500	‡1,417	‡1,807	898,400	175,200	105,300	110,000

Calendar year 1955: Max 26,000 Min 841 Mean 7,082 Ac-ft 5,128,000
Water year 1955-56: Max 36,800 Min 1,100 Mean 10,050 Ac-ft 7,297,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Latah Creek at Spokane, Wash.

Location.--Lat 47°39'10", long 117°26'55", in NW¼ sec. 24, T. 25 N., R. 42 E., on left bank in Spokane, three-quarters of a mile upstream from mouth.

Drainage area.--619 sq mi.

Records available.--April 1948 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,720 ft (from topographic map). Prior to Nov. 22, 1948, wire-weight gage at site half a mile upstream at different datum.

Average discharge.--8 years, 273 cfs (197,600 acre-ft per year).

Extremes.--Maximum discharge during year, 11,300 cfs Dec. 22 (gage height, 12.16 ft), from rating curve extended above 7,400 cfs; minimum, 7.7 cfs Oct. 4 (gage height, 2.26 ft).
1948-56: Maximum discharge, 11,900 cfs May 24, 1948 (gage height, 18.73 ft, from floodmarks, site and datum then in use), from rating curve extended above 7,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, 3.8 cfs Sept. 4, 5, 8, 1955 (gage height, 2.12 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No regulation. A few small diversions for irrigation above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	5.8	5.0	545
2.4	12.5	6.0	1,030
2.7	28	7.0	1,750
3.0	54	8.0	2,740
3.4	107	10.0	5,810
4.0	231	12.0	10,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.3	23	288	261	170	1,220	1,380	166	64	38	21	23
2	8.5	29	410	226	170	2,400	1,080	156	62	a37	*22	22
3	8.0	29	310	285	170	3,140	875	144	60	a36	22	22
4	8.6	28	246	2,540	170	1,460	760	140	63	a35	22	23
5	8.9	26	160	1,860	170	855	684	154	64	a34	22	22
6	8.3	26	144	1,200	170	613	638	181	66	a34	22	21
7	8.3	43	160	1,140	170	545	589	158	69	a33	20	21
8	9.6	40	125	910	170	477	638	144	65	a32	19.5	20
9	12.5	34	162	557	170	480	589	460	57	*32	19	20
10	20	34	150	509	170	424	525	470	53	31	18.5	*19.5
11	*22	31	187	517	180	310	517	460	49	31	19	19
12	35	29	*5,450	621	198	307	577	328	47	30	19	19
13	53	25	*3,020	589	251	334	573	261	45	29	18.5	19
14	33	16	852	573	364	282	561	229	46	29	18.5	19
15	26	15	358	470	277	*319	549	189	52	29	19	19
16	20	15	304	616	187	484	533	162	65	26	18.5	19
17	17.5	15	256	1,820	187	934	502	*146	131	25	18	19
18	15	*15	231	1,280	185	1,540	446	131	156	24	18	20
19	14.5	16	259	934	111	2,250	391	118	111	24	18	21
20	13.5	61	331	775	118	2,860	370	109	90	26	18.5	20
21	12	278	2,070	710	158	3,630	349	99	81	26	18	20
22	12	488	9,280	1,310	785	5,290	340	90	76	24	17.5	19
23	11	367	*5,080	2,510	557	4,500	334	84	69	23	18	19.5
24	12	274	1,810	1,680	373	3,180	325	88	61	23	18	19
25	12	189	969	910	285	2,680	313	88	55	22	18.5	19.5
26	13	1,140	1,180	*550	261	4,180	296	85	52	*22	24	19.5
27	14	1,160	2,590	350	259	3,320	261	84	49	21	23	19.5
28	14.5	549	1,160	250	261	1,940	214	77	44	21	24	20
29	15.5	*352	609	200	505	1,530	189	75	41	20	23	20
30	16.5	293	334	180	------	1,480	177	72	39	20	23	21
31	19	-----	282	170	-----	1,680	-----	67	------	20	23	------
Total	502.8	5,640	38,767	26,503	7,202	54,644	15,575	5,215	1,982	857	623.0	604.5
Mean	16.2	188	1,251	855	248	1,763	519	168	66.1	27.6	20.1	20.2
Cfsm	0.026	0.304	2.02	1.38	0.401	2.85	0.838	0.271	0.107	0.045	0.032	0.033
In.	0.03	0.34	2.33	1.59	0.43	3.28	0.94	0.31	0.12	0.05	0.04	0.04
Ac-ft	997	11,190	76,890	52,570	14,280	108,400	30,890	10,340	3,930	1,700	1,240	1,200

Calendar year 1955: Max 9,280 Min 4.0 Mean 246 Cfsm 0.397 In. 5.40 Ac-ft 178,100
Water year 1955-56: Max 9,280 Min 8.0 Mean 432 Cfsm 0.698 In. 9.50 Ac-ft 313,600

Peak discharge (base, 2,500 cfs).--Dec. 12 (1:30 p.m.) 7,380 cfs (10.72 ft); Dec. 22 (10 a.m.) 11,300 cfs (12.16 ft); Dec. 27 (3 a.m.) 3,850 cfs (8.86 ft); Jan. 4 (1 p.m.) 4,230 cfs (9.11 ft); Jan. 23 (2:30 p.m.) 2,680 cfs (7.95 ft); Mar. 3 (1 a.m.) 4,270 cfs (9.14 ft); Mar. 22 (6:15 a.m.) 5,750 cfs (9.97 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and weather records.

Note.--Stage-discharge relation affected by ice Nov. 13-19, Dec. 21, Jan. 26 to Feb. 11.

Medical Lake at Medical Lake, Wash.

Location.--Lat 47°34'23", long 117°41'00", in SE¼NW¼ sec. 18, T. 24 N., R. 41 E., at end of Lake Street in town of Medical Lake. Prior to Sept. 11, 1956, at site 0.5 mile northwest.

Drainage area.--1.50 sq mi.

Records available.--March 1953 to September 1956 (fragmentary).

Gage.--Staff gage read twice weekly. Datum of gage is 2,385.34 ft (revised) above mean sea level. Gage readings have been reduced to elevations above mean sea level. Mar. 29, 1953, to May 25, 1954, at present site at datum 10 ft higher. May 26, 1954, to Sept. 10, 1956, at site 0.5 mile northwest at causeway to State Hospital in town of Medical Lake at present datum.

Extremes.--Maximum elevation observed during year, 2,391.82 ft Apr. 2; minimum observed, 2,387.69 ft Sept. 24, 28.
1953-56: Maximum elevation observed, 2,397.97 ft Mar. 19, 1954; minimum observed, that of Sept. 24, 28, 1956.

Remarks.--Lake has no natural surface outlet. Since Mar. 14, 1954, a pump has been in operation intermittently to lower the lake. The water is pumped into a tributary of Deep Creek.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	90.35		-	-	-	-	-	90.44	-	-	-
2	-	-		-	-	91.39	91.82	-	-	89.34	-	-
3	-	-		-	91.22	-	-	-	-	-	88.52	87.78
4	-	90.21		-	-	-	-	90.39	90.34	-	-	-
5	-	-		-	-	91.44	-	-	-	-	-	-
6	90.96	-		-	91.19	-	91.76	-	-	89.20	88.34	-
7	-	90.18		-	-	-	-	90.29	-	-	-	87.76
8	-	-		-	-	-	-	-	90.34	-	-	-
9	-	-		-	-	91.44	91.74	-	-	89.10	-	-
10	-	-		-	91.19	-	-	-	-	-	88.32	87.74
11	-	90.15		-	-	-	-	90.24	90.29	-	-	87.81
12	-	-		-	-	91.49	-	-	-	-	-	-
13	-	-		-	91.29	-	91.54	-	-	89.02	87.94	-
14	-	-		-	-	-	-	90.29	-	-	-	87.74
15	-	-		-	-	-	-	-	90.04	-	88.25	-
16	-	-		-	-	91.54	91.09	-	-	88.90	-	-
17	-	90.02		-	91.24	-	-	-	-	-	87.84	87.72
18	-	-		-	-	-	-	90.39	90.09	-	-	-
19	-	-		-	-	91.54	-	-	-	-	-	-
20	-	-		-	91.34	-	90.76	-	-	88.76	87.82	-
21	-	-		-	-	-	-	90.44	-	-	-	87.72
22	-	-		-	-	-	-	-	89.94	-	-	-
23	-	-		91.24	-	91.59	90.72	-	-	88.72	-	-
24	-	-	90.85	-	91.44	-	-	-	-	-	87.80	87.69
25	90.54	-		-	-	-	-	90.44	89.44	-	-	-
26	-	-		-	-	91.69	-	-	-	-	-	-
27	-	-		91.34	91.44	-	90.59	-	-	88.34	87.80	-
28	-	-		-	-	-	-	90.42	-	-	-	87.69
29	-	-		-	-	-	-	-	89.34	-	-	-
30	-	-		91.24	-------	91.79	90.44	-	-	88.63	-	-
31	-	-------		-	-------	-	-------	-	-------	-	87.78	-------

Note.--Add 2,300 ft to obtain elevation above mean sea level.

Little Spokane River at Elk, Wash.

Location.--Lat 48°01'20", long 117°16'20", in SE¼ sec. 8, T. 29 N., R. 44 E., on right bank half a mile upstream and northeast of Elk.

Drainage area.--115 sq mi.

Records available.--July 1948 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,875 ft (from topographic map).

Average discharge.--8 years, 60.7 cfs (43,940 acre-ft per year).

Extremes.--Maximum discharge during year, 148 cfs Apr. 7 (gage height, 1.87 ft); maximum gage height, 3.08 ft Feb. 1 (backwater from ice); minimum daily discharge, 38 cfs Nov. 17, 18.
1948-56: Maximum discharge, that of Apr. 7, 1956; minimum, 28 cfs Jan. 16, 1954 (gage height, 1.01 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No regulation or diversion.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	38	1.6	96
1.2	46	1.9	154
1.4	66		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	45	50	64	a52	60	142	114	82	73	51	52
2	43	44	49	62	a55	62	138	112	80	73	51	52
3	42	46	48	63	a59	64	136	112	80	76	54	51
4	42	48	46	76	a63	64	140	110	83	76	55	51
5	43	47	46	80	a66	62	142	108	83	*76	54	51
6	43	46	46	77	a68	60	142	106	83	76	53	51
7	42	46	46	74	a70	59	146	105	83	74	52	52
8	43	45	46	74	a68	59	146	103	82	73	51	52
9	47	45	46	74	*a66	58	144	103	80	70	52	51
10	55	*46	46	73	56	58	144	103	80	69	53	51
11	*55	44	49	72	55	57	142	99	77	68	53	51
12	52	44	56	72	54	56	142	99	76	66	53	*51
13	49	43	78	72	54	*56	142	96	76	66	53	51
14	47	42	96	73	b52	55	144	*94	77	66	52	51
15	46	b42	69	72	b49	55	144	94	82	65	52	51
16	46	b39	68	73	b45	55	*144	92	84	64	51	50
17	45	b38	70	74	b47	58	144	92	83	63	51	49
18	44	b38	b65	72	b48	60	142	89	82	63	51	49
19	44	b40	b60	70	b49	65	140	91	78	62	51	49
20	44	b42	b55	69	b51	68	134	89	80	60	50	49
21	44	45	*b52	68	56	77	132	88	78	60	50	49
22	44	44	74	69	59	88	132	86	77	60	50	49
23	44	44	77	70	58	101	130	84	76	58	49	49
24	45	44	72	70	55	114	132	86	76	58	49	49
25	46	52	68	70	55	124	130	88	74	56	50	48
26	46	56	72	68	55	138	128	88	74	54	52	48
27	46	54	77	66	54	*144	126	88	74	*52	53	48
28	46	51	74	65	55	140	122	86	73	50	53	48
29	46	49	69	b63	59	138	118	84	72	50	53	49
30	46	49	65	b60	------	140	116	82	72	50	53	50
31	46	-----	64	b56	-------	144	-----	80	------	50	53	------
Total	1,415	1,358	1,899	2,161	1,633	2,539	4,104	2,951	2,357	1,977	1,608	1,502
Mean	45.6	45.3	61.3	69.7	56.3	81.9	137	95.2	78.6	63.8	51.9	50.1
Cfsm	0.397	0.394	0.533	0.606	0.490	0.712	1.19	0.828	0.683	0.555	0.451	0.436
In.	0.46	0.44	0.61	0.70	0.53	0.82	1.33	0.95	0.76	0.64	0.52	0.49
Ac-ft	2,810	2,690	3,770	4,290	3,240	5,040	8,140	5,850	4,680	3,920	3,190	2,980

Calendar year 1955: Max 96 Min 37 Mean 50.3 Cfsm 0.437 In. 5.92 Ac-ft 36,430
Water year 1955-56: Max 146 Min 38 Mean 69.7 Cfsm 0.606 In. 8.25 Ac-ft 50,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby streams.
b Stage-discharge relation affected by ice.

Diamond Lake near Newport, Wash.

Location.--Lat 48°08'05", long 117°10'35", in NE¼ sec. 1, T. 30 N., R. 44 E., on southeast shore of Diamond Lake, 7 miles southwest of Newport.

Drainage area.--5.7 sq mi, approximately.

Records available.--July 1953 to September 1956 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,340 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 4.82 ft Mar. 10; minimum observed, 3.49 ft Oct. 7, 8.
1953-56: Maximum gage height observed, 4.82 ft Apr. 14-17, 19, 1954, Mar. 10, 1956; minimum observed, 3.41 ft Sept. 27, 1955.

Remarks.--No known regulation or diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	3.74	4.12	-	-	-	-	-	4.74	-	-	4.30
2	-	-	-	4.66	-	-	-	4.72	-	-	4.50	-
3	-	-	4.12	-	-	4.76	4.73	-	-	4.64	-	-
4	3.50	3.80	-	4.70	-	-	-	4.72	-	-	4.53	4.26
5	-	3.80	-	-	-	-	4.72	4.72	4.74	4.64	-	-
6	-	-	-	-	-	-	-	-	-	4.64	-	-
7	3.49	-	4.14	4.68	-	-	4.72	-	4.74	-	4.52	-
8	3.49	3.80	-	-	-	4.80	-	4.76	-	-	-	4.22
9	-	-	4.16	-	4.56	-	-	-	-	-	4.50	-
10	-	3.82	-	-	-	4.82	-	-	-	4.63	-	-
11	3.70	-	-	4.58	-	-	4.70	4.76	-	-	4.46	-
12	-	3.82	4.32	-	-	-	-	4.76	4.72	4.62	-	4.20
13	3.71	-	-	-	-	4.74	4.70	-	-	-	4.44	-
14	-	-	-	4.60	-	-	-	4.76	4.71	4.66	-	4.19
15	3.70	-	-	-	-	-	-	4.76	4.72	-	-	4.16
16	-	-	4.36	-	-	-	-	-	4.76	4.77	4.42	-
17	-	3.90	-	4.62	4.56	4.66	4.72	4.76	-	-	-	-
18	3.70	-	-	-	-	-	-	-	4.76	-	4.38	4.14
19	-	3.90	-	-	-	-	-	4.75	-	4.72	-	-
20	3.70	-	-	-	-	4.64	-	-	-	-	-	4.12
21	-	-	4.54	4.68	4.58	4.66	4.72	-	4.76	4.72	-	-
22	3.70	3.90	-	-	4.60	-	-	4.75	-	-	4.32	4.09
23	-	-	4.56	-	-	4.70	-	-	4.76	-	-	-
24	-	-	-	-	-	-	4.74	-	-	4.66	4.30	-
25	3.74	-	-	-	-	-	-	-	-	-	4.30	-
26	-	4.10	-	-	-	-	4.74	4.76	-	4.62	-	4.08
27	3.74	-	-	-	-	4.78	-	-	4.70	4.62	-	-
28	-	-	4.60	-	-	-	4.74	-	-	4.58	4.32	-
29	3.74	4.10	-	-	4.72	-	-	-	4.66	-	-	4.06
30	-	-	-	-	-------	-	-	4.76	4.66	-	-	-
31	-	-------	4.60	-	-------	4.80	-------	-	-------	4.52	4.31	-------

Sacheen Lake near Newport, Wash.

Location.--Lat 48°09'55", long 117°18'05", in NW¼NW¼ sec. 30, T. 31 N., R. 44 E., on concrete wall at southeast corner of bay at Sacheen Lake resort, 12 miles west of Newport.

Drainage area.--32.2 sq mi.

Records available.--April 1954 to September 1956 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,240 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 6.46 ft Apr. 16; minimum observed, 4.04 ft Sept. 22, 23.
1954-56: Maximum gage height observed, that of Apr. 16, 1956; minimum observed, 3.84 ft Aug. 7, 9, 11, 1954.

Remarks.--No known regulation or diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-		6.30	-	-	4.34	4.14	4.13
2	-	-	-	-	-		-	-	4.64	-	-	-
3	-	-	-	-	5.20		-	-	-	4.32	-	-
4	-	-	-	-	-		-	-	-	-	-	-
5	-	-	-	-	-		-	-	-	4.34	-	4.08
6	-	-	-	5.60	-		-	-	-	-	-	-
7	-	-	-	-	-		6.30	-	4.69	4.34	4.18	-
8	-	-	-	-	-		-	-	-	-	-	-
9	-	-	-	-	5.12		-	5.62	4.68	4.32	-	-
10	-	4.96	-	5.60	-		-	-	-	-	-	-
11	4.98	-	-	-	-		-	-	-	-	4.16	-
12	-	5.00	-	-	-		6.30	-	4.64	-	-	4.06
13	-	-	-	-	-		-	-	-	4.29	-	-
14	-	-	-	-	-		6.42	5.34	-	4.29	-	-
15	4.96	-	-	-	-		-	-	-	-	-	4.05
16	-	-	-	-	-		6.46	-	-	-	-	4.05
17	-	-	-	-	-		-	5.10	4.62	-	-	-
18	-	-	-	-	-		-	-	-	4.36	4.11	-
19	-	5.00	-	5.40	-		-	4.97	-	-	-	-
20	-	-	-	-	-		-	-	-	4.32	-	-
21	-	-	5.54	-	-		6.40	-	-	-	4.10	-
22	4.90	-	-	-	-		-	4.84	-	4.29	-	4.04
23	4.90	-	-	-	-		-	-	4.52	-	-	4.04
24	4.89	-	-	-	-		-	-	-	-	-	-
25	-	-	-	5.20	-		6.20	-	4.44	4.23	4.07	-
26	-	5.00	-	-	-		-	4.76	4.42	4.20	4.10	-
27	-	-	5.54	-	-		-	-	-	4.19	-	-
28	-	-	-	-	-		6.00	4.72	-	-	-	-
29	4.98	-	-	-	-		-	-	4.36	4.16	-	4.06
30	-	-	-	-	-------		5.80	-	-	-	-	-
31	4.98	-------	-	-	-------		-------	-	-------	-	-	-------

Eloika Lake near Elk, Wash.

Location.--Lat 48°01'45", long 117°22'25", in NE¼ sec. 9, T. 29 N., R. 43 E., on east shore 1½ miles upstream from outlet and 5 miles northwest of Elk.

Drainage area.--87.5 sq mi.

Records available.--May 1953 to September 1956.

Gage.--Staff gage read once daily. Altitude of gage is 1,920 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 7.66 ft Apr. 18; minimum observed, 2.54 ft Oct. 2.
1953-56: Maximum gage height observed, that of Apr. 18, 1956; minimum observed, 2.32 ft Sept. 3-6, 1955.
Maximum stage known, that of Apr. 18, 1956.

Remarks.--No known regulation or diversion.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.55	2.91	3.24	4.20	3.85	3.80	6.79	6.24	4.08	3.24	2.77	2.69
2	2.54	2.91	3.26	4.20	3.84	3.82	6.84	6.14	4.06	3.22	2.76	2.67
3	2.56	2.98	3.26	4.24	3.82	3.84	6.84	5.94	4.05	3.22	2.75	2.66
4	2.56	3.00	3.24	4.32	3.80	3.90	6.86	5.84	4.04	3.22	2.79	2.65
5	2.56	3.02	3.24	4.34	3.79	3.90	6.84	5.74	3.94	3.20	2.79	2.65
6	2.58	3.02	3.24	4.36	3.76	3.90	6.86	5.60	3.84	3.25	2.78	2.64
7	2.58	3.01	3.23	4.37	3.74	3.92	6.88	5.50	3.82	3.24	2.76	2.63
8	2.58	3.02	3.21	4.38	3.70	3.94	6.86	5.34	3.80	3.25	2.75	2.63
9	2.66	3.01	3.21	4.37	3.68	3.94	6.80	5.34	3.78	3.23	2.74	2.63
10	2.76	3.03	3.21	4.36	3.67	3.94	6.78	5.34	3.76	3.20	2.74	2.62
11	2.82	3.03	3.27	4.33	3.66	3.91	6.82	5.24	3.74	3.20	2.73	2.62
12	2.84	3.02	3.32	4.30	3.66	3.88	6.92	5.19	3.68	3.20	2.72	2.62
13	2.86	3.01	3.36	4.30	3.65	3.88	7.06	5.14	3.63	3.20	2.72	2.61
14	2.88	3.01	3.34	4.28	3.64	3.86	7.18	5.06	3.62	3.20	2.71	2.60
15	2.88	3.00	3.33	4.26	3.63	3.84	7.32	5.02	3.61	3.18	2.69	2.59
16	2.88	3.00	3.33	4.26	3.63	3.86	7.48	4.94	3.64	3.16	2.68	2.59
17	2.89	3.00	3.33	4.26	3.62	3.86	7.58	4.89	3.66	3.12	2.66	2.59
18	2.89	3.00	3.35	4.22	3.61	3.86	7.66	4.84	3.68	3.10	2.64	2.59
19	2.88	3.00	3.37	4.18	3.59	3.92	7.46	4.78	3.58	3.10	2.63	2.59
20	2.86	3.00	3.38	4.14	3.60	3.96	7.36	4.74	3.58	3.10	2.63	2.58
21	2.86	2.99	3.43	4.10	3.63	4.08	7.28	4.70	3.57	3.10	2.62	2.57
22	2.84	2.98	3.58	4.08	3.66	4.20	7.22	4.64	3.56	3.06	2.61	2.56
23	2.82	2.98	3.68	4.06	3.68	4.42	7.18	4.54	3.56	3.02	2.60	2.56
24	2.80	2.97	3.80	4.04	3.69	4.68	7.17	4.48	3.50	2.98	2.60	2.56
25	2.80	2.98	3.86	4.01	3.71	5.02	7.17	4.46	3.44	2.94	2.60	2.56
26	2.81	3.10	3.94	3.99	3.72	5.44	7.07	4.42	3.42	2.92	2.63	2.56
27	2.82	3.14	4.08	3.97	3.72	5.92	6.92	4.36	3.40	2.90	2.68	2.56
28	2.84	3.16	4.18	3.95	3.76	6.14	6.82	4.30	3.37	2.86	2.69	2.57
29	2.85	3.18	4.21	3.92	3.80	6.44	6.58	4.24	3.33	2.84	2.70	2.57
30	2.90	3.20	4.22	3.89	-------	6.62	6.40	4.20	3.30	2.82	2.70	2.60
31	2.90	-------	4.20	3.87	-------	6.71	-------	4.14	-------	2.79	2.70	-------

Little Spokane River at Dartford, Wash.

Location.--Lat 47°47'00", long 117°24'50", in NE¼ sec. 6, T. 26 N., R. 43 E., on right bank 50 ft downstream from highway bridge at Dartford, 6 miles upstream from mouth, and 8 miles north of Spokane.

Drainage area.--665 sq mi.

Records available.--April 1929 to September 1932, December 1946 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to Mar. 16, 1951, staff gage at same site and datum.

Average discharge.--12 years (1929-32, 1947-56), 324 cfs (234,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,720 cfs Mar. 26 (gage height, 4.83 ft); minimum, 140 cfs Nov. 13 (gage height, 1.56 ft).
1929-32, 1946-56: Maximum discharge, 2,240 cfs Mar. 18, 1950 (gage height, 5.1 ft, from graph based on gage readings); minimum observed, 63 cfs July 24, 1930 (gage height, 1.07 ft).
Revisions.--The maximum discharge for the water year 1951 has been revised to 1,560 cfs Feb. 11, 1951 (gage height, 4.25 ft, from graph based on gage readings), superseding figure published in WSP 1216.

Remarks.--Records good except those for periods of shifting control, which are fair, and those for periods of ice effect, which are poor. Small diversions for irrigation and domestic use above station. No known regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1930, 1932(M), 1947-49(M).

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	187	243	418	b330	546	1,550	855	374	273	171	184
2	146	178	240	418	b350	604	1,440	810	366	273	174	181
3	144	187	232	422	402	740	1,380	766	358	277	181	181
4	144	225	225	672	414	609	1,340	740	362	292	190	181
5	150	229	211	800	418	514	1,330	753	378	292	184	181
6	153	211	214	704	406	462	1,300	704	370	*303	178	181
7	148	197	222	699	398	474	1,290	663	362	299	174	181
8	144	190	207	663	390	450	1,300	632	354	280	168	178
9	168	187	214	604	378	434	1,230	622	346	273	168	174
10	243	194	222	578	374	422	1,210	618	338	258	166	174
11	236	197	236	550	370	378	1,230	618	326	254	168	*174
12	*197	184	342	542	366	382	1,270	586	318	240	168	174
13	187	b150	350	550	358	406	1,300	564	310	240	168	174
14	178	b160	240	555	b300	*382	1,330	537	306	243	168	168
15	171	b145	247	537	b250	398	1,370	*519	322	243	168	168
16	168	146	295	550	b240	430	1,400	498	362	232	171	166
17	168	164	266	645	306	510	1,400	486	378	229	171	159
18	166	*171	251	596	322	591	*1,370	478	358	222	168	159
19	166	178	251	560	322	704	1,320	478	346	218	166	161
20	164	190	284	537	326	865	1,280	470	346	214	164	159
21	164	190	326	528	422	900	1,240	462	342	214	161	159
22	161	190	586	546	482	1,080	1,220	454	326	211	161	159
23	159	184	*740	668	438	*1,240	1,210	446	318	204	159	159
24	159	187	668	663	402	1,440	1,200	446	310	200	161	159
25	166	222	524	555	386	1,570	1,200	434	303	190	164	157
26	178	338	502	*486	382	1,680	1,130	430	295	190	181	159
27	174	310	622	514	374	1,640	1,080	434	292	187	207	*159
28	178	269	604	506	418	1,550	1,000	422	284	181	197	159
29	181	243	532	b450	550	1,520	945	410	280	181	190	161
30	207	240	446	b400	------	1,580	900	398	277	*174	187	168
31	211	-----	402	b350	-----	1,650	------	382	------	174	181	------
Total	5,327	6,043	10,944	17,266	10,874	26,151	37,765	17,115	10,007	7,261	5,383	5,057
Mean	172	201	353	557	375	844	1,259	552	334	234	174	169
Cfsm	0.259	0.302	0.531	0.838	0.564	1.27	1.89	0.830	0.502	0.352	0.262	0.254
In.	0.30	0.34	0.61	0.97	0.61	1.46	2.11	0.96	0.56	0.41	0.30	0.28
Ac-ft	10,570	11,990	21,710	34,250	21,570	51,870	74,910	33,950	19,850	14,400	10,680	10,030

Calendar year 1955: Max 1,220 Min 126 Mean 279 Cfsm 0.420 In. 5.70 Ac-ft 202,300
Water year 1955-56: Max 1,680 Min 144 Mean 435 Cfsm 0.654 In. 8.91 Ac-ft 315,800

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice (no gage-height record Jan. 29 to Feb. 2).
Note.--Shifting-control method used Dec. 22 to Jan. 5, Mar. 3 to Sept. 24.

Long Lake at Long Lake, Wash.

Location.--Lat 47°50'15", long 117°50'20", in NW¼SW¼ sec. 13, T. 27 N., R. 39 E., at left end of spillway at Long Lake dam, 12 miles north of Reardan.

Drainage area.--5,920 sq mi, approximately.

Records available.--October 1913 to September 1956. Prior to October 1950 monthly discharge only, published in WSP 1316.

Gage.--Water-stage recorder and staff gage, with long distance indicator in powerhouse. Datum of gage is at mean sea level (levels by Washington Water Power Co.).

Extremes.--Maximum contents during year, 104,200 acre-ft Oct. 25 (elevation, 1,536.00 ft); minimum, 77,200 acre-ft May 6 (elevation, 1,530.50 ft).
1913-56: Maximum contents, 104,200 acre-ft on many days each year since 1950 (elevation, 1,536.0 ft); minimum, 7,950 acre-ft Mar. 31, 1955 (elevation, 1,514.20 ft).

Remarks.--Reservoir is formed by concrete dam, completed in 1913 and raised in 1950. Capacity, 104,200 acre-ft between elevations 1,512 ft (lower limit of normal operation) and 1,536 ft (top of gates). Contents at elevation 1,512 ft by capacity table used prior to October 1915, 148,600 acre-ft. Records given herein represent usable contents. Water used for power. Diversions above station for irrigation of about 25,000 acres in Idaho and Washington. Other regulation in Coeur d'Alene Lake and at powerplants along Spokane River.

Cooperation.--Lake elevations furnished by Washington Water Power Co.

Month-end elevation and contents, water year October 1955 to September 1956

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,535.56	102,000	-
Oct. 31	1,535.62	102,300	+300
Nov. 30	1,535.84	103,400	+1,100
Dec. 31	1,534.98	99,100	-4,300
Calendar year 1955	-	-	+14,200
Jan. 31	1,535.89	103,650	+4,550
Feb. 29	1,534.81	98,250	-5,400
Mar. 31	1,533.90	93,700	-4,550
Apr. 30	1,532.86	88,600	-5,100
May 31	1,533.42	91,400	+2,800
June 30	1,534.80	98,200	+6,800
July 31	1,535.76	103,000	+4,800
Aug. 31	1,535.31	100,750	-2,250
Sept.30	1,535.83	103,350	+2,600
Water year 1955-56	-	-	+1,350

† Elevation at 12 p.m.

Spokane River at Long Lake, Wash.

Location.--Lat 47°50'15", long 117°50'25", in SW¼ sec. 13, T. 27 N., R. 39 E., on left bank at Long Lake powerhouse, 1½ miles upstream from Chamokane Creek and 12 miles north of Reardan.

Drainage area.--5,920 sq mi, approximately.

Records available.--April 1939 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,299.00 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 7,980 cfs (5,777,000 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 45,100 cfs Apr. 25 (gage height, 75.90 ft); minimum not determined; minimum daily, 114 cfs Sept. 2 (determined from powerplant records).

1939-56: Maximum discharge recorded, 49,400 cfs May 24, 1948 (gage height, 78.66 ft); minimum not determined, occurred sometime during periods of backwater; minimum daily, that of Sept. 2, 1956.

Remarks.--Records good. Flow regulated above station by Coeur d'Alene Lake (see p. 254) and Long Lake (see preceding page), and by powerplants of Washington Water Power Co. Water diverted for irrigation above station and is equivalent to that shown for Spokane River at Spokane (see p. 261).

Revisions.--WSP 1216: Drainage area.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,680	4,220	7,210	21,700	7,000	6,100	19,800	*36,000	31,100	379	2,410	3,190
2	1,200	4,230	7,850	24,600	7,010	7,670	18,100	*35,200	30,300	3,830	2,760	114
3	3,370	5,250	7,210	18,500	7,230	11,000	19,300	34,300	30,300	3,850	2,930	562
4	3,050	5,300	7,200	24,700	7,320	8,500	18,700	32,500	25,500	3,620	2,700	2,300
5	3,190	5,920	7,070	20,800	7,100	7,100	18,500	31,700	21,700	3,930	2,390	1,180
6	3,360	5,930	6,790	19,200	7,710	6,370	16,000	34,100	24,300	4,690	2,690	3,020
7	3,260	5,950	6,750	19,800	6,890	6,290	17,100	23,600	24,500	4,610	2,190	1,630
8	3,300	4,380	6,670	17,900	6,870	6,310	19,300	26,800	23,000	2,220	2,890	2,170
9	2,480	4,430	6,800	17,900	6,640	6,310	18,100	27,800	22,100	4,300	2,500	501
10	3,350	5,640	6,820	14,800	6,310	6,320	17,500	29,600	23,600	4,120	2,370	2,370
11	4,620	5,990	7,240	15,400	6,330	6,290	18,600	32,100	19,800	3,810	2,270	2,460
12	4,610	5,960	14,500	13,100	6,340	6,140	17,300	30,200	18,600	4,140	2,300	2,600
13	4,430	5,910	17,700	8,740	6,300	6,080	17,700	35,600	20,000	4,080	2,400	3,060
14	4,410	5,920	15,700	11,100	6,300	6,080	24,500	28,800	14,300	3,820	2,400	3,060
15	4,610	5,940	16,200	11,600	6,280	6,090	29,700	31,700	17,300	3,160	2,400	3,130
16	3,300	5,910	14,100	10,100	6,270	6,090	22,300	29,700	17,100	3,850	2,510	2,050
17	4,290	5,900	10,400	11,500	6,280	6,110	*27,000	29,000	17,300	3,860	2,140	2,600
18	4,490	5,910	7,110	11,000	6,300	7,760	28,600	*29,200	16,200	4,080	2,310	2,950
19	4,350	6,900	7,250	10,400	6,330	9,840	30,800	30,600	16,300	3,910	1,750	2,790
20	4,330	7,280	11,100	9,710	6,290	9,960	32,100	34,800	16,200	3,550	2,350	2,680
21	4,320	7,570	17,100	8,470	6,280	10,600	34,200	27,500	*12,100	3,480	2,260	2,760
22	4,050	7,480	28,200	9,560	6,320	14,400	35,700	34,200	*9,970	2,410	2,510	3,140
23	3,790	7,450	31,700	10,800	6,280	13,400	35,600	33,800	12,100	3,210	2,380	1,150
24	4,380	7,180	18,700	9,820	6,210	13,900	35,200	34,200	7,140	2,530	2,400	3,050
25	4,500	8,560	22,600	7,410	6,120	15,000	38,700	34,200	7,010	2,180	372	2,910
26	5,610	10,100	25,100	9,860	6,130	22,200	39,600	35,200	6,000	2,990	2,930	2,970
27	4,740	13,800	27,600	9,630	6,090	22,700	40,100	37,000	5,580	2,850	3,820	2,970
28	4,760	12,400	25,400	7,120	6,060	18,500	39,600	30,300	5,590	3,210	2,350	3,160
29	4,100	8,990	24,500	7,640	6,090	17,200	41,200	32,500	4,720	1,910	2,380	2,910
30	3,490	8,050	23,400	6,960	-------	16,300	34,700	32,500	3,300	2,630	2,910	1,610
31	4,140	-------	21,700	7,410	-------	23,900	-------	31,700	-------	2,380	3,410	-------
Total	120,560	204,450	457,670	407,230	188,680	330,510	805,600	986,400	503,010	103,589	76,382	71,247
Mean	3,889	6,815	14,760	13,140	6,506	10,660	26,850	31,820	16,770	3,342	2,464	2,375
Ac-ft	239,100	405,500	907,800	807,700	374,200	655,600	‡1,598	‡1,956	997,700	205,500	151,500	141,300
(†)	+300	+1,100	-4,300	+4,550	-5,400	-4,550	-5,100	+2,800	+6,800	+4,800	-2,250	+2,600
Adjusted for change in contents in Long Lake												
Mean	3,893	6,833	14,690	13,210	6,412	10,590	26,770	31,860	16,870	3,420	2,427	2,418
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	239,400	406,600	903,500	812,200	368,800	651,000	‡1,593	‡1,959	‡1,004	210,300	149,200	143,900

Observed

Calendar year 1955:	Max	31,700	Min	144	Mean	7,917	Ac-ft	5,732,000
Water year 1955-56:	Max	41,200	Min	114	Mean	11,630	Ac-ft	8,440,000

Adjusted

Calendar year 1955:	Mean	7,937	Cfsm	1.34	In.	18.20	Ac-ft	5,746,000
Water year 1955-56:	Mean	11,630	Cfsm	1.96	In.	26.73	Ac-ft	8,441,000

* Discharge measurement made on this day.
† Change in contents, in Long Lake, in acre-feet; furnished by Washington Water Power Co.
‡ Expressed in thousands.

Feeder canal at Grand Coulee, Wash.

Location.--Lat 47°57'00", long 118°59'40", on line between secs. 1 and 2, T. 28 N., R. 30 E., on left bank at Grand Coulee, a quarter of a mile downstream from intake, and half a mile southwest of Grand Coulee Dam.

Records available.--October 1951 to September 1956 (pumping seasons only).

Gage.--Water-stage recorder. Datum of gage is 1,550.0 ft above mean sea level, Bureau of Reclamation, adjustment of 1937. Supplementary water-stage recorder 3,100 ft downstream from base gage at same datum. Auxiliary water-stage recorder 1 mile downstream from base gage.

Extremes.--1951-56: Maximum daily discharge, 11,000 cfs July 11, 1954; no flow except during pumping seasons.

Remarks.--Records fair. Water is pumped (beginning May 1951) from Franklin D. Roosevelt Lake behind Grand Coulee Dam, through a lift of about 280 ft into feeder canal for a distance of 2 miles into an equalizing reservoir. From equalizing reservoir it is distributed through a system of canals to the Columbia Basin project.

Cooperation.--Discharge records for periods Oct. 11-13, 25, Oct. 29 to Nov. 4, Nov. 18 to Dec. 2, Dec. 4, 5, 23-29, Apr. 30 to May 24, July 10-12, Aug. 9 to Sept. 2, and stage record for auxiliary gage furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	5,900	1,310				0	1,510	5,880	5,520	4,460	4,790
2	0	4,130	1,310				0	1,660	*5,880	4,730	5,760	3,230
3	0	5,700	0				0	1,610	5,590	4,480	5,390	0
4	0	5,340	3,280				0	1,710	3,490	4,480	4,390	0
5	0	*6,840	1,970				0	4,390	5,020	4,730	4,170	0
6	0	6,690	0				0	4,340	4,450	4,970	*2,900	0
7	0	6,530	0				0	1,820	5,430	4,900	2,990	0
8	0	5,750	0				0	1,870	3,550	4,900	2,740	0
9	0	6,220	0				0	1,760	2,990	2,730	5,440	0
10	0	5,240	0				0	1,460	4,140	2,270	3,880	0
11	1,710	4,190	0				884	1,510	2,990	3,180	6,350	0
12	6,500	3,870	0				3,120	4,180	2,990	3,480	4,790	0
13	3,480	1,350	0				3,400	4,240	2,990	5,480	3,430	0
14	0	0	0				4,400	1,410	3,090	6,410	4,030	0
15	0	0	0				4,590	3,020	2,990	6,360	3,180	0
16	0	0	0				4,540	4,240	3,090	5,900	3,180	0
17	0	0	0				4,380	4,240	3,090	5,470	3,180	0
18	0	101	0				3,890	4,240	3,090	4,140	5,650	0
19	0	4,590	0				2,970	4,290	2,990	3,570	5,390	0
20	0	6,400	0				2,880	4,290	*3,090	5,050	1,410	0
21	0	2,020	0				2,970	4,340	2,900	6,570	2,520	0
22	0	1,920	0				2,900	4,390	3,380	5,420	3,230	0
23	0	2,420	1,110				1,040	4,440	4,480	*4,060	2,370	0
24	0	4,390	3,180				0	4,490	4,560	4,340	3,180	0
25	101	6,150	3,180				0	5,040	4,480	4,250	6,200	0
26	0	6,200	3,180				0	5,860	4,560	2,320	3,430	0
27	0	6,400	3,180				0	5,800	4,480	3,850	3,530	0
28	0	2,520	3,180				0	4,290	4,640	6,020	3,180	0
29	2,770	1,660	1,610				0	4,650	4,930	5,960	3,180	0
30	6,500	655	0		------		151	5,950	6,130	3,240	3,180	0
31	3,330	------	0		------		------	5,950	------	3,250	3,830	------
Total	24,391	113,176	26,490	0	0	0	42,115	113,620	121,360	142,030	120,540	8,020
Mean	787	3,773	855	0	0	0	1,404	3,665	4,045	4,582	3,888	267
Ac-ft	48,380	224,500	52,540	0	0	0	83,530	225,400	240,700	281,700	239,100	15,910

Calendar year 1955: Max 10,100 Min 0 Mean 2,280 Ac-ft 1,651,000
Water year 1955-56: Max 6,840 Min 0 Mean 1,945 Ac-ft 1,412,000

* Discharge measurement made on this day.

• Franklin D. Roosevelt Lake at Grand Coulee Dam, Wash.

Location.--Lat 47°57'20", long 118°59'10", in lot 3, sec. 1, T. 28 N., R. 30 E., in block 12 of Grand Coulee Dam at Grand Coulee.

Drainage area.--74,100 sq mi, approximately.

Records available.--April 1938 to September 1956. Prior to October 1943, published as Columbia River Reservoir at Grand Coulee Dam.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation datum, or 1,425 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Bureau of Reclamation). Prior to Apr. 24, 1942, staff gage at site 2,000 ft upstream at same datum.

Extremes.--Maximum contents during year, 9,573,300 acre-ft Aug. 27 (elevation, 1,290.14 ft); minimum, 6,715,800 acre-ft May 16 (elevation, 1,250.81 ft).
1938-56: Maximum contents recorded, 9,586,200 acre-ft July 17, 1942, June 3, 1945 (elevation, 1,290.3 ft); minimum observed, 16,200 acre-ft Aug. 29, 1938 (elevation, 956.1 ft).

Remarks.--Reservoir is formed by concrete dam; construction of dam began in 1934; was completed in 1941; storage began early in construction period. Capacity, 5,071,700 acre-ft between elevations 1,208 ft (proposed lower limit of operation) and 1,288 ft (top of gates) above mean sea level. Storage below 1,208 ft, 4,330,000 acre-ft. Figures given herein represent total contents. Water is used for power development and diversion by pumping for irrigation of Grand Coulee project of Bureau of Reclamation, began in May 1951.

Revisions (water years).--WSP 1286: 1942, 1945(M).

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey from data furnished by Bureau of Reclamation)

1,250.0	6,663,200
1,260.0	7,327,500
1,270.0	8,030,700
1,280.0	8,775,400
1,290.0	9,562,000

Elevation, in feet, at 12 p.m., water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87.55	88.36	87.89	89.82	86.30	75.85	74.75	61.31	80.46	89.92	89.89	89.79
2	87.49	88.13	87.86	89.82	85.57	75.75	74.88	60.78	81.79	89.89	89.89	89.72
3	87.27	87.78	88.06	89.61	85.13	75.84	74.63	60.12	82.90	89.92	89.90	89.71
4	86.99	87.68	88.12	89.51	84.86	76.07	74.23	59.32	83.90	89.93	89.88	89.37
5	86.91	88.07	87.82	89.56	84.92	75.63	74.16	58.30	84.58	89.89	89.90	88.98
6	87.04	88.15	87.46	89.69	84.56	75.35	74.07	57.26	84.91	89.90	89.94	88.53
7	86.90	87.80	87.32	89.91	84.25	75.06	73.92	56.01	85.00	89.93	89.92	88.11
8	87.01	87.71	87.14	89.92	83.95	74.76	73.81	54.85	84.87	89.95	89.86	87.80
9	87.22	87.60	87.09	89.85	83.63	74.41	73.63	53.90	84.71	89.95	89.88	87.58
10	87.73	87.58	87.22	89.76	83.25	74.13	73.47	53.01	84.61	89.97	89.90	87.48
11	88.02	87.62	87.44	89.87	83.01	73.85	73.35	52.39	85.00	89.98	89.82	87.43
12	88.01	87.69	87.45	89.87	83.05	73.30	72.27	51.83	85.66	90.01	89.90	87.47
13	87.97	87.44	87.62	89.79	82.79	72.80	73.24	51.64	86.29	89.88	89.82	87.54
14	87.96	87.27	87.56	89.65	82.45	72.47	73.34	51.35	86.83	89.93	89.87	87.30
15	88.01	87.19	87.47	89.76	82.00	72.23	73.72	51.03	87.39	90.06	90.03	87.26
16	88.00	87.34	87.58	89.36	81.40	72.03	73.89	50.85	87.74	89.94	89.86	87.40
17	87.91	87.58	87.67	89.34	80.79	71.88	73.82	51.01	88.09	89.95	89.92	87.30
18	87.88	87.88	87.65	89.23	80.34	71.97	73.88	51.60	88.59	89.98	89.93	87.30
19	87.86	88.06	87.27	89.14	79.85	71.51	75.36	52.69	88.85	89.98	90.07	87.35
20	87.91	87.96	87.13	89.11	79.09	71.43	76.35	54.39	89.30	89.86	90.02	87.41
21	87.70	87.96	87.23	89.09	78.76	71.45	75.86	56.59	89.76	89.94	90.00	87.45
22	87.60	88.06	87.70	89.34	78.46	71.65	74.67	59.47	89.75	89.88	90.00	87.61
23	87.56	87.91	88.21	89.08	78.24	72.14	72.93	62.60	89.96	89.91	89.98	87.80
24	87.28	87.97	88.75	88.92	77.93	72.79	71.15	65.26	89.96	89.92	89.90	87.86
25	86.96	87.94	89.20	88.78	77.68	73.57	69.33	67.64	89.91	89.89	89.68	87.77
26	87.35	87.98	89.35	88.55	77.41	74.21	67.33	70.31	89.94	89.90	90.09	87.68
27	87.95	88.09	89.60	88.26	76.98	74.61	65.47	72.74	89.89	89.87	89.98	87.67
28	88.46	87.88	89.67	88.10	76.64	74.79	63.93	75.13	89.97	89.91	89.89	87.61
29	88.71	87.93	89.70	88.08	76.29	74.51	62.94	77.05	89.89	89.90	89.89	87.70
30	88.78	87.90	89.64	87.62	------	74.65	62.13	78.40	89.93	89.90	89.96	87.79
31	88.62	------	89.83	86.90	------	74.76	------	79.33	------	89.90	89.90	------
(†)	9,451.3	9,393.7	9,548.3	9,314.1	8,493.8	8,379.5	7,473.8	8,724.1	9,556.4	9,554	9,554	9,385
(‡)	+72,700	-57,600	+154,600	-234,200	-820,300	-114,300	-905,700	††+1,250	+832,300	-2,400	0	-169,000

Calendar year 1955..... $ +465,200
Water year 1955-56..... $ +6,400

† Contents, in thousands of acre-feet, at end of month.
‡ Change in contents in acre-feet.
†† Expressed in thousands.
Note.--Add 1,200 ft to obtain elevation above mean sea level (Bureau of Reclamation).

Columbia River at Grand Coulee Dam, Wash.

Location.--Lat 47°58'00", long 118°58'45", opposite lot 4, sec. 36, T. 29 N., R. 30 E., in pier 3 of highway bridge, 2,500 ft downstream from Grand Coulee Dam and 14 miles upstream from Nespelem River.

Drainage area.--74,100 sq mi, approximately.

Records available.--April 1913 to June 1923 (monthly discharge only), July to December 1923, January 1924 to May 1928 (monthly discharge only), June 1928 to September 1956. Published as "at Grand Coulee, near Nespelem" prior to 1936 and as "at Grand Coulee" 1936-42.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation adjustment of 1937. June 27 to Dec. 31, 1923, June 12, 1928, to Mar. 31, 1931, staff gages at site half a mile upstream at datum 2.4 ft lower. Apr. 1, 1931, to Dec. 31, 1935, water-stage recorder at site 850 ft downstream at present datum. Since June 12, 1955, auxiliary water-stage recorder 6 miles downstream from base gage.

Average discharge.--43 years, 108,900 cfs (78,840,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 522,000 cfs June 8 (elevation, 983.80 ft); minimum, 27,400 cfs Dec. 12 (elevation, 937.61 ft).
1913-56: Maximum discharge, 637,800 cfs June 12, 1948 (elevation, 987.90 ft); minimum daily, 15,300 cfs Feb. 1, 1937.
Maximum discharge known, 725,000 cfs (estimated) during flood in June 1894.

Remarks.--Records excellent. Feeder canal diverts water by pumping from Franklin D. Roosevelt Lake for Columbia Basin project (see p. 271). Other diversions above station for irrigation are a small percentage of flow past gage. Flow regulated by Franklin D. Roosevelt Lake (see preceding page) and reservoirs in Kootenai, Pend Oreille, and Spokane River basins. Records of chemical analyses and water temperatures for the water year 1956 are given in WSP 1453.

Revisions (water years).--WSP 1286: 1942, 1947.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67,600	70,300	62,200	71,300	72,100	65,500	113,100	246,100	438,000	268,900	169,800	86,100
2	63,500	68,100	62,600	73,900	74,900	59,200	103,000	264,000	444,100	263,900	158,800	80,800
3	72,700	67,900	54,600	76,500	70,500	53,400	116,300	258,300	450,700	258,100	153,800	79,500
4	73,100	63,100	58,000	72,100	63,900	49,300	118,000	254,200	457,200	253,100	149,700	91,200
5	69,000	*52,900	71,100	68,200	53,500	66,600	111,300	252,400	473,100	249,800	143,000	89,100
6	*64,700	61,500	68,600	67,400	69,600	64,600	106,000	251,100	*494,300	241,300	141,500	88,900
7	64,800	83,700	65,800	65,700	66,700	66,300	101,500	249,700	508,100	234,600	*140,400	84,100
8	66,900	68,800	58,500	75,100	69,500	59,500	102,400	249,800	505,900	225,700	135,000	76,800
9	57,800	67,700	53,400	*78,200	67,600	63,500	102,400	250,900	493,400	228,300	120,500	67,400
10	56,000	62,800	48,500	71,200	69,300	62,200	102,100	249,000	476,700	222,800	115,300	68,500
11	62,900	64,500	42,200	64,100	59,700	56,700	102,900	249,100	459,000	222,800	114,700	63,700
12	67,200	68,400	57,600	66,000	52,900	68,500	103,000	246,600	449,000	223,800	102,300	67,200
13	60,300	71,100	*61,300	64,700	*65,200	63,800	109,200	240,700	441,800	228,300	109,700	66,500
14	*55,600	68,800	64,900	65,200	67,800	59,400	114,600	243,400	426,300	223,800	98,800	73,900
15	53,000	*69,100	65,900	64,000	74,100	55,500	115,000	245,600	408,700	218,200	98,400	68,000
16	54,800	69,700	57,600	71,600	75,100	54,900	128,300	243,900	387,800	222,900	102,300	64,100
17	57,600	69,800	49,100	62,100	71,200	*52,600	151,700	243,100	372,100	217,900	96,700	*70,600
18	57,200	66,000	49,700	*60,300	64,500	45,400	164,500	241,500	347,200	217,700	96,700	72,200
19	58,100	68,800	62,000	61,600	59,700	63,100	117,300	244,200	348,800	216,400	91,400	69,800
20	*58,800	67,300	60,600	59,100	67,600	59,100	156,500	246,300	351,700	214,300	100,200	68,400
21	64,300	69,000	*63,200	56,400	62,300	54,600	218,300	246,300	*344,800	204,200	100,400	73,300
22	63,800	68,800	62,200	51,400	61,100	53,500	287,100	249,200	351,500	208,000	98,200	63,600
23	58,800	68,000	63,700	64,100	62,300	49,500	290,700	257,700	343,600	207,600	97,400	61,800
24	62,600	59,800	55,100	63,600	66,300	51,300	317,300	*296,500	351,100	203,300	98,200	64,600
25	61,700	*58,300	57,300	61,500	60,900	52,700	319,300	325,600	349,300	*200,000	97,100	71,700
26	54,200	61,500	66,600	67,700	59,900	67,300	324,000	332,800	330,800	199,600	82,700	71,800
27	*63,000	60,400	75,500	65,600	69,600	100,900	321,100	350,900	308,000	196,000	102,300	68,200
28	58,500	64,300	78,700	55,700	65,800	103,800	308,900	359,900	*293,600	190,400	98,500	70,000
29	63,100	64,400	*81,400	48,700	64,900	121,100	290,900	381,800	295,000	186,500	98,300	65,200
30	64,400	*61,000	79,100	63,900	------	110,200	275,600	411,100	280,600	182,400	94,800	53,900
31	72,600	------	75,000	73,100	------	114,900	------	432,600	------	175,700	95,900	------
Total	‡1,928.6	‡1,985.8	‡1,932	‡2,030	‡1,908.5	‡2,068.9	‡5,292.3	‡8,614.3	‡11,982.2	‡6,806.3	‡3,502.8	‡2,160.9
Mean	62,210	66,190	62,320	65,480	65,810	66,740	176,400	277,900	399,400	219,600	113,000	72,030
Ac-ft	‡3,825	‡3,939	‡3,832	‡4,026	‡3,785	‡4,104	‡10,500	‡17,090	‡23,770	‡13,500	‡6,948	‡4,286

Calendar year 1955: Max 399,400 Min 42,200 Mean 112,600 Ac-ft 81,520,000
Water year 1955-56: Max 508,100 Min 42,200 Mean 137,200 Ac-ft 99,600,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Rufus Woods Lake at Bridgeport, Wash.

Location.--Lat 47°59'40", long 119°38'05", in SW¼ sec. 24, T. 29 N., R. 25 E., on left bank in spillway access tower of Chief Joseph Dam, half a mile upstream from Foster Creek and 1½ miles southeast of Bridgeport.

Drainage area.--75,000 sq mi, approximately.

Records available.--November 1954 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 28, 1955, staff gage at same site and datum.

Extremes.--1954-55: Maximum contents during period November to September, 517,800 acre-ft July 10 (elevation, 946.2 ft).
1955-56: Maximum contents during water year, 532,200 acre-ft June 27 (elevation, 948.1 ft); minimum, 402,900 acre-ft Dec. 17 (elevation, 930.3 ft).

Remarks.--Reservoir is formed by concrete gravity-type dam completed in June 1955; storage began in November 1954. Capacity, 287,600 acre-ft between elevations 901.5 ft (spillway crest and lower limit of operation) and 946.0 ft (normal maximum operating pool). Storage below 901.5 ft, 228,600 acre-ft. Records given herein represent total contents. Water used for power development.

Cooperation.--Lake elevations furnished by Corps of Engineers.

Month-end elevation and contents, November 1954 to September 1956

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Nov. 30, 1954	836.3	40,000	-
Dec. 31	905.5	249,000	+209,000
Calendar year 1954	-	-	-
Jan. 31, 1955	909.2	269,300	+20,300
Feb. 28	912.5	288,600	+19,300
Mar. 31	911.3	281,500	-7,100
Apr. 30	911.5	282,600	+1,100
May 31	914.3	299,400	+16,800
June 30	946.0	516,300	+216,900
July 31	936.0	442,800	-73,500
Aug. 30	937.4	452,900	+10,100
Sept.30	933.4	424,400	-28,500
Water year 1954-55	-	-	-
Sept.30, 1955	933.4	424,400	-
Oct. 31	938.2	458,700	+34,300
Nov. 30	936.6	447,100	-11,600
Dec. 31	943.7	499,100	+52,000
Calendar year 1955	-	-	+250,100
Jan. 31, 1956	937.3	452,200	-46,900
Feb. 29	938.7	462,300	+10,100
Mar. 31	935.2	437,100	-25,200
Apr. 30	934.1	429,300	-7,800
May 31	933.8	427,200	-2,100
June 30	933.8	427,200	-
July 31	933.6	425,800	-1,400
Aug. 31	935.0	435,700	+9,900
Sept.30	934.0	428,600	-7,100
Water year 1955-56	-	-	+4,200

† Elevation at 12 p.m.

Columbia River at Bridgeport, Wash.

Location.--Lat 48°00'25", long 119°39'50", in SW¼SW¼ sec. 14, T. 29 N., R. 25 E., on left bank at Bridgeport 1 mile downstream from Foster Creek and 1½ miles downstream from Chief Joseph Dam.

Drainage area.--75,000 sq mi, approximately.

Records available.--April 1952 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 488,600 cfs June 7 (elevation, 792.20 ft); minimum not determined; minimum daily, 47,000 cfs Dec. 18.
1952-56: Maximum discharge, that of June 7, 1956; minimum daily, 31,000 cfs Jan. 11, 1953.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Feeder canal diverts water by pumping from Franklin D. Roosevelt Lake for Columbia basin project (see p. 271). Other diversions above station for irrigation are small percentage of flow past gage. Flow regulated at Chief Joseph Dam and affected by storage in Franklin D. Roosevelt Lake (see p. 272) and reservoirs in Kootenai, Pend Oreille, and Spokane River basins.

Rating table, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

57.0	46,000	75.0	208,000
58.0	51,500	80.0	282,000
60.0	63,000	85.0	383,000
65.0	99,000	92.1	486,800
70.0	145,500		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69,100	72,400	62,600	74,400	76,600	66,600	105,800	271,200	425,600	273,300	169,300	88,400
2	68,000	70,900	66,900	78,000	80,400	66,200	107,300	264,200	425,000	265,500	159,600	84,200
3	69,400	67,600	60,100	78,700	74,500	60,400	113,200	259,000	432,100	258,000	149,100	77,600
4	73,700	*66,000	54,400	77,900	66,800	57,700	117,700	250,400	*441,100	260,700	147,900	84,500
5	72,900	60,500	64,500	75,000	59,400	61,600	113,000	249,800	456,200	251,400	139,900	97,900
6	66,200	59,300	72,800	70,400	62,800	66,100	105,200	250,800	472,400	245,600	143,400	87,900
7	59,500	75,400	73,400	68,500	68,900	66,600	102,000	251,100	485,500	239,000	*135,900	84,800
8	61,700	72,600	63,400	69,600	68,700	60,700	101,900	250,800	485,900	234,300	132,400	82,400
9	65,700	69,200	55,100	75,500	69,000	55,200	102,000	250,800	483,600	227,700	124,300	71,600
10	63,500	62,000	52,500	78,200	68,800	67,900	102,000	253,400	471,000	226,400	110,000	67,600
11	63,900	57,600	50,500	72,400	64,000	68,000	101,900	251,100	455,800	228,400	114,900	69,300
12	62,100	60,700	*57,500	66,900	62,000	71,100	102,400	249,400	434,600	224,700	95,600	66,600
13	63,800	73,700	63,500	66,400	65,900	*70,300	107,200	242,400	429,000	227,000	111,000	*64,100
14	61,900	74,500	63,500	66,300	*67,100	64,000	112,800	245,200	416,700	228,000	97,000	71,500
15	56,600	68,800	67,600	66,200	66,800	58,000	112,300	251,000	402,800	224,000	106,700	74,800
16	53,400	68,500	68,400	70,600	72,300	53,900	122,800	258,000	385,400	222,900	103,800	65,300
17	55,200	a71,000	a48,000	69,800	75,000	56,400	147,300	257,700	364,900	222,000	95,600	69,600
18	57,200	71,700	a47,000	*64,800	70,900	53,900	163,200	258,400	323,900	219,600	99,200	78,200
19	56,900	69,500	63,300	62,500	69,200	54,400	91,800	259,500	353,100	219,200	93,200	73,600
20	56,400	65,200	68,200	61,200	69,300	59,800	163,900	252,200	*366,600	216,100	99,800	69,300
21	61,200	68,200	57,100	61,600	66,300	59,300	216,100	253,800	343,800	205,600	93,900	68,700
22	63,500	72,700	58,300	60,800	61,000	57,500	263,600	*251,200	350,800	210,200	99,200	64,000
23	63,500	72,300	57,700	68,200	60,800	53,200	292,200	258,000	341,500	207,400	96,100	67,400
24	62,500	72,200	53,200	68,300	62,500	51,400	308,600	286,500	345,500	208,800	94,700	70,900
25	62,200	64,300	57,100	64,200	62,500	53,800	*307,600	324,200	339,000	*201,100	100,800	72,000
26	60,300	60,200	66,100	66,400	62,500	78,900	333,500	327,600	313,400	198,100	85,500	73,500
27	59,500	64,100	73,300	66,600	66,700	94,200	313,000	343,900	*317,700	206,500	95,400	75,100
28	63,500	64,300	75,400	60,400	70,400	98,900	311,100	353,100	324,900	189,700	100,100	71,100
29	59,900	64,300	73,600	52,100	67,900	116,000	292,600	368,100	309,200	188,300	99,800	67,700
30	60,600	63,000	78,700	58,700	------	111,600	275,400	393,900	294,300	179,800	97,200	66,600
31	70,200	------	74,100	68,100	------	104,400	------	418,800	------	179,000	91,600	------
Total	‡1,944	‡2,022.7	‡1,953.8	‡2,108.7	‡1,959	‡2,118	‡5,209.4	‡8,655.5	‡11,791.3	‡6,888.3	‡3,488.7	‡2,226.2
Mean	62,710	67,420	63,030	68,020	67,550	68,320	173,600	279,200	393,000	222,200	112,500	74,210
Ac-ft	‡3,856	‡4,012	‡3,875	‡4,183	‡3,886	‡4,201	‡10,330	‡17,170	‡23,390	‡13,660	‡6,920	‡4,416

Calendar year 1955: Max 407,300 Min 46,100 Mean 113,000 Ac-ft 81,800,000
Water year 1955-56: Max 485,900 Min 47,000 Mean 137,600 Ac-ft 99,900,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for stations at Grand Coulee Dam and at Trinidad.

Okanagan River at Okanagan Falls, British Columbia

(International gaging station)

Location.--Lat 49°21', long 119°35', on right bank 0.1 mile downstream from dam at outlet of Skaha Lake at Okanagan Falls, B. C.

Drainage area.--2,650 sq mi, approximately.

Records available.--January 1915 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,092.82 ft above mean sea level (Geodetic Survey of Canada, 1947 joint adjustment). Prior to Oct. 2, 1933, staff gages at sites about 600 and 700 ft upstream at different datums. Oct. 2, 1933, to Apr. 13, 1936, staff gage and Apr. 14, 1936, to Nov. 12, 1954, water-stage recorder, at site 200 ft upstream at same datum.

Average discharge.--41 years, 518 cfs (375,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,540 cfs July 15 (gage height, 2.07 ft); minimum, 276 cfs Dec. 19-24, 26 (gage height, 0.47 ft).
1915-56: Maximum discharge observed, 2,680 cfs June 10, 1928; minimum observed, 4.6 cfs Mar. 14, 1931.

Remarks.--Diversions above station for irrigation of approximately 38,000 acres. Flow regulated by control dams at outlets of Okanagan and Skaha Lakes.

Cooperation.--This station is maintained by Canada under agreement with the United States.

Revisions.--WSP 1152: Drainage area.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 15		July 16 to Sept. 30	
0.4	240	0.8	434
1.0	589	1.2	718
1.5	952	1.6	1,040
2.1	1,580	2.1	1,580

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	634	481	282	282	576	570	759	1,090	*1,320	1,340	795	549
2	551	404	282	282	576	602	752	1,100	1,310	1,340	795	549
3	551	348	282	282	576	640	752	1,090	1,300	1,340	795	549
4	519	314	282	282	576	640	752	1,090	1,310	1,410	803	542
5	494	287	282	282	576	674	752	1,090	1,300	1,460	810	542
6	*494	287	282	282	576	701	744	1,090	1,310	1,450	810	542
7	427	287	*282	287	576	694	744	1,090	1,300	1,450	810	542
8	387	287	282	287	576	694	744	1,090	1,290	1,460	818	542
9	387	287	282	287	576	688	744	1,090	1,290	1,460	772	*535
10	387	287	282	287	576	688	744	1,120	1,290	1,460	741	535
11	393	287	282	292	*576	688	744	1,180	*1,290	1,510	703	535
12	393	282	*282	410	576	688	744	1,180	1,290	1,520	680	507
13	342	282	282	525	576	688	744	1,170	1,290	1,520	650	467
14	365	282	282	570	583	681	744	1,170	1,290	1,530	621	467
15	348	282	282	570	576	681	744	1,160	1,290	1,540	621	474
16	491	282	282	*563	576	681	744	1,170	1,290	1,530	621	474
17	494	282	282	563	576	674	744	1,100	1,290	1,530	621	467
18	494	282	282	563	583	674	774	1,020	1,300	1,530	621	467
19	494	282	276	595	583	674	796	987	1,310	1,520	628	467
20	494	282	276	621	570	674	811	*1,000	1,320	1,520	643	474
21	494	282	276	627	570	667	*849	1,020	1,320	1,400	650	474
22	487	282	276	621	570	667	896	1,040	1,330	1,270	666	474
23	487	282	276	615	570	667	896	1,050	1,340	1,120	658	474
24	481	282	276	615	570	667	896	1,060	1,340	1,020	658	474
25	481	282	282	615	570	667	888	1,200	1,340	970	658	474
26	487	282	276	615	570	667	896	*1,260	1,340	944	658	480
27	487	282	282	595	570	667	896	1,250	1,340	952	658	480
28	487	282	282	576	570	701	896	1,240	1,340	920	658	480
29	481	282	282	583	570	759	*978	1,190	1,340	857	658	480
30	481	282	282	583	------	759	1,090	1,250	1,340	834	628	480
31	481	------	282	583	------	759	------	1,310	------	810	549	------
Total	14,476	8,914	8,700	14,740	16,665	21,041	24,257	34,947	39,350	40,517	21,457	14,998
Mean	467	297	281	475	575	679	809	1,130	1,310	1,310	692	500
Ac-ft	28,710	17,680	17,260	29,240	33,050	41,730	48,110	69,320	78,050	80,360	42,560	29,740

Calendar year 1955: Max 1,030 Min 276 Mean 653 Ac-ft 473,100
Water year 1955-56: Max 1,540 Min 276 Mean 711 Ac-ft 515,800

* Discharge measurement made on this day.

Osoyoos Lake near Oroville, Wash.

(International gaging station)

Location.--Lat 48°59'15", long 119°27'15", in lot 1, sec. 8, T. 40 N., R. 27 E., on west shore 1 mile south of international boundary and 3 miles north of Oroville.

Drainage area.--3,150 sq mi, approximately.

Records available.--July 1928 to September 1956.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U. S. Coast and Geodetic Survey datum of 1929. Prior to Sept. 2, 1928, staff gage and Sept. 2, 1928, to Nov. 9, 1929, water-stage recorder, 100 ft south of international boundary. Nov. 10, 1929, to Apr. 11, 1956, staff gage or water-stage recorder at present site. All elevations prior to Oct. 1, 1944, at datum 2.39 ft lower. To convert from present datum to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft; to convert from present datum to 1947 joint adjustment of U. S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft.

Extremes.--Maximum elevation during year, 914.46 ft May 26, 27; minimum observed, 910.95 ft Nov. 18.

1928-56: Maximum elevation, 916.74 ft May 31, 1948; minimum, 908.82 ft (present datum) Oct. 14, 1929.

Flood of May 29, 1894, reached an elevation of 918.8 ft ±0.5 ft (present datum), 1 mile below present lake outlet, from floodmark on old Okanogan Hotel building, pointed out in 1930 by Mr. and Mrs. Stansbury, who kept a diary and operated the hotel in 1894.

Remarks.--Approximately 44,000 acres are irrigated above station in Canada. Elevation may occasionally be affected by dam at Zosel's mill in Oroville.

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

Revisions.--WSP 1346: Drainage area.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.98	11.55	11.15	11.16	11.58	12.12	11.31	12.22	13.83	12.42	11.90	11.35
2	11.92	11.53	11.11	11.16	11.55	12.13	11.33	12.22	13.84	12.41	11.83	11.34
3	11.89	11.53	11.04	11.16	11.49	12.15	11.41	12.23	13.84	12.43	11.75	11.33
4	11.78	11.51	11.04	11.16	11.47	12.19	11.45	12.23	13.82	12.45	11.70	11.33
5	11.67	11.49	11.05	11.16	11.44	12.20	11.48	12.23	13.80	12.51	11.67	11.32
6	11.62	11.47	11.08	11.22	11.44	12.17	11.48	12.24	13.73	12.58	11.64	11.33
7	11.56	11.47	11.09	11.26	11.42	12.15	11.47	12.26	13.58	12.64	11.61	11.35
8	11.54	11.42	11.10	11.28	11.42	12.06	11.47	12.31	13.39	12.70	11.60	11.35
9	11.50	11.39	11.11	11.28	11.43	12.01	11.45	12.31	13.21	12.75	11.61	11.37
10	11.49	11.38	11.12	11.29	11.47	11.97	11.45	12.36	13.11	12.78	11.59	11.39
11	11.47	11.38	11.15	11.29	11.56	11.89	11.42	12.46	13.08	12.79	11.58	11.41
12	11.45	11.33	11.17	11.30	11.64	11.85	11.43	12.55	13.04	12.79	11.56	11.42
13	11.41	11.25	11.11	11.31	11.73	11.83	11.43	12.57	12.98	12.81	11.54	11.43
14	11.38	11.21	11.08	11.32	11.79	11.53	11.45	12.57	12.89	12.86	11.52	11.44
15	11.35	11.12	11.07	11.35	11.82	11.53	11.46	12.53	12.85	12.88	11.48	11.43
16	11.33	11.04	11.06	11.40	11.75	11.51	11.46	12.49	12.81	12.93	11.48	11.43
17	11.30	10.99	11.04	11.47	11.75	11.50	11.46	12.50	12.77	12.95	11.46	11.43
18	11.28	10.95	11.02	11.51	11.76	11.49	11.47	12.61	12.73	12.97	11.44	11.42
19	11.25	10.99	11.02	11.53	11.79	11.48	11.50	12.82	12.71	12.95	11.42	11.42
20	11.27	11.01	11.03	11.55	11.83	11.45	11.55	13.22	12.69	12.93	11.38	11.42
21	11.30	11.04	11.03	11.55	11.96	11.43	11.61	13.66	12.67	12.90	11.36	11.42
22	11.33	11.06	11.06	11.56	12.01	11.43	11.71	14.03	12.67	12.88	11.37	11.40
23	11.34	11.09	11.09	11.57	12.05	11.43	11.82	14.21	12.67	12.85	11.37	11.40
24	11.35	11.11	11.11	11.59	12.07	11.45	11.92	14.30	12.62	12.80	11.36	11.40
25	11.35	11.13	11.12	11.61	12.11	11.48	12.03	14.35	12.58	12.69	11.36	11.40
26	11.39	11.17	11.18	11.63	12.12	11.46	12.10	14.44	12.55	12.57	11.35	11.41
27	11.42	11.22	11.21	11.64	12.12	11.45	12.17	14.44	12.53	12.47	11.35	11.41
28	11.42	11.23	11.21	11.64	12.12	11.44	12.20	14.38	12.51	12.33	11.34	11.41
29	11.47	11.23	11.19	11.63	12.12	11.44	12.23	14.24	12.47	12.22	11.35	11.43
30	11.49	11.21	11.17	11.61	-------	11.45	12.23	14.04	12.44	12.12	11.34	11.45
31	11.52	-------	11.17	11.59	-------	11.35	-------	13.89	-------	12.00	11.32	-------

Note.--Add 900.00 ft to obtain elevation above mean sea level. Staff-gage readings made once daily, usually between 7 and 10 a.m., Oct. 1 to Apr. 11.

Okanogan River at Oroville, Wash.

Location.--Lat 48°55'55", long 119°25'05", in SW¼ sec. 27, T. 40 N., R. 27 E., on left bank in Oroville 20 ft downstream from Great Northern Railway trestle, half a mile downstream from Tonasket Creek, and 1½ miles downstream from Osoyoos Lake.

Drainage area.--3,210 sq mi. approximately.

Records available.--October 1942 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 899.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 26, 1944, staff gage at Zosel's milldam 200 ft upstream at same datum. Oct. 26, 1944, to Mar. 6, 1948, water-stage recorder on railroad trestle 20 ft upstream at same datum. Auxiliary water-stage recorder half a mile downstream used during high-water periods since Apr. 10, 1948. May 15, 1946, to Apr. 9, 1948, auxiliary staff gage at same site and datum.

Average discharge.--14 years, 743 cfs (537,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,480 cfs May 29; maximum gage height, 13.94 ft May 25 (backwater from Similkameen River); minimum discharge, 28 cfs Nov. 27 (gage height, 5.38 ft); minimum daily discharge, 150 cfs Nov. 27.
1942-56: Maximum discharge recorded, 3,430 cfs June 2, 1948 (gage height, 15.28 ft); maximum gage height, 16.50 ft May 31, 1948 (backwater from Similkameen River); maximum daily reverse flow, 2,270 cfs May 29, 1948; minimum gage height, 3.98 ft Mar. 1, 1948.

Remarks.--Records good except those for period of backwater from Similkameen River, which are fair, and those for period of no gage-height record, which are poor. Diversions made to irrigate approximately 44,000 acres in Canada and minor diversions in the United States above station. Natural regulation in several large lakes and artificial regulation in Okanagan Lake as an aid to navigation in that lake; also variations in pondage back of Zosel's milldam at Oroville, 200 ft above gage.

Rating table, water year 1955-56, except periods of backwater from Similkameen River (gage height, in feet, and discharge, in cubic feet per second)

6.0	150	7.0	770
6.3	273	8.1	1,700
6.6	455		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	898	500	a450	345	642	650	738	1,640	1,780	1,440	*1,030	448
2	882	*485	a400	351	642	658	746	1,670	1,620	1,430	954	448
3	866	478	a360	351	610	666	802	1,660	1,970	1,430	914	448
4	818	515	a330	351	602	674	834	1,650	2,100	1,440	898	441
5	674	578	a310	357	610	714	858	1,640	2,160	1,480	890	435
6	594	546	a310	363	586	818	890	1,660	2,380	1,530	842	441
7	586	530	a320	369	578	898	906	1,680	*2,300	1,570	826	441
8	578	508	a320	375	522	874	906	1,690	2,220	1,630	754	448
9	570	455	a320	375	485	858	906	1,600	2,080	1,660	738	*448
10	570	462	a320	381	448	850	914	1,540	2,000	1,680	730	455
11	500	508	*327	381	470	842	898	1,580	1,910	1,660	730	455
12	478	500	327	387	485	834	898	1,700	1,970	1,630	714	455
13	462	441	387	387	508	842	906	1,710	1,910	1,590	714	448
14	448	287	381	387	530	*850	906	1,740	1,840	1,560	714	455
15	441	414	327	*394	522	842	922	1,790	1,720	1,590	698	455
16	441	387	322	407	500	834	914	1,710	1,690	1,660	690	455
17	428	381	327	546	500	834	906	1,750	1,660	1,660	682	448
18	428	254	322	650	*508	826	914	1,510	1,620	1,660	682	448
19	381	259	322	658	515	818	938	1,250	1,600	*1,680	674	448
20	381	259	311	674	546	810	1,010	692	1,580	1,700	610	462
21	381	264	311	682	570	810	1,070	500	1,620	1,670	602	462
22	394	273	316	682	586	810	1,150	1,170	1,570	1,650	610	455
23	401	278	322	674	594	818	1,170	1,620	1,590	1,630	602	462
24	428	278	327	658	610	818	1,150	1,720	1,570	1,580	594	462
25	448	284	333	658	626	818	1,370	*1,450	1,530	1,500	586	470
26	462	316	345	666	650	818	1,460	*1,650	1,530	1,380	570	470
27	455	150	351	674	650	762	1,520	*2,020	1,500	1,340	578	470
28	462	311	351	666	650	746	*1,580	2,260	1,450	1,300	578	470
29	470	470	357	666	650	818	1,580	2,360	1,460	1,230	586	462
30	485	a460	357	666	------	826	1,610	2,260	1,420	1,150	578	478
31	485	------	351	658	------	778	------	2,060	------	1,080	455	------
Total	16,295	11,831	10,514	15,839	16,395	24,814	31,352	50,932	53,350	47,170	21,823	13,643
Mean	526	394	339	511	565	800	1,045	1,643	1,778	1,522	704	455
Ac-ft	32,320	23,470	20,850	31,420	32,520	49,220	62,190	101,000	105,800	93,560	43,290	27,060

Calendar year 1955: Max 2,280 Min -540 Mean 726 Ac-ft 525,600
Water year 1955-56: Max 2,380 Min 150 Mean 858 Ac-ft 622,700

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.
Note.--Backwater from Similkameen River Apr. 23 to May 2, May 8 to July 8.

Palmer Lake near Nighthawk, Wash.

Location.--Lat 48°54'30", long 119°36'50", in SW¼NE¼ sec. 6, T. 39 N., R. 26 E., on northeast shore, 2 miles east of outlet and 4 miles south of Nighthawk.

Drainage area.--293 sq mi.

Records available.--April to September 1956.

Gage.--Staff gage. Datum of gage is 1,100 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum elevation observed during period, 1,159.47 ft May 22; minimum observed, 1,144.68 ft Sept. 12.

Remarks.--Lake affords natural pondage for high stages of Similkameen River. No known regulation. Diversions for irrigation of about 1,000 acres above station. Whitestone Irrigation District diverts water from Toats Coulee Creek for irrigation of about 2,000 acres in Whitestone Creek basin.

Elevation, in feet, April to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	51.82	57.99	51.44	46.07	44.86
2							-	51.64	58.53	51.23	45.96	44.83
3							-	51.49	58.24	51.07	45.86	44.81
4							-	51.27	57.84	50.95	45.77	44.80
5							-	51.08	57.80	50.86	45.69	44.78
6							-	50.90	57.38	50.80	45.61	44.76
7							-	50.86	56.62	50.74	45.55	44.75
8							-	51.05	55.94	50.53	45.49	44.74
9							-	51.55	55.29	50.45	45.42	44.72
10							-	52.35	54.92	50.27	45.36	44.70
11							-	53.35	55.24	50.09	45.30	44.69
12							-	54.06	55.35	49.94	45.26	44.68
13							45.10	54.16	54.92	49.75	45.21	44.69
14							45.10	54.00	54.56	49.60	45.17	44.70
15							45.10	53.78	54.36	49.38	45.12	44.70
16							45.16	53.76	54.24	49.18	45.12	44.70
17							45.30	54.32	54.10	48.96	45.10	44.70
18							45.46	55.48	53.87	48.68	45.05	44.70
19							45.64	57.08	53.60	48.46	45.03	44.71
20							45.88	58.46	53.95	48.24	45.01	44.72
21							46.25	59.26	54.40	48.02	44.99	44.72
22							46.92	59.47	54.16	47.83	44.97	44.71
23							47.83	59.12	53.86	47.64	44.95	44.70
24							49.04	59.10	53.58	47.42	44.90	44.70
25							49.93	59.30	53.24	47.24	44.88	44.70
26							50.73	59.28	52.80	47.03	44.90	44.72
27							51.33	59.10	52.38	46.95	44.94	44.72
28							51.77	58.65	52.14	46.68	44.94	44.72
29							51.91	58.16	52.03	46.50	44.90	44.74
30					-------		51.91	57.80	51.79	46.37	44.88	44.74
31		-------			-------		-------	57.86	-------	46.22	44.86	-------

Note.--Add 1,100 ft to obtain elevation above mean sea level. Gage read once daily at about 8 a.m.

Similkameen River near Nighthawk, Wash.

(International gaging station)

Location.--Lat 48°59'10", long 119°37'00", in NW¼ sec. 7, T. 40 N., R. 26 E., on left bank three-quarters of a mile upstream from Oroville-Tonasket Irrigation District canal intake, about 1¾ miles downstream from and northeast of Nighthawk, and 12 miles upstream from mouth.

Drainage area.--3,550 sq mi, approximately.

Records available.--May 1911 to September 1956 (prior to September 1928, mean monthly discharge included Oroville-Tonasket Irrigation District canal). Published as "near Oroville" 1911-28.

Gage.--Water-stage recorder. Datum of gage is 1,137.70 ft above mean sea level, international joint adjustment of 1947. Prior to Sept. 11, 1928, staff gages at sites 7 miles downstream (below Oroville-Tonasket Irrigation District canal) at various datums.

Average discharge.--45 years, 2,250 cfs (1,629,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,500 cfs May 22 (gage height, 14.19 ft); minimum observed, 285 cfs Feb. 16 (result of discharge measurement).
1928-56: Maximum discharge, 38,700 cfs May 30, 1948 (gage height, 17.62 ft); minimum, 120 cfs Jan. 6, 1930 (gage height, 2.05 ft).

Remarks.--Records good except those for period of doubtful gage-height record, which are fair, and those for periods of ice effect, which are poor. Flow at high stages regulated by natural diversion into and release from Palmer Lake. Several small diversions above station for irrigation of about 2,900 acres in the United States in 1946 and approximately 1,600 acres in Canada.

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

Revisions.--WSP 1182: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.8	300	7.0	4,600
3.4	585	9.0	8,570
4.0	970	11.0	13,700
5.0	1,880	13.0	20,200
6.0	3,080	15.0	27,700

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	590	*1,850	1,280	886	400	596	640	6,210	19,600	5,920	1,380	851
2	568	1,690	1,280	949	400	602	640	5,920	20,800	5,780	*1,340	788
3	563	1,570	1,250	1,040	400	652	652	5,560	18,500	5,860	1,490	760
4	558	4,380	1,200	1,140	450	624	646	5,300	17,500	5,880	1,500	736
5	558	6,250	1,120	1,180	500	596	646	5,190	17,100	5,630	1,410	718
6	568	4,250	1,060	1,200	540	580	652	5,260	14,400	5,820	1,320	694
7	602	3,500	1,040	1,060	580	580	634	5,650	*d12,100	5,650	1,230	676
8	596	3,140	1,080	986	600	568	624	6,470	d10,800	5,190	1,170	658
9	590	2,920	1,070	921	600	574	640	8,090	d10,300	5,030	1,120	634
10	652	3,020	1,040	872	602	574	646	9,950	d11,500	4,990	1,070	*618
11	706	3,740	*1,040	837	612	536	682	11,000	d12,700	4,890	1,030	607
12	706	2,780	1,070	844	612	536	748	10,400	d11,400	4,740	994	640
13	676	1,920	978	865	612	546	823	9,540	d9,990	4,550	956	688
14	676	1,580	900	858	550	*558	970	8,850	9,540	4,300	921	658
15	718	1,490	850	*809	500	574	1,270	*8,850	9,920	4,080	900	640
16	844	1,490	800	781	*300	580	1,710	10,000	9,950	3,780	986	618
17	949	1,360	750	788	*400	596	1,970	12,500	9,560	3,440	1,160	590
18	914	1,380	750	788	450	607	2,000	15,500	8,960	*3,160	1,110	580
19	921	1,420	800	774	530	602	2,180	18,800	9,190	3,000	986	568
20	921	1,670	800	760	580	607	2,680	22,200	11,700	2,860	914	546
21	914	1,680	900	767	634	607	3,650	*23,900	10,300	2,810	865	541
22	872	1,620	900	767	640	618	5,210	24,000	9,260	2,670	823	541
23	809	1,570	900	760	607	624	7,000	22,600	8,820	2,500	795	558
24	767	1,580	1,000	748	602	629	7,480	22,700	8,260	2,310	774	580
25	767	1,570	1,000	694	585	624	7,230	*23,800	7,580	2,130	809	585
26	5,770	1,540	1,100	580	590	629	7,160	23,100	6,960	2,020	921	682
27	3,650	1,650	1,200	520	590	629	7,290	22,100	6,850	1,900	1,060	688
28	2,670	1,320	1,380	470	590	607	*7,190	19,800	7,270	1,750	1,030	858
29	2,340	1,250	1,190	430	596	618	6,890	18,500	6,960	1,650	935	865
30	2,160	1,240	1,000	400	------	624	6,530	17,800	6,490	1,550	900	795
31	2,020	------	858	400	------	629	------	18,200	------	1,450	886	------
Total	36,615	66,350	31,586	24,874	15,652	18,526	87,083	427,740	334,260	117,290	32,785	19,961
Mean	1,181	2,212	1,019	802	540	598	2,903	13,800	11,140	3,784	1,058	665
Ac-ft	72,620	131,600	62,650	49,340	31,050	36,750	172,700	848,400	663,000	232,600	65,030	39,590

Calendar year 1955: Max 28,000 Min 426 Mean 2,800 Ac-ft 2,027,000
Water year 1955-56: Max 24,000 Min 300 Mean 3,313 Ac-ft 2,405,000

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorded graph.
Note.--Stage-discharge relation affected by ice Dec. 14-27, Jan. 27 to Feb. 9, Feb. 14-18.

Okanogan River near Tonasket, Wash.

(International gaging station)

Location.--Lat 48°38'00", long 119°27'50", in lot 3, sec. 8, T. 36 N., R. 27 E., on right bank 1,000 ft upstream from Chewilliken Creek and 5½ miles south of Tonasket.

Drainage area.--7,270 sq mi, approximately.

Records available.--April 1929 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 860.78 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--27 years, 2,937 cfs (2,126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 25,000 cfs May 26 (gage height, 17.37 ft); minimum daily, 850 cfs Feb. 17.
1929-56: Maximum discharge, 40,900 cfs May 31, 1948 (gage height, 21.79 ft, from floodmark); minimum recorded, 126 cfs Sept. 5, 1931 (gage height, 3.43 ft).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation of about 10,700 acres in the United States and 45,580 acres in Canada. Flow affected by regulation of Okanagan Lake and Skaha Lake, and by natural storage in other lakes. Some diurnal fluctuation at low flow caused by powerplant on Similkameen River.

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

Revisions (water years).--WSP 862: 1937. WSP 1216: Drainage area. WSP 1316: 1934(M), 1938(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 25				May 26 to Sept. 30			
5.0	790	12.0	11,000	4.8	960	11.0	8,990
6.0	1,460	15.0	18,200	5.0	1,090	14.0	15,900
7.0	2,430	18.0	27,200	6.0	1,870	18.0	27,000
9.0	5,240			8.0	3,970		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,560	2,610	1,750	1,220	1,050	1,300	1,540	7,360	20,200	7,080	2,390	1,280
2	1,520	2,460	1,750	1,240	1,050	1,330	1,530	7,040	21,500	6,650	2,250	1,240
3	1,500	*2,300	1,700	1,320	1,050	1,390	1,550	6,650	21,300	6,680	*2,210	1,190
4	1,450	2,740	1,600	1,430	1,020	1,410	1,610	6,340	20,000	6,810	2,330	1,150
5	*1,380	6,590	1,500	1,550	1,050	1,390	1,640	6,200	19,600	6,630	2,240	1,120
6	1,250	5,640	1,400	1,660	1,100	1,400	1,660	6,160	*18,400	6,700	2,140	1,110
7	1,240	4,400	1,350	1,810	1,100	1,500	1,680	6,300	16,200	6,750	2,020	1,100
8	1,250	3,900	1,350	1,790	1,150	1,650	1,670	6,610	14,100	6,440	1,940	1,080
9	1,260	3,560	1,400	1,700	1,150	1,640	1,730	8,210	12,600	6,120	1,790	1,060
10	1,250	3,440	1,400	1,590	1,100	1,630	1,860	9,600	12,800	6,070	1,730	1,060
11	1,310	3,940	1,400	1,540	1,100	1,580	1,940	10,400	14,100	5,970	1,690	*1,040
12	1,290	3,710	1,450	1,500	1,100	1,520	1,650	11,000	14,400	5,760	1,640	1,040
13	1,280	2,700	1,470	1,480	1,100	1,500	1,430	11,100	12,800	5,700	1,610	1,080
14	1,220	2,000	1,190	1,470	1,100	1,500	1,530	10,400	11,600	5,540	1,480	1,110
15	1,240	1,900	1,100	1,450	1,050	*1,540	1,750	9,930	11,500	5,280	1,530	1,080
16	1,320	1,850	1,020	*1,420	*900	1,570	2,090	*10,400	11,700	5,090	1,560	1,060
17	1,520	1,800	962	1,410	850	1,530	2,480	11,900	11,400	*4,810	1,640	1,040
18	1,560	1,800	885	1,590	900	1,540	2,620	13,900	10,700	4,560	1,760	1,010
19	1,540	1,800	880	1,570	1,050	1,550	2,670	15,800	10,300	4,350	1,660	992
20	1,490	1,900	926	1,520	1,100	1,530	2,990	19,600	11,900	4,200	1,560	986
21	1,490	2,000	1,070	1,520	1,200	1,560	3,750	*22,800	12,800	4,090	1,430	999
22	1,480	1,950	1,160	1,530	1,200	1,570	5,030	24,300	11,200	4,000	1,360	980
23	1,410	1,900	1,290	1,530	1,250	1,680	6,660	24,600	10,500	3,840	1,320	986
24	1,360	1,900	1,350	1,500	1,250	1,680	7,470	24,200	9,890	3,660	1,280	1,010
25	1,360	1,900	1,430	1,450	1,300	1,680	a7,450	24,600	9,140	3,470	1,270	1,030
26	3,000	1,900	1,560	1,350	1,300	1,680	a7,400	24,900	8,270	3,260	1,340	1,070
27	5,340	1,800	1,690	1,250	1,300	1,620	a7,700	*24,400	7,820	3,090	1,450	1,170
28	3,670	1,800	1,750	1,200	1,300	1,500	a7,700	23,000	7,970	2,960	1,560	1,170
29	3,110	1,700	1,660	1,150	1,300	1,560	*8,060	21,000	8,150	2,810	1,500	1,350
30	2,860	1,700	1,510	1,100	------	1,610	7,740	19,900	7,630	2,660	1,420	1,330
31	2,720	------	1,350	1,100	------	1,620	------	19,800	------	2,510	1,380	------
Total	55,230	79,590	42,303	44,940	32,470	47,760	106,580	448,400	390,470	153,540	52,480	32,923
Mean	1,782	2,653	1,365	1,450	1,120	1,541	3,553	14,460	13,020	4,953	1,693	1,097
Ac-ft	109,500	157,900	83,910	89,140	64,400	94,730	211,400	889,400	774,500	304,500	104,100	65,300

Calendar year 1955: Max 27,300 Min 880 Mean 3,539 Ac-ft 2,562,000
Water year 1955-56: Max 24,900 Min 850 Mean 4,062 Ac-ft 2,949,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for stations on nearby streams.
Note.--Stage-discharge relation affected by ice Nov. 13 to Dec. 12, Jan. 26 to Mar. 1.

Methow River at Twisp, Wash.

Location.--Lat 48°21'40", long 120°06'50", in NW¼ sec. 17, T. 33 N., R. 22 E., on left bank a quarter of a mile downstream from Twisp River and 0.3 mile east of center of Twisp.

Drainage area.--1,330 sq mi, approximately.

Records available.--June 1919 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to Oct. 3, 1919, several staff gages in the immediate vicinity at different datum. Oct. 3, 1919, to Sept. 30, 1929, and Oct. 31 to Nov. 6, 1933, chain gage on road bridge 40 ft upstream at same datum as staff gages. Nov. 7 to Dec. 18, 1933, staff gage at present site at different datum.

Average discharge.--37 years, 1,310 cfs (948,400 acre-ft per year).

Extremes.--Maximum discharge during year, 17,400 cfs May 21, June 1 (gage height, 8.23 ft in gage well, 8.76 ft from high-water mark on outside gage on May 21); minimum daily, 250 cfs Feb. 5-12, 15.

1919-29, 1933-56: Maximum discharge, 40,800 cfs May 29, 1948 (gage height, 12.94 ft in gage well), from rating curve extended above 18,000 cfs on basis of slope-area determination of peak flow; minimum observed, 134 cfs Sept. 4, 5, 1926, Sept. 9, 10, 1929, but may have been less during period of ice effect Jan. 6 to Mar. 4, 1937.

Remarks.--Records good except those for periods of ice effect, which are poor. A large part of flow diverted above station for irrigation by two canals of Methow Valley Irrigation District, by Risley ditch, and by many other smaller ditches. Diversions for irrigation of 7,410 acres above station (1946 estimate).

Revisions (water years).--WSP 512: Drainage area. WSP 1316: 1921(M), 1928(M), 1934.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 17				May 18 to Sept. 30			
1.6	190	4.0	3,420	1.6	290	4.0	3,650
1.8	325	5.0	5,760	2.0	560	5.0	6,140
2.0	480	6.0	8,600	2.5	1,060	6.0	9,160
2.5	990	7.0	11,900	3.0	1,780	7.0	12,600
3.0	1,660			3.5	2,640	8.0	16,500

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	283	848	660	420	270	297	456	4,110	15,700	3,260	896	532
2	283	822	651	440	270	290	480	3,740	*13,400	3,390	907	518
3	283	*859	642	464	260	297	507	3,460	11,800	3,560	*896	504
4	283	1,280	633	464	260	290	534	3,300	12,100	3,450	866	490
5	290	1,400	624	456	250	276	588	3,240	10,500	3,540	810	476
6	290	1,270	624	464	250	269	597	3,320	8,300	3,470	790	448
7	355	1,190	615	440	250	283	615	3,840	7,000	3,120	750	427
8	392	1,140	615	424	250	276	651	4,830	*5,800	3,080	703	407
9	424	1,140	597	408	250	283	710	5,970	5,440	3,430	685	394
10	424	1,430	579	408	250	276	826	7,320	7,240	3,650	667	388
11	424	1,480	588	400	250	262	966	7,120	8,140	3,670	658	394
12	416	1,200	*597	392	250	269	1,180	6,160	6,420	3,760	649	*407
13	400	1,150	543	392	260	290	1,400	5,280	5,710	3,540	624	400
14	400	1,100	420	385	260	269	1,780	4,980	5,790	3,140	608	394
15	408	1,060	450	400	*250	*276	2,510	5,400	6,220	2,680	632	381
16	416	1,020	450	385	260	283	2,980	7,010	6,090	*2,410	820	374
17	424	980	450	*378	260	297	2,870	9,350	5,440	2,090	820	368
18	440	950	450	378	260	304	2,920	*13,000	5,420	1,990	730	355
19	456	920	460	370	260	311	3,360	15,800	7,720	1,990	676	348
20	464	890	470	370	270	318	4,060	15,900	8,140	1,990	649	336
21	464	860	480	362	320	325	5,420	16,100	6,170	1,890	616	329
22	464	830	516	362	325	332	7,180	*14,200	5,550	1,750	584	316
23	464	800	507	355	318	348	7,410	14,400	5,440	1,590	560	316
24	464	780	507	340	311	362	6,290	15,800	4,960	1,500	560	316
25	852	760	507	320	311	378	5,680	15,200	4,440	1,440	576	316
26	1,470	740	507	300	304	416	*5,500	14,200	4,030	1,340	750	329
27	1,210	720	472	290	297	408	5,400	12,900	4,410	1,290	721	348
28	1,100	700	430	280	304	400	5,100	12,200	4,930	1,200	658	355
29	1,050	680	420	280	*304	408	4,860	11,900	4,290	1,110	608	400
30	978	670	420	280	------	424	4,470	12,700	3,580	1,010	576	462
31	906	------	420	280	------	440	------	14,200	------	952	560	------
Total	16,977	29,669	16,304	11,687	7,934	9,957	87,300	286,930	210,170	76,282	21,605	11,828
Mean	548	989	526	377	274	321	2,910	9,256	7,006	2,461	697	394
Ac-ft	33,670	58,850	32,340	23,180	15,740	19,750	173,200	569,100	416,900	151,300	42,850	23,460

Calendar year 1955: Max 15,700 Min 283 Mean 1,497 Ac-ft 1,084,000
Water year 1955-56: Max 16,100 Min 250 Mean 2,149 Ac-ft 1,560,000

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12 to Dec. 1, Dec. 14-21, Dec. 28 to Jan. 2, Jan. 25 to Feb. 21 (no gage-height record Feb. 3-12; discharge estimated on basis of 1 discharge measurement and weather records).

Alta Lake near Pateros, Wash.

Location.--Lat 48°01'30", long 119°56'30", in SW¼NE¼ sec. 10, T. 29 N., R. 23 E., on west shore, 2½ miles southwest of Pateros.

Drainage area.--4.03 sq mi.

Records available.--November 1954 to September 1956 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 1,175 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 8.76 ft June 17; minimum observed, 6.16 ft Nov. 17.
1954-56: Maximum gage height observed, that of June 17, 1956; minimum observed, that of Nov. 17, 1955.

Remarks.--Small diversion for irrigation. No known regulation. Lake has no natural surface outlet.

Gage height, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	6.22	6.26	-	-	-	-	8.27	8.73	8.64	8.29	8.01
2	6.29	6.26	6.26	6.48	-	-	-	8.30	8.72	8.64	8.27	7.98
3	6.28	6.29	6.25	-	6.62	6.72	-	8.32	-	8.64	8.26	7.97
4	6.28	6.29	6.25	-	6.61	-	-	8.34	-	8.64	8.24	7.96
5	6.27	6.28	6.24	-	6.61	-	6.89	8.37	8.72	8.64	8.23	7.94
6	6.26	-	6.26	6.54	-	-	-	8.42	8.70	8.62	8.22	7.92
7	6.25	6.27	-	6.53	-	-	6.96	8.47	8.69	8.62	8.20	7.92
8	6.24	6.27	-	6.53	-	-	7.00	8.50	8.68	8.62	8.20	7.91
9	6.23	6.26	6.30	6.54	-	-	7.02	8.52	8.68	8.62	8.18	7.90
10	6.24	6.26	6.29	-	6.60	-	-	8.56	8.69	-	8.16	7.90
11	6.24	6.25	6.34	-	6.60	-	7.10	8.58	8.75	-	8.16	7.89
12	6.23	6.24	6.37	-	6.60	-	7.16	8.60	-	8.60	8.15	7.89
13	6.22	6.21	6.36	6.55	-	-	-	8.62	-	8.59	8.14	7.88
14	6.22	6.20	6.36	6.55	-	-	7.24	8.64	8.74	8.58	8.13	7.88
15	6.22	6.18	-	6.60	6.59	-	7.31	8.66	8.75	8.56	8.12	7.87
16	6.22	6.17	6.30	-	-	6.68	7.37	8.67	8.75	8.55	8.17	-
17	6.22	6.16	6.30	6.61	-	-	-	8.68	8.76	8.54	8.16	7.86
18	6.22	6.18	-	-	6.59	-	7.47	8.69	8.75	8.53	8.15	7.85
19	6.21	6.24	6.34	-	-	-	7.54	8.70	8.74	8.51	8.14	7.85
20	6.21	6.24	-	6.63	-	-	7.60	-	8.74	8.51	8.12	7.84
21	6.20	6.23	-	6.63	6.68	-	7.68	8.71	8.74	8.50	8.11	7.83
22	6.20	6.22	-	-	-	-	7.80	8.71	8.73	8.48	8.10	7.82
23	6.20	6.24	-	6.64	-	-	7.84	-	8.71	8.46	8.10	7.80
24	6.20	6.24	6.48	-	-	-	7.91	8.72	8.70	8.45	8.08	7.80
25	6.20	6.24	-	-	6.68	-	-	-	8.69	8.44	8.07	7.79
26	6.20	6.25	-	-	-	-	8.06	8.72	8.69	8.41	-	7.78
27	6.18	6.26	6.50	-	6.68	-	8.10	-	8.68	8.39	8.08	7.77
28	6.19	6.25	-	6.64	-	-	8.16	-	8.66	8.36	-	7.76
29	6.22	6.25	-	6.63	-	-	8.20	8.72	8.65	-	-	7.75
30	6.23	6.26	-	-	-------	-	8.24	8.72	8.64	8.33	-	7.74
31	6.23	-------	6.48	-	-------	-	-------	8.73	-------	8.31	-	-------

Stehekin River at Stehekin, Wash.

Location.--Lat 48°19'30", long 120°41'20", in SE¼ sec. 26, T. 33 N., R. 17 E., on left bank 1,200 ft upstream from Boulder Creek, 1¾ miles upstream from Lake Chelan, and 2 miles northwest of Stehekin. Records include flow of Boulder Creek.

Drainage area.--372 sq mi, includes that of Boulder Creek.

Records available.--October 1910 to October 1915, October 1926 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,100 ft above mean sea level (unadjusted). Prior to Aug. 17, 1911, staff gage three-eighths of a mile upstream from mouth at different datums (datum change made June 13, 1911). Aug. 17, 1911, to Oct. 31, 1915, staff gage a quarter of a mile downstream from Boulder Creek at different datum.

Average discharge.--35 years, 1,385 cfs (1,003,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,100 cfs June 1 (gage height, 27.22 ft); minimum, 145 cfs Mar. 16 (gage height, 18.32 ft).
1910-15, 1926-56: Maximum discharge, 18,900 cfs May 29, 1948 (gage height, 29.00 ft), from rating curve extended above 9,000 cfs on basis of slope-area determination of peak flow; minimum, 56 cfs Jan. 21, 1930.

Remarks.--Records good except those for periods of ice effect or shifting control, which are fair. No regulation or diversion.

Cooperation.--Gage-height record collected in cooperation with Public Utility District No. 1 of Chelan County.

Revisions (water years).--WSP 412: 1914. WSP 1316: 1911(M), 1914-15(M). The figure of peak discharge for May 20, 1912 (erroneously published as 7,590 cfs) has been revised to 7,090 cfs (gage height, 5.74 ft), superseding figure published in WSP 1316.

Rating tables, water year 1955-56, except periods of shifting control or ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 21				Apr. 22 to Sept. 30			
18.2	142	20.0	980	19.4	620	23.0	4,110
18.5	230	21.0	1,850	20.0	950	25.0	7,600
19.0	420	23.0	4,390	21.0	1,680	27.0	12,500
19.5	660			22.0	2,760		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	388	1,230	684	350	150	170	320	2,410	11,100	3,790	1,710	1,130
2	380	1,150	655	350	170	179	328	*2,250	8,460	3,980	1,620	1,010
3	368	2,520	630	360	190	191	340	2,140	7,710	*4,030	1,360	884
4	420	4,730	610	350	224	173	384	2,050	7,160	3,970	1,210	786
5	424	3,200	605	350	221	179	388	2,040	5,360	4,120	1,250	720
6	384	2,460	595	352	218	164	376	2,180	4,320	4,140	1,320	675
7	372	2,060	580	328	203	167	372	2,660	3,760	3,720	1,370	685
8	429	2,010	565	308	194	167	388	3,580	*3,490	4,180	1,450	710
9	510	2,940	545	300	188	164	429	4,540	4,250	5,040	1,520	736
10	*492	6,260	535	296	188	156	515	4,860	5,630	5,540	1,570	830
11	434	3,570	525	*286	191	153	630	4,260	5,410	5,720	1,620	914
12	434	2,620	590	286	194	159	792	3,560	4,380	6,370	1,620	819
13	460	2,250	545	286	185	153	1,080	3,100	4,000	6,420	1,750	814
14	515	1,940	520	279	182	150	1,520	2,990	4,170	5,570	1,940	*819
15	816	1,740	506	286	155	150	2,060	3,360	4,680	4,800	2,340	819
16	732	1,610	506	282	155	156	2,120	4,440	4,560	4,340	2,180	764
17	816	1,490	492	272	170	164	1,930	5,860	4,180	4,050	1,700	758
18	834	1,400	450	272	175	179	1,990	7,860	4,550	4,320	1,510	802
19	822	1,290	435	265	185	194	2,270	9,160	7,490	4,780	1,540	824
20	738	1,170	435	258	185	209	2,770	9,560	6,120	5,000	1,700	866
21	655	1,080	410	254	185	215	3,530	8,500	4,720	4,700	1,800	878
22	610	987	430	254	176	221	3,980	7,480	4,490	4,170	1,750	720
23	570	945	470	254	170	240	4,140	8,060	4,490	3,770	1,700	655
24	1,740	917	483	251	173	248	3,660	*8,680	4,140	3,730	1,600	1,020
25	9,050	889	465	237	167	272	3,400	7,970	3,720	3,560	1,630	1,310
26	3,970	840	452	190	167	290	3,440	7,780	3,820	3,080	1,720	2,160
27	2,500	810	438	180	164	279	3,290	6,940	5,100	*2,680	1,510	1,420
28	2,000	756	390	170	170	*276	3,020	6,720	5,430	2,280	1,290	1,110
29	1,800	*726	370	160	164	290	2,760	7,140	4,500	1,990	1,310	1,620
30	1,640	708	350	160	------	304	2,590	8,550	3,790	1,920	1,170	1,540
31	1,420	------	350	150	------	312	------	10,700	------	1,800	1,090	------
Total	36,723	56,298	15,616	8,376	5,259	6,324	54,812	171,380	154,980	127,560	48,850	28,798
Mean	1,185	1,877	504	270	181	204	1,827	5,528	5,166	4,115	1,576	960
Cfsm	3.19	5.05	1.35	0.726	0.487	0.548	4.91	14.9	13.9	11.1	4.24	2.58
In.	3.67	5.63	1.56	0.84	0.53	0.63	5.48	17.13	15.49	12.75	4.88	2.88
Ac-ft	72,840	111,700	30,970	16,610	10,430	12,540	108,700	339,900	307,400	253,000	96,890	57,120

Calendar year 1955: Max 11,000 Min 240 Mean 1,551 Cfsm 4.17 In. 56.59 Ac-ft 1,123,000
Water year 1955-56: Max 11,100 Min 150 Mean 1,953 Cfsm 5.25 In. 71.47 Ac-ft 1,418,000

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice, Dec. 18-23, Dec. 28 to Jan. 5, Jan. 26 to Feb. 3, Feb. 15-18. Shifting-control method used Oct. 1-25, Jan. 6 to Apr. 21, July 14 to Sept. 3.

Railroad Creek at Lucerne, Wash.

Location.--Lat 48°11'45", long 120°35'50", in sec. 9, T. 31 N., R. 18 E., on left bank half a mile upstream from mouth and half a mile southwest of Lucerne.

Drainage area.--64.8 sq mi.

Records available.--October 1910 to September 1913, October 1926 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,250 ft (from topographic map). Dec. 6, 1910, to June 30, 1913, staff gage at site 1,800 ft downstream at different datum.

Average discharge.--33 years, 203 cfs (147,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,030 cfs May 31 (gage height, 6.41 ft), from rating curve extended above 1,400 cfs; minimum daily, 25 cfs Feb. 25-29, Mar. 12-16. 1910-13, 1926-56: Maximum discharge, 3,900 cfs May 28, 1948 (gage height, 8.1 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, less than 9.4 cfs sometime during period of ice effect Jan. 15-25, 1930.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Cooperation.--Gage-height record collected in cooperation with Public Utility District No. 1 of Chelan County.

Revisions (water years).--WSP 1042: 1944. WSP 1122: 1936. WSP 1216: Drainage area. WSP 1316: 1941(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 18				June 19 to Sept. 30	
1.3	20	3.5	570	2.1	100
1.6	44	4.0	840	2.5	172
2.0	89	5.0	1,580	3.0	297
2.5	188	6.0	2,560	4.0	640
3.0	355			5.0	1,100

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	142	112	60	26	28	40	*344	2,060	580	300	200
2	60	138	107	60	30	30	50	325	1,600	636	294	190
3	60	223	106	65	33	31	50	310	1,390	*656	262	168
4	65	444	102	60	34	32	55	299	1,370	640	239	149
5	65	313	101	60	35	30	60	299	888	628	236	136
6	60	245	100	60	35	28	70	306	708	640	239	125
7	60	214	95	55	35	28	65	355	585	596	247	124
8	65	211	95	55	30	27	70	431	*610	640	254	124
9	70	300	90	50	30	27	80	520	720	747	262	127
10	70	834	90	50	30	26	90	561	912	783	262	138
11	*70	444	85	50	30	26	100	525	981	801	262	162
12	70	328	85	*45	30	25	116	453	828	864	262	155
13	75	288	80	45	29	25	138	431	742	878	278	140
14	80	251	80	45	29	25	180	427	758	801	303	*138
15	89	229	78	45	28	25	229	480	822	700	353	140
16	100	239	76	45	26	25	251	580	930	636	353	136
17	101	195	74	43	26	26	242	686	852	588	294	129
18	102	185	72	40	26	27	251	858	894	620	262	134
19	102	183	70	39	28	28	281	1,020	1,040	696	257	140
20	95	165	70	38	28	30	328	1,060	905	752	275	142
21	92	155	70	38	28	32	391	1,310	729	734	294	143
22	88	147	75	37	28	34	476	1,230	692	648	292	124
23	85	142	70	36	26	36	480	1,210	696	584	281	109
24	182	140	70	35	26	36	435	1,230	660	576	284	129
25	708	138	70	33	25	36	419	*1,320	600	572	278	143
26	423	136	70	32	25	38	419	1,300	600	504	289	209
27	255	130	65	31	25	38	415	1,120	724	*444	262	190
28	211	123	65	30	25	38	391	1,090	770	384	239	157
29	194	*119	60	29	25	*40	375	1,120	680	347	234	170
30	172	116	60	27	------	40	359	1,270	572	323	219	195
31	155	-----	60	26	------	40	-----	1,940	------	306	205	------
Total	4,084	6,917	2,503	1,364	831	957	6,906	24,410	26,318	19,304	8,371	4,466
Mean	132	231	80.7	44.0	28.7	30.9	230	787	877	623	270	149
Cfsm	2.04	3.56	1.25	0.679	0.443	0.477	3.55	12.1	13.5	9.61	4.17	2.30
In.	2.34	3.97	1.44	0.78	0.48	0.55	3.96	14.01	15.10	11.08	4.80	2.56
Ac-ft	8,100	13,720	4,960	2,710	1,650	1,900	13,700	48,420	52,200	38,290	16,600	8,860

Calendar year 1955: Max 2,380 Min 43 Mean 245 Cfsm 3.78 In. 51.36 Ac-ft 177,500
Water year 1955-56: Max 2,060 Min 25 Mean 291 Cfsm 4.49 In. 61.07 Ac-ft 211,100

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-15, 20-23, Dec. 7-12, 17, 20, 21, 23-28, Jan. 1-26, Feb. 2 to Mar. 10, Mar. 12 to Apr. 11; discharge estimated on basis of 3 discharge measurements, weather records, and records for Stehekin River at Stehekin. Stage-discharge relation affected by ice Dec. 12-23, Dec. 28 to Jan. 5, Jan. 27 to Feb. 5, Feb. 16-19, Mar. 11, 12.

Lake Chelan at Chelan, Wash.

Location.--Lat 47°50'00", long 120°03'40", in lot 3, sec. 15, T. 27 N., R. 22 E., on south shore of Lake Chelan at Lakeside, 2 miles west of Chelan.
Drainage area.--951 sq mi (revised).
Records available.--September 1897 to December 1899, January to June 1905, and December 1910 to September 1911 (fragmentary gage heights only); October 1911 to September 1956. Prior to October 1940, records of change in contents published with records for Chelan River at Chelan. Records of change in contents prior to October 1911, published in WSP 482 and 492 with records for Chelan River near Chelan have been found to be unreliable and should not be used. Month-end contents October 1911 to September 1950 published in WSP 1316.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 1, 1900, staff gage at Lakeside about 1 mile west of Chelan at datum 1,070.18 ft above mean sea level, adjustment of 1912. Jan. 1 to June 30, 1905, staff gage at upper highway bridge at Chelan at different datum. Dec. 5, 1910, to Nov. 13, 1927, staff gage at Forest Service boat landing at Chelan at datum 1,076.07 ft above mean sea level, adjustment of 1912.
Extremes.--Maximum elevation during year, 1,100.00 ft Aug. 1 (contents, 676,100 acre-ft); minimum, 1,086.34 ft Apr. 9 (contents, 232,600 acre-ft).
1897-99, 1905, 1910-56: Maximum elevation, 1,100.05 ft July 19, 1947 (contents, 677,800 acre-ft); minimum since completion of dam in 1927, 1,079.68 ft Apr. 3, 4, 1937 (contents, 21,400 acre-ft). Minimum elevation 1,076.78 ft Jan. 27, 28, Dec. 2-5, 1898.
Remarks.--Reservoir is formed by low concrete dam at lake outlet completed Sept. 3, 1927. Usable capacity between elevations 1,079 and 1,100 ft, 676,100 acre-ft. Regulation between these elevations is allowed by stipulation of Federal Power Commission. Water is used for power development. Elevation of lake maintained between 1,092 and 1,100 ft during period Aug. 16 to Sept. 15 for scenic effect and recreational purposes. In 1946, an estimated 6,280 acres were irrigated above station, with an estimated annual depletion of about 11,000 acre-ft.
Cooperation.--Gage-height record collected in cooperation with Public Utility District No. 1 of Chelan County.
Revisions (water years).--WSP 1246: 1951. WSP 1286: 1952. See also Records available.

Capacity table, water year 1955-56 (elevation, in feet, and capacity, in acre-feet)

1,086	221,800	1,094	480,000
1,087	253,800	1,095	512,600
1,088	285,800	1,096	545,200
1,089	318,000	1,097	577,800
1,090	350,200	1,098	610,500
1,091	382,600	1,099	643,300
1,092	415,000	1,100	676,100
1,093	447,400		

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96.61	96.23	98.34	96.56	94.49	89.92	86.80	90.51	97.46	99.51	99.99	99.67
2	96.53	96.34	98.30	96.50	94.36	89.73	86.74	90.58	97.64	99.66	99.89	99.62
3	96.43	96.51	98.25	96.46	94.26	89.60	86.65	90.68	97.77	99.70	99.85	99.57
4	96.31	96.86	98.21	96.40	94.18	89.44	86.64	90.74	97.85	99.71	99.82	99.53
5	96.25	97.14	98.17	96.34	94.08	89.30	86.57	90.83	97.84	99.72	99.80	99.46
6	96.11	97.31	98.11	96.28	93.95	89.18	86.47	90.95	97.74	99.73	99.78	99.38
7	95.99	97.46	98.03	96.24	93.83	89.09	86.43	91.08	97.80	99.72	99.77	99.29
8	95.90	97.59	97.96	96.19	93.71	89.00	86.37	91.22	97.87	99.74	99.75	99.22
9	95.85	97.73	97.91	96.13	93.59	88.89	86.34	91.51	97.94	99.83	99.71	99.15
10	95.83	98.20	97.84	96.07	93.47	88.76	86.37	91.90	98.12	99.80	99.70	99.11
11	95.74	98.43	97.83	96.02	93.37	88.65	86.44	92.21	98.13	99.73	99.70	99.07
12	95.71	98.54	97.83	95.94	93.30	88.54	86.50	92.38	98.12	99.84	99.70	98.99
13	95.71	98.56	97.73	95.88	93.16	88.42	86.57	92.46	98.19	99.75	99.74	98.94
14	95.69	98.59	97.64	95.79	93.03	88.30	86.71	92.53	98.25	99.61	99.76	98.86
15	95.65	98.54	97.56	97.76	92.82	88.19	86.95	92.62	98.41	99.63	99.80	98.80
16	95.59	98.50	97.49	95.73	92.63	88.10	87.18	92.81	98.58	99.79	99.87	98.75
17	95.55	98.47	97.41	95.68	92.46	97.99	87.31	93.11	98.71	99.82	99.89	98.68
18	95.47	98.49	97.29	95.63	92.24	87.89	87.49	93.42	98.90	99.83	99.86	98.62
19	95.40	98.55	97.25	95.57	92.03	87.81	87.67	93.79	99.27	99.89	99.87	98.57
20	95.32	98.51	97.18	95.52	91.88	87.72	87.93	94.27	99.56	99.85	99.89	98.51
21	95.24	98.50	97.14	95.46	91.66	87.66	88.23	94.67	99.49	99.76	99.89	98.44
22	95.16	98.45	97.14	95.41	91.45	87.59	88.62	94.95	99.46	99.73	99.88	98.31
23	95.06	98.42	97.11	95.37	91.20	87.51	88.92	95.25	99.49	99.70	99.86	98.22
24	95.01	98.43	97.04	95.31	91.00	87.42	89.17	95.64	99.47	99.79	99.87	98.16
25	95.31	98.47	97.02	95.23	90.79	87.37	89.44	95.95	99.40	99.96	99.85	98.09
26	95.68	98.47	97.05	95.16	90.58	87.30	89.67	96.27	99.45	99.89	99.88	98.09
27	95.77	98.45	97.03	95.06	90.40	87.19	89.91	96.49	99.56	99.93	99.91	98.07
28	95.85	98.44	96.95	94.96	90.24	87.10	90.10	96.53	99.70	99.96	99.85	98.01
29	96.00	98.40	96.86	94.86	90.07	87.05	90.25	96.61	99.51	99.97	99.80	97.96
30	97.17	98.38	96.75	94.74	-------	86.97	90.40	96.75	99.45	99.99	99.75	97.95
31	96.20	-------	96.64	94.62	-------	86.97	-------	97.03	-------	99.98	99.68	-------
(†)	550,690	621,670	584,380	498,530	348,220	247,350	363,430	583,310	657,100	672,180	663,660	605,270
(‡)	-15,320	+70,980	-57,290	-65,850	-150,300	-100,900	+116,100	+219,900	+73,790	+15,080	-8,520	-58,390

Calendar year 1955..... † +126,400
Water year 1955-56..... ‡ +39,260

† Contents, in acre-feet, at end of month, based on mean of elevations at Lakeside and at head of lake at Stehekin.
‡ Change in contents in acre-feet.
Note.--Add 1,000 ft to obtain elevation above mean sea level.

Chelan River at Chelan, Wash.

Location.--Lat 47°50'05", long 120°00'40", in SE¼ sec. 13, T. 27 N., R. 22 E., near right bank in forebay upstream from control dam at outlet of Lake Chelan, a quarter of a mile south of Chelan.

Drainage area.--951 sq mi.

Records available.--November 1903 to September 1956. Published as "below Chelan Lake" 1904-5. Adjusted records for October 1903 to September 1911, published in WSP 482, 492, and 870 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder and concrete power dam. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 7, 1927, staff gage at site 800 ft downstream at same datum. Jan. 7 to Sept. 30, 1927, staff gage about 500 to 1,000 ft below dam at same datum. Oct. 1, 1927, to Nov. 10, 1928, staff gage and Nov. 11, 1928, to Mar. 19, 1939, water-stage recorder, at sites 2½ miles downstream at same datum.

Average discharge.--52 years (1904-56), 2,038 cfs (1,475,000 acre-ft per year), adjusted for storage since October 1911.

Extremes.--Maximum daily discharge during year, 12,100 cfs June 3; minimum daily, 52 cfs Oct. 30, Nov. 5, 6.

1903-56: Maximum daily discharge, 16,000 cfs May 30, 1948; no flow part of day Jan. 30, 1917, when lake outlet was blocked with ice, and at other times owing to artificial regulation.

Remarks.--Unmeasured water that is diverted for irrigation above station is small percentage of total runoff. Chelan County Public Utility District No. 1 diverts water at Chelan to develop about 54,000 horsepower and to irrigate an unknown area near Chelan, which quantity is included in records of daily discharge. Prior to July 1, 1955, the diversion was by Washington Water Power Co. Diversions for irrigation of about 6,280 acres, depletion 11,000 acre-ft (1946 estimate). Flow regulated by Lake Chelan (see preceding page).

Cooperation.--Records of water used for power and irrigation furnished by the Public Utility District No. 1 of Chelan County.

Revisions (water years).--WSP 482: 1904-13. WSP 612: 1924. WSP 1216: Drainage area. WSP 1246: 1951. WSP 1286: 1952. See also Records available.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,190	214	1,460	2,190	2,290	3,180	2,070	2,200	11,700	4,070	2,940	1,890
2	1,950	340	1,510	1,740	2,290	3,080	1,770	2,220	11,800	4,730	2,700	1,610
3	1,910	228	1,450	1,940	2,280	2,920	2,030	2,210	12,100	5,800	2,230	1,420
4	2,100	143	1,440	1,840	2,300	2,990	1,910	2,220	11,600	5,860	2,240	1,700
5	2,110	52	1,680	1,590	2,300	2,620	2,140	2,210	10,400	5,850	2,250	2,130
6	2,200	52	2,150	1,540	2,290	2,250	2,140	2,230	7,490	5,880	2,240	2,000
7	2,130	157	2,070	1,550	2,270	2,230	1,930	2,220	5,440	5,530	2,240	2,210
8	2,190	107	1,810	1,440	2,290	2,240	1,780	1,460	4,920	4,800	2,240	2,170
9	1,900	852	1,780	1,710	2,280	2,240	1,280	1,210	4,970	7,260	2,250	1,900
10	1,380	1,000	2,250	1,790	2,280	2,250	957	2,230	7,120	9,390	2,110	1,830
11	1,480	892	2,260	1,740	2,280	2,010	881	2,540	10,500	7,100	1,890	2,020
12	269	1,580	2,250	1,790	2,280	2,270	1,020	4,020	5,710	7,960	1,740	2,020
13	965	1,630	2,130	1,960	2,300	2,230	923	4,090	5,110	11,100	1,820	2,030
14	1,360	2,220	2,040	1,770	2,790	2,240	925	3,610	5,060	8,500	2,150	2,010
15	1,450	2,220	2,040	1,640	3,310	2,140	934	3,210	5,200	4,160	2,110	2,010
16	1,820	2,220	2,240	1,610	3,240	2,050	927	3,290	4,740	3,680	2,160	1,780
17	1,840	2,210	2,260	1,620	3,580	2,240	1,110	4,710	3,620	5,420	2,190	1,760
18	2,060	2,220	2,250	1,750	3,970	2,260	1,030	8,040	3,640	4,800	2,090	1,900
19	2,100	1,960	2,250	1,550	3,870	1,840	1,100	8,330	5,150	6,050	1,870	2,210
20	2,130	1,780	2,250	1,570	4,090	2,240	1,100	8,170	8,240	7,760	1,850	2,210
21	2,150	1,680	2,250	1,490	4,320	2,220	1,350	8,750	9,020	7,040	2,160	2,210
22	2,130	1,940	2,090	1,320	4,160	2,230	1,930	8,570	7,110	6,080	2,200	2,220
23	1,960	1,830	1,620	1,560	4,000	2,240	2,190	8,130	7,110	4,860	2,190	2,240
24	2,000	1,390	1,450	1,550	3,800	2,240	2,190	8,560	7,120	2,770	1,830	2,210
25	2,200	1,400	718	1,660	3,740	2,230	2,180	8,270	6,040	3,830	1,830	2,210
26	1,720	1,320	1,140	1,710	3,640	2,230	2,180	8,950	4,680	4,020	1,680	2,210
27	1,770	1,190	1,570	2,090	3,470	2,230	2,180	10,600	5,140	2,820	2,230	2,220
28	397	1,530	1,650	2,170	3,340	2,230	2,180	10,500	8,810	*2,490	2,230	2,210
29	372	1,600	2,000	2,120	3,300	2,230	2,190	10,700	9,040	2,400	2,220	2,220
30	52	1,460	2,250	2,300	-------	2,230	2,190	10,800	5,420	2,480	2,230	2,220
31	775	-------	2,170	2,290	-------	2,230	-------	11,200	-------	2,480	1,790	-------
Total	51,060	37,417	58,478	54,590	88,350	72,060	48,717	175,450	214,000	166,970	65,900	60,980
Mean	1,647	1,247	1,886	1,761	3,047	2,325	1,624	5,660	7,133	5,386	2,126	2,033
Ac-ft	101,300	74,220	116,000	108,300	175,200	142,900	96,630	348,000	424,500	331,200	130,700	121,000
(†)	-15,320	+70,980	-57,290	-65,850	-150,300	-100,900	+116,100	+219,900	+73,790	+15,080	-8,520	-58,390

Adjusted for change in contents in Lake Chelan

Mean	1,398	2,440	955	690	433	683	3,575	9,236	8,374	5,632	1,987	1,052
Cfsm	1.47	2.57	1.00	0.726	0.455	0.718	3.76	9.71	8.81	5.92	2.09	1.11
In.	1.70	2.86	1.16	0.84	0.49	0.83	4.19	11.20	9.82	6.83	2.41	1.23
Ac-ft	85,980	145,200	58,710	42,450	24,900	42,000	212,700	567,900	498,300	346,300	122,200	62,610

Observed

Calendar year 1955: Max 10,100 Min 28 Mean 2,048 Ac-ft 1,483,000
Water year 1955-56: Max 12,100 Min 52 Mean 2,989 Ac-ft 2,170,000

Adjusted

Calendar year 1955: Mean 2,223 Cfsm 2.34 In. 31.74 Ac-ft 1,609,000
Water year 1955-56: Mean 3,043 Cfsm 3.20 In. 43.56 Ac-ft 2,209,000

* Discharge measurement made on this day.
† Change in contents in Lake Chelan, in acre-feet; furnished by Chelan Public Utility District No. 1.

Note.--Discharges are combined flows of power conduit, irrigation diversion below dam, and waste water.

Entiat River at Entiat, Wash.

Location.--Lat 47°39'40", long 120°13'30", in SE¼ sec. 17, T. 25 N., R. 21 E., on right bank at Entiat and a quarter of a mile upstream from mouth.

Drainage area.--419 sq mi.

Records available.--October 1910 to September 1925, June 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 690 ft (from topographic map). October 1910 to Sept. 30, 1925, staff gage at site three-quarters of a mile upstream at different datum.

Average discharge.--20 years, 510 cfs (369,200 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 4,960 cfs June 1 (gage height, 5.71 ft); minimum, 29 cfs Jan. 26, result of freezeup.

1910-25, 1951-56: Maximum discharge, 5,380 cfs June 18, 1916; maximum gage height, that of June 1, 1956; minimum discharge, that of Jan. 26, 1956.

Maximum discharge known, 10,800 cfs May 29, 1948, on basis of conveyance-slope determination of peak flow.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Many diversions above station for irrigation of an estimated 2,560 acres in 1946 with a resulting estimated depletion of 4,480 acre-ft of flow. Occasional regulation by millpond 10 miles upstream.

Revisions (water years).--WSP 1316: 1914-16(M), 1918(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 17				May 18 to Sept. 30			
1.3	29	2.5	530	1.5	155	3.0	990
1.5	74	3.0	905	1.7	210	4.0	2,100
1.7	144	3.5	1,420	2.0	325	5.0	3,610
2.0	269	4.0	2,030	2.5	600	6.0	5,550

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	287	292	135	115	110	310	1,210	4,900	1,610	475	249
2	104	301	278	140	110	110	325	1,130	4,800	*1,660	493	224
3	107	283	234	145	113	110	344	1,060	*4,370	1,660	464	220
4	111	623	220	150	116	105	374	1,020	*4,050	1,610	426	210
5	129	595	210	160	120	105	422	977	3,490	1,590	410	201
6	122	495	200	175	120	105	390	977	2,880	1,560	390	192
7	118	454	195	190	120	110	374	1,050	2,400	1,480	380	186
8	126	432	190	200	115	110	374	1,230	2,130	1,490	370	178
9	167	432	185	196	110	115	400	1,550	2,000	1,650	370	175
10	175	*725	190	191	110	120	454	1,800	2,330	1,790	366	183
11	156	718	200	187	110	125	536	1,800	2,650	1,780	356	207
12	148	550	210	187	115	130	582	1,700	2,450	1,840	348	231
13	148	520	230	191	120	130	658	1,560	2,200	1,830	343	204
14	140	500	220	175	115	135	780	1,460	2,100	1,690	352	195
15	156	480	200	171	115	140	977	1,490	2,140	1,410	370	189
16	167	460	190	171	110	150	1,060	1,740	2,230	1,250	511	*180
17	167	450	180	167	110	160	986	2,210	2,200	1,120	415	172
18	175	435	170	160	110	170	968	3,060	2,180	1,080	370	168
19	183	420	160	152	105	180	1,050	*3,950	2,800	1,090	338	165
20	183	400	150	152	105	190	1,220	4,500	3,290	1,110	325	165
21	175	390	155	152	105	200	1,560	*4,640	2,680	1,080	321	168
22	171	380	160	152	105	208	1,910	*4,180	2,290	990	321	168
23	164	375	170	144	100	217	1,980	*4,080	2,180	884	313	162
24	164	380	180	*140	100	234	*1,780	*4,200	2,060	828	325	158
25	454	390	170	114	100	274	1,640	4,270	1,910	780	313	160
26	569	427	160	42	100	325	1,590	4,100	1,780	705	356	158
27	500	369	150	120	100	306	1,560	3,920	1,910	635	317	183
28	450	340	*140	125	105	301	1,500	3,770	2,190	*600	297	178
29	395	320	135	120	105	292	1,380	3,770	2,060	580	277	180
30	354	300	130	115	------	*297	1,300	3,950	1,800	535	269	231
31	315	------	130	115	------	301	------	4,410	------	499	253	------
Total	6,600	13,231	5,784	4,734	3,184	5,565	28,784	80,764	78,450	38,416	11,234	5,640
Mean	213	441	187	153	110	180	959	2,605	2,615	1,239	362	188
Ac-ft	13,090	26,240	11,470	9,390	6,320	11,040	57,090	160,200	155,600	76,200	22,280	11,190

Calendar year 1955: Max 4,610 Min 104 Mean 535 Ac-ft 387,600
Water year 1955-56: Max 4,900 Min 42 Mean 772 Ac-ft 560,100

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13-21, Dec. 21 to Jan. 8, Jan. 27 to Feb. 24. No gage-height record Oct. 27, 28, Nov. 13-25, 28-30, Dec. 4-20, Feb. 25 to Mar. 21; discharge estimated on basis of weather records and records for stations on nearby streams.

White River near Plain, Wash.

Location.--Lat 47°52'30", long 120°52'10", in NE¼ sec. 5, T. 27 N., R. 16 E., on left bank at downstream side of Forest Service bridge, 1¼ miles downstream from Sears Creek, 4 miles upstream from Wenatchee Lake (revised), and 12½ miles northwest of Plain.

Drainage area.--150 sq mi.

Records available.--May 1911 to September 1914 (fragmentary), August 1954 to September 1956. Monthly discharge only for some periods, published in WSP 1316. Published as "near Chiwaukum" May 1911 to September 1914.

Gage.--Water-stage recorder. Altitude of gage is 1,880 ft (from river-profile map). May 1911 to September 1914, staff gage at same site at different datum.

Extremes.--Maximum discharge during year, 5,700 cfs June 1 (gage height, 13.20 ft); minimum, 104 cfs Mar. 10 (gage height, 2.25 ft).
1911-14, 1954-56: Maximum discharge, that of June 1, 1956; minimum, that of Mar. 10, 1956.

Remarks.--Records excellent except those for periods of ice effect, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1914.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.3	112	8.0	2,210
3.0	266	10.0	3,180
4.0	580	12.0	4,400
6.0	1,380	13.0	5,390

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	165	654	341	245	150	134	173	1,300	5,280	2,240	872	422
2	*160	615	327	240	150	125	173	1,220	4,480	2,730	772	389
3	156	1,790	307	245	150	134	178	1,150	4,180	2,940	730	338
4	204	3,880	299	250	150	126	195	1,090	3,810	2,640	660	299
5	218	2,260	296	250	155	123	191	1,060	2,940	2,520	702	280
6	184	1,660	290	250	173	121	189	1,120	*2,400	2,500	744	269
7	186	1,340	277	240	156	125	193	1,380	2,120	2,310	769	269
8	226	1,300	277	230	144	126	198	1,810	1,990	2,660	780	280
9	282	1,570	266	228	146	125	218	2,260	2,410	3,140	783	288
10	266	3,060	263	214	142	125	266	2,540	3,080	*3,460	790	336
11	238	1,820	296	207	142	125	350	2,220	2,980	3,610	786	*503
12	*258	*1,340	657	202	146	125	440	1,910	2,410	3,900	772	353
13	313	1,200	420	200	140	125	612	1,730	2,230	3,720	790	313
14	365	1,000	410	195	136	125	836	1,690	2,400	3,160	839	310
15	545	900	400	198	125	128	1,040	1,840	2,680	2,650	936	310
16	478	800	370	191	130	128	1,020	2,270	2,580	2,480	842	293
17	552	700	360	186	*135	134	960	3,020	2,450	2,320	692	288
18	548	650	360	184	140	134	1,020	4,080	2,630	2,480	640	299
19	531	600	350	180	140	136	1,220	4,720	3,730	2,740	654	310
20	450	580	350	175	140	142	1,470	*5,020	3,240	2,840	699	321
21	398	560	350	175	138	144	1,920	*4,530	2,560	2,640	716	304
22	368	520	360	175	132	*146	2,200	4,020	2,490	2,210	692	245
23	330	500	370	173	130	154	2,100	*4,200	2,500	2,050	660	218
24	1,050	480	360	171	130	154	1,850	4,410	2,340	2,080	648	304
25	3,820	460	330	163	130	169	1,770	4,070	2,120	1,960	636	506
26	1,880	420	310	160	128	178	*1,800	3,960	2,130	1,640	626	626
27	1,220	398	300	155	128	169	1,760	3,570	2,810	1,410	604	437
28	1,060	383	300	155	128	167	1,620	3,360	3,060	1,180	514	374
29	948	368	280	155	128	169	1,500	3,610	2,580	*1,040	510	634
30	842	359	270	150	------	173	1,420	4,210	2,160	1,000	464	506
31	738	------	*250	150	------	173	------	4,860	------	996	419	------
Total	18,979	32,167	10,396	6,092	4,062	4,362	28,882	88,230	84,770	75,246	21,739	10,624
Mean	612	1,072	335	197	140	141	963	2,846	2,826	2,427	701	354
Cfsm	4.08	7.15	2.23	1.31	0.933	0.940	6.42	19.0	18.8	16.2	4.67	2.36
In.	4.71	7.98	2.58	1.51	1.01	1.08	7.16	21.88	21.02	18.66	5.39	2.63
Ac-ft	37,640	63,800	20,620	12,080	8,060	8,650	57,290	175,000	168,100	149,200	43,120	21,070

Calendar year 1955: Max 5,120 Min 144 Mean 876 Cfsm 5.84 In. 79.27 Ac-ft 634,200
Water year 1955-56: Max 5,280 Min 121 Mean 1,053 Cfsm 7.02 In. 95.61 Ac-ft 764,600

Peak discharge (base, 2,000 cfs).--Oct. 25 (3:30 p.m.) 4,920 cfs (12.63 ft); Nov. 4 (2 p.m.) 4,550 cfs (12.21 ft); Nov. 10 (5 a.m.) 4,160 cfs (11.66 ft); Apr. 22 (11:30 p.m.) 2,290 cfs (8.17 ft); May 10 (6 a.m.) 2,580 cfs (8.79 ft); May 20 (9 a.m.) 5,240 cfs (12.89 ft); June 1 (6 a.m.) 5,700 cfs (13.20 ft); June 10 (11 p.m.) 3,370 cfs (10.38 ft); June 19 (4:30 p.m.) 4,110 cfs (11.59 ft); June 28 (2 a.m.) 3,520 cfs (10.63 ft); July 13 (1 a.m.) 4,300 cfs (11.85 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-26. Dec. 13 to Jan. 8, Jan. 26 to Feb. 5, Feb. 15-18, Mar. 11-14 (no gage-height record during most of these periods; discharge estimated on basis of 1 discharge measurement and records for stations on nearby streams).

Wenatchee Lake near Plain, Wash.

Location.--Lat 47°49'50", long 120°46'30", in sec. 19, T. 27 N., R. 17 E., on north (left) shore, 2¾ miles upstream from outlet, 7½ miles northwest of Plain, and 33 miles upstream from Leavenworth.

Drainage area.--276 sq mi.

Records available.--January 1932 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,860.00 ft above mean sea level, subject to correction to datum of 1929. Prior to Jan. 4, 1935, staff gage at same site and datum.

Extremes.--Maximum elevation during year, 1,877.13 ft May 21; minimum, 1,869.68 ft Oct. 3, 4.

1932-56: Maximum elevation recorded, 1,879.65 ft May 29, 1948; minimum, 1,869.27 ft Dec. 1, 1936.

Remarks.--Records excellent. No regulation or diversions.

Revisions (water years).--WSP 1216: Drainage area. WSP 1396: 1944.

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69.71	71.13	70.38	70.13	69.79	69.81	70.01	72.22	76.85	73.11	71.03	-
2	69.70	71.01	70.34	70.15	69.76	69.81	70.02	72.08	76.82	73.22	70.93	-
3	69.68	71.33	70.28	70.17	69.78	69.82	70.05	71.96	76.30	73.49	70.86	-
4	69.66	73.59	70.26	70.17	69.82	69.81	70.10	71.86	75.89	73.48	70.75	-
5	69.79	74.63	70.24	70.18	69.82	69.80	70.12	71.78	75.17	73.33	70.72	-
6	69.81	73.52	70.24	70.16	69.84	69.76	70.12	71.77	74.31	73.32	70.72	-
7	69.81	72.66	70.23	70.14	69.83	69.78	70.14	71.91	73.67	73.16	70.72	69.97
8	69.85	72.17	70.21	70.11	69.81	69.81	70.16	72.29	73.30	73.16	70.72	69.96
9	70.05	72.02	70.19	70.09	69.81	69.89	70.18	72.96	73.22	73.54	70.74	69.95
10	70.17	73.32	70.17	70.06	69.81	69.75	70.24	73.61	73.74	73.91	70.74	69.97
11	70.16	73.47	70.27	70.04	69.82	69.73	70.32	73.75	74.26	74.10	-	70.10
12	70.14	72.73	70.72	70.03	69.88	69.73	70.46	73.42	73.96	74.23	-	70.24
13	70.18	72.12	70.99	70.03	69.88	69.73	70.65	73.02	73.54	74.34	-	70.17
14	70.21	71.73	70.78	70.03	69.88	69.73	70.92	72.75	73.40	74.13	-	70.11
15	70.36	71.43	70.64	70.08	69.86	69.73	71.34	72.71	73.56	73.59	-	70.06
16	70.48	71.24	70.60	70.08	69.82	69.75	71.62	73.04	73.67	73.20	-	70.02
17	70.50	71.12	70.55	70.04	69.80	69.76	71.66	73.74	73.56	72.92	-	69.99
18	70.55	71.07	70.48	70.02	69.79	69.77	71.65	74.81	73.59	72.85	-	69.97
19	70.56	70.92	70.42	70.01	69.79	69.79	71.75	75.96	74.10	72.93	-	69.97
20	70.53	70.85	70.42	69.99	69.79	69.81	72.00	76.86	74.56	73.07	-	69.96
21	70.45	70.81	70.39	69.97	69.78	69.84	72.45	77.02	74.13	73.06	-	69.98
22	70.34	70.76	70.43	69.96	69.77	69.84	73.07	76.49	73.72	72.84	-	69.98
23	70.27	70.71	70.54	69.95	69.76	69.87	73.43	76.13	73.55	72.54	-	69.94
24	70.34	70.69	70.54	69.94	69.77	69.91	73.29	76.14	73.40	72.39	-	69.92
25	72.09	70.68	70.48	69.92	69.79	69.95	73.06	76.01	73.15	72.31	-	69.98
26	73.05	70.71	70.44	69.87	69.77	69.99	72.99	75.77	72.96	72.10	-	70.17
27	72.38	70.64	70.37	69.84	69.76	69.98	72.95	75.47	73.19	71.82	-	70.28
28	71.86	70.54	70.30	69.86	69.78	69.97	72.78	75.00	73.73	71.60	-	70.22
29	71.71	70.46	70.21	69.87	69.77	69.97	72.58	74.86	73.75	71.37	-	70.23
30	71.59	70.42	70.14	69.85	-------	69.99	72.39	75.22	73.34	71.22	-	70.53
31	71.36	-------	70.11	69.81	-------	70.01	-------	75.95	-------	71.13	-	-------

Note.--Add 1,800 ft to obtain elevation above mean sea level.

Wenatchee River below Wenatchee Lake, Wash.

Location.--Lat 47°48'30", long 120°43'20", in sec. 28, T. 27 N., R. 17 E., on left bank 0.1 mile downstream from lake outlet, 4¾ miles northwest of Plain, and 17 miles northwest of Leavenworth. Prior to Sept. 7, 1956, at site 2¾ miles upstream.

Drainage area.--276 sq mi.

Records available.--January 1932 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,860.00 ft above mean sea level, datum of 1912; gage readings have been reduced to elevations above mean sea level. Prior to Jan. 5, 1935, staff gage and Jan. 5, 1935, to Sept. 6, 1956, water-stage recorder, at site 2¾ miles upstream from outlet at same datum.

Average discharge.--24 years, 1,322 cfs (957,100 acre-ft per year).

Extremes.--Maximum discharge during year, 9,400 cfs May 21 (elevation of lake surface, 1,877.13 ft); minimum, 208 cfs Oct. 4 (elevation of lake surface, 1,869.66 ft).
1932-56: Maximum discharge recorded, 13,700 cfs May 29, 1948 (elevation of lake surface, 1,879.65 ft); minimum, 96 cfs Nov. 30, Dec. 1-3, 1952; minimum elevation of lake surface, 1,869.27 ft Dec. 1, 1936.

Remarks.--Records good except those for period of no gage-height record, which are fair. Natural regulation in lake. No diversion.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1955-56 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1-25		Oct. 26 to Sept. 30	
1,869.6	175	1,869.7	240
1,870.0	425	1,870.0	420
1,870.5	825	1,870.5	800
1,871.0	1,280	1,871.0	1,270
1,873.0	3,620	1,873.0	3,620
		1,877.1	9,350

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	1,400	704	511	290	301	427	2,640	8,980	3,760	1,300	560
2	*230	1,280	672	525	*273	301	434	2,480	8,930	3,910	1,200	530
3	219	1,610	624	539	284	307	455	2,330	8,150	4,260	1,130	500
4	219	4,390	608	539	307	301	490	2,210	7,550	4,240	1,020	470
5	284	5,780	592	546	307	295	504	2,120	6,540	*4,050	998	440
6	296	4,300	592	532	319	273	504	2,100	*5,330	4,040	998	420
7	296	3,180	584	518	313	284	518	2,270	4,490	3,830	998	414
8	322	2,580	568	497	301	301	532	2,730	4,010	3,830	998	407
9	462	2,400	553	483	301	349	546	3,570	3,910	4,320	1,020	400
10	556	4,040	539	462	301	268	592	4,410	4,580	4,800	1,020	414
11	548	4,230	616	448	307	256	656	4,600	5,260	5,050	1,000	497
12	532	3,270	998	441	343	256	768	4,170	4,870	5,220	950	*592
13	*564	2,520	1,260	441	343	256	935	3,650	4,320	5,380	950	546
14	588	2,060	1,050	441	343	256	1,190	3,300	4,140	5,090	930	511
15	708	1,720	926	476	331	256	1,620	3,240	4,350	4,390	1,000	483
16	808	*1,510	890	476	307	268	1,930	3,670	4,490	3,880	1,050	455
17	825	1,390	845	448	295	273	1,980	4,580	4,350	3,520	990	441
18	868	1,340	784	434	290	278	1,960	6,030	4,390	3,420	900	434
19	876	1,190	736	427	290	290	2,080	*7,640	5,050	3,530	820	434
20	850	1,120	*736	414	290	301	2,380	8,990	5,680	3,710	800	434
21	782	1,080	712	400	284	*319	2,920	*9,230	5,090	3,700	800	441
22	692	1,030	744	394	278	319	3,720	8,440	4,560	3,410	800	434
23	636	989	836	388	273	337	4,180	7,900	4,340	3,030	780	414
24	692	971	836	381	278	362	4,000	7,910	4,140	2,850	770	394
25	2,530	962	784	368	290	388	3,700	*7,720	3,820	2,750	780	441
26	3,680	989	752	337	278	414	*3,610	7,380	3,570	*2,500	820	592
27	2,840	926	696	319	273	407	3,560	6,960	3,870	2,160	780	672
28	2,210	836	640	331	284	400	3,330	6,300	4,570	1,910	730	624
29	2,030	768	568	337	278	400	3,080	6,100	4,600	1,660	680	624
30	1,900	736	518	325	------	414	2,850	6,610	4,060	1,490	630	845
31	1,650	------	497	301	------	427	------	7,630	------	1,400	590	------
Total	29,929	60,597	22,460	13,479	8,651	9,857	55,451	158,910	151,990	111,090	28,232	14,863
Mean	965	2,020	725	435	298	318	1,848	5,126	5,066	3,584	911	495
Cfsm	3.50	7.32	2.63	1.58	1.08	1.15	6.70	18.6	18.4	13.0	3.30	1.79
In.	4.03	8.17	3.03	1.82	1.17	1.33	7.47	21.41	20.48	14.97	3.80	2.00
Ac-ft	59,360	120,200	44,550	26,740	17,160	19,550	110,000	315,200	301,500	220,300	56,000	29,480

Calendar year 1955: Max 9,440 Min 219 Mean 1,485 Cfsm 5.38 In. 73.06 Ac-ft 1,075,000
Water year 1955-56: Max 9,230 Min 219 Mean 1,818 Cfsm 6.59 In. 89.68 Ac-ft 1,320,000

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 11 to Sept. 6; discharge estimated on basis of recorded range in stage and records for nearby streams.

Chiwawa River near Plain, Wash.

Location.--Lat 47°50'30", long 120°39'40", in SE¼ sec. 13, T. 27 N., R. 17 E., on right bank half a mile upstream from Goose Creek, 6 miles north of Plain, 7 miles upstream from mouth, and 11 miles northeast of Chiwaukum.

Drainage area.--170 sq mi.

Records available.--May 1911 to October 1914 (published as Chiwawa Creek near Leavenworth), August 1936 to November 1949, August 1954 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 2,100 ft (from river-profile map). May 29, 1911, to Oct. 31, 1914, staff gage at site 3 miles downstream at different datum.

Average discharge.--18 years (1911-14, 1936-49, 1954-56), 500 cfs (362,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,080 cfs June 1 (gage height, 8.87 ft); minimum daily, 90 cfs Feb. 19-29, Mar. 5-14.
1911-14, 1936-49, 1954-56: Maximum discharge, 5,880 cfs May 29, 1948 (gage height, 9.17 ft); minimum recorded, 56 cfs Oct. 24-27, 1942 (gage height, 3.73 ft), but may have been less during some periods of ice effect.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1316: Drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 18				Mar. 19 to Sept. 30			
3.9	97	5.0	670	3.9	104	6.0	1,390
4.1	165	6.0	1,570	4.1	172	7.0	2,440
4.5	355	7.0	2,760	4.5	357	9.0	5,270
				5.0	640		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*119	416	250	150	105	92	143	1,270	4,840	1,650	568	249
2	133	388	240	160	105	94	147	1,210	4,010	1,940	556	244
3	129	524	230	160	100	96	154	*1,150	3,740	1,910	504	240
4	136	1,390	220	160	105	94	165	1,120	3,530	1,800	460	230
5	173	1,100	210	170	110	90	176	1,100	2,970	1,700	460	220
6	154	796	210	170	105	90	172	1,140	*2,450	1,640	454	210
7	147	670	210	160	100	90	172	1,300	2,100	1,560	460	200
8	169	614	200	160	98	90	176	1,580	1,880	1,590	460	200
9	250	642	200	160	96	90	184	1,930	1,850	*1,790	460	205
10	290	1,450	210	160	94	90	218	2,250	2,160	1,980	454	220
11	201	1,100	241	155	100	90	268	2,190	2,400	2,000	448	*250
12	197	*828	260	155	105	90	316	1,940	2,200	2,090	432	268
13	193	642	270	151	100	90	384	1,770	1,980	2,040	432	218
14	*193	579	260	143	96	90	492	1,710	1,950	1,890	448	209
15	223	518	230	143	*96	92	666	1,810	2,060	1,600	504	205
16	228	500	200	147	94	94	731	2,180	2,180	1,490	538	201
17	236	470	180	140	92	98	718	2,700	2,130	1,320	443	197
18	255	450	170	136	92	100	738	3,510	2,100	1,340	409	192
19	255	430	160	136	90	104	826	3,920	2,610	1,420	378	192
20	236	420	170	133	90	107	973	4,420	2,930	1,470	384	192
21	218	400	180	129	90	110	1,250	4,400	2,430	1,420	389	201
22	205	380	190	133	90	110	1,620	*3,910	2,140	1,270	378	188
23	197	360	180	133	90	117	1,720	*3,770	2,080	1,120	362	180
24	275	340	170	129	90	120	1,560	3,920	1,980	1,080	362	180
25	1,600	320	160	125	90	133	1,520	4,100	1,830	1,100	362	192
26	1,220	310	160	125	90	150	1,570	3,910	1,720	*952	368	244
27	780	290	150	120	90	*143	1,580	3,750	1,860	840	342	258
28	670	280	150	120	90	140	1,500	3,560	2,150	744	316	218
29	628	270	*150	115	90	140	1,410	3,560	1,950	660	296	231
30	565	260	150	110	------	143	1,340	3,850	1,720	622	292	321
31	470	------	150	110	------	143	------	4,240	------	598	268	------
Total	10,745	17,137	6,111	4,398	2,783	3,320	22,889	83,170	71,930	44,606	12,987	6,555
Mean	347	571	197	142	96.0	107	763	2,683	2,398	1,439	419	218
Cfsm	2.04	3.36	1.16	0.835	0.565	0.629	4.49	15.8	14.1	8.46	2.46	1.28
In.	2.35	3.75	1.34	0.96	0.61	0.73	5.01	18.19	15.74	9.76	2.84	1.43
Ac-ft	21,310	33,990	12,120	8,720	5,520	6,590	45,400	165,000	142,700	88,470	25,760	13,000

Calendar year 1955: Max 4,550 Min 119 Mean 630 Cfsm 3.71 In. 50.30 Ac-ft 456,100
Water year 1955-56: Max 4,840 Min 90 Mean 783 Cfsm 4.61 In. 62.71 Ac-ft 568,600

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 16 to Dec. 9, Dec. 15 to Jan. 12, Jan. 25 to Mar. 14. No gage-height record Mar. 2-18, Sept. 3-11; discharge estimated on basis of 1 discharge measurement, weather records, and records for stations on nearby streams.

Wenatchee River at Plain, Wash.

Location.--Lat 47°45'50", long 120°39'30", in lot 8, sec. 12, T. 26 N., R. 17 E., on left bank at Plain a quarter of a mile downstream from Beaver Creek, 7½ miles downstream from Nason Creek, and 12 miles north of Leavenworth.

Drainage area.--591 sq mi.

Records available.--November 1910 to September 1956 in reports of Geological Survey. Published as "near Leavenworth" 1910-31. August 1904 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. Altitude of gage is 1,805 ft (from river-profile map). Prior to Jan. 8, 1932, staff gages at site a quarter of a mile downstream at different datum.

Average discharge.--52 years (1904-56), 2,220 cfs (1,607,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,100 cfs May 21 (gage height, 10.62 ft); minimum, 431 cfs Oct. 4 (gage height, 1.96 ft).
1910-29, 1931-56: Maximum discharge, 22,700 cfs May 29, 1948 (gage height, 12.43 ft, from high-water mark in well); minimum, 168 cfs Nov. 30, 1952 (gage height, 1.31 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair. Wenatchee Park Land & Irrigation Co. diverts a maximum of about 12 cfs from Chiwawa River for irrigation of 1,400 acres near Plain. Natural regulation by Wenatchee Lake.

Revisions (water years).--WSP 482: 1911-14. WSP 1316: 1914(M), 1916(M), 1919(M), 1921-23(M), 1927(M).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	395	4.0	2,390
2.2	590	6.0	5,400
2.5	810	8.0	9,800
3.0	1,240	10.5	16,700

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*462	2,290	1,360	920	560	618	858	5,270	16,000	6,690	2,350	984
2	455	2,120	1,290	920	540	682	882	*5,050	15,900	7,110	2,180	941
3	443	2,700	1,220	930	560	690	898	4,820	14,500	7,530	2,060	882
4	455	6,980	1,170	950	570	660	992	4,660	13,500	7,370	1,890	834
5	632	8,530	1,100	940	580	611	1,040	4,540	11,800	7,000	1,780	788
6	590	6,340	1,050	930	560	576	1,020	4,580	9,730	6,930	1,780	742
7	569	4,700	1,040	900	550	590	1,020	4,980	*8,220	6,560	1,770	720
8	625	4,060	1,020	870	550	597	1,040	5,920	7,420	6,600	1,760	698
9	932	3,960	1,000	836	550	597	1,120	7,420	7,240	*7,420	1,760	690
10	1,020	7,020	1,010	820	580	534	1,250	8,740	8,460	8,170	1,750	712
11	950	6,670	1,210	820	618	507	1,450	8,840	9,440	8,500	1,730	874
12	932	5,140	2,400	820	682	520	1,730	7,900	8,790	8,840	1,690	1,030
13	984	4,020	2,410	830	660	527	2,120	7,000	7,790	9,010	1,680	*898
14	*992	3,400	1,930	860	*632	507	2,690	6,500	7,590	8,550	1,690	818
15	1,180	2,890	1,730	898	560	507	3,540	6,560	7,950	7,290	1,820	772
16	1,310	*2,640	1,650	907	510	514	3,940	7,480	8,220	6,460	1,990	742
17	1,330	2,440	1,550	866	570	520	3,900	9,250	7,950	5,840	1,750	712
18	1,390	2,380	1,420	850	583	534	3,920	11,800	8,020	5,720	1,560	690
19	1,410	2,140	1,350	826	604	548	4,190	14,500	9,510	5,940	1,460	690
20	1,340	2,060	1,350	802	618	576	4,800	*16,400	10,600	6,160	1,440	682
21	1,240	1,990	*1,300	780	632	*597	5,880	*16,600	9,300	6,100	1,440	742
22	1,130	1,870	1,460	772	611	618	7,370	15,100	8,240	5,600	1,420	728
23	1,050	1,780	1,670	758	583	675	7,860	14,300	7,930	4,980	1,390	675
24	1,100	1,750	1,580	742	583	712	7,370	14,400	7,590	4,740	1,370	653
25	4,400	1,730	1,480	705	590	758	6,960	*14,200	6,980	*4,610	1,340	720
26	5,540	1,790	1,410	610	583	826	6,890	13,500	6,540	4,190	1,430	898
27	4,300	1,690	1,340	600	569	818	6,820	12,800	7,110	3,700	1,340	1,010
28	3,520	1,560	1,220	590	576	810	6,460	11,800	8,290	3,270	1,230	958
29	3,340	1,450	1,080	590	569	810	5,980	11,600	8,140	2,910	1,150	984
30	3,100	1,390	1,000	580	------	826	5,620	12,400	7,200	2,640	1,100	1,470
31	2,680	------	940	580	------	842	------	14,000	------	2,480	1,050	------
Total	49,401	99,480	42,740	24,796	16,933	19,707	109,610	302,910	275,950	188,910	50,150	24,737
Mean	1,594	3,316	1,379	800	584	636	3,654	9,771	9,198	6,094	1,618	825
Cfsm	2.70	5.61	2.33	1.35	0.988	1.08	6.18	16.5	15.6	10.3	2.74	1.40
In.	3.11	6.26	2.69	1.56	1.07	1.24	6.90	19.06	17.36	11.89	3.16	1.56
Ac-ft	97,990	197,300	84,770	49,180	33,590	39,090	217,400	600,800	547,300	374,700	99,470	49,070

Calendar year 1955: Max 16,800 Min 443 Mean 2,638 Cfsm 4.46 In. 60.59 Ac-ft 1,910,000
Water year 1955-56: Max 16,600 Min 443 Mean 3,293 Cfsm 5.57 In. 75.86 Ac-ft 2,391,000

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 5-10, Dec. 29 to Jan. 14, Jan. 26 to Feb. 10, Feb. 15-17.

Icicle Creek above Snow Creek, near Leavenworth, Wash.

Location.--Lat 47°32'25", long 120°42'55", in SE¼ sec. 28, T. 24 N., R. 17 E., on right bank three-eighths of a mile upstream from Snow Creek and 4½ miles southwest of Leavenworth.

Drainage area.--193 sq mi.

Records available.--September 1936 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from river-profile map).

Average discharge.--20 years, 620 cfs (448,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,470 cfs June 1 (gage height, 11.38 ft); minimum, 106 cfs Mar. 11; minimum gage height, 2.37 ft Oct. 3, 4.
1936-56: Maximum discharge, 11,600 cfs May 28, 1948 (gage height, 13.93 ft), from rating curve extended above 7,000 cfs on basis of slope-area determination of peak flow; minimum daily, 45 cfs Nov. 30, 1952.
Revisions.--The maximum discharge for the water year 1943 has been revised to 3,880 cfs May 26, 1943 (gage height, 9.7 ft, from recorded range in stage), superseding figure published in WSP 982 and 1316.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion. Some regulation in headwater lakes for irrigation.

Revisions (water years).--WSP 1246: 1936-41. WSP 1286: 1948.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 21 to July 31)

Oct. 1 to Feb. 2				Feb. 3 to Sept. 30			
2.3	105	6.0	1,150	2.5	119	6.0	1,080
3.0	198	7.0	1,760	3.0	186	7.0	1,640
4.0	406	8.0	2,550	4.0	380	9.0	3,350
5.0	710	9.0	3,500	5.0	670	10.8	5,660

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	123	475	359	270	170	158	204	1,240	5,600	1,800	537	238
2	118	430	343	260	170	164	209	1,190	*4,420	2,000	498	219
3	114	1,020	312	250	170	161	224	1,120	4,200	1,990	486	209
4	123	3,180	314	240	170	160	250	1,050	3,760	*1,930	442	196
5	200	1,820	308	240	170	152	250	1,030	*2,890	1,880	432	184
6	160	1,220	308	230	170	149	240	1,120	2,370	1,890	428	174
7	145	985	301	230	170	141	250	1,270	2,160	1,820	425	168
8	178	930	290	220	170	149	270	1,630	2,070	2,010	420	164
9	375	1,280	280	220	170	149	300	2,010	2,290	2,300	418	163
10	321	3,060	270	210	170	144	350	2,200	2,900	2,570	408	177
11	244	1,810	270	210	170	127	450	2,150	2,730	2,460	408	348
12	237	1,180	500	210	160	145	600	2,000	2,270	2,520	400	*279
13	276	930	450	205	160	140	800	1,800	2,190	2,420	398	224
14	282	850	400	205	160	135	900	1,700	2,310	2,120	408	197
15	375	790	380	200	160	135	1,050	1,900	2,510	1,740	428	184
16	345	730	370	200	*160	139	1,000	2,200	2,330	1,570	432	171
17	336	700	360	200	150	141	900	2,610	2,200	1,430	380	164
18	350	640	350	200	150	145	1,000	3,890	2,470	1,470	341	160
19	352	600	350	200	150	158	1,300	*5,270	3,360	1,620	328	157
20	329	560	340	195	150	161	1,700	*5,660	2,880	1,660	328	167
21	291	520	340	195	148	157	2,000	*4,450	2,310	1,530	330	269
22	264	470	350	195	148	157	2,300	3,970	2,250	1,350	324	216
23	242	440	360	190	147	*165	2,200	4,220	2,250	1,200	319	188
24	385	430	450	190	145	178	2,000	*4,240	2,090	1,140	317	182
25	1,500	470	400	190	147	199	1,900	3,640	1,840	*1,090	328	194
26	955	475	360	185	145	209	1,900	3,720	1,910	944	470	207
27	689	432	340	180	145	200	*1,700	3,330	2,430	832	366	212
28	650	401	320	180	145	197	1,530	3,100	2,610	736	317	200
29	692	382	300	175	145	199	1,390	3,380	2,210	666	293	275
30	658	370	290	175	------	202	1,310	4,210	1,850	610	275	438
31	555	------	280	170	------	202	------	5,440	------	570	252	------
Total	11,864	27,580	10,645	6,420	4,585	5,018	30,477	86,730	79,660	49,868	11,936	6,324
Mean	383	919	343	207	158	162	1,016	2,798	2,655	1,609	385	211
Cfsm	1.98	4.76	1.78	1.07	0.819	0.839	5.26	14.5	13.8	8.34	1.99	1.09
In.	2.29	5.31	2.05	1.24	0.88	0.97	5.87	16.71	15.35	9.61	2.30	1.22
Ac-ft	23,530	54,700	21,110	12,730	9,090	9,950	60,450	172,000	158,000	98,910	23,670	12,540

Calendar year 1955: Max 5,290 Min 114 Mean 721 Cfsm 3.74 In. 50.72 Ac-ft 521,900
Water year 1955-56: Max 5,660 Min 114 Mean 905 Cfsm 4.69 In. 63.80 Ac-ft 656,700

Peak discharge (base, 2,500 cfs).--Nov. 4 (12 m.) 3,720 cfs (9.20 ft); Nov. 10 (7 a.m.) 3,660 cfs (9.15 ft); May 20 (3 a.m.) 6,220 cfs (11.20 ft); June 1 (1 a.m.) 6,470 cfs (11.38 ft); June 10 (10 p.m.) 3,050 cfs (8.74 ft); June 19 (1 p.m.) 3,530 cfs (9.25 ft); June 28 (2 a.m.) 2,840 cfs (8.66 ft); July 13 (12:30 a.m.) 2,700 cfs (8.49 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 14-16, Dec. 8 to Feb. 2, Apr. 5-26, May 10-15; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams. Stage-discharge relation affected by ice Nov. 18-25, Dec. 13-22, Dec. 28 to Jan. 6, Jan. 26 to Feb. 21.

Wenatchee River at Peshastin, Wash.

Location.--Lat 47°34'50", long 120°37'00", in SE¼SW¼ sec. 8, T. 24 N., R. 18 E., on right bank 1 mile northwest of Peshastin and 3½ miles upstream from Peshastin Creek.

Drainage area.--1,000 sq mi, approximately.

Records available.--October 1928 to February 1929 (monthly discharge only), March 1929 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,028.04 ft above mean sea level, datum of 1929. Prior to Mar. 24, 1932, staff gage at site 1¼ miles downstream at different datum.

Average discharge.--28 years, 3,017 cfs (2,184,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,200 cfs May 21 (gage height, 13.20 ft); minimum, 525 cfs Oct. 4 (gage height, 2.00 ft).
1929-56: Maximum discharge, 32,300 cfs May 28, 1948 (gage height, 15.88 ft); minimum, 183 cfs Oct. 14, 1939; minimum gage height, 1.24 ft Nov. 1, 1952; minimum daily discharge, 270 cfs Oct. 2, 1929, Nov. 30, 1936, Dec. 1, 1952.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Numerous diversions upstream for irrigation of an estimated 3,200 acres above station, and domestic use above and below station. Diversion by Icicle Creek irrigation canal 8 miles upstream from station is used for irrigation of a substantial part of the 23,000 acres irrigated below station. Some regulation by power-plant in Tumwater Canyon.

Revisions (water years).--WSP 1316: 1929-32(M).

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	525	5.0	3,720
2.5	850	8.0	9,670
3.0	1,310	13.1	23,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	580	2,950	1,850	a1,590	a850	805	1,560	7,530	23,800	9,280	3,000	1,350
2	569	2,630	1,750	a1,570	a840	939	1,660	7,180	22,800	9,880	2,820	1,270
3	552	3,190	1,670	a1,540	a830	966	1,760	6,800	20,800	10,300	2,720	1,200
4	558	9,640	1,620	a1,510	a820	906	2,030	6,460	19,200	10,200	2,500	1,110
5	754	11,200	1,590	1,480	a830	858	2,120	6,240	16,400	9,740	2,360	1,040
6	858	8,320	1,590	1,410	a840	812	1,980	6,360	13,400	9,620	2,330	975
7	812	6,420	1,580	1,400	a860	790	1,950	6,990	*11,400	9,230	2,320	922
8	874	5,290	1,510	1,380	a900	805	2,040	8,250	10,400	9,280	2,310	890
9	1,370	5,250	1,460	1,350	a920	805	2,230	10,200	10,300	*10,400	2,300	858
10	1,550	10,400	1,410	1,330	a1,000	775	2,490	11,800	12,100	11,600	2,270	998
11	1,390	9,530	1,880	1,300	1,130	726	2,890	11,700	13,200	12,000	2,250	1,220
12	1,320	7,280	4,290	1,270	1,100	733	2,500	10,500	12,100	12,400	2,200	1,480
13	1,410	5,580	3,920	1,270	1,030	740	3,800	9,320	11,000	12,400	2,190	*1,270
14	1,410	4,560	3,050	1,230	984	726	4,630	8,890	10,800	11,700	2,190	1,130
15	1,620	3,870	2,790	1,240	850	733	6,020	8,850	11,400	9,950	2,320	1,050
16	1,810	3,550	2,610	1,300	800	754	6,480	10,300	11,600	8,850	2,610	1,000
17	1,700	*3,300	2,440	1,270	820	812	6,140	13,000	11,200	8,020	2,360	948
18	1,760	3,220	2,310	1,220	900	858	6,100	16,900	11,400	7,830	2,120	914
19	1,820	3,000	2,210	1,170	930	930	6,670	*21,000	13,800	8,120	1,960	998
20	1,760	2,860	2,130	1,140	957	1,020	7,700	*23,600	14,800	8,430	1,890	914
21	1,640	2,720	2,090	1,110	1,020	993	9,370	23,400	12,900	8,320	1,870	1,060
22	1,520	2,570	*2,260	1,090	1,010	*984	11,400	21,400	11,600	7,680	1,860	1,040
23	1,370	2,450	2,440	1,070	984	1,070	11,600	*20,400	11,200	6,800	1,830	930
24	1,350	2,410	2,380	1,060	930	1,200	10,700	20,600	10,600	6,300	1,830	882
25	4,880	2,370	2,150	1,000	898	1,370	10,100	20,000	9,740	*6,140	1,810	922
26	7,050	2,440	2,000	930	866	1,550	9,970	19,400	9,260	5,480	2,130	1,060
27	5,250	2,310	1,800	900	798	1,460	*9,810	18,200	10,400	4,750	1,940	1,300
28	4,230	2,120	1,700	*880	790	1,450	9,260	16,800	11,900	4,150	1,770	1,240
29	4,050	1,990	1,620	870	798	1,430	8,560	16,600	11,400	3,690	1,600	1,280
30	3,880	1,900	1,610	870	------	1,490	8,040	18,100	9,970	3,380	1,530	1,900
31	3,360	------	a1,600	860	------	1,550	------	21,100	------	3,180	1,430	------
Total	63,057	135,320	65,310	37,610	26,285	31,040	171,560	427,670	390,870	259,100	66,620	33,151
Mean	2,034	4,511	2,107	1,213	906	1,001	5,719	13,800	13,030	8,358	2,149	1,105
Ac-ft	125,100	268,400	129,500	74,600	52,140	61,570	340,300	848,300	775,300	513,900	132,100	65,750

Calendar year 1955: Max 22,800 Min 552 Mean 3,593 Ac-ft 2,602,000
Water year 1955-56: Max 23,800 Min 552 Mean 4,666 Ac-ft 3,387,000

Peak discharge (base, 11,000 cfs).--Nov. 4 (11:30 p.m.) 12,200 cfs (9.05 ft); Nov. 10 (3 p.m.) 11,900 cfs (8.92 ft); Apr. 23 (3:30 a.m.) 12,000 cfs (8.94 ft); May 10 (10:30 p.m.) 12,100 cfs (9.00 ft); May 21 (1:30 a.m.) 24,200 cfs (13.20 ft); June 1 (11 p.m.) 24,100 cfs (13.16 ft); June 20 (3:30 a.m.) 15,300 cfs (10.21 ft); June 28 (10 a.m.) 12,100 cfs (8.99 ft); July 13 (7 a.m.) 12,700 cfs (9.22 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station at Plain.

Note.--Stage-discharge relation affected by ice Dec. 25 to Jan. 8, Jan. 27 to Feb. 6, Feb. 15-19.

Sand Creek near Cashmere, Wash.

Location.--Lat 47°25'50", long 120°30'45", in NW¼ sec. 6, T. 22 N., R. 19 E., 800 ft upstream from mouth and 6¾ miles southwest of Cashmere.

Drainage area.--19.8 sq mi.

Records available.--May 1954 to September 1956 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,730 ft (from topographic map).

Extremes.--Maximum discharge during year, 425 cfs Aug. 15 (gage height, 5.95 ft), estimated on basis of computation of peak flow through culvert 600 ft downstream, adjusted for channel storage; minimum, 0.5 cfs Oct 1-4; minimum gage height, 1.08 ft Oct. 1-4, Aug. 22, 23.
1954-56: Maximum discharge, that of Aug. 15, 1956; minimum, 0.4 cfs Sept. 10, 1955 (gage height, 1.06 ft).

Remarks.--Records fair except those for periods Oct. 11 to Mar. 25 and Aug. 15 to Sept. 30, which are poor. No regulation or diversion.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.9	1.5	5.0	2.5	5.9	37	*60	12.5	4.8	2.8	1.5
2	.5	1.0	1.4	4.5	2.3	6.8	39	57	11.5	4.8	2.8	1.5
3	.5	1.7	1.3	4.0	2.3	7.7	39	56	11	4.8	3.0	1.4
4	.6	2.1	1.3	3.5	2.3	9.2	48	54	11	*4.8	2.8	1.4
5	.8	1.9	1.2	3.0	2.3	13.5	53	54	*9.6	4.8	2.8	1.4
6	.7	1.5	1.2	3.0	2.5	22	47	58	8.8	4.8	2.6	1.3
7	.7	1.2	1.2	4.0	2.5	25	45	68	7.7	4.6	2.6	1.3
8	.8	1.0	1.3	6.0	2.8	20	46	72	7.4	4.6	2.6	1.3
9	1.4	1.3	1.4	8.0	3.0	16	52	73	6.8	4.6	2.5	1.5
10	1.0	1.2	1.7	10	3.3	13	73	69	12	4.3	2.5	*2.5
11	.9	1.0	2.2	12	3.8	12	95	61	9.2	4.3	2.5	3.0
12	.9	.9	3.0	13	4.0	11	110	52	8.0	4.1	2.5	2.5
13	.8	.8	4.0	14	*4.3	11	120	44	7.7	4.1	2.3	2.1
14	.8	.7	3.5	15	3.6	11	136	42	7.4	3.9	2.3	1.9
15	.8	.6	3.2	16	3.6	11	144	42	7.4	3.9	*11	1.8
16	.7	.6	3.0	17	3.4	12	125	49	7.0	3.9	14.5	1.7
17	.7	.6	3.5	16	3.2	15	*104	55	6.8	3.6	6.2	*1.7
18	.7	.6	4.0	16	3.0	18	117	*56	6.8	3.6	3.4	1.6
19	.7	.6	5.0	15	2.5	22	138	52	7.7	3.6	2.5	1.6
20	.7	.6	6.0	14	2.5	25	160	45	6.2	3.6	2.1	1.5
21	.7	.6	8.0	13	4.0	28	190	38	5.9	3.4	2.0	1.5
22	.7	.7	10	12	5.9	32	166	32	5.9	3.4	1.7	1.5
23	.8	.8	15	11	5.6	36	115	30	5.1	3.2	1.5	1.5
24	.8	1.5	10	10	5.3	41	101	*27	4.8	*3.0	2.0	1.5
25	.9	2.3	7.0	9.0	5.6	47	*102	23	4.8	3.2	2.5	1.5
26	.8	2.8	7.0	8.0	5.9	*53	95	20	4.8	3.2	2.3	1.5
27	1.0	2.5	10	7.0	5.6	44	89	19	4.8	3.2	2.0	1.5
28	1.3	2.0	9.0	*6.3	5.3	41	79	16.5	4.8	3.0	1.8	1.6
29	1.5	1.8	8.0	5.5	6.4	39	71	15.5	4.8	3.0	1.7	1.6
30	1.3	1.6	*7.0	4.5	------	38	65	14	4.8	3.0	1.6	1.7
31	1.0	-----	6.0	3.0	-----	39	-----	13.5	------	2.8	1.6	------
Total	26.1	37.4	147.9	288.3	109.3	725.1	2,801	1,367.5	223.0	119.9	97.0	49.9
Mean	0.84	1.25	4.77	9.30	3.77	23.4	93.4	44.1	7.43	3.87	3.13	1.66
Cfsm	0.042	0.063	0.241	0.470	0.190	1.18	4.72	2.23	0.375	0.195	0.158	0.084
In.	0.05	0.07	0.28	0.54	0.21	1.36	5.26	2.57	0.42	0.23	0.18	0.09
Ac-ft	52	74	293	572	217	1,440	5,560	2,710	442	238	192	99

Calendar year 1955: Max 34 Min 0.5 Mean 4.72 Cfsm 0.238 In. 3.25 Ac-ft 3,410
Water year 1955-56: Max 190 Min 0.5 Mean 16.4 Cfsm 0.828 In. 11.26 Ac-ft 11,890

Peak discharge (base, 25 cfs).--Mar. 7 (time and discharge unknown); about Mar. 26 (time and discharge unknown); Apr. 15 (1:30 a.m.) 175 cfs (3.70 ft); Apr. 22 (3 a.m.) 282 cfs (4.68 ft); Aug. 15 (6 p.m.) 425 cfs (5.95 ft); about Sept. 11 (time and discharge unknown).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 11 to Nov. 9, Nov. 12, 13, Nov. 16 to Dec. 12, Dec. 14-21, 24-29, Dec. 31 to Jan. 27, Mar. 7-25, Apr. 16, and Aug. 24 to Sept. 9; stage-discharge relation indefinite Aug. 15-23 and Sept. 10-30; discharge estimated on basis of weather records, recorder graph, field notes, and records for nearby streams. Stage-discharge relation affected by ice Nov. 10, 11, 14, 15, Dec. 13, 22, 23, 30, Jan. 28 to Feb. 12 and Feb. 17-21.

Mission Creek near Cashmere, Wash.

Location.--Lat 47°30'15", long 120°28'30", in SE¼NE¼ sec. 8, T. 23 N., R. 19 E., on right bank 1½ miles upstream from mouth and 1½ miles south of Cashmere.

Drainage area.--77.9 sq mi.

Records available.--May 1954 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 850 ft (from topographic map).

Extremes.--Maximum discharge during year, 463 cfs Apr. 22 (gage height, 2.78 ft); minimum, 3.7 cfs Oct. 1, 2 (gage height, 0.49 ft).
1954-56: Maximum discharge, that of Apr. 22, 1956; minimum daily, 0.1 cfs Aug. 25 to Sept. 12, 1955.

Remarks.--Records good except those for Nov. 14 to Apr. 15, and Aug. 15 to Sept. 15, which are poor. No regulation. Many small diversions for domestic use and irrigation above station.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 20				Apr. 21 to Sept. 30			
0.4	2.1	1.3	58	0.5	6.8	1.6	116
.6	6.1	1.6	100	.7	13.5	2.0	208
.8	14	2.0	180	1.0	33	2.7	435
1.0	28	2.5	325	1.3	67		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.7	6.8	11	12	12	38	150	*126	98	30	9.5	9.2
2	3.7	6.1	10	12	10	38	160	118	90	28	9.8	9.0
3	4.1	10.5	9.0	13	8.0	42	175	114	85	28	10	8.8
4	4.1	46	8.0	13	6.0	40	200	114	79	*25	9.8	8.8
5	5.4	22	7.0	13	6.0	35	210	112	*70	24	9.5	8.6
6	4.8	15.5	7.0	14	7.0	32	200	124	63	23	9.2	8.4
7	4.6	12.5	7.0	15	8.0	29	190	145	58	22	8.9	8.2
8	5.4	12.5	8.0	20	9.0	27	190	163	54	21	9.2	8.2
9	13.5	16	8.0	27	10	25	195	165	54	21	9.2	8.0
10	12	25	9.0	27	11	25	210	168	73	21	8.9	9.0
11	7.5	16.5	20	26	13	25	230	136	63	21	8.6	19
12	6.8	8.6	25	26	16	25	190	118	57	21	8.0	12
13	6.8	4.8	20	28	*19.5	26	180	107	53	17	7.7	*10
14	6.1	4.1	10	28	18	27	220	100	52	16	7.7	9.5
15	5.9	4.0	7.0	29	16	28	260	105	52	16	22	9.2
16	5.6	3.9	8.0	28	13	29	290	120	48	15	19.5	8.9
17	5.4	3.8	9.0	27	10	30	*248	149	46	14	16	8.9
18	5.2	3.8	10	28	10	31	242	172	45	14.5	14.5	8.6
19	5.2	3.8	11	28	11	35	257	*187	52	14.5	13	8.6
20	5.0	3.9	12	28	13	40	311	200	46	14	11.5	9.8
21	4.8	4.0	13	28	15	50	414	170	44	14	12	11
22	4.8	4.5	13	28	20	60	*407	147	42	13	11	9.2
23	4.8	5.0	13	27	25	80	308	140	41	12	10	8.9
24	4.8	8.5	14	27	30	100	230	134	41	*11.5	9.5	8.6
25	5.6	11	14	26	35	150	*225	122	39	11	10	8.6
26	5.4	17	15	26	39	*202	214	114	37	11	14	8.6
27	5.2	15.5	16	21	38	170	187	107	35	11	12	8.3
28	5.6	14	15	*18	35	150	158	102	31	10.5	11	8.6
29	9.3	13	14	17	35	140	147	98	31	10	10	8.9
30	11	12	*13	16	------	140	134	96	30	10	9.8	9.2
31	7.5	------	12	14	------	150	------	102	------	9.8	9.5	------
Total	189.6	334.6	368.0	690	498.5	2,019	6,732	4,075	1,609	529.8	341.3	280.6
Mean	6.12	11.2	11.9	22.3	17.2	65.1	224	131	53.6	17.1	11.0	9.35
Ac-ft	376	664	730	1,370	989	4,000	13,350	8,080	3,190	1,050	677	557

Calendar year 1955: Max 108 Min 0.1 Mean 17.1 Ac-ft 12,360
Water year 1955-56: Max 414 Min 3.7 Mean 48.3 Ac-ft 35,030

Peak discharge (base, 100 cfs).--About Mar. 26 (time unknown) 225 cfs (2.18 ft); about Apr. 16 (time unknown) 350 cfs (2.57 ft); Apr. 22 (5 a.m.) 463 cfs (2.78 ft); May 10 (2 a.m.) 177 cfs (1.88 ft); May 19 (12 p.m.) 222 cfs (2.05 ft); Aug. 15 (5 p.m.) 230 cfs (2.08 ft); about Aug. 26 (time unknown) 219 cfs (2.00 ft); about Sept. 11 (time unknown) 233 cfs (2.05 ft).
* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-23, Nov. 28 to Dec. 10, Dec. 14-22, Dec. 28 to Jan. 7, Jan. 27 to Feb. 24, Mar. 4-14. No gage-height record Nov. 28 to Dec. 21, Dec. 23-29, Jan. 2-8, Jan. 29 to Feb. 12, Feb. 16, 18-25, Mar. 10-17, 19-25, Mar. 27 to Apr. 8, Apr. 10-15, Aug. 23 to Sept. 12; discharge estimated on basis of weather records, recorded range in stage, and records for nearby stations.

Columbia River at Trinidad, Wash.

Location.--Lat 47°13'30", long 120°00'50", in SE¼ sec. 13, T. 20 N., R. 22 E., on left bank half a mile southwest of Trinidad, 8½ miles downstream from Colocham Creek, and 12 miles downstream from Rock Island Dam.

Drainage area.--89,700 sq mi, approximately.

Records available.--January to December 1910 (gage heights only), May 1913 to September 1956. Published as "at Wenatchee" 1910, 1913-16, and as "at Vernita" 1917-30.

Gage.--Water-stage recorder. Datum of gage is 499.3 ft above mean sea level (river-profile survey). Prior to Jan. 1, 1916, staff gage 1 mile upstream from highway bridge at Wenatchee (24 miles upstream) at datum 583 ft above mean sea level, unadjusted. Jan. 1 to Dec. 31, 1916, staff gage on pier of highway bridge at Wenatchee at datum 579.30 ft above mean sea level, unadjusted. Jan. 14, 1917, to Sept. 30, 1930, staff gages at ferry at Vernita (50 miles downstream) at datum 388.7 ft above mean sea level, unadjusted.

Average discharge.--43 years, 119,500 cfs (86,510,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 553,900 cfs June 6 (gage height, 54.50 ft); minimum, 36,000 cfs Dec. 18 (gage height, 19.18 ft).
1913-56: Maximum discharge, 692,600 cfs June 12, 1948 (gage height, 59.35 ft); minimum, 4,120 cfs Feb. 10, 1932 (gage height, 11.40 ft).
Maximum discharge known, about 740,000 cfs June 7, 1894 (based on information obtained at other points).

Remarks.--Records excellent. Diversion above station for irrigation of about 500,000 acres is small percentage of flow past gage. Some diurnal fluctuation caused by powerplants at Rock Island, Chief Joseph, and Grand Coulee Dam. Flow regulated by Franklin D. Roosevelt Lake (see p. 272) and reservoirs in Kootenai, Pend Oreille, Spokane, Okanogan, and Chelan River basins.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

21.4	48,900	40.0	250,100
23.0	59,500	45.0	338,300
26.0	82,500	50.0	443,200
30.0	118,800	55.0	567,300
35.0	177,500		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72,600	80,100	69,100	80,500	74,800	72,100	111,800	295,700	505,000	309,200	186,000	95,900
2	74,300	80,300	69,700	81,100	81,600	74,000	116,400	291,900	508,300	294,300	178,500	95,000
3	73,400	77,500	75,600	83,500	85,100	73,700	115,900	285,000	509,000	293,400	165,800	88,300
4	75,400	80,300	63,600	85,700	80,600	62,600	125,600	278,200	513,600	288,300	161,000	84,300
5	79,900	83,600	61,500	83,400	68,400	64,600	126,400	276,000	*523,600	286,900	154,900	97,200
6	77,300	73,800	71,600	81,300	63,600	70,200	117,800	274,100	539,600	277,000	153,000	99,400
7	72,800	81,800	80,100	76,500	72,700	71,500	109,800	274,800	546,100	270,700	152,000	90,800
8	65,000	88,700	79,400	77,500	74,400	72,400	109,600	277,200	544,500	263,900	145,400	89,500
9	66,200	84,700	67,300	76,000	73,500	61,900	111,100	278,900	541,700	256,200	141,600	87,300
10	71,400	82,200	62,300	80,700	75,300	59,600	111,000	282,600	534,900	264,100	125,800	74,800
11	66,700	80,900	56,600	83,900	74,300	77,900	111,500	289,400	520,800	*258,900	122,200	74,200
12	69,800	72,700	60,100	79,300	67,900	74,600	112,900	287,200	498,600	258,700	118,200	75,900
13	66,400	76,600	72,300	72,300	66,800	77,700	114,700	280,900	481,800	261,100	106,100	71,600
14	67,000	86,800	69,100	72,100	74,100	74,000	125,400	274,600	471,400	264,600	116,900	69,400
15	66,400	82,200	72,300	71,300	71,700	66,600	129,500	278,000	455,200	252,700	101,300	*81,000
16	59,200	78,500	75,900	68,800	73,700	61,700	132,200	280,200	438,800	244,200	105,200	77,600
17	58,500	79,100	73,100	76,100	79,300	58,300	150,100	284,000	417,900	248,300	112,400	69,900
18	61,800	*80,600	49,000	75,000	81,200	62,600	175,200	297,700	377,700	242,300	102,100	77,400
19	63,300	81,200	57,600	68,800	75,600	56,400	162,600	308,800	379,800	241,600	107,900	83,300
20	62,300	77,100	73,400	65,700	77,900	*63,400	121,000	317,800	418,600	242,300	99,500	76,700
21	62,500	75,400	73,400	66,000	76,600	66,500	221,200	324,600	402,800	237,600	109,800	75,000
22	67,900	77,900	60,300	68,200	72,300	64,300	266,500	325,000	389,700	228,400	106,600	72,200
23	69,200	81,500	69,300	64,400	65,400	63,200	310,800	326,000	387,400	230,800	107,400	69,400
24	69,500	80,900	59,200	75,500	68,700	60,200	332,200	340,200	380,800	224,800	103,300	74,800
25	68,500	80,400	60,600	*72,100	69,500	55,300	340,800	380,600	385,700	220,200	104,500	77,500
26	74,600	71,000	64,000	69,500	67,900	64,700	359,000	396,200	354,800	217,600	106,300	78,700
27	73,100	68,300	74,700	71,900	70,700	98,500	349,400	408,000	343,400	217,000	88,900	79,100
28	74,900	68,300	78,800	72,100	74,700	121,000	345,100	419,300	361,200	211,700	113,200	81,400
29	74,800	72,000	82,400	60,900	77,600	115,100	332,200	422,100	350,600	202,300	106,000	76,600
30	69,800	70,800	85,200	54,900	------	126,300	*313,300	448,300	337,400	*195,300	107,000	75,100
31	66,300	------	85,100	68,300	------	116,900	------	481,300	------	191,700	103,100	------
Total	‡2,140.7	‡2,355.2	‡2,152.6	‡2,281.3	‡2,135.9	‡2,307.8	‡5,661	‡9,984.6	‡13,420.7	7,696.1	‡3,811.9	‡2,419.3
Mean	69,050	78,510	69,440	73,590	73,650	74,450	188,700	322,100	447,400	248,300	123,000	80,640
Ac-ft	‡4,246	‡4,671	‡4,270	‡4,525	‡4,236	‡4,577	‡11,230	‡19,800	‡26,620	‡15,260	‡7,561	‡4,799

Calendar year 1955: Max 441,900 Min 49,000 Mean 127,100 Ac-ft 92,000,000
Water year 1955-56: Max 546,100 Min 49,000 Mean 154,000 Ac-ft 111,800,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Crab Creek at Irby, Wash.

Location.--Lat 47°21'30", long 118°51'00", in NW¼ sec. 31, T. 22 N., R. 32 E., on right bank 8 ft upstream from highway bridge at Irby, 5 miles downstream from Lake Creek, and 7 miles west of Odessa.

Drainage area.--974 sq mi.

Records available.--September 1942 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,386.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--14 years, 91.4 cfs (66,170 acre-ft per year).

Extremes.--Maximum discharge observed during year, 4,170 cfs Mar. 2 (gage height, 9.73 ft); minimum, 5.6 cfs Nov. 12 (gage height, 1.85 ft).
1942-56: Maximum discharge observed, that of Mar. 2, 1956; minimum, 2.0 cfs Jan. 12, 1948 (gage height, 1.80 ft).
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
1152,1316	1949	Feb. 24, 1949	2,970	8.88
1182,1316	1950	Mar. 5, 1950	3,070	8.96
1216	1951	Mar. 16, 1951	2,410	8.40

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Some diversion above station for irrigation.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1949-51, superseding those published in WSP 1152, 1182 and 1216, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1949		1950-Con.		1951-Con.	
Feb. 18	2,370	Feb. 27	2,340	Feb. 10	1,480
19	1,620	28	1,830	11	1,640
22	1,000	Mar. 1	1,500	12	1,280
24	2,770	5	2,890	13	918
25	2,520	6	2,640	Mar. 15	754
26	1,980	7	2,540	16	2,080
27	1,630	8	1,750	17	2,070
				18	1,180
1950		1951		19	775
Feb. 26	1,980	Feb. 9	584		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
February 1949	20,822	2,770	26	744	41,300
Water year 1948-49	49,186.5	2,770	14	135	97,560
Calendar year 1949	47,476.5	2,770	11.5	130	94,170
February 1950	13,709	2,340	16	490	27,190
March	28,163	2,890	337	908	55,860
Water year 1949-50	57,142	2,890	11	157	113,300
Calendar year 1950	57,592	2,890	11	158	114,200
February 1951	11,861	1,640	49	424	23,530
March	15,411	2,080	199	497	30,570
Water year 1950-51	-	2,080	14.5	119	85,870
Calendar year 1951	-	2,080	18.5	119	86,390

Revised peak discharge.--1948-49: Feb. 18 (8:30 a.m.) 2,700 cfs; Feb. 24 (6:30 p.m.) 2,970 cfs.
1949-50: Feb. 19 (9 p.m.) 1,390 cfs; Feb. 27 (8:30 a.m.) 2,480 cfs; Mar. 5 (1 to 2 p.m.) 3,070 cfs.
1950-51: Feb. 11 (6 a.m.) 1,730 cfs (7.61 ft); Mar. 16 (11 p.m.) 2,410 cfs (8.40 ft).

Crab Creek at Irby, Wash.--Continued

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	3.0	5.0	648
1.9	8.2	6.0	920
2.0	15	7.0	1,350
2.2	34	8.0	2,030
2.5	72	9.0	3,120
3.0	168	10.0	4,600
4.0	410		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.2	8.2	8.2	400	*240	3,400	440	114	57	29	28	16.5
2	8.2	8.2	8.2	700	220	3,740	417	109	50	30	28	16.5
3	7.7	8.2	8.2	1,100	200	3,620	396	100	48	30	28	16.5
4	7.7	8.2	8.2	1,950	160	3,240	365	100	49	*30	27	15.5
5	7.7	7.7	8.2	3,200	140	1,680	354	98	52	30	26	15.5
6	7.7	7.7	8.9	2,000	110	1,030	347	100	53	30	26	15
7	7.2	7.7	8.9	1,700	100	813	331	96	53	30	25	15
8	7.2	7.7	8.9	1,750	90	703	324	96	55	30	25	15
9	7.7	*7.7	9.2	1,550	80	670	317	98	57	30	25	14
10	7.7	7.2	9.5	1,250	70	682	306	95	58	30	25	14
11	7.7	7.0	10	1,300	80	686	301	90	57	30	25	14
12	7.7	6.9	13	1,350	90	614	272	90	54	34	24	14
13	7.7	6.8	8.5	1,450	80	545	262	86	50	30	*24	14
14	7.7	6.7	*8.5	1,350	75	526	255	88	52	29	23	14
15	7.7	6.6	8.5	1,250	70	511	240	86	53	29	22	14
16	7.7	6.6	8.5	1,500	63	569	232	86	53	29	22	15
17	7.7	6.6	8.5	1,400	55	646	219	85	53	29	21	14
18	7.7	6.7	8.5	1,300	50	1,150	209	83	52	29	21	13.5
19	7.7	6.8	8.5	1,100	100	*1,320	198	82	52	29	21	14
20	7.7	7.2	9.0	1,000	400	1,200	190	80	48	29	20	14
21	7.7	7.0	11	900	936	1,200	176	78	46	29	20	13.5
22	7.7	8.0	285	1,000	3,030	941	161	72	46	29	19	13.5
23	7.7	8.2	1,580	1,150	2,290	944	156	69	44	29	19	14
24	7.7	8.2	1,300	900	1,020	892	154	64	38	28	19	*14
25	7.7	9.0	1,100	750	730	765	150	62	35	28	19	14
26	7.7	11	900	650	694	634	*147	61	34	28	20	14
27	7.7	10	1,100	560	595	631	143	71	33	28	19	13.5
28	8.2	9.4	900	500	569	*576	134	*62	31	28	18.5	13.5
29	8.2	9.0	700	400	*2,460	509	128	59	29	28	18.5	13.5
30	8.2	8.6	600	350	------	473	120	57	29	28	17.5	13.5
31	8.2	------	500	300	------	457	------	53	------	28	17.5	------
Total	240.7	234.8	9,153.9	36,060	14,797	35,367	7,444	2,570	1,421	907	693.0	431.0
Mean	7.76	7.83	295	1,163	510	1,141	248	82.9	47.4	29.3	22.4	14.4
Ac-ft	477	466	18,160	71,520	29,350	70,150	14,760	5,100	2,820	1,800	1,370	855

Calendar year 1955: Max 2,040 Min 6.6 Mean 85.2 Ac-ft 61,710
Water year 1955-56: Max 3,740 Min 6.6 Mean 299 Ac-ft 216,800

Peak discharge (base, 300 cfs).--Dec. 23 (10:30 p.m.) 2,060 cfs (8.03 ft); Jan. 5 (2 a.m.) 3,670 cfs (9.40 ft); Feb. 22 (7 p.m.) 3,500 cfs (9.28 ft); Mar. 2 (7 a.m.) 4,170 cfs (9.73 ft); Mar 20 (3 a.m.) 1,450 cfs (7.18 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 11-24, Dec. 13-20, Jan. 26 to Feb. 20. No gage-height record Nov. 21 to Dec. 12, Dec. 25 to Jan. 4, Jan. 6 to Feb. 21; discharge estimated on basis of weather records and records for stations on nearby streams.

Wilson Creek at Wilson Creek, Wash.

Location.--Lat 47°26', long 119°06', in SW¼ sec. 6, T. 22 N., R. 30 E., on right bank half a mile upstream from mouth and town of Wilson Creek.

Drainage area.--About 470 sq mi.

Records available.--February 1951 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is about 1,280 ft (from Great Northern Ry.).

Average discharge.--5 years, 6.16 cfs (4,460 acre-ft per year).

Extremes.--Maximum discharge during year, 1,270 cfs Mar. 23 (gage height, 8.88 ft); no flow for many days.
1951-56: Maximum discharge, 1,420 cfs Mar. 16, 1951 (gage height, 9.59 ft), from rating curve extended above 270 cfs; no flow for long periods each year.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Diversions for irrigation above station. Flow regulated by storage for irrigation above station.

Rating tables, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 23				Mar. 23 to Sept. 30			
4.8	0	5.7	69	5.0	0	6.0	96
4.9	1.0	6.0	121	5.1	1	6.5	212
5.0	3.3	6.5	240	5.2	4	7.0	370
5.1	9.3	7.0	405	5.3	9	8.0	820
5.4	33			5.5	25	9.0	1,340
				5.7	48		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					*0	9.4	282	29				
2					0	2.6	218	29				
3					0	81	170	29				
4					0	10	153	30		(*)		
5					0	9.3	144	29				
6					0	6.9	102	29				
7					0	2.8	92	28				
8					0	5.7	89	26			(*)	
9		(*)			0	7.5	76	25				
10					0	2.8	72	24				
11					0	b2.5	65	24				
12					0	b2.5	58	22				
13					0	b2.5	54	21			(*)	
14			(*)		0	b2.5	49	19.5				
15					0	49	46	18				
16					0	164	43	16				
17					0	170	42	11				
18					0	.2	41	10.5				
19					0	*0	40	8.5				
20					a2.0	*0	37	7.5				
21					a12	11	37	8.5				
22					a9.0	403	36	8.5				
23					a7.0	908	35	7.5				
24					a6.0	1,100	38	6.5				(*)
25					a5.0	1,000	44	4.5				
26					a4.0	945	*40	3.4				
27					a4.0	*760	36	3.1				
28					a3.0	*562	34	*2.8				
29					*2.6	335	33	1.6				
30					------	414	32	.7				
31		------			------	442	------	.1	------			------
Total	0	0	0	0	54.6	7,411.2	2,238	483.2	0	0	0	0
Mean	0	0	0	0	1.88	239	74.6	15.6	0	0	0	0
Ac-ft	0	0	0	0	108	14,700	4,440	958	0	0	0	0

Calendar year 1955: Max 22 Min 0 Mean 0.39 Ac-ft 282
Water year 1955-56: Max 1,100 Min 0 Mean 27.8 Ac-ft 20,210

* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and information from local residents.
b Stage-discharge relation affected by ice.

Crab Creek near Moses Lake, Wash.

Location.--Lat 47°11'25", long 119°16'00", in SW¼SE¼ sec. 26, T. 20 N., R. 28 E., on left bank on downstream side of highway bridge, 3 miles upstream from Parker Horn and 4 miles north of town of Moses Lake. Prior to July 14, 1956, at site 300 ft upstream.

Drainage area.--About 2,040 sq mi.

Records available.--September 1942 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 1,070.39 ft above mean sea level (Bureau of Reclamation benchmark). Prior to July 14, 1956, at site 300 ft upstream at same datum.

Extremes.--Maximum discharge during year, 3,090 cfs Mar. 5 (gage height, 8.19 ft); minimum, 10.5 cfs Feb. 14 (gage height, 1.55 ft).
1942-56: Maximum discharge, that of Mar. 5, 1956; no flow during several months each year prior to 1952, and part of each day Jan. 14, 15, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Numerous small diversions for irrigation and domestic use above station. Most of natural flow from upper basin passes this station underground. No regulation. Beginning in 1952, return flow from irrigation on Columbia Basin project has increased runoff during summer months.

Cooperation.--Three discharge measurements furnished by Bureau of Reclamation.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-18)

Oct. 1 to July 13				July 14 to Sept. 30	
1.6	12	4.0	365	2.0	29
2.0	28	5.0	810	2.1	34
2.5	61	6.0	1,420	2.2	39
3.0	119	8.1	3,020	2.3	45
3.5	214			2.4	52

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	29	22	14	170	620	740	148	47	32	37	46
2	*39	32	21	14	120	888	700	142	48	51	38	46
3	38	33	20	21	80	1,920	630	137	46	*80	38	45
4	38	30	20	230	60	2,780	574	136	49	50	38	46
5	38	29	20	196	50	*2,990	504	132	49	42	38	46
6	37	28	20	198	40	*2,600	452	131	46	38	39	46
7	38	28	19	247	30	1,830	432	131	45	35	40	46
8	37	28	19	630	25	1,260	386	125	44	32	40	46
9	40	28	18	866	20	908	358	122	43	30	40	46
10	39	*28	19	1,110	16.5	695	337	120	46	29	40	46
11	36	27	19	*810	16	538	301	114	44	29	41	46
12	35	24	20	620	16.5	524	274	110	*43	29	41	46
13	35	22	*18	492	15	448	260	106	43	29	42	46
14	34	20	16	412	14.5	432	254	101	46	30	*41	46
15	33	19	15	340	14	416	232	96	48	31	40	47
16	32	19	15	308	14	393	217	99	47	32	40	46
17	32	19	15	277	14	386	193	96	45	32	40	46
18	32	19	15	240	14	390	178	93	44	32	41	47
19	30	20	15	248	14	*432	164	93	44	31	41	46
20	31	19	16	243	15	512	157	92	43	31	41	47
21	31	19	19	235	15	645	151	86	41	31	41	46
22	30	20	29	237	16	745	142	82	41	31	41	45
23	30	20	26	235	16	815	136	83	41	31	41	*44
24	30	22	20	230	18	896	128	79	39	31	43	45
25	30	28	20	168	270	1,060	120	73	37	31	44	45
26	30	27	20	237	1,190	1,200	119	88	37	32	48	45
27	29	23	17	500	1,430	1,170	*112	75	37	32	50	45
28	30	22	16	550	*1,060	1,140	105	62	37	32	48	44
29	32	22	15	450	*810	1,050	110	57	35	33	47	44
30	32	22	14	300	------	902	141	51	33	34	46	44
31	30	------	14	*220	------	790	------	48	------	36	46	------
Total	1,047	726	572	10,878	5,583.5	31,375	8,607	3,108	1,288	1,079	1,291	1,369
Mean	33.8	24.2	18.5	351	193	1,012	287	100	42.9	34.8	41.6	45.6
Ac-ft	2,080	1,440	1,130	21,580	11,070	62,230	17,070	6,160	2,550	2,140	2,560	2,720

Calendar year 1955: Max 317 Min 10 Mean 37.8 Ac-ft 27,390
Water year 1955-56: Max 2,990 Min 14 Mean 183 Ac-ft 132,700

* Discharge measurement made on this day.
Note.--No gage-height record July 21 to Aug. 3; discharge estimated on basis of weather records and recorded range in stage. Stage-discharge relation affected by ice Nov. 11-23, Dec. 8, 9, 13-21, Dec. 27 to Jan. 2, Jan. 27 to Feb. 9, Feb. 15-23 (no gage-height record Jan. 30, Feb. 2, 3, 15-23; discharge estimated on basis of weather records and records for stations on nearby streams).

Park Lake near Coulee City, Wash.

Location.--Lat 47°35', long 119°24', in NW¼ sec. 14, T. 24 N., R. 27 E., on southeast shore, 1 mile upstream from outlet and 5½ miles southwest of Coulee City.

Records available.--March 1938 to September 1956 (fragmentary).

Gage.--Staff gage read 2 or 3 times a month. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1938-56: Maximum elevation observed, 1,096.44 ft Feb. 9, 1950; minimum observed, 1,094.17 ft Sept. 30, 1939.
Maximum elevation known, 1,101.3 ft (from well-defined alkali line at gage), date of occurrence unknown.

Remarks.--Some diversion from tributary for irrigation.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	95.88	-	-	-	-	-	-	-
2	-	-	-	-	-	-	95.57	-	-	95.85	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	95.80	95.74	95.65	-	95.67
5	95.40	-	95.88	-	-	-	-	-	-	-	-	-
6	-	-	-	-	95.86	95.78	-	-	-	-	95.73	-
7	-	95.58	-	-	-	-	-	95.77	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	95.58	-	95.84	-	-	95.87	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	95.74	-
14	-	-	95.86	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	95.77
18	-	-	-	-	-	-	-	-	95.83	-	-	-
19	-	-	-	-	-	95.58	-	-	-	-	-	-
20	-	-	95.85	-	95.92	-	95.92	-	-	-	95.74	-
21	95.50	95.98	-	-	-	-	-	95.79	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	95.96	-	-	-	-	-	95.70	-	-
24	-	-	-	-	-	-	-	-	-	-	-	95.68
25	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	95.92	-	-	-	-	-
28	-	-	-	-	-	-	-	95.76	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Park Creek below Park Lake, near Coulee City, Wash.

Location.--Lat 47°34'20", long 119°25'10", in SW¼ sec. 15, T. 24 N., R. 27 E., on left bank at highway crossing 100 ft upstream from mouth, 500 ft downstream from Park Lake, and 6½ miles southwest of Coulee City.

Drainage area.--About 400 sq mi, most of which is noncontributing to surface runoff.

Records available.--July 1945 to September 1956.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,091.52 ft above mean sea level (Bureau of Reclamation benchmark).

Average discharge.--11 years, 8.29 cfs (6,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24 cfs Feb. 29 (gage height, 2.32 ft); maximum gage height, 2.95 ft Dec. 14 (backwater from ice); minimum discharge, 0.6 cfs Nov. 11 (gage height, 1.67 ft).

1945-56: Maximum discharge, 47 cfs Feb. 9, 1951 (gage height, 2.71 ft); maximum gage height, 3.05 ft Jan. 28, 1950 (backwater from ice); minimum discharge not determined, probably less than 0.1 cfs during period Aug. 17 to Sept. 21, or Oct. 1-17, 1945 (gage height, less than 1.4 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. Some diversion during summer months for irrigation above Park Lake. Occasional regulation by operation of fish screen at outlet of Park Lake.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	0.4	2.0	7.1
1.7	1.2	2.1	11
1.8	2.5	2.2	16.5
1.9	4.4	2.3	24

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	11	17	14.5	*14.5	19.5	16	14.5	12.5	6.5	6.2	5.9
2	9.2	11.5	16.5	14.5	14.5	17	16	14.5	13	6.5	6.2	5.9
3	9.2	12.5	16.5	14.5	14.5	17	16	14.5	13	6.5	6.8	5.6
4	9.2	12.5	16	14.5	14.5	14.5	16	14.5	13	*6.8	6.8	5.4
5	8.4	12.5	16	14.5	14	14	12.5	15.5	10.5	6.8	7.1	5.1
6	9.2	11.5	15.5	15.5	14	13.5	5.6	15.5	11	6.5	7.1	5.4
7	*7.3	11	15.5	15.5	14	16.5	6.2	15.5	12	6.5	7.1	5.4
8	8.8	11	15.5	15.5	13.5	18	6.8	16	12.5	6.5	7.1	5.4
9	8.8	*11.5	15.5	15.5	13.5	17	5.0	16.5	13	6.5	7.4	5.6
10	9.2	11	15.5	14.5	13.5	17	3.7	16.5	13.5	5.9	7.4	5.6
11	9.2	7.7	16	14.5	13.5	17	7.7	16.5	13.5	5.9	7.4	5.6
12	9.2	.9	16	15.5	13	18	6.2	16	14	5.9	7.7	5.9
13	9.2	.8	15	15.5	13	18	4.9	15.5	14	6.2	*7.4	5.9
14	9.6	.7	*14.5	15.5	13	18	4.6	15.5	15.5	6.2	7.1	6.2
15	9.6	.7	14	16	13	17	5.9	14.5	16	6.5	7.4	6.2
16	10.5	.7	14.5	16	13	17	7.4	14.5	14	6.5	7.4	6.2
17	10.5	.7	14.5	16.5	13	17	10.5	11.5	14.5	6.2	7.1	6.2
18	10.5	.7	14.5	16.5	13	17	10.5	8.8	12	6.5	7.1	6.5
19	10.5	.8	14.5	16.5	13	*17	9.2	6.8	10	6.5	6.8	9.2
20	11	1.0	14.5	16.5	14	18	7.4	4.2	9.6	6.5	6.8	12
21	11	1.2	14.5	16.5	14.5	18	7.7	5.5	9.6	6.8	6.8	12
22	11.5	9.0	16	16.5	15.5	18	7.7	14.5	9.6	4.6	6.8	10.5
23	11.5	18.5	16	16.5	16	18	13.5	15.5	9.2	2.4	6.8	11
24	12	18	15.5	16.5	16.5	17	16.5	13.5	8.4	2.2	6.8	*11
25	12	17	15.5	16.5	16.5	18	16.5	13	8.4	2.1	7.1	11
26	11	16.5	15.5	16.5	16.5	18	16.5	14.5	8.0	1.7	7.1	11
27	10	9.2	15.5	16.5	16.5	18	*16	5.8	7.7	1.6	7.1	10.5
28	10	9.6	15.5	16.5	18.5	18	15.5	*1.4	7.4	1.3	7.1	10
29	11	18	14.5	16	20	16.5	14.5	5.0	7.1	1.3	6.8	9.6
30	11.5	17	14.5	15.5	------	16.5	14.5	8.6	6.5	3.5	6.5	9.6
31	11.5	------	14.5	14.5	------	16	------	14	------	6.2	6.2	------
Total	310.9	264.7	475.0	486.0	422.5	530.0	317.0	388.6	339.0	161.6	216.5	231.4
Mean	10.0	8.82	15.3	15.7	14.6	17.1	10.6	12.5	11.3	5.21	6.98	7.71
Ac-ft	617	525	942	964	838	1,050	629	771	672	321	429	459

Calendar year 1955: Max 18.5 Min 0.7 Mean 10.1 Ac-ft 7,300
Water year 1955-56: Max 20 Min 0.7 Mean 11.3 Ac-ft 8,220

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 12-21, Dec. 13-14, Jan. 3-5, Feb. 8-20.

Blue Lake near Coulee City, Wash.

Location.--Lat 47°34', long 119°26', in SE¼ sec. 16, T. 24 N., R. 27 E., on right shore 2½ miles upstream from outlet and 7 miles southwest of Coulee City.

Records available.--March 1938 to September 1956 (fragmentary).

Gage.--Staff gage read 2 or 3 times a month. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1938-56: Maximum elevation observed, 1,093.50 ft Apr. 27, 1956; minimum observed, 1,090.50 ft Nov. 10, 1939.
Maximum elevation known, 1,101.2 ft (from alkali line at gage), date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	93.12	-	-	-	-	-	-	-
2	-	-	-	-	-	-	93.22	-	-	93.25	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4		-	-	-	-	-	-	93.30	93.35	93.26	-	92.76
5	92.54	-	93.16	-	-	-	-	-	-	-	-	-
6	-	-	-	-	93.08	93.04	-	-	-	-	93.08	-
7	-	92.80	-	-	-	-	-	93.26	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	92.85	-	93.02	-	-	93.17	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	93.03	-
14	-	-	93.00	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	92.58
18	-	-	-	-	-	-	-	-	93.45	-	-	-
19	-	-	-	-	-	93.05	-	-	-	-	-	-
20	-	-	93.32	-	92.98	-	93.40	-	-	-	93.10	-
21	92.61	92.82	-	-	-	-	-	93.09	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	93.10	-	-	-	-	-	93.29	-	-
24	-	-	-	-	-	-	-	-	-	-	-	92.57
25	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	93.50	-	-	-	-	-
28	-	-	-	-	-	-	-	93.16	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	93.10	-------	-	-	-	-	-	-	-
31	-	-------	-	-	-------	-	-------	-	-------	-	-	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Lenore Lake near Soap Lake, Wash.

Location.--Lat 47°31', long 119°30', in SW¼ sec. 1, T. 23 N., R. 26 E., on east shore 5½ miles upstream from outlet and 9 miles north of town of Soap Lake.

Records available.--July 1936, March 1938 to September 1956 (fragmentary).

Gage.--Staff gage, benchmark or reference point read about two times a week. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1936, 1938-56: Maximum elevation observed, 1,087.73 ft June 12, 1953; minimum observed, 1,076.65 ft Oct. 26, 1940.
Maximum elevation known, 1,092.2 ft (from well-defined alkali line at gage), date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation, and pumping into and out of lake.

Elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	78.81	-	-	79.20	-	-
3	80.05	-	-	78.98	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	79.14	79.37	79.19	-	78.58
5	-	-	79.84	-	-	-	-	-	-	-	-	-
6	-	-	-	-	78.65	78.30	-	-	-	-	78.90	-
7	-	80.12	-	-	-	-	-	79.19	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	80.04	-	78.86	-	-	78.95	-	-	79.26	-	-
10	-	-	-	-	-	-	78.90	-	-	-	-	78.66
11	80.02	-	-	-	-	-	-	-	79.39	-	-	-
12	-	-	79.60	-	-	-	-	-	-	-	-	-
13	-	-	-	-	78.54	78.20	-	-	-	-	78.86	-
14	-	80.07	-	-	-	-	-	79.24	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	78.79	-	78.15	79.02	-	-	79.20	-	-
17	80.03	-	-	-	-	-	-	-	-	-	-	78.59
18	-	-	-	-	-	-	-	-	79.36	-	-	-
19	-	-	79.42	-	-	78.27	-	-	-	-	-	-
20	-	-	-	-	78.44	-	79.06	-	-	-	78.83	-
21	80.04	-	-	-	-	-	-	79.30	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	79.08	-	-	79.14	-	-
24	80.03	-	-	-	-	-	-	-	-	-	-	78.58
25	-	-	-	-	-	-	-	-	79.29	-	-	-
26	-	-	-	-	-	78.58	-	-	-	-	-	-
27	-	-	79.16	-	78.34	-	79.10	-	-	-	78.75	-
28	-	80.06	-	-	-	78.67	-	79.32	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	78.76	-------	-	79.11	-	-	-	-	-
31	80.05	-------	-	-	-------	-	-------	-	-------	78.97	-	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level. Bureau of Reclamation pumped from lake Nov. 11 to Mar. 16.

Soap Lake near Soap Lake, Wash.

Location.--Lat 47°23'40", long 119°29'30", in SW¼ sec. 18, T. 22 N., R. 27 E., on east shore 1 mile north of town of Soap Lake.

Records available.--May to August 1936, March 1938 to September 1956 (fragmentary).

Gage.--Water-stage recorder. Prior to Feb. 4, 1953, staff gage or reference point at site three-quarters of a mile uplake. Feb. 4, 1953, to June 8, 1954, staff gage at present site. All readings have been reduced to elevations above mean sea level.

Extremes.--Maximum daily elevation during year, 1,076.53 ft Dec. 27; minimum daily, 1,074.95 ft Mar. 15.
1936, 1938-56: Maximum elevation observed, 1,079.20 ft Jan. 28, 1953; minimum observed, 1,070.87 ft Oct. 21, 1939.
Maximum elevation known, 1,083.1 ft (from well-defined alkali line at gage), date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation. Water pumped from lake to reduce or limit high stages.

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75.15	75.54	76.00	-	75.72	-	75.18	75.31	75.37	75.37	75.38	75.51
2	75.15	75.57	76.02	-	-	-	75.19	75.31	75.36	75.36	75.38	75.50
3	75.17	75.59	76.03	76.40	-	-	75.19	75.32	75.37	75.38	75.38	75.50
4	75.16	75.61	76.05	-	-	-	75.18	75.33	75.39	75.39	75.38	75.50
5	75.17	75.63	76.07	-	-	-	75.17	75.33	75.37	75.40	75.38	75.50
6	75.18	75.64	76.09	-	75.59	75.04	75.18	75.34	75.37	75.40	75.38	75.51
7	75.18	75.66	76.11	-	-	75.04	75.19	75.35	75.38	75.40	75.37	75.52
8	75.21	75.66	76.13	-	-	75.03	75.21	75.37	75.39	75.41	75.38	75.53
9	75.22	75.67	76.15	76.24	-	75.02	75.23	75.37	75.39	75.42	75.38	75.56
10	75.23	75.68	76.17	76.20	-	75.01	75.23	75.36	75.40	75.43	75.39	75.58
11	75.23	75.67	76.20	76.17	-	74.99	75.24	75.35	75.41	75.43	75.40	75.59
12	75.24	75.66	76.23	76.14	-	74.99	75.25	75.35	75.42	75.43	75.40	75.59
13	75.25	75.66	76.25	76.11	75.38	74.97	75.26	75.34	75.42	75.44	75.41	75.60
14	75.26	75.65	76.26	76.09	-	74.96	75.27	75.35	75.42	75.44	75.42	75.62
15	75.28	75.66	76.27	76.10	-	74.95	75.27	75.36	75.42	75.44	75.43	75.64
16	75.30	75.66	76.29	76.09	-	74.96	75.27	75.37	75.42	75.44	75.42	75.64
17	75.32	75.68	76.30	76.07	-	74.97	75.27	75.37	75.42	75.45	75.42	75.67
18	75.34	75.72	76.31	76.04	-	74.99	75.28	75.37	75.42	75.46	75.43	75.71
19	75.35	75.75	76.32	76.04	-	75.00	75.29	75.38	75.42	75.47	75.45	75.73
20	75.36	75.77	76.34	76.03	75.21	75.02	75.29	75.37	75.41	75.48	75.46	75.73
21	75.38	75.79	76.37	76.01	-	75.05	75.30	75.36	75.41	75.50	75.48	75.72
22	75.39	75.79	76.39	75.98	-	75.07	75.30	75.37	75.40	75.50	75.48	75.72
23	75.40	75.83	76.42	75.96	-	75.09	75.31	75.37	75.40	75.50	75.49	75.74
24	75.41	75.86	76.45	75.93	-	75.11	75.31	75.37	75.39	75.50	75.49	75.76
25	75.42	75.87	76.47	75.90	-	75.12	75.31	75.37	75.38	-	75.49	75.78
26	75.43	75.89	76.50	75.87	-	75.13	75.31	75.37	75.39	-	75.50	75.79
27	75.44	75.91	76.53	75.84	75.11	75.14	75.31	75.37	75.40	-	75.51	75.80
28	75.46	75.92	-	75.81	-	75.15	75.31	75.37	75.38	-	75.52	75.81
29	75.49	75.95	-	75.78	-	75.15	75.31	75.36	75.37	-	75.51	75.82
30	75.51	75.98	-	75.77	-------	75.16	75.32	75.36	75.36	75.38	75.50	75.83
31	75.51	-------	-	-	-------	75.17	-------	75.37	-------	75.38	75.52	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level. Bureau of Reclamation pumped from lake Dec. 27 to Mar. 16.

Rocky Ford Creek near Ephrata, Wash.

Location.--Lat 47°18'20", long 119°26'50", in NW¼NW¼ sec. 21, T. 21 N., R. 27 E., on right bank 1½ miles downstream from source at Rocky Ford Springs, 5 miles east of Ephrata, and 7 miles upstream from mouth.

Drainage area.--About 500 sq mi, most of which is noncontributing to surface runoff.

Records available.--June 1909 to April 1910, July to December 1911, August 1942 to September 1956. Prior to January 1910, published as Upper Crab Creek near Ephrata.

Gage.--Water-stage recorder. Datum of gage is 1,064.88 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Jan. 1, 1912, staff gages at sites 4½ to 5½ miles downstream at different datums. Aug. 19, 1942, to May 23, 1945, water-stage recorder at site 3½ miles downstream at datum 5.37 ft lower.

Average discharge.--14 years (1942-56), 76.9 cfs (55,670 acre-ft per year).

Extremes.--Maximum discharge during year, 212 cfs Apr. 15-18 (gage height, 3.58 ft); minimum, 69 cfs Jan. 4 (gage height, 2.10 ft).
1909-11, 1942-56: Maximum discharge, that of Apr. 15-18, 1956; minimum observed, 20 cfs Aug. 13-18, 1911.

Remarks.--Records good. A few small diversions for domestic use above station. Slight regulation by fish hatchery.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 5 to Feb. 12)

2.0	71
2.5	110
3.0	156
3.6	214

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	92	81	74	85	140	197	207	188	171	160	151
2	99	92	80	74	87	142	198	207	187	171	159	150
3	99	91	80	74	89	144	201	207	187	*170	159	150
4	99	91	79	73	91	145	202	207	186	170	159	149
5	99	90	78	73	92	149	203	207	185	169	159	149
6	99	90	77	73	95	150	205	206	184	169	158	149
7	99	90	77	73	95	150	206	206	183	169	158	148
8	98	89	77	72	97	151	207	204	182	168	157	146
9	99	88	77	72	99	154	208	203	182	168	157	145
10	99	*87	77	72	101	157	*208	202	181	167	157	145
11	99	89	77	72	103	160	210	202	180	167	157	145
12	99	87	76	72	105	161	210	201	*180	167	156	145
13	99	87	76	72	108	164	210	201	180	167	*156	144
14	99	85	*77	72	109	167	211	201	180	166	156	144
15	99	85	77	72	109	169	211	201	180	165	156	143
16	99	85	77	72	110	171	211	200	179	165	155	144
17	98	84	77	72	112	172	211	199	178	164	155	144
18	98	84	77	73	113	175	211	198	178	164	154	144
19	98	84	77	74	116	*177	208	198	177	163	154	143
20	98	85	77	74	117	*179	206	197	176	163	154	142
21	99	85	77	75	120	180	205	196	176	163	154	142
22	99	85	77	76	123	181	204	195	176	162	154	141
23	99	85	77	77	125	182	205	195	175	162	153	*141
24	99	84	76	77	128	184	206	194	174	162	153	140
25	98	83	76	78	129	186	206	193	174	161	153	138
26	97	83	75	79	131	188	206	192	173	161	152	138
27	96	82	75	79	133	189	*206	*191	173	161	152	139
28	95	82	75	81	134	191	206	190	172	161	152	140
29	95	82	74	82	137	192	206	190	172	160	151	140
30	94	82	74	83	------	194	206	189	171	160	151	139
31	92	------	74	*84	------	196	------	188	------	160	151	------
Total	3,038	2,588	2,381	2,326	3,193	5,240	6,190	6,167	5,369	5,116	4,812	4,318
Mean	98.0	86.3	76.8	75.0	110	169	206	199	179	165	155	144
Ac-ft	6,030	5,130	4,720	4,610	6,330	10,390	12,280	12,230	10,650	10,150	9,540	8,560

Calendar year 1955: Max 108 Min 71 Mean 90.0 Ac-ft 65,160
Water year 1955-56: Max 211 Min 72 Mean 139 Ac-ft 100,600

* Discharge measurements made on this day.
Note.--No gage-height record Feb. 15 to Mar. 6; discharge estimated on basis of recorded range in stage.

Moses Lake at Moses Lake, Wash.

Location.--Lat 47°06'00", long 119°19'20", in NW¼ sec. 33, T. 19 N., R. 28 E., on east shore 100 ft north of U. S. Highway 10, 1½ miles upstream from outlet, and 2 miles southwest of town of Moses Lake.

Drainage area.--2,970 sq mi, approximately.

Records available.--June 1909 to September 1914, November 1936 to September 1945 (fragmentary), October 1945 to September 1956. Published as "at Neppel" 1912-14.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Prior to Apr. 3, 1910, staff gage at site 1 mile northeast at different datum. Apr. 3, 1910, to Sept. 30, 1914, and Nov. 19, 1936, to Nov. 24, 1944, staff gages at site 3¼ miles northeast at Parker Horn at various datums. Oct. 30, 1945, to Mar. 14, 1955, water-stage recorder at site near west shore on downstream side of bridge on U. S. Highway 10 at same datum.

Extremes.--Maximum elevation during year, 1,048.07 ft Mar. 7; minimum recorded, 1,044.31 ft Jan. 3, 4.
1909-14, 1936-56: Maximum elevation, 1,048.29 ft Mar. 10, 1950; minimum observed, 1,038.17 ft Aug. 27, 1910.

Remarks.--Elevation controlled by dam at lake outlet. Many small diversions for irrigation.

Mean elevation, in feet, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.64	46.11	45.20	44.33	45.69	46.24	45.69	45.94	46.26	45.98	45.77	46.48
2	46.66	46.10	45.13	44.32	45.64	46.24	45.64	46.04	46.23	45.97	45.78	46.43
3	46.63	46.11	45.07	44.32	45.58	46.40	45.58	46.13	46.20	45.98	45.79	46.40
4	46.60	46.14	45.00	44.34	45.52	46.80	45.50	46.22	46.18	45.99	45.81	46.38
5	46.58	46.17	44.93	44.66	45.46	47.31	45.41	46.31	46.16	45.98	45.83	46.34
6	46.55	46.18	44.89	44.85	45.38	47.77	45.32	46.46	46.14	45.98	45.87	46.32
7	46.52	46.19	44.83	44.90	45.34	48.02	45.24	46.51	46.15	45.98	45.92	46.29
8	46.47	46.20	44.77	44.97	45.31	47.97	45.15	46.59	46.15	45.97	45.96	46.26
9	46.48	46.21	44.72	45.07	45.26	47.72	45.08	46.66	46.16	45.97	46.01	46.24
10	46.47	46.22	44.67	45.31	45.22	47.38	45.02	46.67	46.18	45.95	46.06	46.22
11	46.44	46.25	44.63	45.52	45.18	47.04	44.94	46.66	46.18	45.93	46.09	46.19
12	46.43	46.21	44.60	45.64	45.13	46.72	44.84	46.66	46.18	45.91	46.13	46.17
13	46.41	46.17	44.56	45.74	45.10	46.43	44.78	46.65	46.18	45.89	46.17	46.16
14	46.39	46.13	44.55	45.79	45.07	46.18	44.72	46.64	46.17	45.88	46.22	46.14
15	46.37	46.11	44.53	45.86	45.02	45.97	44.64	46.63	46.19	45.87	46.25	46.13
16	46.36	46.09	44.52	45.88	44.99	45.79	44.59	46.62	46.18	45.86	46.28	46.11
17	46.35	46.08	44.51	45.88	44.97	45.62	44.57	46.60	46.17	45.85	46.32	46.09
18	46.33	46.07	44.50	45.88	44.95	45.49	44.68	46.58	46.17	45.84	46.35	46.08
19	46.32	46.08	44.49	45.88	44.92	45.37	44.80	46.57	46.17	45.82	46.39	46.07
20	46.31	46.06	44.48	45.88	44.88	45.30	44.93	46.56	46.16	45.80	46.43	46.05
21	46.30	45.97	44.47	45.87	44.89	45.28	45.05	46.53	46.14	45.78	46.47	46.02
22	46.28	45.87	44.45	45.87	45.27	45.28	45.15	46.51	46.13	45.77	46.51	45.99
23	46.27	45.79	44.44	45.85	45.52	45.30	45.27	46.48	46.12	45.76	46.57	45.98
24	46.25	45.71	44.43	45.85	45.49	45.36	45.37	46.46	46.11	45.76	46.60	45.98
25	46.22	45.63	44.42	45.84	45.40	45.43	45.46	46.43	46.08	45.76	46.64	45.98
26	46.21	45.56	44.41	45.83	45.45	45.53	45.55	46.42	46.07	45.75	46.66	45.98
27	46.18	45.48	44.40	45.81	45.73	45.62	45.64	46.40	46.07	45.76	46.66	45.97
28	46.17	45.40	44.39	45.79	45.94	45.70	45.71	46.37	46.07	45.76	46.63	45.96
29	46.16	45.32	44.37	45.77	46.14	45.75	45.79	46.35	46.03	45.77	46.59	45.94
30	46.14	45.26	44.36	45.75	------	45.73	45.87	46.32	46.00	45.77	46.54	45.94
31	46.12	------	44.35	45.73	------	45.72	------	46.29	------	45.78	46.50	------

Note.--Add 1,000 ft to obtain elevation above mean sea level. No gage-height record Dec. 14 to Jan. 2, Jan. 26-30, Feb. 2; elevations estimated from reconstructed graph.

Crab Creek near Warden, Wash.

Location.--Lat 46°57'00", long 119°15'20", in SW¼NW¼ sec. 24, T. 17 N., R. 28 E., on left bank 0.5 mile upstream from Goose Lake, 2½ miles downstream from O'Sullivan Dam, 5 miles northwest of Othello, and 12 miles south of Warden. Prior to Sept. 1, 1955, at site 2 miles upstream.

Drainage area.--About 4,150 sq mi, of which 500 sq mi in the vicinity of Soap Lake is probably noncontributing.

Records available.--June to December 1909, March to December 1910, February to December 1911, February to June 1912, October 1942 to September 1952, October 1955 to September 1956. Published as Lower Crab Creek near Warden 1909-12. Records for September 1952 to September 1955 at site 2 miles upstream not equivalent owing to seepage bypassing gage.

Gage.--Water-stage recorder and rock and culvert control. Altitude of gage is 880 ft (from topographic map). Prior to June 27, 1912, staff gages at several sites within 3 miles of present station at various datums. October 1942 to September 1950, water-stage recorder at site 1.6 miles upstream at different datum. October 1950 to September 1952, water-stage recorder at site 2 miles upstream at different datum.

Extremes.--Maximum discharge during year, 37 cfs Feb. 21 (gage height, 1.24 ft); minimum daily, 29 cfs Oct. 1 to Nov. 3, Nov. 14, 16, 27, Dec. 14; minimum gage height, 0.84 ft Nov. 2.

1909-12, 1942-52, 1955-56: Maximum discharge, 3,000 cfs Feb. 7, 1943 (gage height, 4.25 ft, site and datum then in use), from rating curve extended above 20 cfs on basis of slope-area measurement of flood in Lind Coulee; no flow for short intervals in June and July 1948, and part of each day Feb. 2-21, 1952, when water was shut off at O'Sullivan Dam.

Remarks.--Records good. Many diversions for irrigation. Flow regulated by O'Sullivan Dam. Storage began in Potholes Reservoir above O'Sullivan Dam in September 1952. Discharge between September 1952 and September 1955 consisted of a small part of dam seepage. Discharge at present location includes essentially all of the seepage.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*29	29	30	30	30	35	33	32	31	31	31	31
2	29	29	30	30	30	35	33	32	31	*31	31	32
3	29	29	30	31	30	35	33	32	31	31	31	32
4	29	30	30	30	30	34	33	32	31	31	31	32
5	29	30	30	31	30	34	33	32	31	31	31	32
6	29	30	30	31	30	34	33	32	31	31	31	32
7	29	30	30	31	31	34	33	32	31	31	31	32
8	29	30	30	31	31	34	33	32	31	31	31	32
9	29	30	30	30	31	34	33	31	31	31	31	32
10	29	*30	30	30	31	34	33	31	31	31	31	32
11	29	30	30	30	31	33	32	31	31	31	31	32
12	29	30	30	31	31	33	32	31	31	31	31	32
13	29	30	30	31	32	33	32	31	31	31	31	32
14	29	29	*29	31	32	33	32	31	31	31	*31	32
15	29	30	30	31	32	33	32	31	32	31	31	32
16	29	29	30	31	32	33	32	31	31	31	31	32
17	29	30	30	31	32	33	32	31	31	31	31	32
18	29	30	30	31	32	*33	32	31	31	31	31	32
19	29	30	30	31	32	33	32	31	31	31	31	32
20	29	30	30	31	32	33	32	31	31	32	31	32
21	29	30	31	31	36	33	32	31	31	32	31	32
22	29	30	31	31	36	33	32	31	31	31	31	*32
23	29	30	31	31	35	33	32	31	31	31	31	32
24	29	30	30	30	35	33	32	31	31	31	31	32
25	29	30	30	30	35	33	32	31	31	31	31	32
26	29	30	30	30	35	33	32	31	31	31	32	32
27	29	29	30	30	35	33	32	*31	31	31	32	32
28	29	30	30	30	*35	33	*32	30	31	31	32	32
29	29	30	30	30	35	33	32	30	31	31	31	32
30	29	30	30	*30	------	33	32	31	31	31	31	32
31	29	------	30	30	------	33	------	31	------	31	32	------
Total	899	894	932	947	939	1,036	970	967	931	963	965	959
Mean	29.0	29.8	30.1	30.5	32.4	33.4	32.3	31.2	31.0	31.1	31.1	32.0
Ac-ft	1,780	1,770	1,850	1,880	1,860	2,050	1,920	1,920	1,850	1,910	1,910	1,900

Calendar year 1955: Max - Min - Mean - Ac-ft -
Water year 1955-56: Max 36 Min 29 Mean 31.2 Ac-ft 22,600

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 2 to Nov. 1, Nov. 3-9, 11-13, Dec. 25-27, Jan. 13-15, 20-22, June 3, 4; discharge estimated on basis of weather records.

Crab Creek near Smyrna, Wash.

Location.--Lat 46°50'35", long 119°36'25", in SE¼ sec. 30, T. 16 N., R. 26 E., on left bank at highway bridge, 2½ miles east of Smyrna and 17 miles upstream from mouth.

Drainage area.--About 4,500 sq mi, of which about 500 sq mi in the vicinity of Soap Lake is probably noncontributing.

Records available.--August 1942 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 530.83 ft above mean sea level (Bureau of Reclamation benchmark).

Extremes.--Maximum discharge during year, 134 cfs Feb. 23 (gage height, 3.46 ft); minimum, 13 cfs Nov. 12 (gage height, 1.32 ft).
1942-56: Maximum discharge, 3,300 cfs Feb. 8, 1943 (gage height, 7.5 ft, estimated by observer), from rating curve extended above 1,000 cfs; possibly no flow at times during summer of 1947.

Remarks.--Records good. Many diversions above station for irrigation. Flow is entirely regulated in Potholes Reservoir by O'Sullivan Dam. Flow by station is essentially seepage from Potholes Reservoir and return flow from part of the Columbia Basin project.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	14	2.5	51
1.7	21	3.0	83
2.0	31	3.5	140

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*50	48	52	29	b25	58	42	21	40	30	39	41
2	49	48	52	27	b26	57	41	26	41	*34	41	42
3	48	51	52	33	b27	52	41	28	43	36	41	43
4	46	50	51	49	b30	51	40	40	48	36	41	43
5	48	48	51	81	b33	48	40	44	49	37	41	43
6	48	47	46	86	b36	48	41	47	47	37	40	45
7	48	47	54	72	b37	45	40	45	46	39	40	45
8	49	46	52	61	b38	49	40	42	46	39	40	43
9	52	46	53	56	b40	50	40	38	45	38	39	42
10	52	*45	52	54	43	50	40	35	45	37	39	42
11	52	47	52	54	46	48	40	37	45	37	38	41
12	51	33	62	52	52	49	39	38	45	39	38	42
13	51	24	*52	54	60	49	40	37	43	40	37	42
14	52	20	37	52	60	48	38	36	45	41	*32	42
15	52	b19	26	56	52	48	40	32	45	40	29	40
16	50	b20	28	66	42	47	42	26	45	39	28	39
17	51	21	38	70	32	46	46	27	45	40	29	40
18	52	22	41	64	34	*46	49	33	45	41	29	41
19	53	24	36	60	36	44	52	29	45	41	30	41
20	54	26	35	60	40	45	50	26	39	40	30	39
21	55	29	37	62	58	45	45	29	35	41	28	40
22	56	31	70	63	97	46	43	32	35	41	18.5	*43
23	57	31	98	60	102	45	42	35	34	41	14.5	44
24	56	36	72	56	73	45	38	37	34	41	18	45
25	53	57	61	52	64	44	37	38	35	40	20	44
26	51	68	59	45	63	44	37	*39	35	39	24	43
27	49	58	57	40	60	44	32	39	35	39	33	42
28	48	53	52	41	61	43	*22	41	33	39	37	44
29	50	52	46	43	66	43	18	41	30	39	37	45
30	50	52	38	*45	------	43	19	41	27	39	41	42
31	50	------	34	b33	------	43	-------	41	-------	38	42	------
Total	1,585	1,199	1,546	1,676	1,433	1,463	1,174	1,100	1,225	1,198	1,034.0	1,268
Mean	51.1	40.0	49.9	54.1	49.4	47.2	39.1	35.5	40.8	38.6	33.4	42.3
Ac-ft	3,140	2,380	3,070	3,320	2,840	2,900	2,330	2,180	2,430	2,380	2,050	2,520

Calendar year 1955: Max 98 Min 13.5 Mean 35.7 Ac-ft 25,830
Water year 1955-56: Max 102 Min 14.5 Mean 43.4 Ac-ft 31,540

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Yakima River near Martin, Wash.

Location.--Lat 47°19'10", long 121°20'10", in NE¼ sec. 12, T. 21 N., R. 11 E., on left bank 800 ft downstream from dam at outlet of Keechelus Lake, 3½ miles northwest of Martin, and 9½ miles northwest of Easton.
Drainage area.--55.8 sq mi.
Records available.--October 1903 to September 1956.
Gage.--Water-stage recorder and masonry channel. Datum of gage is 2,422.40 ft above mean sea level (Bureau of Reclamation benchmark). Prior to July 20, 1923, staff gages at several sites within 2 miles of present site at various datums.
Average discharge.--53 years (1903-56), 331 cfs (239,600 acre-ft per year), adjusted for storage since January 1906.
Extremes.--Maximum discharge during year, 1,240 cfs Aug. 12, 13; maximum gage height, 8.33 ft Aug. 12; minimum discharge, 1.5 cfs Oct. 18 (gage height, 2.14 ft).
1903-56: Maximum discharge, 7,370 cfs Mar. 26, 1915, when temporary crib dam was washed out; practically no flow when gates in Keechelus Lake Dam are closed.
Remarks.--Records good. Flow regulated by Keechelus Lake (see p. 327). Keechelus Lake spillway discharge, computed from reservoir elevations and spillway rating, bypasses gage and is added to flow at station. No diversion.
Cooperation.--Gage-height record, 10 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.
Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910.

Rating tables, water year 1955-56, except period of combined flow at gage and over spillway (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 14

2.1	1.0	3.4	75
2.2	2.6	4.0	141
2.3	5.0	5.0	285
2.5	12	6.0	500
2.9	34	7.1	800

Nov. 14 to Sept. 30

2.3	6.2	4.0	147
2.4	9.4	5.0	300
2.6	18	6.0	500
3.0	42	7.0	760
3.5	86	8.4	1,270

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	653	11.5	645	799	147	204	374	10	222	e461	1,190	283
2	656	11.5	670	799	147	264	374	22	292	e591	1,190	283
3	656	12	706	790	147	300	374	383	338	e736	1,230	283
4	719	15.5	703	766	148	300	376	300	386	e762	1,230	283
5	749	14	703	730	148	300	376	300	593	e745	1,230	290
6	749	13	703	748	108	300	374	302	700	e776	1,230	285
7	782	*13	739	772	*86	300	376	357	811	e798	1,230	280
8	746	13	763	769	86	298	376	396	964	e817	1,230	285
9	713	14	760	766	85	359	*327	396	998	e940	1,230	286
10	570	16.5	763	*545	85	398	300	396	998	e1,080	1,230	285
11	322	15.5	775	394	85	396	302	396	998	1,110	1,230	286
12	225	14	583	286	85	394	119	489	998	1,110	1,230	283
13	98	14	300	222	86	*392	7.4	548	995	1,050	1,240	283
14	3.8	145	612	219	162	394	7.4	635	956	925	1,230	283
15	2.8	252	787	218	204	394	7.4	*703	928	922	1,230	283
16	2.4	298	775	218	204	394	7.4	526	928	928	*1,230	283
17	2.2	302	769	219	204	394	7.4	220	925	928	1,230	*283
18	2.0	346	766	219	204	394	153	14	866	974	1,200	283
19	*4.8	388	766	219	204	394	237	14	824	*1,070	1,170	283
20	9.2	394	769	189	204	394	95	14	*824	1,120	1,090	285
21	9.2	456	587	175	204	394	8.4	14	820	1,110	1,030	285
22	9.2	500	128	175	204	394	8.7	14	820	1,000	932	285
23	9.2	556	133	175	204	394	8.7	14.5	820	900	858	285
24	135	595	481	175	204	153	8.7	15	820	1,110	799	283
25	195	595	706	157	204	143	95	15	694	1,110	724	285
26	44	595	709	147	204	268	240	15	514	1,110	632	285
27	9.6	595	706	147	204	344	289	15	456	1,110	556	283
28	10	595	*760	148	204	374	304	14.5	458	1,170	383	283
29	13	628	799	147	204	376	300	144	458	1,190	283	288
30	13	645	796	147	-------	376	156	220	456	1,190	283	290
31	12	-------	799	147	-------	376	-------	222	-------	1,190	283	-------
Total	8,124.4	8,062.5	20,661	11,627	4,665	10,555	5,988.5	7,124.0	21,860	30,033	31,063	8,530
Mean	262	269	666	375	161	340	200	230	729	969	1,002	284
Ac-ft	16,110	15,990	40,980	23,060	9,250	20,940	11,880	14,130	43,360	59,570	61,610	16,920
(†)	+13,420	+20,870	-15,540	-13,400	-2,650	-12,150	+19,970	+63,550	+19,650	-25,770	-55,190	-11,930

Adjusted for change in contents in Keechelus Lake

Mean	480	619	414	157	115	143	535	1,263	1,059	550	104	83.9
Cfsm	8.60	11.1	7.42	2.81	2.06	2.56	9.59	22.6	19.0	9.86	1.86	1.50
In.	9.92	12.39	8.55	3.25	2.22	2.95	10.70	26.10	21.17	11.36	2.16	1.68
Ac-ft	29,530	36,860	25,440	9,660	6,600	8,790	31,850	77,680	63,010	33,800	6,420	4,990

Observed

Calendar year 1955:	Max	1,300	Min	2.0	Mean	402	Ac-ft	291,100
Water year 1955-56:	Max	1,240	Min	2.0	Mean	460	Ac-ft	333,800

Adjusted

Calendar year 1955:	Mean	410	Cfsm	7.35	In.	99.77	Ac-ft	296,900
Water year 1955-56:	Mean	461	Cfsm	8.26	In.	112.45	Ac-ft	334,600

* Discharge measurement made on this day.
† Change in contents in Keechelus Lake, in acre-feet.
e Combined flow at gage and over spillway.

Kachess River near Easton, Wash.

Location.--Lat 47°15'30", long 121°11'50", in NE¼ sec. 3, T. 20 N., R. 13 E., on left bank three-quarters of a mile downstream from Kachess Lake and 2 miles northwest of Easton.
Drainage area.--63.6 sq mi.
Records available.--October 1903 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,188.10 ft above mean sea level (Bureau of Reclamation benchmark): Prior to July 22, 1913, staff gage and July 22, 1913, to Aug. 14, 1916, water-stage recorder, at site a quarter of a mile upstream at different datum. Aug. 15, 1916, to Oct. 8, 1927, water-stage recorder at site half a mile downstream at different datum. Oct. 9, 1927, to Sept. 30, 1951, staff gage and water-stage recorder at present site at datum 1.33 ft higher.
Average discharge.--53 years, 288 cfs (208,500 acre-ft per year), adjusted for storage since October 1905.
Extremes.--Maximum discharge during year, 1,050 cfs June 8 (gage height, 6.17 ft); minimum, 0.5 cfs Oct. 17 (gage height, 1.28 ft).
1903-56: Maximum discharge, 2,530 cfs May 28, 1948 (gage height, 8.45 ft, present datum); no flow at times when gates in dam are closed.
Remarks.--Records excellent except those below 20 cfs, which are fair. No diversion. Flow regulated by Kachess Lake (see p. 327).
Cooperation.--Gage-height record, 10 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.
Revisions (water years).--WSP 369: 1904, 1907-8. WSP 1216: Drainage area.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.3	0.6	3.5	133
1.4	1.4	4.0	224
1.5	2.5	4.5	364
1.7	6.0	5.0	544
2.0	15	6.1	1,020
2.4	33		
3.0	77		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	3.0	700	888	171	239	472	10.5	536	364	624	749
2	96	2.6	696	884	171	242	472	23	668	462	624	749
3	96	3.2	692	880	171	242	472	382	740	632	624	749
4	58	6.8	688	942	171	239	469	254	816	704	620	744
5	3.2	5.8	688	983	171	239	469	254	920	704	620	704
6	3.2	4.2	684	978	171	239	410	254	947	704	616	684
7	3.2	*3.7	740	974	*171	239	378	254	938	700	616	684
8	3.7	3.7	767	970	171	239	382	262	983	696	596	684
9	4.0	4.4	767	965	212	295	*277	259	1,010	696	584	680
10	3.1	7.2	767	*693	244	328	226	259	1,000	696	584	676
11	1.0	6.0	772	560	244	328	226	259	992	692	584	676
12	.9	4.0	538	355	244	343	81	343	974	744	584	648
13	.8	3.4	390	232	242	*378	9.4	399	920	772	580	604
14	.8	134	532	232	242	378	10.5	480	888	787	580	560
15	.7	295	532	232	242	310	12	*540	888	754	*576	544
16	.6	364	528	232	242	430	10.5	476	884	744	576	544
17	*.6	361	528	232	242	430	9.7	392	826	731	576	544
18	.6	413	524	232	242	430	9.4	154	672	*749	576	*544
19	.6	444	548	232	242	427	10	35	608	740	572	544
20	.6	444	*680	232	242	427	10.5	35	*544	713	572	544
21	.7	497	567	232	242	427	11.5	34	490	708	572	544
22	.8	528	147	232	242	424	14.5	34	497	708	592	544
23	.8	588	147	232	242	424	13	143	497	708	616	544
24	1.3	632	450	232	242	143	12	102	497	708	656	536
25	1.5	632	668	200	239	148	11	130	500	704	704	528
26	1.2	632	664	179	239	301	11.5	296	402	704	704	516
27	1.2	632	664	177	239	430	11.5	340	352	656	708	516
28	1.8	632	749	177	239	476	11	346	355	624	704	516
29	5.0	676	803	175	239	476	11.5	430	361	624	754	516
30	5.6	700	852	173	-------	476	11	483	364	624	785	512
31	3.4	-------	893	173	-------	476	-------	512	-------	624	767	-------
Total	406.9	8,662.0	19,365	14,110	6,411	10,623	4,534.5	8,174.5	21,069	21,156	19,446	18,127
Mean	13.1	289	625	455	221	343	151	264	702	682	627	604
Ac-ft	807	17,180	38,410	27,990	12,720	21,070	8,990	16,210	41,790	41,960	38,570	35,950
(†)	+19,670	+19,620	-14,950	-17,390	-5,370	-11,760	+26,520	+61,840	+9,380	-17,720	-35,140	-33,040

Adjusted for change in contents in Kachess Lake

Mean	333	618	382	172	128	151	597	1,269	860	394	55.8	48.9
Cfsm	5.24	9.72	6.01	2.70	2.01	2.37	9.39	20.0	13.5	6.19	0.877	0.769
In.	6.04	10.85	6.92	3.12	2.17	2.74	10.47	23.01	15.09	7.15	1.01	0.86
Ac-ft	20,480	36,800	23,460	10,600	7,350	9,310	35,510	78,050	51,170	24,240	3,430	2,910

Observed

Calendar year 1955:	Max	1,550	Min	0.6	Mean	374	Ac-ft	270,400
Water year 1955-56:	Max	1,010	Min	0.6	Mean	416	Ac-ft	301,600

Adjusted

Calendar year 1955:	Mean	358	Cfsm	5.63	In.	76.37	Ac-ft	259,000
Water year 1955-56:	Mean	418	Cfsm	6.57	In.	89.43	Ac-ft	303,300

* Discharge measurement made on this day.
† Change in contents in Kachess Lake, in acre-feet.

Cle Elum River near Roslyn, Wash.

Location.--Lat 47°14'30", long 121°03'50", in NW¼ sec. 11, T. 20 N., R. 14 E., on left bank 1,000 ft downstream from dam at Cle Elum Lake and 4 miles northwest of Roslyn.
Drainage area.--203 sq mi.
Records available.--October 1903 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 2,102.10 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Oct. 14, 1913, and Sept. 4, 1931, to Apr. 19, 1933 several staff gages and Oct. 14, 1913, to Sept. 3, 1931, water-stage recorder, at about same sites at same datum.
Average discharge.--53 years, 918 cfs (664,600 acre-ft per year), adjusted for storage since 1906.
Extremes.--Maximum discharge during year, 3,630 cfs June 23 (gage height, 9.26 ft); minimum, 5.7 cfs Oct. 27 (gage height, 3.89 ft).
1903-56: Maximum discharge, 18,700 cfs Nov. 15, 1906 (gage height, 14.05 ft); no flow at times when gates in dam are closed.
Remarks.--Records good. No diversion above station. Flow regulated by Cle Elum Lake (see p. 327).
Cooperation.--Gage-height record, 10 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.
Revisions (water years).--WSP 369: 1906-8. WSP 1216: Drainage area. WSP 1286: 1908-9. WSP 1316: 1904. WSP 1396: 1943, 1953.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 12 to June 3)

4.2	36	5.5	475
4.3	53	6.0	725
4.5	97	7.0	1,370
4.7	160	8.0	2,230
5.0	265	9.3	3,680

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	882	51	1,200	1,560	506	816	1,680	1,160	2,140	2,230	2,230	2,010
2	876	51	1,190	1,560	506	816	1,670	1,170	2,420	2,120	2,230	2,030
3	882	51	1,190	1,550	502	816	1,670	1,240	2,750	1,900	2,220	2,030
4	834	51	1,200	1,670	502	904	1,660	1,300	2,780	1,760	2,220	2,020
5	681	50	1,200	1,710	502	904	1,660	1,310	2,980	1,690	2,220	2,010
6	630	50	1,190	1,690	498	798	1,650	1,310	3,070	1,460	2,230	2,000
7	708	48	1,240	1,690	570	792	1,640	1,430	3,120	1,340	2,230	1,990
8	708	*48	1,300	1,680	*630	873	1,630	1,480	3,220	1,360	2,230	1,960
9	635	48	1,290	1,670	698	1,220	1,400	1,520	3,280	1,330	2,230	1,970
10	545	46	1,290	1,190	752	1,210	*1,290	850	3,320	1,250	2,220	1,990
11	367	43	1,300	*954	747	1,200	1,280	649	3,360	1,040	2,230	1,930
12	181	44	850	742	747	1,310	1,280	1,030	3,330	1,060	2,230	1,710
13	178	46	269	625	747	1,330	1,120	1,100	3,390	1,130	2,210	1,590
14	109	90	711	625	747	*1,390	551	1,110	3,460	1,340	2,210	1,510
15	106	234	*1,010	625	742	1,640	206	662	3,500	1,700	*2,220	1,470
16	106	309	1,150	625	736	1,890	202	*1,150	3,500	1,990	2,210	1,470
17	106	309	1,230	620	736	1,960	415	810	3,540	2,210	2,230	1,450
18	106	479	1,260	620	736	1,950	692	462	3,580	2,410	2,220	1,440
19	*109	605	1,260	565	736	1,940	780	353	3,550	2,420	2,210	1,450
20	115	605	1,240	520	730	1,930	397	353	3,550	*2,580	2,270	1,450
21	115	742	1,220	520	786	1,910	134	353	*3,520	2,640	2,320	1,450
22	115	918	1,220	520	846	1,910	130	718	3,540	2,630	2,320	1,450
23	112	1,010	1,230	520	840	1,900	130	1,170	3,560	1,280	2,310	1,440
24	112	1,070	1,220	520	840	1,050	130	1,420	3,560	1,420	2,350	1,430
25	106	1,070	1,220	516	834	840	374	*1,450	3,320	1,970	2,410	*1,450
26	127	1,080	1,220	516	828	816	720	1,500	2,890	2,030	2,390	1,450
27	70	1,070	1,210	511	822	1,060	852	1,570	2,380	2,040	2,400	1,430
28	51	1,160	1,290	511	822	1,530	864	1,810	2,240	2,280	2,370	1,410
29	51	1,200	1,360	511	816	1,710	870	2,040	2,250	2,220	2,210	1,390
30	51	1,200	1,470	511	-------	1,700	1,050	2,110	2,170	2,230	2,040	1,160
31	51	-------	1,560	506	-------	1,690	-------	2,140	-------	2,230	2,030	-------
Total	9,825	13,778	36,790	28,153	20,504	41,905	28,127	36,730	93,270	57,290	69,650	49,540
Mean	317	459	1,187	908	707	1,352	938	1,185	3,109	1,848	2,247	1,651
Ac-ft	19,490	27,330	72,970	55,840	40,670	83,120	55,790	72,850	185,000	113,600	138,100	98,260
(†)	+28,180	+71,480	-16,660	-32,030	-27,800	-63,390	+50,660	+179,270	+5,430	+800	-107,370	-81,150

Adjusted for change in contents in Cle Elum Lake

Mean	775	1,661	916	387	224	321	1,788	4,100	3,200	1,861	500	288
Cfsm	3.82	8.18	4.51	1.91	1.10	1.58	8.81	20.2	15.8	9.17	2.46	1.42
In.	4.40	9.13	5.20	2.20	1.19	1.82	9.83	23.29	17.59	10.57	2.84	1.58
Ac-ft	47,670	98,810	56,310	23,810	12,870	19,730	106,400	252,100	109,400	114,400	30,730	17,110

Observed

Calendar year 1955: Max 6,600 Min 43 Mean 1,091 Ac-ft 789,800
Water year 1955-56: Max 3,580 Min 43 Mean 1,327 Ac-ft 963,000

Adjusted

Calendar year 1955: Mean 1,097 Cfsm 5.40 In. 73.32 Ac-ft 793,800
Water year 1955-56: Mean 1,337 Cfsm 6.59 In. 89.64 Ac-ft 970,300

* Discharge measurement made on this day.
† Change in contents in Cle Elum Lake, in acre-feet.

Yakima River at Cle Elum, Wash.

Location.--Lat 47°11'20", long 120°56'40", in sec. 27, T. 20 N., R. 15 E., on left bank at highway bridge at Cle Elum just upstream from Roslyn Creek, 7 miles upstream from Teanaway River.
Drainage area.--500 sq mi, approximately.
Records available.--August 1906 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 1,902.27 ft above mean sea level (levels by Bureau of Reclamation). Prior to Aug. 12, 1910, chain gage on highway bridge at different datum. Aug. 12, 1910, to July 11, 1911, staff gage; July 12, 1911, to June 27, 1923, water-stage recorder; June 28, 1923, to Oct. 21, 1924, staff gages; all at various locations within vicinity of bridge at datum 2.0 ft (corrected) higher.
Average discharge.--50 years, 1,987 cfs (1,439,000 acre-ft per year), adjusted for storage since October 1906 and Kittitas Canal diversion since 1930.
Extremes.--Maximum discharge during year, 5,740 cfs June 11 (gage height, 9.28 ft); minimum, 360 cfs Oct. 25 (gage height, 5.40 ft).
1906-56: Maximum discharge, 25,600 cfs Nov. 14, 1906 (gage height, 12.5 ft, from floodmarks); minimum, 46 cfs Nov. 17, 1953.
Remarks.--Records good. Kittitas high-line canal diverts water from river at Easton for irrigation below station. Several smaller diversions for irrigation of several hundred acres above station. Considerable regulation by Keechelus, Kachess, and Cle Elum Lakes (see p. 327). Records of chemical analyses and water temperatures for the water year 1956 are given in WSP 1453.
Cooperation.--Gage-height record collected in cooperation with, and nine discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 369: 1910-11. WSP 832: 1936.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
5.4	360	7.0	1,940	6.2	900	8.0	3,180
5.7	660	8.0	3,400	6.5	1,210	9.3	5,780
6.0	920	9.0	5,440	7.0	1,780		
6.5	1,380						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,270	1,120	3,030	3,540	980	1,540	3,070	3,230	4,400	2,560	2,920	2,210
2	1,280	669	3,000	3,520	990	1,640	3,020	2,960	4,260	2,500	2,900	2,220
3	1,290	705	3,010	3,520	990	1,650	3,080	2,460	4,660	2,570	2,920	2,240
4	1,260	1,190	3,010	3,650	990	1,640	3,290	2,400	4,600	2,640	2,940	2,220
5	1,230	1,590	3,010	3,750	1,000	1,600	3,260	2,900	4,810	2,560	2,930	2,210
6	1,020	1,350	3,010	3,700	980	1,560	3,130	2,880	5,050	2,400	2,930	2,190
7	1,140	1,130	3,040	3,740	1,000	1,580	3,020	3,020	5,030	2,250	2,940	2,150
8	1,210	*1,300	3,200	3,700	*1,070	1,670	3,070	3,470	5,230	2,260	2,940	2,120
9	1,410	1,370	3,190	3,640	1,140	1,950	2,940	3,940	5,450	2,240	2,930	2,110
10	1,360	2,330	3,200	3,210	1,260	2,020	2,720	3,570	5,630	2,320	2,960	2,150
11	1,120	2,460	3,580	*2,300	1,310	2,060	2,860	2,900	5,690	2,210	2,990	2,190
12	848	1,720	*4,380	2,020	1,400	2,120	*3,020	2,990	5,630	2,200	2,990	2,020
13	786	1,400	2,770	1,640	*1,380	2,190	2,980	3,050	5,630	2,280	2,990	1,880
14	741	1,270	2,580	1,540	1,350	*2,300	2,430	3,020	5,690	2,320	2,990	1,800
15	732	1,400	3,080	1,470	1,350	2,540	2,210	3,100	5,690	2,570	3,000	1,760
16	831	1,490	3,120	1,420	1,380	2,800	2,160	*3,740	5,670	2,800	2,990	1,740
17	*777	1,540	3,120	1,380	1,410	2,940	2,120	3,610	5,560	3,040	3,020	1,720
18	705	1,720	3,070	1,380	1,390	2,980	2,290	3,480	5,450	3,180	3,020	1,710
19	620	1,980	3,020	1,320	1,380	2,990	2,510	3,540	5,340	3,230	2,990	1,710
20	530	1,980	3,040	1,240	1,350	3,000	2,260	3,590	5,320	*3,410	3,000	1,710
21	490	2,050	3,130	1,210	1,400	3,000	2,370	2,980	*5,100	3,500	3,040	1,710
22	440	2,350	2,640	1,180	1,460	3,020	3,000	2,820	5,010	3,430	*3,020	1,700
23	430	2,470	2,320	1,170	1,460	3,050	2,720	3,560	4,990	2,190	2,980	1,680
24	420	2,690	2,220	1,160	1,460	2,420	*2,600	*3,680	4,940	1,980	*2,930	1,700
25	410	2,780	2,750	1,130	1,450	1,610	2,440	3,220	4,620	2,740	2,940	1,700
26	430	3,000	3,040	1,060	1,440	1,780	2,880	3,290	3,920	2,780	2,930	1,710
27	610	2,930	3,020	1,040	1,440	2,080	3,210	3,230	3,100	2,750	2,820	*1,700
28	550	2,900	3,070	1,030	1,440	2,690	3,080	3,120	2,840	2,880	2,740	1,670
29	840	2,930	3,260	1,010	1,440	2,940	3,210	3,320	2,800	2,940	2,420	1,680
30	1,430	3,040	3,380	990	-------	3,040	3,130	3,940	2,600	2,920	2,260	1,560
31	1,550	-------	3,540	970	-------	3,070	-------	4,340	-------	2,920	2,240	-------
Total	27,760	56,854	94,830	63,630	37,090	71,470	84,080	101,350	144,710	82,570	89,610	56,870
Mean	895	1,895	3,059	2,053	1,279	2,305	2,803	3,269	4,824	2,664	2,891	1,896
Ac-ft	55,060	112,800	188,100	126,200	73,570	141,800	166,800	201,000	287,000	163,800	177,700	112,800
(†)	11,460	0	0	0	0	0	1,040	29,710	40,400	67,730	68,410	47,160
(‡)	+61,270	+112,000	-47,150	-62,820	-35,820	-87,300	+97,150	+304,700	+34,460	-42,690	-197,700	-126,100

Adjusted for change in lake contents and diversion

Mean	2,078	3,778	2,293	1,031	656	886	4,453	8,707	6,082	3,071	787	569
Cfsm	4.16	7.56	4.59	2.06	1.31	1.77	8.91	17.4	12.2	6.14	1.57	1.14
In.	4.79	8.43	5.29	2.38	1.42	2.04	9.94	20.08	13.57	7.08	1.82	1.27
Ac-ft	127,800	224,800	141,000	63,380	37,750	54,500	265,000	535,400	361,900	188,800	48,410	33,860

Observed

Calendar year 1955:	Max	9,920	Min	310	Mean	2,007	Ac-ft	1,453,000
Water year 1955-56:	Max	5,690	Min	410	Mean	2,489	Ac-ft	1,807,000

Adjusted

Calendar year 1955:	Mean	2,418	Cfsm	4.84	In.	65.63	Ac-ft	1,750,000
Water year 1955-56:	Mean	2,869	Cfsm	5.74	In.	78.11	Ac-ft	2,083,000

* Discharge measurement made on this day.
† Diversion by Kittitas Canal, in acre-feet.
‡ Change in contents in Keechelus, Kachess, and Cle Elum Lakes, in acre-feet.

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Yakima River at Umtanum, Wash.

Location.--Lat 46°51'45", long 120°28'30", in NW¼ sec. 20, T. 16 N., R. 19 E., on right bank at Umtanum, half a mile upstream from Umtanum Creek and 10 miles south of Ellensburg.

Drainage area.--1,590 sq mi, approximately.

Records available.--August 1906 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,300.00 ft above mean sea level, datum of 1929. Prior to Sept. 28, 1911, staff or chain gages at approximately same site at various datums. Sept. 28, 1911, to Nov. 23, 1936, water-stage recorder at site about 300 ft upstream at datum 26.70 ft higher.

Extremes.--Maximum discharge during year, 11,900 cfs Apr. 22 (gage height, 35.16 ft); minimum, 762 cfs sometime during period of no gage-height record Oct. 12-26 (gage height, 30.58 ft, from recorded range in stage).
1906-56: Maximum discharge, 41,000 cfs Nov. 15 or 16, 1906 (gage height, 41.1 ft, from floodmarks, present datum); minimum recorded, 138 cfs Oct. 3, 1915 (gage height, 2.86 ft, datum then in use).

Remarks.--Records excellent except those for periods of no gage-height record or ice effect, which are fair. Flow partly regulated by Keechelus, Kachess, and Cle Elum Lakes (see p. 327). Water diverted above station for irrigation of about 105,000 acres.

Cooperation.--Records collected and prepared in cooperation with, and results of three discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 412: 1914. WSP 1216: Drainage area. WSP 1286: 1910.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

30.6	780	33.0	4,760
31.0	1,200	34.0	7,720
32.0	2,640	35.5	13,200

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,800	1,930	3,460	b4,400	1,360	2,140	5,720	6,160	7,920	3,200	3,280	2,730
2	1,800	1,500	3,400	4,440	1,380	2,620	5,740	5,860	7,430	3,220	3,300	2,730
3	1,800	1,360	3,360	4,440	b1,400	2,820	5,720	5,260	7,530	3,260	3,340	2,730
4	1,800	1,930	3,340	4,460	b1,450	2,750	6,430	4,810	7,500	3,280	3,420	2,710
5	1,600	3,260	3,380	4,610	b1,450	2,610	6,610	5,130	7,210	3,320	3,440	2,640
6	1,400	2,620	3,380	4,540	b1,450	2,500	5,920	5,740	7,180	3,220	3,480	2,640
7	1,650	2,190	3,380	4,510	b1,600	2,490	5,600	6,310	6,920	2,950	3,440	2,590
8	1,670	2,050	3,550	4,460	1,620	2,440	5,740	7,270	6,920	2,920	3,420	2,560
9	1,930	2,330	3,550	4,370	1,610	2,820	5,980	8,230	7,050	2,880	3,400	2,570
10	2,190	3,440	3,530	4,220	1,770	2,800	6,130	9,010	8,090	2,880	3,380	2,640
11	2,040	4,440	3,720	3,240	1,810	2,840	7,210	7,240	8,600	2,880	3,400	2,930
12	1,700	3,280	*7,300	2,880	2,020	2,880	*7,720	6,430	7,960	2,660	3,400	2,880
13	1,400	2,450	6,130	2,420	*2,080	3,090	8,300	6,070	7,620	2,820	3,380	2,620
14	1,350	2,140	4,160	2,270	2,040	3,160	8,430	5,720	7,660	2,800	3,420	2,540
15	1,400	1,960	4,440	2,200	1,880	3,380	8,710	5,920	7,460	2,840	3,420	2,380
16	1,500	2,190	4,340	2,110	1,930	4,040	8,300	6,790	7,500	3,160	3,460	2,330
17	1,400	2,330	4,270	2,050	1,980	5,020	7,180	7,860	7,270	3,180	3,480	2,280
18	1,300	2,300	4,110	2,020	2,000	5,350	7,050	8,740	7,080	3,460	3,480	*2,200
19	1,200	2,490	3,970	2,020	2,000	6,040	7,790	9,320	7,050	3,480	3,480	2,170
20	1,100	2,490	3,930	1,940	1,990	*7,460	8,640	10,000	7,080	3,630	3,460	2,120
21	1,000	2,450	4,060	1,880	1,980	6,860	9,740	9,150	6,760	3,780	3,480	2,120
22	900	2,690	4,090	1,860	2,020	6,670	11,200	7,560	6,520	3,740	3,400	2,170
23	850	2,860	3,930	1,840	2,020	7,240	10,400	7,620	*6,370	3,380	3,340	2,170
24	820	3,050	3,670	1,800	2,000	7,690	8,260	*8,160	6,190	1,960	*3,320	2,160
25	800	3,200	3,650	1,670	2,000	6,340	7,180	7,530	5,890	2,800	3,400	2,140
26	*960	3,460	4,130	1,610	2,000	6,280	7,660	7,140	5,210	*2,950	3,530	2,160
27	970	3,530	4,130	1,650	1,990	5,160	8,030	6,920	4,270	2,950	3,500	2,110
28	1,010	3,380	3,950	1,690	2,000	5,370	7,400	6,400	3,720	2,950	3,360	2,100
29	1,200	3,400	b3,980	1,610	2,040	5,720	6,760	6,190	3,530	3,240	3,180	2,110
30	1,940	3,440	b4,100	1,520	------	5,950	6,400	6,790	3,320	3,180	2,840	2,170
31	2,140	------	b4,400	1,420	------	5,890	------	7,460	------	3,180	2,770	------
Total	44,620	80,140	124,790	86,150	52,870	138,420	221,950	218,790	200,810	96,150	104,400	72,400
Mean	1,439	2,671	4,025	2,779	1,823	4,465	7,398	7,058	6,694	3,102	3,368	2,413
Ac-ft	88,500	159,000	247,500	170,900	104,900	274,600	440,200	434,000	398,300	190,700	207,100	143,600

Calendar year 1955: Max 12,400 Min 500 Mean 2,780 Ac-ft 2,012,000
Water year 1955-56: Max 11,200 Min 800 Mean 3,938 Ac-ft 2,859,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 1-6, 12-25; discharge estimated on basis of recorded range in stage, weather records, and records for Yakima River at Cle Elum.

Bumping River near Nile, Wash.

Location.--Lat 46°52', long 121°18', in NE¼ sec. 23, T. 16 N., R. 12 E., on left bank a quarter of a mile downstream from spillway of Bumping Lake Dam and 19 miles west of Nile.
Drainage area.--68.6 sq mi.
Records available.--June to July 1906, April 1909 to September 1956.
Gage.--Water-stage recorder. Datum of gage is 3,367.10 ft above mean sea level (Bureau of Reclamation benchmark). June 13 to July 31, 1906, staff gage at site half a mile upstream at different datum. Apr. 27 to Aug. 6, 1909, June 24, 1912, to June 13, 1913, staff gage at site three-eighths of a mile upstream at different datum. Aug. 7, 1909, to June 23, 1912, staff gage at site 1,300 ft upstream at different datum.
Average discharge.--47 years (1909-56), 294 cfs (212,800 acre-ft per year), adjusted for storage since November 1910.
Extremes.--Maximum discharge during year, 2,510 cfs June 1 (gage height, 5.58 ft); minimum, 24 cfs Nov. 7 (gage height, 1.48 ft).
1906, 1909-56: Maximum discharge, 5,180 cfs Dec. 29, 1917 (gage height, 9.33 ft); practically no flow when gates in outlet conduit are closed.
Remarks.--Records good. No diversion. Flow regulated by dam at Bumping Lake (see p. 327).
Cooperation.--Gage-height record, 5 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 3 discharge measurements made and records reviewed by Geological Survey.
Revisions (water years).--WSP 369: 1911. WSP 1246: Drainage area. WSP 1286: 1911.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.9	82	3.5	680
2.1	125	4.0	1,010
2.5	237	5.5	2,450
3.0	428		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	237	630	446	164	88	125	402	2,420	1,020	565	206
2	177	244	614	424	161	88	123	520	2,200	940	550	206
3	177	251	598	402	158	88	123	545	1,900	933	520	203
4	177	251	581	381	150	88	120	603	1,810	933	473	203
5	177	257	560	361	128	88	120	664	1,550	954	455	200
6	177	293	555	349	111	88	120	652	1,280	*954	437	200
7	177	263	550	345	109	88	116	642	1,120	940	432	200
8	177	298	530	326	104	90	114	652	1,030	947	381	197
9	186	*419	506	311	102	90	111	664	1,030	1,040	*353	197
10	194	455	482	289	100	88	111	674	1,110	1,170	349	197
11	192	460	492	278	102	88	116	692	1,160	1,260	345	*166
12	192	460	540	268	102	88	120	680	1,150	1,260	357	142
13	192	455	570	261	104	88	128	674	*1,110	1,230	365	140
14	192	482	586	251	104	88	145	692	1,080	1,150	361	140
15	194	515	598	237	104	88	177	692	1,150	1,020	337	140
16	200	511	598	225	104	88	209	710	1,110	919	322	140
17	200	565	586	215	104	88	231	752	1,070	877	322	169
18	203	608	576	203	104	90	244	458	1,070	842	318	180
19	203	608	565	197	104	90	251	326	1,190	863	315	180
20	206	603	555	194	104	88	289	353	1,230	820	315	177
21	206	598	550	192	107	86	206	334	996	870	311	177
22	206	674	545	189	100	86	125	506	814	863	311	177
23	206	704	537	186	92	86	140	*849	926	870	307	177
24	206	710	560	180	90	88	148	877	989	891	307	177
25	*212	704	550	177	90	88	200	870	961	884	303	174
26	215	704	535	174	88	102	278	989	*919	776	300	174
27	215	698	525	174	88	125	381	1,270	996	630	300	174
28	218	669	506	172	88	128	385	1,410	1,210	581	264	172
29	231	658	487	172	88	125	385	1,470	1,230	576	228	172
30	237	642	478	169	-------	125	389	1,370	1,120	570	208	169
31	237	-------	455	166	-------	125	-------	2,040	-------	570	206	-------
Total	6,162	14,996	17,000	7,914	3,154	2,932	5,730	24,032	36,931	28,153	10,917	5,326
Mean	199	500	548	255	109	94.6	191	775	1,231	908	352	178
Ac-ft	12,220	29,740	33,720	15,700	6,260	5,820	11,370	47,670	73,250	55,840	21,650	10,560
(†)	+6,960	-160	-8,840	-3,660	-140	+20	+10,560	+22,600	-1,010	-6,950	-11,240	-4,810

Adjusted for change in contents in Bumping Lake

Mean Cfsm	312	497	405	196	106	95.0	369	1,143	1,214	795	169	96.6
In.	4.55	7.24	5.90	2.86	1.55	1.38	5.38	16.7	17.7	11.6	2.46	1.41
Ac-ft	5.24	8.08	6.80	3.29	1.67	1.60	5.99	19.21	19.74	13.36	2.85	1.57
	19,180	29,580	24,880	12,040	6,120	5,840	21,930	70,270	72,240	48,890	10,410	5,750

Observed

Calendar year 1955: Max 1,980 Min 6.1 Mean 329 Ac-ft 238,400
Water year 1955-56: Max 2,420 Min 86 Mean 446 Ac-ft 323,800

Adjusted

Calendar year 1955: Mean 328 Cfsm 4.78 In. 64.86 Ac-ft 237,400
Water year 1955-56: Mean 451 Cfsm 6.57 In. 89.40 Ac-ft 327,100

* Discharge measurement made on this day.
† Change in contents in Bumping Lake, in acre-feet.

American River near Nile, Wash.

Location.--Lat 46°58'30", long 121°10'10", in SW¼ sec. 12, T. 17 N., R. 13 E., on right bank 300 ft upstream from Bumping Lake road crossing, three-quarters of a mile upstream from mouth, and 16 miles northwest of Nile.

Drainage area.--78.9 sq mi.

Records available.--April 1909 to March 1912, July to September 1913, June to September 1914, June to September 1915, October 1939 to September 1956. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 2,700.0 ft above mean sea level (Washington State Highway Department benchmark). Prior to Sept. 12, 1915, staff gage at site 300 ft downstream at different datum. Oct. 12 to Dec. 7, 1939, staff gage at present site and datum.

Average discharge.--19 years (1909-11, 1939-56), 248 cfs (179,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,440 cfs May 20 (gage height, 76.25 ft); minimum, 55 cfs Feb. 28, Mar. 14 (gage height, 72.03 ft).
1909-12, 1913-15, 1939-56: Maximum discharge, 2,600 cfs May 27, 1948 (gage height, 76.6 ft, from high-water mark in well), from rating curve extended above 1,400 cfs; minimum, 20 cfs Nov. 22, 1940.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation or diversion.

Cooperation.--Gage-height record collected in cooperation with, and six discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 982: 1940-42. WSP 1216: Drainage area. WSP: 1286: 1911.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

72.0	51	73.5	452
72.3	96	74.0	710
72.6	157	75.0	1,370
73.0	264	76.2	2,390

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	239	139	140	71	67	117	535	2,080	710	233	88
2	59	213	133	140	72	67	113	535	1,710	656	216	86
3	56	343	129	143	72	67	113	535	1,590	704	205	84
4	56	740	123	145	72	66	117	511	1,430	746	195	82
5	70	764	121	150	76	67	123	502	1,170	728	192	79
6	67	526	123	155	80	66	123	521	957	*728	190	78
7	64	431	119	155	85	67	121	575	848	710	188	76
8	78	382	117	144	82	66	121	704	806	722	185	74
9	168	*435	113	137	81	67	135	896	878	848	180	73
10	213	830	109	133	78	67	168	950	1,080	957	178	76
11	164	606	173	129	79	65	*213	902	1,100	1,010	173	113
12	135	444	550	127	79	65	230	776	957	950	166	102
13	135	400	*617	121	76	66	304	668	*908	908	162	88
14	135	300	444	119	74	63	394	634	914	824	162	81
15	146	250	386	115	70	63	492	698	964	680	159	76
16	146	230	336	*115	66	63	492	908	908	617	153	73
17	144	225	284	115	62	67	461	1,290	848	585	144	70
18	146	225	242	113	64	74	470	*1,830	896	580	135	70
19	164	225	222	109	68	82	540	2,240	1,030	612	131	68
20	162	225	233	107	*74	86	692	*2,340	1,050	650	129	68
21	146	198	242	104	73	86	902	1,950	902	617	125	68
22	139	182	271	104	72	86	1,050	1,660	848	560	*119	67
23	129	175	304	104	70	*96	992	*1,690	854	497	115	66
24	127	175	264	100	70	111	872	1,750	812	470	111	64
25	*366	192	239	100	68	121	824	1,640	710	431	109	63
26	448	182	225	92	67	137	758	1,550	680	394	123	*83
27	284	178	211	84	67	131	740	1,400	854	347	111	63
28	236	157	185	77	67	127	680	1,250	1,010	311	104	61
29	267	150	160	74	68	123	612	1,290	920	280	98	63
30	362	146	150	72	------	123	560	1,610	776	267	93	68
31	280	-----	145	71	-----	121	-----	2,000	------	248	93	------
Total	5,153	9,768	7,109	3,594	2,103	2,623	13,529	36,340	30,490	19,347	4,677	2,251
Mean	166	326	229	116	72.5	84.6	451	1,172	1,016	624	151	75.0
Cfsm	2.10	4.13	2.90	1.47	0.919	1.07	5.72	14.9	12.9	7.91	1.91	0.951
In.	2.43	4.60	3.35	1.69	0.99	1.24	6.38	17.13	14.37	9.12	2.20	1.06
Ac-ft	10,220	19,370	14,100	7,130	4,170	5,200	26,830	72,080	60,480	38,370	9,280	4,460

Calendar year 1955: Max 1,680 Min 51 Mean 241 Cfsm 3.05 In. 41.47 Ac-ft 174,500
Water year 1955-56: Max 2,340 Min 56 Mean 374 Cfsm 4.74 In. 64.56 Ac-ft 271,700

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13-19, Dec. 29 to Jan. 6, Jan. 26 to Feb. 7, Feb. 15-19, Mar. 11, 12.

Tieton River at Tieton Dam, near Naches, Wash.

Location.--Lat 46°39'30", long 121°07'20", in sec. 31, T. 14 N., R. 14 E. (unsurveyed), on left bank 900 ft upstream from Wildcat Creek, 1,200 ft downstream from Tieton Dam, 19 miles upstream from Oak Creek, and 22 miles southwest of Naches.

Drainage area.--187 sq mi.

Records available.--August 1908 to December 1912, June to September 1914, June 1918 to March 1921, April 1925 to September 1956. Monthly discharge only for some periods, published in WSP 1316. Published as "at McAllister Meadows" 1908-14 and as "at Rimrock" 1918-19.

Gage.--Water-stage recorder. Datum of gage is 2,680.99 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Oct. 1, 1914, staff gage at site a third of a mile upstream at different datum. Oct. 1, 1918, to Mar. 31, 1919, Apr. 27 to Sept. 4, 1925, staff gage and reference point and Sept. 5, 1925, to Apr. 23, 1933, water-stage recorder, at site about 800 ft downstream at different datum. Apr. 24, 1933, to Dec. 11, 1934, water-stage recorder at present site at datum 2.0 ft higher.

Average discharge.--37 years (1908-12, 1918-20, 1925-56), 493 cfs (356,900 acre-ft per year), adjusted for storage since October 1925.

Extremes.--Maximum discharge during year, 2,980 cfs June 9 (gage height, 6.36 ft); minimum, 6.0 cfs Mar. 8 (gage height, 1.42 ft).

1908-14, 1918-21, 1925-56: Maximum discharge, 8,450 cfs Dec. 22, 1933 (gage height, 9.24 ft); no flow Apr. 4-6, 10, 1930.

Remarks.--Records good. No diversion above station. Flow regulated by Tieton Reservoir (see p. 327).

Cooperation.--Gage-height record, 14 discharge measurements, and computations of daily discharge furnished by Bureau of Reclamation; 2 discharge measurements made and records reviewed by Geological Survey.

Revisions (water years).--WSP 369: 1909-10. WSP 1286: 1910, 1928(M), 1935(M). WSP 1316: 1909.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

1.5	8.6	3.3	330
1.7	18	4.0	650
2.0	39	5.0	1,230
2.3	76	6.3	2,880
2.7	152		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	402	110	904	1,150	330	295	660	826	2,120	898	1,090	914
2	320	105	904	1,150	442	295	711	826	2,120	898	1,090	914
3	298	101	904	1,230	520	295	755	892	2,400	904	1,100	914
4	326	92	904	1,320	491	295	760	931	2,470	931	1,100	909
5	346	97	904	1,320	491	295	477	931	2,350	1,090	1,100	904
6	330	105	898	1,310	442	298	782	931	2,410	1,220	1,060	904
7	330	106	898	1,320	406	201	810	518	2,800	1,340	1,020	904
8	316	112	898	1,320	406	201	810	176	2,830	1,360	*1,020	909
9	260	194	898	1,150	406	365	607	417	2,860	*1,480	1,010	904
10	192	278	898	808	406	410	810	298	2,850	1,630	1,070	904
11	139	295	898	650	406	410	*810	299	2,800	1,530	1,100	882
12	116	400	455	495	406	432	810	632	2,780	1,620	1,100	832
13	110	486	216	*555	406	455	810	755	2,500	1,740	1,080	810
14	110	540	662	555	406	455	347	832	2,120	1,830	1,050	*810
15	110	724	843	555	*394	*455	16	870	1,870	1,960	1,060	810
16	110	848	*843	555	362	455	16	865	1,610	1,990	1,050	804
17	110	*848	843	464	346	455	186	*438	1,610	1,980	1,050	804
18	114	848	843	410	323	455	450	103	1,420	1,990	1,050	804
19	118	848	876	410	323	455	550	11	1,310	1,990	1,050	799
20	118	848	920	410	316	450	303	10.5	1,310	1,990	*1,040	799
21	120	848	926	410	295	450	16	11	1,220	1,980	1,040	799
22	120	876	926	410	295	450	16	360	1,160	1,960	1,040	804
23	120	920	931	410	295	450	15.5	814	1,160	1,500	1,040	799
24	*120	914	926	410	295	177	14.5	953	1,160	*1,000	1,040	799
25	120	914	926	374	295	122	236	1,210	*1,080	1,300	1,040	772
26	120	914	926	330	295	342	539	1,650	898	1,150	1,040	755
27	120	909	931	330	295	446	650	1,760	848	1,090	997	755
28	124	909	980	334	295	496	650	*2,060	887	1,090	975	755
29	122	909	1,040	334	295	589	650	*2,120	887	1,090	958	755
30	118	909	1,080	330	-------	660	750	2,120	892	1,090	920	659
31	116	-------	1,150	326	-------	660	-------	2,120	-------	1,090	914	-------
Total	5,595	17,007	27,151	21,135	10,683	12,269	15,017.0	26,739.5	54,732	44,711	32,294	24,886
Mean	180	567	876	682	368	396	501	863	1,824	1,442	1,042	830
Ac-ft	11,100	33,730	53,850	41,920	21,190	24,340	29,790	53,040	108,600	88,680	64,050	49,360
(†)	+15,620	+8,310	-8,710	-18,950	-6,120	-6,960	+25,570	+69,300	+5,060	-14,010	-33,160	-31,560

Adjusted for change in contents in Tieton Reservoir

Mean	435	707	734	374	262	283	930	1,989	1,911	1,214	502	299
Cfsm	2.33	3.78	3.93	2.00	1.40	1.51	4.97	10.6	10.2	6.49	2.68	1.60
In.	2.63	4.22	4.53	2.30	1.51	1.74	5.55	12.26	11.40	7.49	3.10	1.78
Ac-ft	26,720	42,040	45,140	22,970	15,070	17,380	55,360	122,300	113,700	74,670	30,890	17,800

Observed

Calendar year 1955: Max 2,420 Min 92 Mean 566 Ac-ft 409,400
Water year 1955-56: Max 2,860 Min 10.5 Mean 798 Ac-ft 579,600

Adjusted

Calendar year 1955: Mean 563 Cfsm 3.01 In. 40.86 Ac-ft 407,400
Water year 1955-56: Mean 805 Cfsm 4.30 In. 58.56 Ac-ft 584,000

* Discharge measurement made on this day.
† Change in contents in Tieton Reservoir, in acre-feet.

Tieton River at headworks of Tieton Canal, near Naches, Wash.

Location.--Lat 46°40'10", long 121°00'20", in sec. 30, T. 14 N., R. 15 E. (unsurveyed), on right bank 1,000 ft downstream from headworks of Tieton Canal, 12 miles upstream from Oak Creek, and 16 miles southwest of Naches.
Drainage area.--239 sq mi.
Records available.--April 1906 to September 1956. Monthly discharge only for some periods, published in WSP 1316.
Gage.--Water-stage recorder. Datum of gage is 2,280.44 ft above mean sea level, unadjusted. Prior to July 28, 1909, staff gages at same site or sites within 1½ miles downstream referred to same datum.
Average discharge.--50 years, 560 cfs (405,400 acre-ft per year), adjusted for diversion since 1910 and for storage since October 1924.
Extremes.--Maximum discharge during year, 2,330 cfs June 3 (gage height, 5.00 ft); minimum, 39 cfs Mar. 8 (gage height, 1.78 ft).
1906-56: Maximum discharge, 8,910 cfs Dec. 22, 1933 (gage height, 9.70 ft); no flow at times in 1926, 1929, 1931-32, 1934, 1945.
Remarks.--Records good. Diversion for irrigation by Tieton Canal. Flow regulated by Tieton Reservoir, 7 miles above station.
Cooperation.--Gage-height records collected in cooperation with, and seven discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910(M), 1920.

Rating table, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 8 to Jan. 11)

2.1	96	3.3	665
2.3	159	3.6	890
2.5	235	4.0	1,230
2.7	322	4.5	1,740
3.0	475	5.0	2,330

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	313	g142	938	1,260	370	332	810	1,060	2,200	679	742	587
2	346	119	g938	1,240	475	332	874	1,010	2,160	679	742	587
3	308	149	g970	1,340	542	336	946	1,030	2,190	672	750	587
4	356	216	g1,020	1,480	511	336	987	1,060	2,090	672	742	587
5	365	g174	g1,010	1,500	511	332	688	1,060	2,050	802	742	587
6	346	g163	g1,030	1,480	470	332	996	1,060	2,090	930	700	587
7	356	152	g996	1,500	436	273	996	732	2,130	1,030	672	587
8	327	166	996	1,490	436	198	1,030	375	2,130	1,050	665	587
9	290	235	g996	1,310	431	385	818	606	2,100	1,120	665	580
10	219	365	g1,000	914	431	426	1,140	493	2,130	*1,230	714	580
11	142	356	1,190	721	431	436	*1,190	410	2,110	1,210	765	587
12	122	g410	946	471	448	458	1,230	686	2,110	1,260	765	554
13	116	g458	g448	580	448	475	1,280	818	1,990	1,360	735	548
14	113	g548	*742	594	442	487	898	898	1,820	1,500	714	548
15	113	g707	1,000	600	426	*487	554	970	1,640	1,550	714	554
16	110	906	987	600	400	499	475	1,030	1,410	1,630	707	554
17	110	*g906	970	511	390	523	542	691	1,410	1,640	700	566
18	108	g898	946	453	360	542	826	375	1,260	1,630	700	580
19	108	g874	g946	453	356	568	976	300	1,170	1,630	693	580
20	108	850	g996	453	*356	580	842	264	1,160	1,630	*693	587
21	108	874	1,060	453	327	554	652	185	1,090	1,630	693	587
22	108	914	1,110	453	332	561	658	407	1,030	1,630	*693	594
23	108	898	1,110	453	327	587	548	882	1,030	1,300	686	594
24	*108	890	1,080	448	322	411	448	1,050	1,030	677	686	*594
25	108	922	1,060	415	322	285	548	1,220	*930	978	686	574
26	113	962	1,060	380	322	535	882	1,740	742	842	686	561
27	113	954	1,040	370	327	600	1,010	1,830	686	*765	658	574
28	g132	946	g1,040	375	327	639	970	*2,070	693	765	639	580
29	174	954	g1,160	375	327	728	906	2,110	686	758	620	580
30	163	946	g1,170	375	-------	826	987	2,140	679	750	587	542
31	g152	-------	g1,280	370	-------	826	-------	2,210	-------	742	587	-------
Total	5,763	18,054	31,235	23,417	11,603	14,889	25,709	30,772	45,946	34,741	21,541	17,294
Mean	186	602	1,008	755	400	480	857	993	1,532	1,121	695	576
Ac-ft	11,430	35,810	61,950	46,450	23,010	29,530	50,990	61,040	91,130	68,910	42,730	34,300
(†)	+15,620	+8,310	-8,710	-18,950	-6,120	-6,960	+25,570	+69,300	+5,060	-14,010	-33,160	-31,560
(‡)	161	1,270	369	0	0	242	573	12,560	16,760	20,830	21,020	16,570

Adjusted for change in reservoir contents and diversion

Mean	443	763	872	447	294	371	1,296	2,324	1,899	1,232	497	325
Cfsm	1.85	3.19	3.65	1.87	1.23	1.55	5.42	9.72	7.95	5.15	2.08	1.36
In.	2.13	3.56	4.21	2.16	1.33	1.79	6.05	11.21	8.87	5.94	2.40	1.51
Ac-ft	27,210	45,390	53,610	27,500	16,890	22,810	77,130	142,900	113,000	75,730	30,590	19,310

Observed

Calendar year 1955: Max 2,280 Min 108 Mean 468 Ac-ft 339,200
Water year 1955-56: Max 2,210 Min 108 Mean 768 Ac-ft 557,300

Adjusted

Calendar year 1955: Mean 605 Cfsm 2.53 In. 34.34 Ac-ft 437,800
Water year 1955-56: Mean 898 Cfsm 3.76 In. 51.16 Ac-ft 652,100

* Discharge measurement made on this day.
† Change in contents of Tieton Reservoir, in acre-feet.
‡ Diversion by Tieton Canal, in acre-feet.
g Computed from once-daily staff-gage readings.

Naches River below Tieton River near Naches, Wash.

Location.--Lat 46°44'40", long 120°46'00", in SW¼NE¼ sec. 36, T. 15 N., R. 16 E., on left bank half a mile downstream from Wapatox power canal, three-quarters of a mile downstream from Tieton River, and 3½ miles northwest of Naches.
Drainage area.--941 sq mi.
Records available.--August to October 1905, October 1908 to September 1956. Monthly discharge only for some periods, published in WSP 1316.
Gage.--Water-stage recorder. Datum of gage is 1,549.67 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Dec. 7, 1916, staff gage and Dec. 7, 1916, to Sept. 9, 1936, water-stage recorder, at site five-eighths of a mile upstream at different datums. Sept. 10 to Oct. 30, 1936, staff gage at present site and datum.
Average discharge.--48 years, 1,714 cfs (1,241,000 acre-ft per year), adjusted for diversions by Selah Valley and Tieton Canals since 1909, city of Yakima at Oak Flat since 1929, by Wapatox Canal since 1936, for change in contents in Bumping Lake since November 1910, and in Tieton Reservoir since October 1924.
Extremes.--Maximum discharge during year, 13,300 cfs June 1 (gage height, 17.78 ft); minimum, 150 cfs Oct. 24 (gage height, 10.66 ft).
1905, 1908-56: Maximum discharge, 32,200 cfs Dec. 22, 23, 1933 (gage height, 14.33 ft, site and datum then in use); minimum, 1 cfs Nov. 7, 1942, and for many days during winter of 1943-44, result of regulation and diversion.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Bumping Lake and Tieton Reservoir (see p. 327), by diversion at Oak Flat for municipal supply of city of Yakima below station, and by diversion of Selah Valley, Tieton, and Wapatox Canals. Small unmeasured diversions for irrigation of approximately 420 acres above station.
Cooperation.--Gage-height record collected in cooperation with, and nine discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 1316: Drainage area. WSP 1286: 1910(M), 1911, 1929-30(M), 1932-33(M), 1935(M). WSP 1396: 1954.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	169	717	1,720	1,980	b440	399	1,480	4,070	12,900	3,280	1,370	482
2	176	641	1,650	1,920	b580	416	1,470	4,070	11,400	3,170	1,330	476
3	166	754	1,640	1,950	b700	427	1,510	4,090	10,200	3,170	1,310	470
4	169	1,750	1,660	2,040	b650	416	1,700	4,090	9,250	3,090	1,220	446
5	210	2,080	1,650	1,990	b650	405	1,490	4,170	7,980	*3,170	1,180	407
6	198	1,530	1,630	1,950	*702	399	1,700	4,380	6,850	3,260	1,110	390
7	194	1,280	1,610	1,900	641	394	1,650	4,420	6,180	3,310	1,040	375
8	206	1,130	1,590	1,870	608	267	1,690	4,560	5,810	3,310	990	370
9	461	1,300	1,550	1,700	589	416	1,630	5,570	5,850	3,590	883	370
10	551	3,920	1,530	1,330	601	450	2,250	6,060	6,580	*3,900	874	*380
11	362	3,360	2,020	1,100	608	433	2,800	5,280	6,700	4,030	918	521
12	218	2,360	4,720	928	648	450	2,970	4,780	*6,130	3,880	918	440
13	218	1,990	*3,490	976	595	520	3,640	4,380	5,670	3,920	883	370
14	206	1,840	2,800	958	582	502	4,000	4,190	5,300	3,790	840	339
15	231	1,830	2,810	1,010	539	532	4,360	4,620	5,230	3,430	832	315
16	231	2,010	2,530	967	427	*a560	*4,110	5,680	4,860	3,300	798	300
17	210	1,950	2,320	*884	532	a660	3,600	*7,360	4,660	3,120	781	296
18	202	2,050	2,150	782	508	a760	3,840	9,060	4,600	3,060	764	315
19	202	2,020	2,050	767	585	a920	4,560	*10,100	4,880	3,060	747	320
20	202	1,950	2,110	753	479	958	5,570	11,000	4,940	3,140	738	324
21	184	1,840	2,200	731	*444	916	6,640	*8,960	4,480	3,120	722	334
22	166	*1,820	2,440	717	416	933	7,830	7,410	3,940	2,940	*706	339
23	156	1,900	2,530	717	405	1,060	7,150	*8,680	3,940	2,610	706	339
24	153	1,870	2,390	695	405	1,210	5,890	9,490	3,860	1,850	714	339
25	324	1,920	2,250	668	399	1,110	5,200	8,930	3,590	2,200	690	334
26	*695	1,970	2,180	608	394	1,570	5,530	8,930	3,310	1,970	722	324
27	589	1,910	1,920	545	388	1,430	5,890	8,790	3,450	1,680	690	329
28	394	1,820	1,950	569	394	1,380	5,450	8,430	3,900	1,520	658	334
29	653	1,780	1,880	563	394	1,380	4,940	8,600	3,900	1,450	594	365
30	1,240	1,750	1,880	b500	-------	1,570	4,380	9,670	3,560	*1,420	521	380
31	916	-------	1,970	b430	-------	1,570	-------	10,700	-------	1,400	500	-------
Total	10,252	55,042	66,820	34,498	15,303	24,413	114,920	210,520	173,900	90,140	26,749	11,123
Mean	331	1,835	2,155	1,113	528	788	3,831	6,791	5,797	2,908	863	371
Ac-ft	20,330	109,200	132,500	68,430	30,350	48,420	227,900	417,600	344,900	178,800	53,060	22,060
(†)	+22,580	+8,150	-17,550	-22,610	-6,260	-6,940	+36,130	+91,900	+4,050	-20,960	-44,400	-36,370
(‡)	33,380	26,850	24,440	22,870	19,080	24,980	25,670	50,080	51,690	57,750	57,890	52,510

Adjusted for change in lake and reservoir contents and diversions

Mean	1,241	2,423	2,267	1,117	751	1,081	4,869	9,101	6,732	3,506	1,082	642
Cfsm	1.32	2.57	2.41	1.19	0.798	1.15	5.17	9.67	7.15	3.73	1.15	0.682
In.	1.52	2.87	2.78	1.37	0.86	1.32	5.77	11.15	7.98	4.30	1.33	0.76
Ac-ft	76,290	144,200	139,400	68,690	43,170	66,460	289,700	559,600	400,600	215,600	66,550	38,200

Observed

Calendar year 1955:	Max	9,260	Min	25	Mean	1,197	Ac-ft	866,400
Water year 1955-56:	Max	12,900	Min	153	Mean	2,278	Ac-ft	1,654,000

Adjusted

Calendar year 1955:	Mean	1,816	Cfsm	1.93	In.	26.18	Ac-ft	1,315,000
Water year 1955-56:	Mean	2,904	Cfsm	3.09	In.	42.01	Ac-ft	2,108,000

* Discharge measurement made on this day.
† Change in contents in Bumping Lake and Tieton Reservoir, in acre-feet.
‡ Diversion by Tieton, Selah Valley and Wapatox Canals, and city of Yakima, in acre-feet.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

North Fork Ahtanum Creek near Tampico, Wash.

Location.--Lat 46°33'40", long 120°55'10", in NW¼ sec. 2, T. 12 N., R. 15 E., on left bank 150 ft downstream from Nasty Creek, 3½ miles upstream from Tampico and confluence with South Fork, and 20 miles west of Yakima.

Drainage area.--68.9 sq mi.

Records available.--August 1907 to September 1956 (no winter records in water years 1908-9, 1916-30). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 2,450 ft (from topographic map). Prior to Sept. 20, 1934, staff gage or water-stage recorder at site 50 ft upstream at different datum.

Average discharge.--32 years (1909-15, 1930-56), 68.8 cfs (49,810 acre-ft per year).

Extremes.--Maximum discharge during year, 823 cfs May 20 (gage height, 3.00 ft); minimum daily, 17 cfs Feb. 1.
1907-56: Maximum discharge, that of May 20, 1956; maximum gage height, 4.6 ft June 18, 1916 (site and datum then in use); minimum discharge, 5.0 cfs Nov. 14, 15, 1944, Jan. 20, 1945 (gage height, 0.18 ft), but may have been less during periods of ice effect.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion of importance. No regulation.

Cooperation.--Gage-height record, 6 discharge measurements, and computations of daily discharge furnished by Office of Indian Affairs; 10 discharge measurements made and records reviewed by Geological Survey.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910(M), 1914-15.

Rating table, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 21-30)

0.2	9	1.0	124
.3	19	1.5	242
.5	42	2.0	400
.7	70	2.8	723

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a19	27	a29	66	17	31	128	277	644	200	64	35
2	a20	24	a28	61	18	30	124	271	588	198	66	34
3	21	38	27	62	18	31	124	268	535	190	67	34
4	22	55	27	66	19	30	145	259	471	181	62	*34
5	24	50	28	61	20	30	152	254	407	178	64	32
6	22	40	29	55	22	30	139	259	356	174	60	32
7	22	38	29	50	25	30	130	283	327	169	56	31
8	26	40	30	46	27	30	134	333	*311	167	55	30
9	46	46	29	45	28	30	156	383	330	167	52	30
10	43	102	30	45	29	29	190	393	366	167	50	31
11	30	66	70	43	30	29	228	346	*346	163	50	50
12	28	a54	183	42	33	30	256	304	320	158	48	36
13	28	a42	114	42	36	*31	*289	274	314	152	47	34
14	28	a30	78	41	34	30	330	271	311	143	46	31
15	28	22	*77	42	28	31	380	301	311	132	45	30
16	27	20	75	43	29	35	376	383	304	122	45	30
17	27	20	67	41	37	42	346	482	295	114	44	29
18	27	20	55	40	36	56	350	597	289	110	42	29
19	27	22	52	38	37	78	*373	*690	317	*104	42	29
20	26	26	62	38	36	81	435	*723	292	112	40	28
21	24	29	91	38	*35	81	482	610	271	99	40	28
22	24	31	126	37	34	88	576	*563	259	91	38	28
23	24	33	116	37	32	120	531	547	256	86	*38	28
24	24	35	*99	36	32	156	435	568	237	83	38	28
25	29	40	88	35	31	183	383	555	226	80	41	28
26	27	38	83	34	30	185	373	516	231	76	42	27
27	*26	36	73	28	30	149	363	475	245	73	38	27
28	24	35	58	25	30	132	336	457	248	72	37	27
29	32	32	52	23	30	*128	311	475	231	68	36	27
30	34	a30	52	20	------	141	283	504	215	67	35	28
31	28	-----	62	18	-----	143	-----	618	------	64	35	------
Total	837	1,121	2,019	1,298	843	2,250	8,858	13,239	9,853	3,960	1,463	925
Mean	27.0	37.4	65.1	41.9	29.1	72.6	295	427	328	128	47.2	30.8
Cfsm	0.392	0.543	0.945	0.608	0.422	1.05	4.28	6.20	4.76	1.86	0.685	0.447
In.	0.45	0.61	1.09	0.70	0.46	1.21	4.78	7.15	5.32	2.14	0.79	0.50
Ac-ft	1,660	2,220	4,000	2,570	1,670	4,460	17,570	26,260	19,540	7,850	2,900	1,830

Calendar year 1955: Max 326 Min 14 Mean 56.2 Cfsm 0.816 In. 11.09 Ac-ft 40,690
Water year 1955-56: Max 723 Min 17 Mean 128 Cfsm 1.86 In. 25.20 Ac-ft 92,530

Peak discharge (base, 200 cfs).--Dec. 12 (11 a.m.) 210 cfs (1.38 ft); Mar. 25 (8 p.m.) 215 cfs (1.40 ft); Apr. 22 (11 p.m.) 597 cfs (2.65 ft); May 10 (1:30 a.m.) 414 cfs (2.11 ft); May 20 (1:30 a.m.) 823 cfs (3.00 ft); May 31 (11 p.m.) 681 cfs (2.71 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for South Fork Ahtanum Creek.

Note.--Stage-discharge relation affected by ice Nov. 16-23, Dec. 15, Jan. 28 to Feb. 12 (no gage-height record Feb. 2, 3, 7-11).

South Fork Ahtanum Creek at Conrad Ranch, near Tampico, Wash.

Location.--Lat 46°30'30", long 120°54'50", in SW¼ sec. 23, T. 12 N., R. 15 E., on left bank at Conrad Ranch, 2½ miles upstream from confluence with North Fork, 2¾ miles southwest of Tampico, and 20 miles southwest of Yakima.

Drainage area.--24.8 sq mi.

Records available.--March 1915 to September 1956 (no winter records prior to water year 1931). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 2,400 ft (from topographic map). Prior to Aug. 9, 1918, staff gage at same site at datum 1.00 ft lower. Aug. 9, 1918, to Mar. 22, 1951, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 196 cfs May 20 (gage height, 2.25 ft); minimum, 6.2 cfs Oct. 1; minimum gage height, 0.46 ft Oct. 27.

1915-56: Maximum discharge observed, 424 cfs Dec. 23, 1933 (gage height, 3.10 ft), from rating curve extended above 80 cfs; minimum observed, 2.6 cfs Aug. 23, 25, 1931 (gage height, 0.35 ft).

Revisions.--The maximum discharge for the water year 1918 has been revised to 53 cfs May 4, 1918 (gage height, 1.98 ft, from graph based on gage readings), superseding figures published in WSP 482 and 1316.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversion for irrigation of about 55 acres above station. No regulation.

Cooperation.--Gage-height record, 7 discharge measurements, and computations of daily discharge furnished by Office of Indian Affairs; 12 discharge measurements made and records reviewed by Geological Survey.

Revisions (water years).--WSP 312: 1910. WSP 902: 1939. WSP 1316: Drainage area, 1943(M).

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 8-21)

Oct. 1 to Apr. 21

0.44	6.2	1.0	51
.6	14	1.3	94
.8	29	1.7	169

Apr. 22 to Sept. 30

0.7	7.6	1.6	87
.8	12.5	2.0	150
1.0	25	2.2	187
1.3	51		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	7.4	10.5	20	b8.0	10.5	58	51	179	53	20	13.5
2	6.6	7.8	10.5	19	b8.5	12	52	51	174	55	19	13
3	6.6	10	10.5	19	b9.0	12.5	50	50	161	49	20	13
4	7.4	14	10	19.5	b9.5	12.5	58	50	139	48	19	*13
5	7.8	13	10.5	18.5	b10	12.5	60	49	118	47	18.5	12.5
6	7.4	11	12.5	17.5	b10	12	52	49	101	45	*18	12.5
7	7.2	10.5	10	17	b10	12	49	56	90	44	17.5	12.5
8	7.8	10	9.5	17	10	12	47	86	80	42	17.5	12
9	13	10.5	9.5	16	10.5	12	54	78	75	41	17	12
10	12	15	9.5	16	11	12	74	78	79	39	16	12
11	10	12.5	17	15.5	12	15	108	68	*87	38	16	16
12	9.5	12.5	51	15.5	12	14.5	113	58	82	37	15.5	13
13	9.0	b11	36	15.5	11.5	12.5	*125	52	78	36	15.5	12.5
14	9.0	b10	b30	15.5	11	14	140	50	74	34	14.5	12.5
15	9.0	b9.0	*24	16	10	14.5	163	53	73	33	14.5	12
16	8.5	b8.0	22	16	11	17	142	64	72	31	14.5	11.5
17	8.5	b7.5	19.5	15	12	24	113	90	72	29	14	11.5
18	8.2	b7.0	19.5	15	12.5	33	96	130	75	28	14	11.5
19	8.2	b7.0	b18	15	12.5	43	99	*164	74	*27	14	11
20	8.0	b7.5	24	15	12.5	40	115	*187	70	36	14	11.5
21	8.0	b8.0	33	15	*12	41	142	178	64	31	*13.5	11.5
22	8.0	9.0	61	15	11.5	50	163	*159	70	27	14	11
23	8.2	9.0	59	15	11.5	84	145	154	72	25	*15	11
24	8.2	9.0	*44	14.5	11.5	96	113	150	62	24	16	11
25	8.6	11	37	14.5	11	125	91	*148	60	23	16	10.5
26	7.8	11.5	33	14.5	11	106	80	145	59	*22	16	10.5
27	*7.0	11.5	29	b12	10.5	80	77	130	58	22	15	10.5
28	7.4	10.5	26	b10	10.5	67	63	119	*59	21	14.5	10.5
29	9.5	10.5	b23	b9.0	10.5	*65	59	122	58	21	14.5	10.5
30	9.0	10.5	b22	b8.0	------	67	55	132	54	20	14	11
31	7.8	------	24	b8.0	------	67	------	166	------	20	13.5	------
Total	259.4	301.7	755.0	469.0	313.5	1,195.5	2,756	3,097	2,569	1,048	491.0	357.0
Mean	8.37	10.1	24.4	15.1	10.8	38.6	91.9	99.9	85.6	33.8	15.8	11.9
Ac-ft	515	598	1,500	930	622	2,370	5,470	6,140	5,100	2,080	974	708

Calendar year 1955: Max 78 Min 6.0 Mean 14.9 Ac-ft 10,790
Water year 1955-56: Max 187 Min 6.2 Mean 37.2 Ac-ft 27,010

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 7-17, 20-23, Feb. 1-3, 5-20, 22-29, Apr. 29, 30; discharge estimated on basis of weather records and records for nearby streams.

Yakima River near Parker, Wash.

Location.--Lat 46°29'40", long 120°26'10", in sec. 28, T. 12 N., R. 19 E., on left bank 700 ft downstream from Sunnyside diversion dam, 1½ miles east of Parker, and 3 miles downstream from Ahtanum Creek.

Drainage area.--3,650 sq mi, approximately.

Records available.--April 1908 to September 1956. Monthly discharge only for some periods, published in WSP 1316. Prior to October 1916, published as "near Wapato."

Gage.--Water-stage recorder. Datum of gage is 886.23 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Jan. 1, 1909, hook gage at site 25 ft above headgate of Sunnyside Canal at different datum. Jan. 1, 1909, to Dec. 31, 1913, chain gage at site 500 ft downstream from Sunnyside Canal at datum 1.82 ft higher than present datum. Jan. 1, 1914, to Aug. 16, 1915, chain or staff gage and Aug. 17, 1915, to Feb. 2, 1919, water-stage recorder, at site 500 ft downstream from headgate of Sunnyside Canal at datum 0.18 ft lower than present datum. Feb. 3, 1919, to Oct. 20, 1940, water-stage recorder at present site at datum 0.18 ft lower than present datum. Oct. 21, 1940, to Aug. 9, 1953, water-stage recorder at site 1,000 ft downstream from headgate of Sunnyside Canal at datum 0.18 ft lower than present datum.

Extremes.--Maximum discharge during year, 19,600 cfs May 20 (gage height, 10.91 ft); minimum observed, 20 cfs Oct. 13 (gage height, 0.50 ft); minimum daily, 92 cfs Sept. 17. 1908-56: Maximum discharge, 65,000 cfs Dec. 23, 1933 (gage height, 15.0 ft, from high-water marks); practically no flow for several days during latter part or irrigation season in most years as result of diversions.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Diversions above station for irrigation of about 200,000 acres above and 220,000 acres below station. During the irrigation season when Sunnyside Canal is carrying water, as much as 18 cfs, depending upon the stage of the canal, is released ahead of the fish screens and passes the river and canal gaging stations unmeasured. Some regulation by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see p. 327).

Cooperation.--Records collected and prepared in cooperation with Bureau of Reclamation, which furnished 13 discharge measurements.

Revisions (water years).--WSP 982: 1942. WSP 1122: 1934. WSP 1216: 1949-50, drainage area.

Rating tables, water year 1955-56, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 20				May 21 to Sept. 30			
2.6	160	5.0	2,220	2.3	83	5.0	2,060
2.8	222	6.0	3,900	2.6	139	6.0	3,660
3.0	300	8.0	8,600	3.0	270	8.0	8,200
3.5	575	11.0	20,000	3.5	535	11.0	20,000
4.0	1,000			4.0	920		

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	444	3,580	5,820	7,350	b2,600	3,310	8,050	7,510	17,000	2,700	420	274
2	462	3,150	5,700	7,330	b2,550	3,880	8,110	7,050	16,000	2,560	464	230
3	434	2,860	5,600	7,220	b2,500	4,300	7,790	6,680	14,200	*2,620	568	198
4	417	3,560	5,540	7,510	b2,500	4,080	8,440	6,110	13,900	2,720	568	266
5	575	6,060	5,600	7,610	b2,800	3,820	8,960	6,110	11,900	2,800	574	292
6	562	5,270	5,560	7,530	*3,020	3,580	8,030	6,850	10,600	2,900	548	226
7	439	4,500	5,560	7,480	2,840	3,560	7,510	7,740	9,730	2,750	*404	242
8	516	3,940	5,580	7,300	2,820	3,500	7,480	8,470	9,100	2,560	370	216
9	781	4,220	5,650	7,100	2,790	3,880	7,430	10,300	9,160	2,670	258	216
10	1,550	6,550	5,630	6,700	2,810	4,120	8,000	12,500	10,800	2,860	202	306
11	1,480	9,270	5,820	5,510	2,940	4,040	9,660	11,000	*12,700	3,220	279	649
12	836	a7,350	*10,800	4,770	3,220	4,000	10,700	8,880	11,600	2,780	315	*950
13	183	a5,600	12,100	4,280	3,320	4,220	11,600	7,950	10,600	2,930	330	554
14	575	a5,000	8,370	4,020	3,200	4,600	12,900	7,150	10,200	2,670	242	404
15	1,140	a4,700	*8,160	4,020	3,100	4,500	13,500	7,350	10,200	2,370	288	270
16	1,180	4,520	8,130	3,790	2,860	5,340	*13,400	8,740	9,670	2,480	270	137
17	1,240	4,770	7,770	*3,620	3,050	6,850	11,000	11,700	9,280	2,310	297	92
18	1,440	4,900	7,400	3,470	3,080	7,870	10,300	14,300	8,980	2,400	330	160
19	1,390	4,990	7,150	3,470	3,030	*8,820	11,000	16,900	8,900	2,430	297	111
20	1,390	5,250	7,100	3,380	3,070	10,800	*12,700	18,700	9,340	2,500	335	138
21	1,930	*5,320	7,400	3,240	3,070	9,860	14,600	*17,600	8,540	2,880	335	143
22	1,800	*5,160	7,850	3,260	2,970	9,640	17,100	12,700	7,350	2,610	288	132
23	1,740	5,450	7,900	3,260	*3,000	10,100	*17,400	12,400	6,930	2,490	*258	216
24	1,730	5,510	7,510	3,190	2,980	11,900	13,600	13,800	6,740	530	330	212
25	1,720	5,820	7,080	3,050	2,980	9,940	10,600	13,300	6,300	608	350	258
26	2,300	6,200	7,480	2,870	2,950	10,700	10,400	12,300	5,240	857	614	270
27	*2,280	6,400	7,480	2,870	2,860	8,800	11,000	12,100	4,310	*561	742	292
28	2,240	5,960	7,080	b2,750	3,190	8,240	10,500	11,100	*4,020	284	548	283
29	2,240	5,820	6,900	b2,720	3,220	8,180	9,190	10,600	3,740	436	436	240
30	*3,560	5,840	6,780	2,700	------	8,710	8,180	11,500	3,280	436	320	376
31	3,880	------	7,050	b2,650	------	8,880	------	14,100	------	315	310	------
Total	42,454	157,520	219,550	146,020	85,320	204,020	319,130	333,490	280,310	65,237	11,890	8,353
Mean	1,369	5,251	7,082	4,710	2,942	6,581	10,640	10,760	9,344	2,104	384	278
Ac-ft	84,210	312,400	435,500	289,600	169,200	404,700	633,000	661,500	556,000	129,400	23,580	16,570

Calendar year 1955: Max 18,000 Min 183 Mean 2,505 Ac-ft 1,813,000
Water year 1955-56: Max 18,700 Min 92 Mean 5,118 Ac-ft 3,716,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station at Kiona.
b Stage-discharge relation affected by ice.

Yakima River near Parker, Wash.--Continued

Monthly discharge of Yakima River and canals near Parker, Wash., water year October 1955 to September 1956

Month	Mean discharge in cubic feet per second							Combined flow of Yakima River and canals (acre-feet)
	Yakima River near Parker	Roza Canal at mile 26.9	Union Gap Canal (estimated)	New Reservation Canal	Old Reservation Canal	Sunnyside Canal	Combined flow of Yakima River and canals	
October	1,369	320	12	331	3	432	2,467	151,700
November	5,251	0	0	0	7	0	5,258	312,900
December	7,082	0	0	0	13	0	7,095	436,300
Calendar year 1955.	2,505	411	19	880	15	643	4,473	3,242,000
January	4,710	0	0	0	10	0	4,720	290,200
February	2,942	0	0	0	9	0	2,951	169,700
March	6,581	110	0	0.	6	131	6,828	419,800
April	10,640	539	24	912	30	884	13,030	775,300
May	10,760	790	34	2,032	74	1,216	14,910	916,800
June	9,544	776	36	1,974	14	1,221	13,360	795,000
July	2,104	948	39	1,887	32	1,267	6,277	386,000
August	384	838	35	1,780	0	1,265	4,302	264,500
September	278	578	26	1,358	0	1,034	3,274	194,800
Water year 1955-56.	5,118	410	17	859	17	622	7,043	5,113,000

Note.--New Reservation, Old Reservation, and Sunnyside Canals divert from river above station and below Union Gap. Roza and Union Gap Canals head above Union Gap, but records given herein show flow in these canals that reaches the valley below Union Gap. Records for Roza and Sunnyside Canals furnished by Bureau of Reclamation. Records for Union Gap Canal estimated on basis of discharge measurements and records of flow at canal headworks. Combined flow represents flow of Yakima River that reaches valley below Union Gap.

Yakima River at Kiona, Wash.

Location.--Lat 46°15'10", long 119°28'50", in sec. 19, T. 9 N., R. 27 E., on left bank just upstream from highway bridge at Kiona, 3½ miles downstream from intake of Kiona Canal and 25 miles upstream from mouth.

Drainage area.--5,600 sq mi, approximately.

Records available.--August to December 1895 (gage heights only, fragmentary), August 1896 to March 1915, February 1933 to September 1956.

Gage.--Water-stage recorder. Datum of gage is 454.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 31, 1915, several staff or chain gages at approximately same site and datum Feb. 6, 1933, to July 26, 1934, tape gage at present site and datum.

Extremes.--Maximum discharge during year, 20,100 cfs May 22 (gage height, 12.73 ft); minimum, 1,650 cfs July 31 (gage height, 3.59 ft).
1896-1915, 1933-56: Maximum discharge, 67,000 cfs Dec. 23, 1933 (gage height, 21.57 ft, from high-water marks); minimum observed, 105 cfs Sept. 11, 1906 (gage height, 2.35 ft, datum then in use).

Remarks.--Records excellent except those for period of ice effect, which are fair. Water diverted above gage for irrigation of about 424,000 acres. Some regulation by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see following page). The Kiona Canal bypasses station with a mean flow of approximately 23 cfs for irrigation of about 1,100 acres below station. Records of chemical analyses and water temperatures for the water year 1956 are given in WSP 1453.

Revisions (water years).--WSP 214: 1905. WSP 1122: 1934(M). WSP 1216: 1949-50, drainage area. WSP 1286: 1907(M), 1909, 1936.

Rating tables, water year 1955-56, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 22				May 23 to Sept. 30			
4.4	2,330	10.0	12,400	3.7	1,750	7.0	6,380
5.0	3,130	13.0	21,000	4.0	2,030	10.0	12,500
7.0	6,260			5.0	3,180	13.0	20,800

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,400	4,830	7,210	8,890	3,510	4,850	11,900	11,000	15,700	4,930	1,950	2,430
2	2,500	4,580	7,140	8,840	2,990	5,650	11,500	10,100	17,800	4,410	1,910	2,350
3	2,460	4,240	6,980	8,760	b3,100	6,020	10,900	9,700	18,900	4,300	2,010	2,310
4	2,430	4,000	6,840	9,040	b3,300	6,110	10,600	9,360	18,100	4,370	2,090	2,250
5	2,370	4,660	6,780	10,300	b3,380	5,850	11,000	8,840	17,400	4,490	2,100	2,230
6	2,410	6,510	6,840	10,100	b3,430	5,680	11,700	8,580	16,200	*4,610	2,100	2,220
7	2,520	6,070	6,730	9,760	b3,440	5,500	11,100	9,220	15,000	4,650	2,090	2,210
8	2,400	5,480	6,710	9,540	b3,550	5,480	10,500	10,100	14,000	4,480	2,010	2,230
9	2,460	5,060	6,780	9,240	b3,800	5,270	10,300	11,000	13,000	4,290	*1,960	2,190
10	2,720	5,220	6,780	8,920	4,040	5,580	10,300	12,400	12,800	4,240	1,880	2,190
11	3,330	7,120	6,760	8,520	4,220	5,650	10,500	14,200	14,100	4,250	1,810	2,180
12	3,460	9,140	7,990	7,390	4,610	5,580	11,400	14,100	15,300	4,530	1,790	2,410
13	3,160	7,750	12,500	6,690	4,930	5,580	12,500	12,100	15,400	4,190	1,830	2,720
14	2,780	6,390	13,300	6,180	4,740	5,780	13,300	10,900	14,500	4,270	1,820	2,530
15	2,750	5,840	10,300	6,020	4,550	6,060	14,200	10,100	14,000	4,050	1,770	2,380
16	3,180	5,500	*9,580	6,160	4,240	6,040	15,200	9,840	13,800	3,760	1,760	2,310
17	3,160	5,390	9,480	6,160	4,120	*6,800	16,000	10,700	13,300	3,760	1,770	2,220
18	3,190	5,600	9,080	5,920	4,340	8,060	14,900	12,700	12,800	3,590	1,810	2,140
19	3,200	5,750	8,660	5,840	4,360	9,040	*13,400	14,400	12,200	3,620	1,850	2,080
20	3,070	5,890	8,320	5,780	4,380	9,920	13,200	16,800	11,900	3,600	1,880	2,090
21	3,060	6,110	8,600	5,650	5,840	11,400	13,800	18,700	12,000	3,720	1,890	*2,010
22	3,330	6,110	12,200	5,480	4,950	11,600	15,000	*19,800	11,400	4,030	1,880	2,030
23	3,180	6,140	*15,100	5,410	4,420	12,000	17,400	17,600	10,100	3,860	1,920	2,070
24	2,950	6,310	12,000	5,350	4,330	12,700	19,100	15,800	9,540	3,860	1,960	2,140
25	2,920	6,400	10,700	5,230	4,320	14,100	17,800	*16,200	9,240	2,720	2,060	2,180
26	2,880	7,300	10,500	5,030	4,360	14,200	15,000	16,500	8,500	2,200	2,120	2,190
27	3,260	7,930	10,800	*4,790	4,280	13,900	13,500	15,900	7,370	2,420	2,370	2,180
28	*3,340	8,060	10,400	4,590	4,280	12,700	13,600	15,600	6,180	2,270	2,600	2,200
29	3,320	7,410	9,440	4,500	5,010	11,700	13,600	14,900	5,810	2,090	2,570	2,200
30	3,330	7,210	8,920	4,500	------	11,500	12,500	14,300	5,430	2,030	2,570	2,180
31	4,390	------	8,640	4,160	------	11,700	------	14,400	------	2,000	2,450	------
Total	91,910	184,000	282,060	212,650	120,820	262,000	395,700	405,840	381,770	115,590	62,580	67,050
Mean	2,965	6,133	9,099	6,860	4,166	8,452	13,190	13,090	12,730	3,729	2,019	2,235
Ac-ft	182,300	365,000	559,500	421,800	239,600	519,700	784,900	805,000	757,200	229,300	124,100	133,000

Calendar year 1955: Max 17,800 Min 1,180 Mean 3,827 Ac-ft 2,771,000
Water year 1955-56: Max 19,800 Min 1,760 Mean 7,055 Ac-ft 5,121,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Reservoirs in Yakima River basin, Wash.

Keechelus Lake.--Lat 47°19'20", long 121°20'20", in NE¼ sec. 12, T. 21 N., R. 11 E., at dam on Yakima River at outlet of Keechelus Lake, 3½ miles northwest of Martin and 9½ miles northwest of Easton. Drainage area, 55.8 sq mi. Records available, January 1906 to September 1956. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 158,130 acre-ft July 3 (elevation, 2,517.14 ft); minimum observed, 50,030 acre-ft Apr. 11 (elevation, 2,462.83 ft). Maximum contents observed during period 1906-56, 160,570 acre-ft May 16, 1925 (elevation, 2,518.09 ft); minimum observed, 448 acre-ft Sept. 6, 12, 13, 1906 (original crib dam); minimum elevation observed, 2,428.30 ft Sept. 20, 1926.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1917; storage began above crib dam Jan. 12, 1906, above present dam Aug. 19, 1[illegible]. To aid in construction and clearing of reservoir site, the water surface was kept low and [illegible] reservoir was not filled until June 15, 1920. Capacity, 157,800 acre-ft between gate sill (elevation, 2,425.00 ft), and spillway crest (elevation, 2,517.00 ft). Spillway raised 2 ft, construction completed Sept. 12, 1952. Records given herein represent usable contents. Water used for irrigation.

Kachess Lake.--Lat 47°15'50", long 121°12'00", in SW¼ sec. 34, T. 21 N., R. 13 E., at dam on Kachess River at outlet of Kachess Lake, 2½ miles northwest of Easton. Drainage area, 63.6 sq mi. Records available, September 1905 to September 1956. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 240,390 acre-ft July 3 (elevation, 2,262.31 ft); minimum observed, 137,290 acre-ft Apr. 9-11 (elevation, 2,237.80 ft). Maximum contents observed during period 1905-56, 243,070 acre-ft June 13, 1955 (elevation, 2,262.90 ft); minimum observed, 525 acre-ft Sept. 14, 15, 1910 (original crib dam); minimum elevation observed, 2,197.73 ft Sept. 26, 27, 1915.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1912. Original crib dam creating capacity of 21,000 acre-ft used Sept. 20, 1905, to June 30, 1911. Storage above present dam began June 30, 1911. Capacity, 239,000 acre-ft between gate sill (elevation, 2,192.75 ft) and top of spillway gate (elevation, 2,262.00 ft). Records given herein represent usable contents. Water used for irrigation.

Cle Elum Lake.--Lat 47°14'40", long 121°04'00", in NE¼ sec. 10, T. 20 N., R. 14 E., at dam on Cle Elum River at outlet of Cle Elum Lake, 4 miles northwest of Roslyn. Drainage area, 203 sq mi. Records available, May 1906 to September 1956. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 441,770 acre-ft July 15, 16 (elevation, 2,241.00 ft); minimum observed, 155,420 acre-ft Apr. 13 (elevation, 2,170.84 ft). Maximum contents observed during period 1906-56, 443,700 acre-ft May 31, 1945, May 28, 1949 (elevation, 2,241.40 ft); minimum observed, 2,380 acre-ft Aug. 31, 1906; minimum elevation observed, 2,114.35 ft Oct. 14, 1932. Storage was uncontrolled Oct. 3, 1931, to Feb. 26, 1932.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1933; storage began above present dam Feb. 26, 1932. Capacity, 436,900 acre-ft between gate sill (elevation, 2,110.00 ft) and top of spillway gate (elevation, 2,240.00 ft). Records given herein represent usable contents. Water used for irrigation.

Revisions (water years).--WSP 1182: 1948-49.

Bumping Lake.--Lat 46°52', long 121°18', in SW¼ sec. 23 (unsurveyed), T. 16 N., R. 12 E., at dam on Bumping River at outlet of Bumping Lake, 11½ miles upstream from American River, and 19 miles west of Nile. Drainage area, 68.6 sq mi. Records available, June to July 1906, April 1909 to September 1956. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 36,630 acre-ft June 1 (elevation, 3,428.20 ft); minimum observed, 3,190 acre-ft Mar. 20-22 (elevation, 3,393.99 ft). Maximum contents observed during period 1906, 1909-56, 39,840 acre-ft June 21, 22, 1925 (elevation, 3,430.55 ft); minimum observed, 1,130 acre-ft Feb. 5-9, 1949 (elevation, 3,390.80 ft).

Reservoir is formed on natural lake by earth-fill dam completed in 1910; storage began Nov. 3, 1910. Capacity, 33,700 acre-ft between gate sill (elevation, 3,389.00 ft) and spillway crest (elevation, 3,426.00 ft). Records given herein represent usable contents. Water used for irrigation.

Tieton Reservoir.--Lat 46°39'10", long 121°07'30", in SW¼ sec. 31 (unsurveyed), T. 14 N., R. 14 E., on face of dam on Tieton River, at spillway, at Rimrock, 2,000 ft upstream from Wildcat Creek, 7½ miles upstream from headworks of Tieton Canal, and 22½ miles southwest of Naches. Drainage area, 187 sq mi. Records available, April 1925 to September 1956. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 199,800 acre-ft July 12 (elevation, 2,926.71 ft); minimum observed, 86,880 acre-ft Apr. 14 (elevation, 2,871.85 ft). Maximum contents observed during period 1925-56, 201,380 acre-ft June 21, 1937 (elevation, 2,927.33 ft); minimum observed, 89 acre-ft Oct. 12, 1926 (elevation, 2,766.77 ft).

Reservoir is formed by earth- and gravel-fill dam completed in 1925; storage began Apr. 27, 1925. Capacity, 198,000 acre-ft between sill of tunnel entrance (elevation, 2,766.00 ft) and crest of spillway gates (elevation, 2,926.00 ft). Records given herein represent usable contents. Water used for irrigation.

Cooperation.--Records furnished by Bureau of Reclamation, reviewed and prepared for publication by Geological Survey.

Reservoirs in Yakima River basin, Wash.--Continued

Month-end elevation and usable contents, water year October 1955 to September 1956

Date	Keechelus Lake			Kachess Lake		
	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,471.72	63,460	-	2,241.57	151,870	-
Oct. 31	2,479.74	76,880	+13,420	2,246.45	171,540	+19,670
Nov. 30	2,490.83	97,750	+20,870	2,251.13	191,160	+19,620
Dec. 31	2,482.72	82,210	-15,540	2,247.58	176,210	-14,950
Calendar year 1955	-	-	+5,810	-	-	-11,420
Jan. 31	2,475.01	68,810	-13,400	2,243.32	158,820	-17,390
Feb. 29	2,473.40	66,160	-2,650	2,241.97	153,450	-5,370
Mar. 31	2,465.56	54,010	-12,150	2,238.95	141,690	-11,760
Apr. 30	2,478.07	73,980	+19,970	2,245.64	168,210	+26,520
May 31	2,508.86	137,530	+63,550	2,260.02	230,050	+61,840
June 30	2,516.77	157,180	+19,650	2,262.10	239,430	+9,380
July 31	2,506.28	131,410	-25,770	2,258.15	221,710	-17,720
Aug. 31	2,479.36	76,220	-55,190	2,250.05	186,570	-35,140
Sept.30	2,472.24	64,290	-11,930	2,241.99	153,530	-33,040
Water year 1955-56	-	-	+830	-	-	+1,660

Date	Cle Elum Lake			Bumping Lake		
Sept.30	2,188.85	219,240	-	3,402.31	9,040	-
Oct. 31	2,196.25	247,420	+28,180	3,410.42	16,000	+6,960
Nov. 30	2,213.84	318,900	+71,480	3,410.25	15,840	-160
Dec. 31	2,209.86	302,240	-16,660	3,399.56	7,000	-8,840
Calendar year 1955	-	-	+4,060	-	-	-1,060
Jan. 31	2,202.01	270,210	-32,030	3,394.22	3,340	-3,660
Feb. 29	2,194.96	242,410	-27,800	3,394.01	3,200	-140
Mar. 31	2,177.73	179,020	-63,390	3,394.04	3,220	+20
Apr. 30	2,191.63	229,680	+50,660	3,408.03	13,780	+10,560
May 31	2,234.10	408,950	+179,270	3,428.02	36,380	+22,600
June 30	2,235.26	414,380	+5,430	3,427.26	35,370	-1,010
July 31	2,235.43	415,180	+800	3,421.80	28,420	-6,950
Aug. 31	2,211.20	307,810	-107,370	3,411.62	17,180	-11,240
Sept.30	2,190.83	226,660	-81,150	3,406.42	12,370	-4,810
Water year 1955-56	-	-	+7,420	-	-	+3,330

Date	Tieton Reservoir		
Sept.30	2,886.37	112,190	-
Oct. 31	2,894.51	127,810	+15,620
Nov. 30	2,898.65	136,120	+8,310
Dec. 31	2,894.31	127,410	-8,710
Calendar year 1955	-	-	-2,050
Jan. 31	2,884.34	108,460	-18,950
Feb. 29	2,880.94	102,340	-6,120
Mar. 31	2,876.94	95,380	-6,960
Apr. 30	2,891.00	120,950	+25,570
May 31	2,922.89	190,250	+69,300
June 30	2,924.93	195,310	+5,060
July 31	2,919.19	181,300	-14,010
Aug. 31	2,904.42	148,140	-33,160
Sept.30	2,888.71	116,580	-31,560
Water year 1955-56	-	-	+4,390

† Elevation estimated at 12 p.m. from twice-daily gage readings.

Providence Coulee at Cunningham, Wash.

Location.--Lat 46°49'20", long 118°48'30", near township line in NW¼ sec. 4, T. 15 N., R. 32 E., on right bank on upstream side of Northern Pacific Railway bridge at Cunningham.

Drainage area.--27.8 sq mi.

Records available.--January 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 1,160 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,160 cfs Feb. 21 (gage height, 10.04 ft); no flow for long periods.
1953-56: Maximum discharge, that of Feb. 21, 1956; no flow most of each year.

Remarks.--Records poor. No known regulation or diversion.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)		0	0	0			0				
2			0	0	0			0				
3			0	0	0			0		(*)		
4		(*)	0	*90	0			0				
5			0	*1.4	0			0				
6			0	*0	0			0	(*)			
7			0	0	0			0				
8			0	0	0	(*)		2.7				
9			0	0	0			*0	(*)			
10			0	0	0			0			(*)	
11			0	0	0			*0				
12			*0	0	0			0				
13			0	0	0			0				
14			0	0	0	(*)	(*)	0				
15			0	0	0			0				
16			0	2.6	0			0				
17			0	1.1	0			0				
18			0	.1	0			0				
19			0	0	0			0				
20			0	0	0			0				
21			0	0	*695			0				
22			*20	0	6.2			0				(*)
23			*.6	0	**9.7			0				
24			0	0	1.1			*0				
25			0	0	0			0				
26			0	0	0			*0				
27			0	0	0			0				
28			0	0	0			0				
29			0	0	0			0				
30			0	0	------			0				
31		-----	0	*0	------		-----	0	------			------
Total	0	0	20.6	95.2	712.0	0	0	2.7	0	0	0	0
Mean	0	0	0.66	3.07	24.6	0	0	0.09	0	0	0	0
Cfsm	0	0	0.024	0.110	0.885	0	0	0.0032	0	0	0	0
In.	0	0	0.03	0.13	0.95	0	0	0.004	0	0	0	0
Ac-ft	0	0	41	189	1,410	0	0	5.4	0	0	0	0

Calendar year 1955: Max 44 Min 0 Mean 0.22 Cfsm 0.0079 In. 0.11 Ac-ft 157
Water year 1955-56: Max 695 Min 0 Mean 2.27 Cfsm 0.082 In. 1.11 Ac-ft 1,650

* Discharge measurement or observation of no flow made on this day.
** Field estimated made on this day.

Esquatzel Coulee at Connell, Wash.

Location.--Lat 46°39'40", long 118°51'40", in NE¼ sec. 36, T. 14 N., R. 31 E., on right bank 30 ft downstream from Main Street in Connell.

Drainage area.--240 sq mi.

Records available.--January 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (from topographic map).

Extremes.--Maximum discharge during year, 5,560 cfs Feb. 21 (gage height, 12.68 ft), from rating curve extended above 1,300 cfs on basis of slope-area determinations at gage heights 9.00 and 12.68 ft; no flow for long periods.
1953-56: Maximum discharge, that of Feb. 21, 1956; no flow most of each year.

Remarks.--Records fair. No known regulation or diversion.

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)		0	0	0			0		0		
2			0	0	0			0		2.4		
3			0	0	0	(*)		0		2.5		
4		(*)	0	*405	0			0		0		
5			0	*64	0			0		0		
6			0	*3.2	0		(*)	0		*0		
7			0	.1	0			0		0		
8			0	0	0			157		0		
9			0	0	0			101		0		
10			0	0	0			*0		0	(*)	
11			0	0	0			0		0		
12			*0	0	55	(*)		0		0		
13			0	0	59			0		0		(*)
14			0	0	7.1			0		0		
15			0	0	2.2			0		0		
16		(*)	0	0	0			0		0		
17			0	36	0			0		0		
18			0	2.1	0			0		0		
19			0	.1	0			0		0		
20			0	0	0			0		0		
21		(*)	0	0	*2,160			0		0		
22			*27	0	*286			0		0		(*)
23			*15.5	0	50			0		0		
24			.7	0	26			0		0		
25			0	0	6			0		0		
26			0	0	4			*0		0		
27			0	0	1.4			0		0		
28			0	0	.2			0		0		
29			0	0	0			0		0		
30			0	*0	------			0		0		
31		-----	0	-----			-----	0	------	0		------
Total	0	0	43.2	510.5	2,656.9	0	0	258	0	4.9	0	0
Mean	0	0	1.39	16.5	91.6	0	0	8.3	0	0.16	0	0
Cfsm	0	0	0.0058	0.069	0.382	0	0	0.035	0	0.00067	0	0
In.	0	0	0.007	0.08	0.41	0	0	0.04	0	0.0008	0	0
Ac-ft	0	0	86	1,010	5,270	0	0	512	0	9.7	0	0

Calendar year 1955: Max 47 Min 0 Mean 0.28 Cfsm 0.0012 In. 0.016 Ac-ft 203
Water year 1955-56: Max 2,160 Min 0 Mean 9.49 Cfsm 0.040 In. 0.54 Ac-ft 6,890

* Discharge measurement or observation of no flow made on this day.

Esquatzel Coulee at Eltopia, Wash.

Location.--Lat 46°27'40", long 119°01'00", in SE¼ sec. 2, T. 11 N., R. 30 E., on left bank on upstream side of Northern Pacific Railway bridge at Eltopia.

Drainage area.--394 sq mi.

Records available.--January 1953 to September 1956.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,740 cfs Feb. 22 (gage height, 18.23 ft); no flow during most of year.
1953-56: Maximum discharge, that of Feb. 22, 1956; no flow during most of each year.

Remarks.--Records fair. Considerable regulation by natural pondage in Esquatzel Coulee near Mesa. No known diversions.

Rating tables, water year 1955-56 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 22				Feb. 22 to Sept. 30			
4.3	0	8.0	239	4.3	0	7.0	141
4.6	5.9	10.0	513	4.6	5.9	8.0	260
5.0	16	12.0	880	5.0	16	10.0	610
5.5	34	14.0	1,340	5.5	34	12.0	1,120
6.0	61	16.0	1,900	6.0	61	14.0	1,780
7.0	138						

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)			0	0							
2				0	0							
3				0	0							
4		(*)		0	0							
5				*50	0							
6				*37	0					(*)		
7				2.1	0							
8				0	0							
9				0	0						(*)	
10				0	0			(*)				
11				0	0							
12			(*)	0	0							
13				0	0	(*)						
14				0	0							
15				0	0							
16				0	0							
17				0	0							
18				0	0							
19				0	0			(*)				
20				0	0							
21				0	*564							(*)
22			(*)	0	*1,770							
23			(*)	0	184							
24				0	84			(*)				
25				0	38							
26				0	9.0			(*)				
27				0	.5							
28				0	0							
29				0	0							
30				*0	------							
31		------		0	------		-----		------			------
Total	0	0	0	89.1	2,649.5	0	0	0	0	0	0	0
Mean	0	0	0	2.87	91.4	0	0	0	0	0	0	0
Ac-ft	0	0	0	177	5,260	0	0	0	0	0	0	0

Calendar year 1955: Max 0 Min 0 Mean 0 Ac-ft 0
Water year 1955-56: Max 1,770 Min 0 Mean 7.48 Ac-ft 5,440

* Discharge measurement or observation of no flow made on this day.

Measurements of streamflow in the Pacific slope basins in Washington and upper Columbia River basin made at points other than regular gaging stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. Measurements believed to have been made under base-flow conditions are identified by an asterisk (*) to the left of the discharge figure. These measurements when correlated with the simultaneous discharge of a nearby stream where continuous records are available will give a picture of the low-flow potentiality of stream. The column headed, "Measured previously" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1956

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Chehalis River basin, Wash.						
Wynoochee River.	Chehalis River.	NW¼SE¼ sec. 28, T. 18 N., R. 8 W., 4 miles northwest of Montesano.	146	1955	Aug. 28 Sept.17	*120 *126
Mooney Creek.	Wynoochee River.	SW¼NE¼ sec. 33, T. 18 N., R. 8 W., at road crossing, ½ mile above mouth and 3 miles northwest of Montesano.	3.87	1942-1955	Aug. 28 Sept.17	*1.12 *2.55
Black Creek..	....do.....	S½ sec. 24, T. 18 N., R. 8 W., at road crossing, 3 miles northwest of Montesano.	19.3		Aug. 28 Sept.17	*2.46 *6.65
Wynoochee River.	Chehalis River.	NW¼NW¼ sec. 35, T. 18 N., R. 8 W., at former gaging-station site below Black Creek near Montesano.	178	1942-1955	June 13 July 17 Aug. 28 Sept.17	1,250 *495 *148 *144
Chambers Creek basin, Wash.						
Chambers Creek.	Chambers Bay, Puget Sound.	SE¼SE¼ sec. 27, T. 20 N., R. 2 E., 40 ft above fish hatchery diversion and 1¼ miles northwest of Lakewood Center.	79.2		Mar. 27 Apr. 23 May 31 July 6 Aug. 15	204 130 *69.9 *50.5 *33.0
Leach Creek..	Chambers Creek.	SW¼NE¼ sec. 23, T. 20 N., R. 2 E., at West 53rd St. crossing, at Tacoma.	a6.63		Aug. 16	*4.28
Do.....	....do.....	NW¼NW¼ sec. 26, T. 20 N., R. 2 E., 1/3 mile above mouth and 4 miles northeast of Steilacoom.	a7.63	1944,1949	Aug. 16	*9.38
Duwamish River basin, Wash.						
North Fork Green River.	Green River..	Center of SW¼ sec. 11, T. 21 N., R. 8 E., 3⅔ miles north of Eagle Gorge.	14.8		Aug. 15	*11.9
Do.....	....do.....	S½SW½ sec. 11, T. 21 N., R. 8 E., 3¼ miles north of Eagle Gorge.	16.1		Aug. 15 Aug. 22	*14.8 *12.3
Do.....	....do.....	About center of sec. 15, T. 21 N., R. 8 E., 3 miles north of Eagle Gorge.	16.7		Aug. 15	*9.53
Big Soos Creek.	....do.....	SE¼NE¼ sec. 16, T. 21 N., R. 5 E., 2½ miles east of Auburn.	54.9		Apr. 19 May 18 June 20 July 3 Aug. 16	121 62.5 *48.5 *30.8 *20.2
Lake Washington basin, Wash.†						
Unnamed tributary.	Lake Washington.	SE¼ sec. 30, T. 24 N., R. 5 E., at road crossing on Mercer Island.	-	1945	1955 Aug. 15	b0.02
May Creek....	....do.....	NW¼ sec. 7, T. 23 N., R. 6 E., at highway crossing, 4½ miles east of Renton.	2.74	1945	1955 Aug. 16 Sept. 6	*.28 *.18
Do.....	....do.....	East line of sec. 3, T. 23 N., R. 5 E., at county road crossing, 3 miles northeast of Renton.	6.98	1945-46	1955 June 27 July 15 Aug. 8 Sept. 6 1956 July 31 Aug. 27 Sept. 4	*2.02 *1.25 *1.14 *.73 *.61 *.82 *.54
Etta Cartney Creek.	May Creek....	NW¼ sec. 34, T. 24 N., R. 5 E., at county road crossing, 3 miles northeast of Renton.	.92	1945	1955 Aug. 17 Sept. 6	0 0
Coal Creek...	Lake Washington.	SE¼ sec. 26, T. 24 N., R. 5 E., at county road crossing, 4 miles northeast of Renton.	2.02	1945	1955 Aug. 17 Sept. 6	0 0
Do.....	....do.....	W½ sec. 16, T. 24 N., R. 5 E., at highway crossing near mouth, 3 miles south of Bellevue.	6.73	1945-46	1955 June 27 July 15 Aug. 5 Sept. 8 Oct. 10 Oct. 26 1956 May 16 July 31 Sept. 4	*3.86 *3.00 *2.61 *2.31 *3.71 *9.23 *4.53 *2.61 *2.24

* Base flow.
† Includes some discharge measurements made during water year 1955.
a Of which 2.52 sq mi does not contribute to surface runoff. b Estimated.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1956--Continued

Lake Washington basin, Wash.--Continued †

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Mercer Creek.	Lake Washington.	SW¼SW¼ sec. 26, T. 25 N., R. 5 E., at private road crossing, 3 miles east of Bellevue.	1.03	1945	1955 Aug. 17 Sept. 6	 *1.33 *.98
Do.....	....do.....	NW¼SE¼ sec. 27, T. 25 N., R. 5 E., 15 ft above North Branch Mercer Creek at county road crossing and 2½ miles east of Bellevue.	1.61	1945	1955 Aug. 17 Sept. 6 1956 Aug. 1	 *1.89 *1.27 *1.32
North Branch Mercer Creek.	Mercer Creek.	NW¼SE¼ sec. 27, T. 25 N., R. 5 E., at mouth at county road crossing, 2½ miles east of Bellevue.	2.96	1945	1955 Aug. 17 Sept. 6 1956 Aug. 1	 *.55 *.35 *.5[illegible]
Mercer Creek.	Lake Washington.	SW¼SW¼ (revised) sec. 27, T. 25 N., R. 5 E., at county road crossing, 2 miles east of Bellevue.	6.91	1945-46	1955 June 27 Aug. 5 Sept. 6 Oct. 10 1956 Aug. 1 Sept. 5	 *3.14 *3.01 *2.04 6.10 *2.10 *2.32
South Fork Mercer Creek (formerly Eaton Creek).	Mercer Creek.	NW¼SW¼ sec. 3, T. 24 N., R. 5 E., at private road crossing, ½ mile above mouth and 2 miles southeast of Bellevue.	3.28	1945-46	1955 June 27 July 15 Aug. 5 Sept. 6 Oct. 10 1956 Aug. 1 Sept. 5	 *1.88 *1.25 *1.50 *1.10 3.03 *1.59 *1.42
Sturtevant Creek.	....do.....	E½ sec. 32, T. 25 N., R. 5 E., at county road crossing, ¾ mile east of Bellevue.	1.24	1945	1955 Aug. 17 Sept. 6	 b.01 b.10
Unnamed tributary.	Lake Washington.	NW¼ sec. 20, T. 25 N., R. 5 E., at highway crossing, 2 miles south of Kirkland.	1.94	1945	1955 Aug. 17 Sept. 6	 *.62 *.33
Forbes Creek.	....do.....	E½ sec. 32, T. 26 N., R. 5 E., 200 ft above gravel company reservoir and ½ mile north of Kirkland.	-	1945	1955 Aug. 17	 *.08
Juanita Creek	....do.....	North line of sec. 29, T. 26 N., R. 5 E., at county road crossing, 2 miles north of Kirkland.	3.67	1945-46	1955 June 28 Aug. 5 Sept. 9	 *2.58 *1.02 *.86
Do.....	....do.....	SE¼ sec. 30, T. 26 N., R. 5 E., at former gaging-station site near Kirkland.	5.50	1946	1955 June 28 July 15 Aug. 5 Sept. 9 1956 July 31 Sept. 4	 *4.96 *1.99 *1.68 *1.65 *2.22 *1.40
Unnamed tributary.	Lake Sammamish.	SW¼ sec. 13, T. 25 N., R. 5 E., at highway crossing, 1½ miles south of Redmond.	.12	1945	1955 Aug. 17 Sept. 9	 *.03 *.19
Do.....	....do.....	NE¼ sec. 24, T. 25 N., R. 5 E., at highway crossing at Idylwood, 2 miles south of Redmond.	.59	1945	1955 Sept. 9	 b.02
Do.....	....do.....	NE¼SW¼ sec. 36, T. 25 N., R. 5 E., at highway crossing at junction with Bellevue Road, ¼ miles east of Bellevue.	.17	1945	1955 Aug. 18 Sept. 9	 b.03 b.01
Phanton Lake Creek.	....do.....	SW¼ sec. 1, T. 24 N., R. 5 E., at highway crossing, 4½ miles east of Bellevue.	1.70	1945	1955 Aug. 18 Sept. 9	 b.01 0
Unnamed tributary.	....do.....	SW¼ sec. 12, T. 24 N., R. 5 E., at highway crossing, ¼ mile north of Vasa Park and 4 miles northwest of Issaquah.	.35	1945	1955 Aug. 18 Sept. 9	 0 0
Do.....	....do.....	NW¼NE¼ sec. 13, T. 24 N., R. 5 E., at Vasa Park, 4 miles northwest of Issaquah.	.22	1945	1955 Aug. 18 Sept. 9	 *.67 *.72
Do.....	....do.....	SW¼ sec. 18, T. 24 N., R. 6 E., at highway crossing, 3 miles northwest of Issaquah.	1.55	1945	1955 Aug. 18 Sept. 9	 *.10 *.20

* Base flow.
† Includes some discharge measurements made during water year 1955.
b Estimated.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1956--Continued

Lake Washington basin, Wash.--Continued†

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Tibbetts Creek.	Lake Sammamish.	NE¼ sec. 29, T. 24 N., R. 6 E., at highway crossing, 1 mile northwest of Issaquah.	3.89	1945,1947	1955 June 27 July 1 Sept. 8	 *.72 *.38 *.26
Carey Creek (formerly Issaquah Creek).	Issaquah Creek.	West line of sec. 6, T. 22 N., R. 7 E., at county road crossing, ½ mile north of Hobart.	4.79	1945-46	1955 Sept. 7	 *3.71
Holder Creek	....do.....	NW¼SW¼ sec. 31, T. 23 N., R. 7 E. (revised), at county road crossing, 1 mile north of Hobart.	5.93	1945-46	1955 July 5 July 18 Aug. 8 Sept. 7 1956 Sept. 5	 15.6 *7.87 *8.74 *3.18 *2.27
Unnamed tributary.	....do.....	NE¼ sec. 26, T. 23 N., R. 6 E., at county road crossing, 3 miles northwest of Hobart.	-	1945	1955 Aug. 16 Sept. 7	 0 *1.07
Issaquah Creek.	Lake Sammamish.	SE¼ sec. 22, T. 23 N., R. 6 E., at county road crossing, 4½ miles south of Issaquah.	19.8	1945	1955 July 18 Aug. 8 Sept. 6 1956 Sept. 5	 *23.2 *23.0 *13.6 *10.3
Unnamed tributary.	Issaquah Creek.	NW¼ sec. 22, T. 23 N., R. 6 E., at mouth, about ½ mile above Issaquah Creek gaging station and 4 miles south of Issaquah.	-	1945	1955 Aug. 16 Sept. 6	 0 0
Do.....	....do.....	NE¼ sec. 17, T. 23 N., R. 6 E., at county road crossing, 3½ miles southwest of Issaquah.	.87	1945	1955 Aug. 16 Sept. 6	 0 0
McDonald Creek.	....do.....	SE¼ sec. 16, T. 23 N., R. 6 E., 600 ft above mouth and 3½ miles south of Issaquah.	5.06	1945-46	1955 June 30 July 18 Aug. 8 Sept. 6 1956 July 31	 *2.73 *.96 *.72 *.58 *.92
Fifteen Mile Creek (formerly unnamed tributary)	....do.....	NW¼ sec. 15, T. 23 N., R. 6 E., at county road crossing, 3½ miles south of Issaquah.	4.57	1945	1955 July 1 July 18 Aug. 8 Sept. 7 1956 July 31	 17.0 *3.47 *4.21 *1.66 *2.03
Unnamed tributary	....do.....	North line of sec. 15, T. 23 N., R. 6 E., at road crossing, 3 miles south of Issaquah.	.39	1945	1955 Aug. 18 Sept. 7	 *.13 *.07
Do.....	....do.....	North line of sec. 10, T. 23 N., R. 6 E., at road crossing, 2 miles south of Issaquah.	1.23	1945	1955 Aug. 18 Sept. 7	 *.21 0
Do.....	....do.....	NE¼ sec. 3, T. 23 N., R. 6 E. (revised), at road crossing, 1 mile south of Issaquah.	1.23	1945	1955 Aug. 18 Sept. 7	 *.19 *.10
East Fork Issaquah Creek.	....do.....	NE¼ sec. 32, T. 24 N., R. 7 E., at road crossing opposite U. S. Highway 10 junction, ½ mile west of Preston.	.86	1945	1955 Aug. 18 Sept. 7	 *.32 *.14
Do.....	....do.....	SE¼ sec. 25, T. 24 N., R. 6 E., at U. S. Highway 10 crossing, 2½ miles east of Issaquah.	5.86	1945	1955 July 5 July 18 Aug. 8 Sept. 7 1956 Sept. 5	 5.46 *2.41 3.33 *1.42 *.63
Do.....	....do.....	SE¼ sec. 27, T. 24 N., R. 6 E., at former gaging-station site at Issaquah.	8.29	1945	1955 July 5 July 18 Aug. 8 Sept. 7 1956 Sept. 5	 8.00 *5.05 *5.25 *2.75 *1.71
North Fork Issaquah Creek (formerly Jordan Creek)	....do.....	East line of sec. 28, T. 24 N., R. 6 E., at county road crossing, ½ mile north of Issaquah.	4.24	1945	1955 Aug. 18 Sept. 8	 *.98 *.68

* Base flow.
† Includes some discharge measurements made during water year 1955.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Lake Washington basin, Wash.--Continued †

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Issaquah Creek.	Lake Sammamish.	W½ sec. 21, T. 24 N., R. 6 E., at county road crossing, 2 miles north of Issaquah.	54.1	1945	1955 July 6 July 18 Aug. 8 Sept. 8 1956 July 31	74.9 *54.3 *50.2 *35.1 *35.9
Laughing Jacobs Creek.	....do.....	SW¼ sec. 16, T. 24 N., R. 6 E., at county road crossing, 2½ miles north of Issaquah.	5.00	1945,1947	1955 Aug. 18 Sept. 8	*.24 *.20
Unnamed tributary.	....do.....	NE¼NE¼ sec. 6, T. 24 N., R. 6 E. (revised), at county road crossing, 2 miles south of Inglewood.	2.06	1945	1955 Aug. 18 Sept. 8	b.03 0
Do.....	....do.....	SE¼NW¼ sec. 32, T. 25 N., R. 6 E., at county road crossing, 1¼ miles south of Inglewood.	.30	1945	1955 Aug. 18 Sept. 8	0 b.03
Do.....	....do.....	NE¼NW¼ sec. 32, T. 25 N., R. 6 E., at county road crossing, 1 mile south of Inglewood.	4.25	1945	1955 Aug. 18 Sept. 8	b.05 0
Do.....	....do.....	NW¼ sec. 29, T. 25 N., R. 6 E., at county road crossing, 0.3 mile north of Inglewood.	-	1945	1955 Aug. 18 Sept. 8	b.02 b.02
Bear Creek...	Sammamish River.	E½ sec. 8, T. 26 N., R. 6 E., at State Highway 2C crossing, 6 miles northeast of Redmond.	5.14	1945	1955 July 6 July 20 Aug. 10 Sept. 8 Oct. 11 1956 Sept. 4	9.68 *6.57 *5.94 *6.04 14.1 *4.22
East Fork Bear Creek.	Bear Creek...	NE¼ sec. 9, T. 26 N., R. 6 E., at highway crossing, 6½ miles northeast of Redmond.	-	1945	1955 Aug. 17	0
Seidel Creek.	....do.....	SW¼ sec. 20, T. 26 N., R. 6 E., at county road crossing, 3½ miles northeast of Redmond.	2.41	1943,1945	1955 Aug. 17 Sept. 8 1956 Aug. 1	*.31 *.40 *.48
Bear Creek...	Sammamish River.	NW¼NW¼ sec. 29, T. 26 N., R. 6 E., at former gaging-station site near Redmond.	13.6	1945-49	1955 July 6 July 20 Aug. 10 Oct. 11 1956 Sept. 4	17.0 *9.85 *8.81 20.9 *4.06
Daniels Creek	Cottage Lake.	South line of sec. 1, T. 26 N., R. 5 E., at highway crossing, 6 miles north of Redmond.	4.27	1945	1955 Aug. 17 Sept. 8	*.10 b.02
Unnamed tributary.	....do.....	NE¼ sec. 7, T. 26 N., R. 6 E., at highway crossing, 5½ miles north of Redmond.	1.33	1945-46	1955 July 20 Aug. 9 Sept. 8	*.28 *.28 .17
Do.....	Cottage Lake Creek.	SE¼ sec. 18, T. 26 N., R. 6 E., at county road crossing, 4½ miles north of Redmond.	-	1945	1955 Aug. 17 Sept. 8	*.18 b.20
Mackey Creek.	Bear Creek...	NW¼ sec. 32, T. 26 N., R. 6 E., at county road crossing, 2½ miles northeast of Redmond.	1.42	1945	1955 Aug. 18 Sept. 8	*.44 *.61
Evans Creek..	....do.....	NW¼ (revised) sec. 22, T. 25 N., R. 6 E., at highway crossing, 5 miles east of Redmond.	2.91	1945	1955 Aug. 18 Sept. 7	*.02 b.01
Do.....	....do.....	SE¼SW¼ (revised) sec. 16, T. 25 N., R. 6 E., at private road crossing, 4 miles southeast of Redmond.	6.96	1945-46	1955 July 6 July 19 Aug. 11 Sept. 7 1956 Aug. 1	2.14 *1.07 *1.19 *1.05 *1.32
Unnamed tributary.	Evans Creek..	NE¼SW¼ sec. 16, T. 25 N., R. 6 E., at highway crossing, 3½ miles east of Redmond.	2.46	1945	1955 July 6 July 19 Aug. 11 Sept. 7	1.53 *.85 *.72 *.51

* Base flow.
† Includes some discharge measurements made during water year 1955.
b Estimated.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Lake Washington basin, Wash.--Continued †

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Evans Creek..	Bear Creek...	SW¼NW¼ sec. 17, T. 25 N., R. 6 E., at former gaging-station site near Redmond.	10.9	1945	1955 July 6 July 19 Aug. 11 Sept. 7 1956 Aug. 1	8.41 *6.50 *5.88 *5.66 *5.90
Bear Creek...	Sammamish River.	North line of sec. 27, T. 27 N., R. 5 E., at county road crossing, 4 miles northeast of Bothell.	8.30	1945-46	1955 June 29 July 21 Aug. 9 Aug. 19 Sept. 8 1956 Aug. 31	15.9 *4.20 *4.37 *4.29 *3.71 *4.58
Do.....	....do.....	NE¼SW¼ sec. 3, T. 26 N., R. 5 E., at former gaging-station site at Woodinville.	13.9	1945	1955 June 29 July 21 Aug. 9 Sept. 8 1956 Aug. 31	26.0 *7.59 *7.54 *6.56 *7.48
North Creek..	....do.....	SW¼ sec. 30, T. 28 N., R. 5 E., at county road crossing, 8½ miles north of Bothell.	2.64	1945	1955 Aug. 15	0
Do.....	....do.....	South line of sec. 6, T. 27 N., R. 5 E., at county road crossing, 6½ miles north of Bothell.	6.88	1945-46	1955 July 21 Aug. 9 Sept. 7	*1.61 *1.74 *1.32
Swamp Creek..	....do.....	SE¼ sec. 23, T. 27 N., R. 4 E., 4½ miles northwest of Bothell.	10.9	1945-46	1955 Aug. 19 Sept. 7	*2.71 *2.23
Scriber Lake Creek.	Swamp Creek..	NW¼NE¼ sec. 27, T. 27 N., R. 4 E., at county road crossing, 5 miles northwest of Bothell.	4.43	1945	1955 Aug. 19 Sept. 7	*.19 *.55
Swamp Creek..	Sammamish River.	NE¼SW¼ sec. 1, T. 26 N., R. 4 E., at former gaging-station site near Bothell.	21.1	1945	1955 June 28 July 21 Aug. 9 Sept. 7 1956 May 16 Aug. 31	14.7 *4.51 *4.51 *3.76 13.3 *4.69
Unnamed tributary.	Lake Washington.	NW¼ sec. 11, T. 26 N., R. 4 E., at highway crossing, 3 miles west of Bothell.	1.67	1945	1955 Aug. 15 Sept. 7	*.09 *.11
Lyon Creek...	....do.....	W½ (revised) sec. 10, T. 26 N., R. 4 E., at highway crossing, 3½ miles west of Bothell.	3.58	1945-46	1955 June 28 July 21 Aug. 8 Aug. 26 Sept. 7 1956 May 16 Aug. 31	2.60 *1.26 *1.20 *1.05 *.82 *2.01 *1.33
McAleer Creek	....do.....	East line (revised) of sec. 5, T. 26 N., R. 4 E., at highway crossing, 5½ miles west of Bothell.	6.17	1945-46	1955 June 28 July 21 Aug. 8 Aug. 26 Sept. 7	1.94 *1.31 *1.55 *1.54 *1.30
Do.....	....do.....	NE¼ sec. 9, T. 26 N., R. 4 E., at former gaging-station site near Bothell.	6.88	1945, 1947-49	1955 June 28 July 21 Aug. 8 Aug. 26 Sept. 7 1956 May 16 Aug. 31	5.49 *3.36 *4.14 *3.17 *3.58 6.45 *4.22
Thornton Creek.	....do.....	South line of sec. 21, T. 26 N., R. 4 E., at State Highway 1-J crossing, at Seattle.	5.74	1945	1955 June 29 July 22 Aug. 8 Aug. 19 Aug. 26 Sept. 7	9.26 b.02 .03 2.64 4.20 2.44

* Base flow.
† Includes some discharge measurements made during water year 1955.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Lake Washington basin, Wash.--Continued†

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Little Brook.	Thornton Creek.	SW¼ sec. 27, T. 26 N., R. 4 E., at mouth, at East 115th St. crossing, at Seattle.	-	1943,1945	1955 Aug. 19 Sept. 7	 b0.03 b.005
Thornton Creek.	Lake Washington.	SW¼ sec. 27, T. 26 N., R. 4 E., at East 110th St. crossing, at Seattle.	7.48	1945	1955 June 29 July 22 Aug. 8 Aug. 26 Sept. 7	 10.2 3.09 4.11 3.88 6.77
Maple Leaf Creek.	Thornton Creek.	N½ sec. 33, T. 26 N., R. 4 E., at Bothell Way crossing, at Seattle.	2.91	1945-46	1955 July 22 Aug. 8 Aug. 26 Sept. 7	 1.97 2.20 2.43 1.78
Unnamed tributary.	Maple Leaf Creek.	N½ sec. 33, T. 26 N., R. 4 E., at East 98th St. crossing, at Seattle.	.18	1945	1955 Aug. 19 Sept. 7	 .06 b.25
Maple Leaf Creek.	Thornton Creek.	SE¼SE¼ (revised) sec. 28, T. 26 N., R. 4 E., at county road crossing on east side of golf course, at Seattle.	3.70	1945-46	1955 July 22 Aug. 8 Aug. 26 Sept. 7	 2.78 2.73 2.46 2.33
Thornton Creek.	Lake Washington.	SE¼ sec. 34, T. 26 N., R. 4 E., at former gaging-station site, at Seattle.	12.1	1942-43 1945-46	1955 June 29 July 22 Aug. 8 Aug. 26 Sept. 7 1956 July 31	 16.7 7.90 9.63 6.19 12.6 5.17
Snohomish River basin, Wash.†						
Raging River.	Snoqualmie River.	West line of sec. 27, T. 24 N., R. 7 E., at former gaging-station site near Fall City.	30.6	1945-50	1955 July 19 Aug. 11 Sept. 7	 *31.7 *36.9 *14.9
Cherry Creek.	....do.....	NW¼ sec. 17, T. 26 N., R. 7 E., at former gaging-station site near Duvall.	19.9	1945-48	1955 July 20 Aug. 10 Sept. 8 1956 Sept. 4	 *16.6 *15.0 *6.00 *1.97
Deer Creek...	North Fork Stillaguamish River.	SE¼ sec. 5, T. 32 N., R. 7 E., at former gaging-station site at Oso.	c71	1917-30, 1950	Aug. 18	*51.8
Skagit River basin, Wash.						
Suiattle River.	Skagit River.	Lat 48°09'45", long 121°00'20", just above Small Creek, 10½ miles southwest of Holden.	28.7		Feb. 1 Mar. 29	*48.2 *39.8
Small Creek..	Suiattle River.	Lat 48°09'45", long 121°00'20", at mouth, 10½ miles southwest of Holden.	3.71		Feb. 1 Mar. 11 Mar. 29 Aug. 23 Sept.18	*3.46 *2.63 *2.00 12.4 7.70
Suiattle River.	Skagit River.	Lat 48°09'45", long 121°00'20", just below Small Creek, 10½ miles southwest of Holden.	32.4		Mar. 11	*61.4
Miners Creek.	Suiattle River.	Lat 48°11'10", long 121°01'40", at mouth, 1½ miles west of Holden.	11.3		Feb. 1 Mar. 11 Mar. 29 Aug. 23 Sept.18	*10.9 *4.15 *7.83 58.3 23.1
Grandy Creek.	Skagit River.	SE¼ sec. 10, T. 35 N., R. 7 E., at former gaging-station site near Concrete.	18.9	1943-44	Aug. 10 Sept. 8	*12.0 *7.87
Chuckanut Creek basin, Wash.						
Chuckanut Creek.	Chuckanut Bay.	NE¼ sec. 13, T. 37 N., R. 2 E., at alternate U. S. Highway 99 crossing, 2½ miles southwest of Bellingham.	6.67	1948-49, 1954-55	Aug. 9	b0.26

* Base flow.
† Includes some discharge measurements made during water year 1955.
b Estimated.
c Approximately.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Whatcom Creek basin, Wash.

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Austin Creek.	Lake Whatcom.	SW¼NW¼ sec. 8, T. 37 N., R. 4 E., at former gaging-station site, near Bellingham.	7.80	1948-49, 1951,1955	Aug. 9 Sept. 8	*0.76 b.50
Smith Creek..	....do.....	NE¼NE¼ sec. 5, T. 37 N., R. 4 E., at road crossing, at Sunnyside.	5.56	1948-49, 1954-55	Aug. 8 Sept. 9	*.82 b.50
Olsen Creek..	....do.....	SW¼ sec. 30, T. 38 N., R. 4 E., at road crossing, ½ mile south of Woodlawn.	3.78	1948-49, 1954-55	Aug. 8 Sept. 9	*.81 b.50

Squalicum Creek basin, Wash.

Squalicum Creek.	Bellingham Bay.	NW¼SW¼ sec. 16, T. 38 N., R. 3 E., at former gaging-station site, at Bellingham.	10.3	1948-50, 1955	Aug. 9 Sept. 9	b0.20 b.15

Nooksack River basin, Wash.

Kendall Creek	Nooksack River.	NE¼ sec. 3, T. 39 N., R. 5 E., at former gaging-station site at Kendall.	d29.2	1948-50, 1955	Aug. 10 Sept. 7	*15.1 *8.82
Coal Creek...	....do.....	NW¼NW¼ sec. 10, T. 39 N., R. 5 E., at former gaging-station site near Kendall.	4.57	1948-49, 1955	Aug. 10 Sept. 8	*.43 b.20
Bells Creek..	....do.....	SE¼ sec. 21, T. 39 N., R. 5 E., at Mount Baker highway crossing, 1½ miles northwest of Kulshan.	4.15	1948-49, 1954-55	Aug. 10 Sept. 8	*.60 b.20
Porter Creek.	Middle Fork Nooksack River.	SE¼ sec. 11, T. 38 N., R. 5 E., at road crossing, 3 miles southeast of Kulshan.	4.23	1954-55	Sept. 9	b.10
Canyon Creek.	....do.....	SE¼SE¼ sec. 27, T. 39 N., R. 5 E., at former gaging-station site at Kulshan.	8.70	1948-55	Sept. 8	*4.82
Anderson Creek.	Nooksack River.	SE¼ sec. 6, T. 38 N., R. 4 E., at Mount Baker highway crossing, 3 miles south of Goshen.	7.16	1948-49, 1954-55	Aug. 8	b.10
Do.....	....do.....	NE¼ sec. 19, T. 39 N., R. 4 E., at former gaging-station site at Goshen.	12.9	1948-49, 1955	Aug. 8 Sept. 7	*.32 *.19
Fishtrap Creek.	....do.....	NE¼ sec. 25, T. 40 N., R. 2 E., at alternate U. S. Highway 99 crossing, 1 mile southwest of Lynden.	e29.1	1942-43, 1948-49, 1954-55	Aug. 8 Sept. 6	*10.9 *8.38
Bertrand Creek.	....do.....	SE¼ sec. 11, T. 40 N., R. 2 E., at Blaine-Sumas road crossing, 2½ miles northwest of Lynden.	f28.4	1948-49, 1954-55	Aug. 8 Sept. 6	*2.65 *2.83
Do.....	....do.....	SE¼ sec. 27, T. 40 N., R. 2 E., at former gaging-station site near Lynden.	g40.3	1948-49, 1951,1955	Aug. 8 Sept. 6	*8.67 *6.79
Wiser Creek..	....do.....	SW¼ sec. 3, T. 39 N., R. 2 E., ½ mile above mouth and 3 miles northeast of Ferndale.	6.23	1942-43, 1949, 1954-55	Aug. 8 Sept. 6	*1.48 *1.12
Tenmile Creek	Barrett Lake.	NE¼ sec. 18, T. 39 N., R. 3 E., at road crossing, 1 mile northeast of Laurel.	10.5	1942-43, 1948-49, 1954-55	Aug. 8	*1.07
Do.....	....do.....	NE¼SW¼ sec. 22, T. 39 N., R. 2 E., at former gaging station site near Ferndale.	22.7	1948-49, 1951,1955	Aug. 8 Sept. 6	*2.39 *3.90
Larrabee Springs.	Deer Creek...	NW¼NW¼ sec. 36, T. 39 N., R. 2 E., 100 ft below source and 2 miles southwest of Laurel.	-	1948,1950, 1954-55	Aug. 8 Sept. 7	*.43 *.31
Deer Creek...	Barrett Lake.	NE¼ sec. 27, T. 39 N., R. 2 E., at road crossing, 2 miles east of Ferndale.	7.06	1943, 1948-49, 1954-55	Aug. 8 Sept. 7	*1.21 *.88

Terrell Creek basin, Wash.

Terrell Creek	Birch Bay....	East line of sec. 6, T. 39 N., R. 1 E., at road crossing, 6 miles south of Blaine.	8.56	1954-55	Aug. 7 Sept. 6	0 0

California Creek basin, Wash.

California Creek.	Drayton Harbor.	SE¼ sec. 27, T. 40 N., R. 1 E., at former gaging-station site near Custer.	6.85	1942-43, 1955	Aug. 7 Sept. 6	*0.84 *.69

Dakota Creek basin, Wash.

North Fork Dakota Creek.	Dakota Creek.	SE¼SE¼ sec. 14, T. 40 N., R. 1 E., at road crossing, 5 miles southeast of Blaine.	6.65	1948-49, 1954-55	Aug. 7 Sept. 6	*0.56 *.70
Dakota Creek.	Drayton Harbor.	NW¼SW¼ sec. 14, T. 40 N., R. 1 E., at former gaging-station site near Blaine.	15.2	1948-55	Aug. 7 Sept. 6	*1.90 *1.28

* Base flow.
b Estimated.
d Of which 5.6 sq mi is in Canada.
e Of which 19.4 sq mi is in Canada.
f Of which 22.6 sq mi is in Canada.
g Of which 23.1 sq mi is in Canada.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Fraser River basin, Wash.

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Dale Creek...	Sumas River..	North line of sec. 9, T. 39 N., R. 4 E., at road crossing, 2⅔ miles southeast of Nooksack.	2.57	1947-48, 1954-55	Aug. 9	b0.30
Goodwin ditch.	....do.....	SW¼ sec. 33, T. 40 N., R. 4 E., at road crossing, 1 mile southeast of Nooksack.	-	1947-49, 1954-55	Aug. 9 Sept. 7	3.86 3.79
Unnamed tributary.	....do.....	NW¼ sec. 33, T. 40 N., R. 4 E., at road crossing, ¾ mile east of Nooksack.	4.45	1947-48, 1954-55	Aug. 9	b.10
Sumas River..	Vedder River.	South line of sec. 29, T. 40 N., R. 4 E., at road crossing at at Nooksack.	16.9	1948-49, 1954-55	Sept. 7	*8.46
Breckenridge Creek.	Sumas River..	East line of sec. 28, T. 40 N., R. 4 E., at crossing of Goodwin Road, 1½ miles east of Nooksack.	5.37	1947-49, 1954-55	Aug. 9 Sept. 7	*.95 *.42
Sumas River..	Vedder River.	NE¼ sec. 11, T. 40 N., R. 4 E., at former gaging-station site near Sumas.	32.1	1948-50, 1951,1955	Aug. 9 Sept. 7	*17.2 *12.9
Pangborn Lake Creek.	Johnson Creek	SW¼ sec. 5, T. 40 N., R. 4 E., at road crossing at Clearbrook.	2.74	1947-48, 1954-55	Aug. 9 Sept. 7	*3.03 *2.43
Johnson Creek	Sumas River..	SW¼ sec. 35, T. 41 N., R. 4 E., at former gaging-station site at Sumas.	h23.0	1947-49, 1955	Aug. 9 Sept. 7	*10.4 *11.1
Saar Creek...	....do.....	North line of sec. 6, T. 40 N., R. 5 E., at former gaging-station site near Sumas.	9.76	1948,1955	Aug. 9 Sept. 7	*.59 *.08

Kootenai River basin

Yaak River...	Kootenai River.	NW¼NE¼ sec. 2, T. 35 N., R. 32 W., at bridge at Yaak, Mont., about 3 miles above Pete Creek.	437		May 23 May 24 May 26 June 1 June 14	5,040 4,620 4,210 2,730 954
Do.....	....do.....	SE¼ sec. 4, T. 35 N., R. 32 W., about 1 mile above Pete Creek and 2 miles west of Yaak, Mont.	446		July 16	307
Kootenay River.	Columbia River.	Lat 49°29'40", long 117°20'04", at Grohman Narrows, 2 miles below Nelson, British Columbia; measurements referred to gage No. 10 at Nelson (station 8 N., J. 9 of Water Resources Division, Department of Northern Affairs and National Resources, Canada).	17,700	1932-55	Jan. 26 May 2 June 8 Aug. 2	13,590 54,080 162,700 48,680

Pend Oreille River basin, Wash.

Sweet Creek..	Pend Oreille River.	SW¼NE¼ sec. 5, T. 38 N., R. 43 E., at concrete culvert on State Highway 6, 2 miles southwest of Metaline.	10.7	1954	June 12 July 26 Sept. 3	29.1 5.38 3.89
Slate Creek..	....do.....	NW¼ sec. 36, T. 40 N., R. 43 E., at crossing of State Highway 6, 5½ miles northeast of Metaline Falls.	c29	1952,1954	May 29 June 12 June 25 July 28 Sept. 4	155 60.2 48.3 15.5 10.6

Spokane River basin

Coeur d'Alene River.	Coeur d'Alene Lake.	In lot 7, sec. 32, T. 50 N., R. 4 E., at site of former gaging station, 0.2 mile below Beaver Creek and 1½ miles southwest of Prichard, Idaho.	583	1944-53	Jan. 14	1,140
Hayden Creek.	Hayden Lake..	In NW¼SW¼ sec. 25, T. 52 N., R. 3 W., at site of former gaging station, 0.35 mile below North Fork and 7 miles northeast of Hayden Lake Post Office, Idaho.	22.0	1948-54	Jan. 18	49.8
Little Spokane River.	Spokane River.	NE¼ sec. 34, T. 28 N., R. 43 E., at former gaging-station site at Chattaroy, Wash.	300	1948,1952, 1955	Sept.25	*100
Deer Creek...	Little Spokane River.	On line between SW¼ and SE¼ sec. 26, T. 28 N., R. 43 E., 1 mile upstream from mouth of Chattaroy, Wash.	31.9	1948,1952, 1955	Sept.25	*.58
Dragoon Creek.	....do.....	NE¼ sec. 4, T. 27 N., R. 43 E., at mouth, 1½ miles southwest of Chattaroy, Wash.	177	1948,1952, 1955	Sept.25	*3.01
Little Spokane River.	Spokane River.	On line between secs. 3 and 4, T. 27 N., R. 43 E., 500 ft below Dragoon Creek and 1 mile south of Chattaroy, Wash.	512	1952,1955	Sept.25	*99.1

* Base flow.
b Estimated.
c Approximate.
h Of which 6.6 sq mi is in Canada.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and Upper Columbia River basin during the water year 1956--Continued

Spokane River basin--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Little Spokane River.	Spokane River.	NE¼ sec. 16, T. 27 N., R. 43 E., 50 ft above county bridge at Buckeye, Wash.	518	1952,1955	Sept.26	*138
Do.....	....do.....	SE¼ sec. 21, T. 27 N., R. 43 E., 50 ft below county bridge and 1½ miles south of Buckeye, Wash.	523	1952,1955	Sept.26	*136
Do.....	....do.....	S½ sec. 28, T. 27 N., R. 43 E., at county bridge, ⅔ mile above Deadman Creek and 2¼ miles northeast of Dartford, Wash.	524	1952,1955	Sept.26	*135
Deep Creek...	Deadman Creek.	SE¼ sec. 22, T. 27 N., R. 43 E., at former gaging-station site at Colbert, Wash.	32.8	1948, 1952-53, 1955	Sept.25	0
Deadman Creek.	Little Spokane River.	E½ sec. 3, T. 26 N., R. 43 E., 300 ft below highway bridge and 1 mile north of Mead, Wash.	80.3	1948,1952, 1955	Sept.26	*1.63
Do.....	....do.....	SE¼NW¼ sec. 3, T. 26 N., R. 43 E., 1,000 ft below U. S. Highway 195 and 1 mile northeast of Mead, Wash.	94.7	1953,1955	Sept.26	*5.64
Unnamed tributary.	....do.....	NW¼SW¼ sec. 33, T. 27 N., R. 43 E., 820 ft below Deadman Creek and 2 miles northwest of Mead, Wash.	.09	1955	Sept.26	0
Little Spokane River.	Spokane River.	NW¼ sec. 5, T. 26 N., R. 43 E., 400 ft above Wandermere Lake Creek and ¾ mile east of Dartford, Wash.	660	1953,1955	Sept.27	*143
Wandermere Lake Creek.	Little Spokane River.	SE¼NW¼ sec. 5, T. 26 N., R. 43 E., 100 ft above mouth and ¾ mile east of Dartford, Wash.	4.65	1953,1955	Sept.27	*9.54
Little Spokane River.	Spokane River.	NW¼NW¼ sec. 12, T. 26 N., R. 42 E., 10 ft above bridge and 2 miles southwest of Dartford, Wash.	688	1953,1955	Sept.27	*398
Do.....	....do.....	SW¼NW¼ sec. 3, T. 26 N., R. 42 E., at site of former gaging station, 4 miles west of Dartford, Wash.	698	1953	Sept.28	*415
Do.....	....do.....	SE¼NW¼ sec. 5, T. 26 N., R. 42 E., 50 ft below bridge, ¾ mile above mouth, and 5½ miles west of Dartford, Wash.	700	1947-48, 1953,1955	Sept.28	*425

Okanogan River basin, Wash.

Okanogan River.	Columbia River.	NE¼ sec. 16, T. 30 N., R. 25 E., at bridge on State Highway 10, 3 miles east of Brewster.	c8,400	1955	Nov. 4	2,290
					Mar. 16	1,800
					Apr. 25	9,300
					May 23	27,400
					July 24	4,010
					Aug. 6	*2,330
					Sept.13	*1,140

Methow River basin, Wash.

South Fork Beaver Creek.	Beaver Creek.	NE¼NE¼ sec. 24, T. 34 N., R. 22 E., 1,000 ft above mouth and 7 miles northeast of Twisp.	26.8		May 19	109
					Aug. 4	*8.73
					Sept.12	*5.56
Methow River.	Columbia River.	NW¼NE¼ sec. 28, T. 30 N., R. 23 E., at bridge on State Highway 16, 3 miles northeast of Pateros.	c1,790		Mar. 16	400
					Apr. 26	7,090
					May 23	15,700
					July 24	2,220
					Aug. 5	1,100
					Sept.13	634
Do.....	....do.....	SW¼ sec. 36, T. 30 N., R. 23 E., 500 ft below bridge on U. S. Highway 97 at Pateros.	c1,810		Feb. 14	370

* Base flow.
c Approximate.

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