Compilation of Records of Quantity and Quality of Surface Waters of Alaska through September 1950

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1372

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PREFACE

This report contains summaries of records of streamflow and of the quality of surface waters in Alaska through September 1950. It was prepared by the United States Geological Survey in the Water Resources Division, C. G. Paulsen, chief. The streamflow records were prepared under the direction of J. V. B. Wells, chief, Surface Water Branch, B. J. Peterson, chief, Basic Records Section, and E. G. Bailey, project engineer, by personnel in the district office at Juneau, Alaska, R. E. Marsh, district engineer. The quality-of-water records were prepared under the general direction of S. K. Love, chief, Quality of Water Branch, by personnel in the district office at Palmer, Alaska, G. W. Whetstone, district chemist.

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COMPILATION OF RECORDS OF QUANTITY AND QUALITY OF SURFACE WATERS OF ALASKA THROUGH SEPTEMBER, 1950

PURPOSE AND SCOPE

This volume is one of a series of reports presenting monthly and yearly summaries of streamflow and reservoir data collected by the Geological Survey in the United States and the Territories of Alaska and Hawaii. Included with these data are some records furnished by other Federal, State, and private agencies. The purpose of this series of reports is to make available in summarized form all the previously published surface-water records that have been collected up to September 30, 1950.

Those records have been collected mainly in cooperation with State, municipal and other Federal cooperating agencies and published in numerous bulletins and water-supply papers, many of which are out of print and difficult to obtain. This series of compilation reports has been prepared by the Geological Survey as a special project not included in the cooperative program.

The present report contains all published streamflow records for Alaska prior to 1946 summarized on a monthly and yearly basis. Results of miscellaneous discharge measurements prior to 1946 and, in general, stage records have been excluded. Also included are bar charts showing the period of record covered by each gaging station and a map of the area showing the location of each station (pl. 1). In addition to summaries of streamflow records prior to 1946, the Alaskan report contains records of daily and monthly discharge and miscellaneous discharge measurements, which were collected during the years 1946–50 and which are being published in this report for the first time.

An important feature in compiling the summarized data was to review the computations originally made on the basis of all information now available. For some stations additional base data, obtained subsequently, allowed for reinterpretation and recomputation of more accurate records of discharge. All records were examined for major computation errors and tested wherever possible by comparison with records of discharge at other stations

and weather data. Records that were found to be in need of substantial revision were recomputed or were omitted if revision was not feasible. Estimates of discharge were made to fill short gaps to complete the continuity of the record, whenever practical.

Records furnished by other agencies are incorporated in this report when they supplement records collected by the Geological Survey, and appear consistent and reliable. Furnished records were reviewed in the same manner as Geological Survey records whenever base data were available and detailed study was feasible.

Unlike other reports in the aforementioned series, the present report includes not only streamflow data but also the results of quality-of-water investigations in Alaska. The quality-of-water investigations of the Geological Survey are concerned with the chemical and physical characteristics of the surface and ground water supplies of the United States and its territories. Most of the records of quality of water are at sites of regular stream-gaging stations.

The records of chemical analysis and temperature for surface waters given in this volume serve as a basis for determining the suitability of the waters examined for industrial, agricultural, and domestic uses insofar as such uses are affected by the dissolved or suspended mineral matter in the waters. The discharge of a stream and, to a lesser extent, the chemical quality are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved matter may be expected during the period of high flow than during periods of low flow. The concentrations in some streams may change materially with relatively small variations in flow, whereas for other streams the quality may remain relatively uniform throughout large ranges in discharge.

The quality-of-water data included in this report consist of records of chemical quality of streams in Alaska collected between September 1948 and September 1950, and also some earlier records for the Yukon River at Anvik.

SURFACE-WATER RECORDS

STREAM-GAGING PROGRAM

The history of stream gaging in Alaska closely parallels that of changing industries of the Territory. Collection of streamflow data was begun by the Geological Survey in the summer of 1906 during the height of the famed Alaska gold rush. The Nome

district on Seward Peninsula was the region selected first as one in which streamflow data would be of the greatest immediate value. Placer mining was the principal means used for recovery of the precious metals, and, at this time, mining operations here were being conducted on a large-scale basis. The economic success of future expansion of these operations depended in part on definite knowledge of water supplies available during the working seasons.

In the summer season of 1907, stream-gaging work was expanded on the Seward Peninsula to include other river basins in which placer mining districts were active; work on the Seward Peninsula continued each season until 1910. In 1907 investigations also were extended to the Yukon-Tanana region where large-scale placer mining operations were in a less advanced stage of development. The program in this area continued until 1912. Stream-gaging activities during 1913 were confined to the lower Copper River basin and Prince William Sound area, and consisted of a general reconnaissance of the region to evaluate the water-power potential of the many power sites known to exist on the various streams.

Comparatively few gaging stations were operated during these years but many miscellaneous discharge measurements and other pertinent data were collected over an area of several thousand square miles. Nearly all of these records were obtained during the open-water season. Winter records published for the early years in Alaska are based on meager field data and are rough estimates at best. Many companies and individuals cooperated in the collection of base data which considerably expanded the scope of the investigations beyond that permitted by the limited Federal funds.

The first stream-gaging work in southeastern Alaska was performed by private parties when a gaging station on Ketchikan Creek was operated during 1909–12; two other gaging stations were established in 1913. These records were collected for use in power studies for proposed pulp mills. The Geological Survey working in cooperation with the Forest Service initiated a program in southeastern Alaska in 1915. It was designed primarily to report on available water power for promotion of the paper-pulp industry, lode mines, ore-reduction mills, fish canneries, and for other industrial uses. Records were collected at 9 gaging stations on different streams during 1915; by 1920 this number had increased to 20. Participation in the program by the Geological Survey was discontinued in 1921 because of lack of funds. The Forest Service and Federal Power Commission permittees continued the program on a reduced scale for the next several years, with a few gaging stations operating until 1946.

The conclusion of World War II marked the beginning of an era of renewed public interest in Alaskan water resources. In answer to increasing demands for these data a comprehensive program of streamflow and other water resources investigations was activated by the Geological Survey during 1946. The work was focused principally in southeastern, central, and south-central Alaska and served to furnish information for use in connection with water-power investigations, and also to obtain data necessary for design and construction of municipal water-supply and sewage disposal systems, highways, bridges, and railroads.

Numerous municipal and private organizations have assisted the Geological Survey in this work as have many bureaus of the Federal government. Organizations that supplied data are acknowledged in the station descriptions.

DESCRIPTION OF DATA

The data presented for the years prior to 1946 are compiled from previously published records and comprise a station description, tables of monthly discharge and runoff, together with a yearly summary table, when full-year records are available. Data presented for the period 1946–50 are published in this report for the first time and comprise a station description, tables of daily discharge, each followed by monthly and yearly summaries, and (for some stations) tables of daily chemical analyses and temperatures.

The station description gives the location of the gaging station, drainage area, supplemental records available (for some stations), type and datum of gages, average discharge, extremes of discharge, and general remarks concerning the data. When records were furnished by another agency the fact is so stated.

The location of the gaging station and the drainage area are obtained from the best available maps. When more than one site was used and the difference in drainage areas is significant, the area for the latest site is shown first followed by the areas for other sites in chronological order. In some instances drainage-area figures have not been obtained because of the lack of suitable maps or because the boundaries cannot be defined or the effective drainage area determined.

For some stations a paragraph headed "Supplemental records available" gives reference to records other than those given in the present report. Such records may consist of gage-height records for periods other than those for which discharge records

are presented, records of quality of water, or the results of periodic discharge measurements.

The gage described first is the present gage or the one used most recently. Information is then given in chronological order for all gages used earlier, giving changes in location, type of gage, or datum. The location or datum of all earlier gages is given with reference to the present or most recently used gage. The datum of the gage is the elevation of the zero of the gage above mean sea level. Where information as to datum is not available, the altitude of the gage is given. This was determined from topographic maps, river-profile surveys, barometric levels, or where nothing better is available, by estimates based on average fall between a known elevation and the gage or on other known factors. The degree of accuracy of an altitude determination is indicated by the source of the information and to some extent by the refinement to which the figure is given.

The average discharge for a station is the average of all complete water years and is published only if there are five or more complete water years of record. The years used to determine the average are not necessarily consecutive. The average discharge is not published for some stations because of extensive changes in diversion or storage, or other water development, that have occurred upstream.

In general, the momentary maximum and minimum discharges and stages are given in the "Extremes" paragraph. These are qualified if necessary according to the type of gage used and the completeness of the record. Maximum and minimum discharges at nonrecording gaging stations are qualified as "observed" unless determined from a graph drawn through actual gage heights which approximates the actual hydrograph. Also, under "Extremes" are given (for some stations) the values of maximum and minimum dissolved solids and hardness, in parts per million, and temperatures of water.

Under "Remarks" information is given on factors which affect the basin yield and runoff characteristics. These include upstream regulation, diversion, and utilization -- a history of changes in these items is given when known. Also, references are made to the records of storage or diversion upstream, if published. When discharge records are furnished by another agency, credit is given under "Cooperation."

The streamflow data prior to 1946 that are summarized in this paper are generally contained in two monthly tables and one yearly table. The first monthly table is a tabulation of monthly and yearly

mean discharge in cubic feet per second. These figures represent discharge passing the station; they are unadjusted for storage or diversion upstream. Each monthly figure is the mean flow for the entire month. Usually the months are arranged on a water-year basis. Exceptions to this rule are made in connection with seasonal records wherein the months are grouped to give a complete season for each calendar year.

The second monthly table is a tabulation of monthly and yearly runoff in acre-feet.

The third table contains a yearly summary of the streamflow data. The column headed "W. S. P. no." (or "Bull. no.") lists the number of the water-supply paper, bulletin, or other publication in which the figures of daily and monthly discharge are published. If a part of the record has been revised and republished, then reference is made to both the original report and the one containing the revised record; if the daily discharge record for the entire year has been republished to include revisions, then only the later report is listed. For stations where the third table is omitted the report containing records for any particular year can be found by reference to the footnote which follows the second monthly table.

In the third table (yearly summary) the momentary maximum discharge for each water year and the date of its occurrence is given whenever obtainable. This is maximum discharge for the water year unless otherwise qualified. For nonrecording gage records, momentary maximums were often obtained from graphs drawn through the gage readings. If a graph was not feasible, then the discharge was computed from the maximum gage height observed, provided it was believed to be of significant value. The momentary maximum discharge is given for some years for which the record, as shown in the first two tables, is incomplete. The maximum discharge when so given is believed to be representative of the absolute maximum of the water year and is not qualified in any way. Occasionally maximum daily discharges are tabulated, but only when it was not practicable to give momentary maximums and when figures may have general statistical value.

The minimum daily discharge for each water year is listed if known. The annual mean discharge listed in the third table is the same as that given in the yearly column in the first table.

Other data in the yearly summary table are given for both the water and calendar year and consist of runoff in inches or in acre-feet, or both. In arid regions where the average annual precipitation is less than 20 inches, the computation of runoff

in cubic feet per second per square mile and in depth in inches is not ordinarily made.

Figures of discharge that have been revised as the result of the review made in connection with this compilation are so noted; however; revisions that have been previously published are not indicated as revisions in this report. Revised daily discharges made in connection with this compilation are published herein along with the monthly and yearly tables. Revisions of figures of runoff in inches resulting solely from a revision of the drainage area are not noted as such. Figures that represent corrections of typographical or computational errors where no figures of daily discharge have been revised or changed are indicated as "corrected." Estimates of discharge made to complete months or years for this report are noted as estimated and as "not previously published."

Records for "Twin Creek at head of canal" for 1911, published in Bulletin 520, were found to be grossly in error. The base data were such that the records could not be improved or revised and the entire period of record is omitted from this report.

In addition to the above, records for some other stations in the area, previously published by the Geological Survey, are omitted from this compilation. In general, the records of such stations either are too fragmentary to allow computation of monthly mean discharge or are records that did not measure streamflow, total diversion, or return-flow and were considered not important enough to warrant publication in this report. These stations are listed in the following table:

Previously published records which are not compiled in this report

Station	Water-Supply Paper	Period of record
Humpback Creek near Cordova	372	1913
Gladhaugh Creek at Elevation 250 ft	372	1913
Gold Creek at mouth	342	1911
Buckskin Creek above Fortyfive Pup	342	1910-12
Liberty Fork at mouth	342	1911-12
Barney Creek ditch below the forks	342	1912
Sheep Creek at mouth	342	1911-12
Bonanza ditch near outlet	342	1911-12
California branch of Thanksgiving ditch near intake	228	1908
Thanksgiving ditch near outlet	228	1908-9
What Cheer Bar ditch near intake	342	1909
Pargon ditch below McKelvie Creek	314	1908-9
American Creek below Auburn Ravine	314	1908
American Creek below Game Creek	314	1908
Canyon ditch above claim "No. 10 above"	314	1909
Miocene ditch at Clara Creek	314	1907, 1909
Miocene ditch below the flume	314	1906-10
Hobson branch of Seward ditch	314	1909
Seward ditch below Dexter Creek flume	314	1909-10
Seward ditch above Newton Gulch	314	1909-10

Previously published records which are not compiled in this report— Continued

Station	Water-Supply Paper	Period of record
Cedric ditch above penstock	314	1907
Nugget Creek at Miocene ditch intake	218	1907
Fall Creek	314	1906
Pond Creek	314	1906
Glacier Creek	314	1906
Dome Creek below Hardluck Creek	314	1907
Iron Creek below Canyon Creek	314	1907
Iron Creek at mouth	314	1909
Iron Creek flume at intake	314	1909
Middle Creek	314	1909
Osborn Creek	314	1909
West End Creek	314	1909
Homestake ditch at penstock	314	1907
Quartz Creek above Bismark Creek	314	1907
Chicago Creek at Coal Mine	314	1908
Dome Creek at siphon crossing	314	1909

Note.—Previously published figures of estimated daily discharge at 5 stations are not listed here. These are for Ophir Creek at Canyon ditch intake, Nome River at Miocene ditch intake, Nome River at Pioneer ditch intake, David Creek at Miocene ditch, and Hobson Creek below Manila Creek, all of which are published in W. S. P. 314. The discharges, in each case, were obtained by combining the records for other stations in order to show approximate figures of natural flow.

The streamflow data in this paper for the years 1946–50 are presented in a table of daily discharge. In this table, 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 parenthesis, 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.

PUBLICATIONS

Records of stream-gaging stations in Alaska, collected by the Geological Survey prior to 1946, are presented in reports published as water-supply papers or bulletins. Water-supply papers which contain these data are listed in the following table.

Water-supply papers containing surface-water records in Alaska

No.	Title	Year
196	Water supply of Nome region, Seward Peninsula, Alaska	1906
218	Water-supply investigations in Alaska	1906-7
228	Water-supply investigations in the Yukon-Tanana region, Alaska	1907-8
314	Surface-water supply of Seward Peninsula, Alaska	1906-10
342	Surface-water supply of the Yukon-Tanana region, Alaska	1907-12
345-F	The discharge of Yukon River at Eagle, Alaska	1911-13
372	A water-power reconnaissance in south-central Alaska	1913

Streamflow records contained in Geological Survey bulletins, which report on the mineral resources of Alaska, duplicate in part, and, in some instances, supplement the records presented in the water-supply papers listed above. These bulletins are shown in the table which follows.

Number of bulletins containing surface-water records of Alaska

Year	Bull. no.	Year	Bull. no.	Year	Bull. no.	Year	Bull. no.
1906	314	1910	480	1915	642	1919	714
1907	337,345	1911	520	1916	662	1920	722
1908	379	1912	542	1917	692	1930	836
1909	442	1913	592	1918	712		

Note.—Bulletin 836 is a compilation of streamflow records for southeastern Alaska collected during the period 1909-30.

The reports listed in the preceding tables contain, in addition to records of daily discharge at gaging stations, also the results of many miscellaneous discharge measurements. Records of

miscellaneous measurements previously published are not included in this report.

Records of streamflow also have been published in reports of the Federal Power Commission in cooperation with the Forest Service of the U. S. Department of Agriculture. These reports are compilations of records, some of which are records previously published by the Geological Survey and some are supplemental records published for the first time. There are two such reports, one published in 1924 and the other in 1947, both entitled, "Water powers of southeastern Alaska."

HYDROLOGIC CONDITIONS

Hydrologic conditions vary greatly in Alaska, owing, in large measure, to the diversity of climatic conditions which are found throughout the territory. In southeastern Alaska, temperatures are moderate along the coast and at the lower altitudes, precipitation is abundant and often is in the form of rain during the early winter. The annual streamflow pattern shows that a considerable amount of the runoff occurs during the fall and early winter season. Climatic conditions in the interior of central Alaska are in contrast with those of the southeastern region; precipitation is light, averaging less than 15 inches per year; the winter period is long with temperatures that persist in the lower ranges. The total annual runoff is composed largely of streamflow occurring during the short summer season and is derived principally from snowmelt and contemporary precipitation; minimum flows occur during the winter and some streams are completely frozen for long periods. The annual climatic and runoff picture in the Seward Peninsula region is similar to that of interior Alaska but with some modification of extremes in the southern portion. Both temperature and precipitation are influenced by winds and storms from the Bering Sea; annual precipitation is near 20 inches in the coastal regions and probably exceeds twice that amount in the mountainous interior. Most of the annual runoff occurs in the open-water season; base flow is of minimum quantity during the winter because of the permanently frozen subsurface ground. A comparison of annual runoff characteristics of streams in the three regions described above are represented in figure 1 by Fish Creek near Ketchikan for southeastern Alaska, by Tanana River at Big Delta for interior Alaska, and by Kruzgamepa River near Iron Creek for Seward Peninsula.

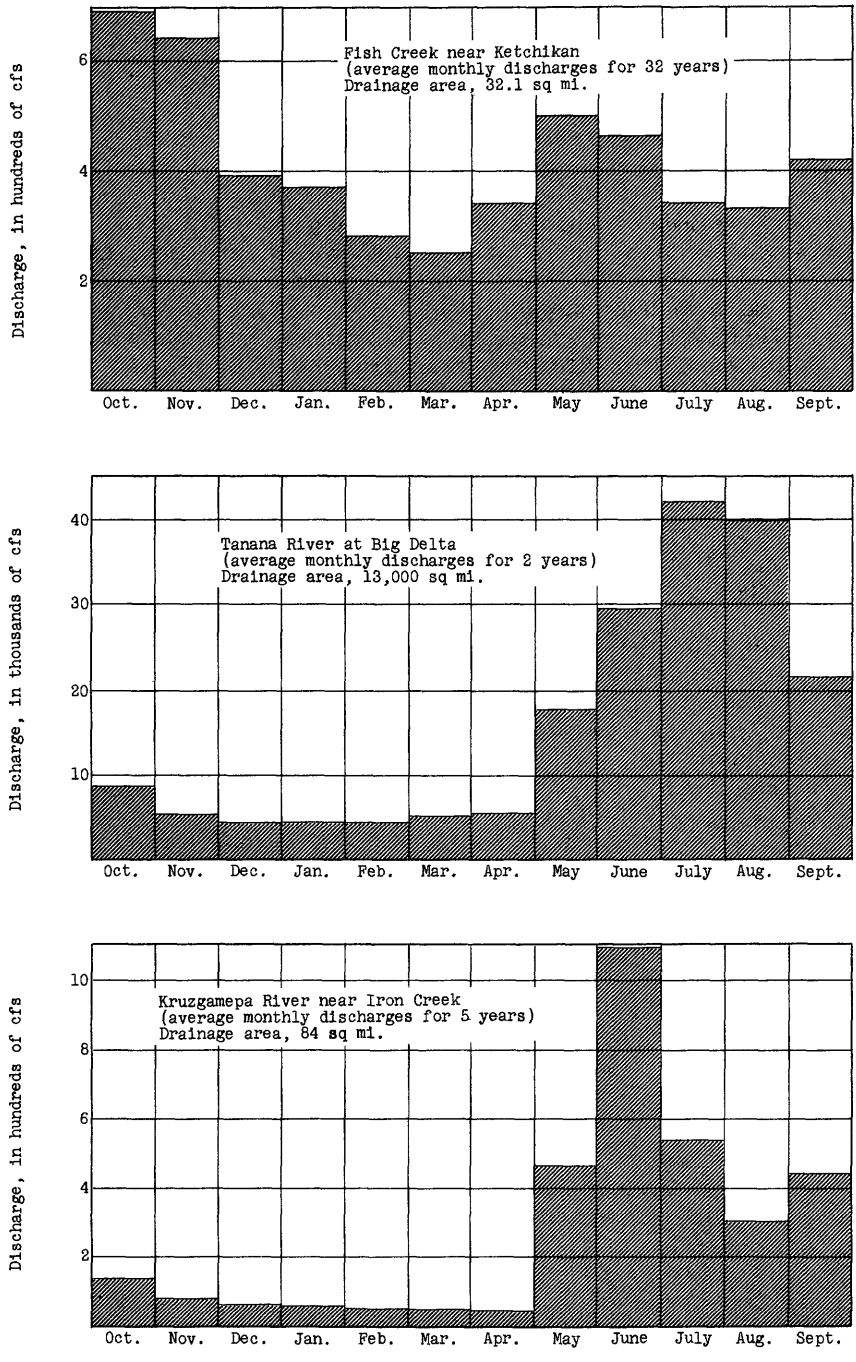

Figure 1.—Average monthly discharge at three representative gaging stations in Alaska.

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QUALITY-OF-WATER RECORDS

QUALITY-OF-WATER PROGRAM

The earliest known records of the chemical and physical composition of surface waters in Alaska were obtained in 1913. Daily measurements of turbidity were made on samples collected from the Copper River near Copper Center from July 6 to November 30, 1913. The surface waters of the Seward Peninsula were sampled in 1914 by H. M. Eakin, and 17 samples were collected from points in the Yukon River basin in the summer of 1915 by G. A. Waring. Samples of water were collected from the Yukon River at Anvik from August 23, 1915 to April 19, 1916 and from June 14 to August 16, 1916.

The quality-of-water program remained dormant for the next 32 years. In 1948 a continuing chemical-quality program was started by the Geological Survey. Several miscellaneous samples were collected and analyzed that year and regular sampling stations were begun in 1949. By the end of 1950 eight chemical quality sampling stations were in operation and water temperature records were being collected at five of these stations.

Samples for chemical analysis were collected daily at five of the regular sampling stations, for three of which sampling was discontinued during the winter season. For the daily stations most of the analyses were made on 10-day composites of daily samples. Three composite samples were usually prepared each month by combining equal volumes of daily samples collected from the 1st to the 10th, from the 11th to the 20th, and during the remainder of the month. At two other stations samples were collected twice-weekly and at one station they were collected weekly. At these stations one composite sample was prepared each month. Samples were collected for chemical analysis less frequently at many sites and these data appear in the report as miscellaneous analyses.

The samples collected were analyzed according to methods regularly used by the Geological Survey. These methods are essentially the same as or are modifications of methods described in authoritative publications for the mineral analysis of water samples.[1,2]

For those waters containing moderately large quantities of soluble salts, the value reported for dissolved solids is the sum of the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. In other analyses the value reported as dissolved solids is the residue on evaporation

[1]Am. Public Health Assoc., Standard Methods for the examination of water and sewage, 9th ed, p. 1-112, 1946.
[2]Collins, W. D., Notes on practical water analysis: U. S. Geol. Survey Water-Supply Paper 596-H, 1928.

after drying at 180°C for 1 hour. Specific conductance is given for most analyses and was determined by means of a conductance bridge using a standard potassium chloride solution as reference.

For most of the regular stations, daily water temperatures were obtained at the time that the chemical quality samples were collected. So far as practicable, the water temperatures were observed at about the same time each day for an individual river station in order that the data would be relatively unaffected by diurnal variations in temperature. The thermometers used for determination of water temperatures were accurate to plus or minus about 0.5°F.

DESCRIPTION OF DATA

EXPRESSION OF RESULTS

The dissolved mineral constituents are reported in parts per million. A part per million is a unit weight of a constituent in a million unit weights of water. Equivalents per million are not given in this report although the expression of analyses in equivalents per million is sometimes preferred. An equivalent per million is a unit chemical combining weight of a constituent in a million unit weights of water and is calculated by dividing the concentration in parts per million by the chemical combining weight of the constituent. For convenience in making this conversion the reciprocals of chemical combining weights of the most commonly reported constituents (ions) are given below:

Constituent	Factor	Constituent	Factor
Iron (Fe^{++})	0.0358	Carbonate (CO_3^{--})	0.0333
Iron (Fe^{+++})	.0537	Bicarbonate (HCO_3^-)	.0164
Calcium (Ca^{++})	.0499	Sulfate (SO_4^{--})	.0208
Magnesium (Mg^{++})	.0822	Chloride (Cl^-)	.0282
Sodium (Na^+)	.0435	Fluoride (F^-)	.0526
Potassium (K^+)	.0256	Nitrate (NO_3^-)	.0161

Results given in parts per million can be converted to grains per gallon (U. S.) by dividing by 17.12. A calculated quantity of sodium and potassium is given in some analyses and is the quantity of sodium needed in addition to the calcium and magnesium to balance the acid constituents.

The hardness, as calcium carbonate ($CaCO_3$), is calculated from the equivalents of calcium and magnesium. The hardness caused by calcium and magnesium equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness.

Specific conductance values are expressed in reciprocal ohms (micromhos at 25°C). Color is expressed in units of the platinum-cobalt scale proposed by Hazen[3]. Hydrogen-ion concentration (pH) is expressed as the negative logarithm of the number of moles of ionized hydrogen per liter of water.

An average of analyses (arithmetical) for the period of record is given for most daily stations. An arithmetical average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the river each day of the period of record for which the computation was made.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. Water in contact with soils or rock, even only for a few hours, will dissolve some rock materials. The quantity of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils through which the water has passed and the length of time it has been in contact with the rocks or soils. Streams are generally fed by surface runoff and underground water from springs or seeps. In Alaska, streams reflect the chemical character of their underground sources during the dry cold winter months and are more dilute during periods of snow and glacier melt runoff in the spring and summer.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on the value of the waters for most purposes. The analyses generally include results for silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together as sodium), bicarbonate, sulfate, chloride, fluoride, nitrate, and dissolved solids. Color, and pH are reported for most streams.

PUBLICATIONS

Geological Survey reports containing chemical analyses of surface waters of Alaska prior to 1948 are as follows:

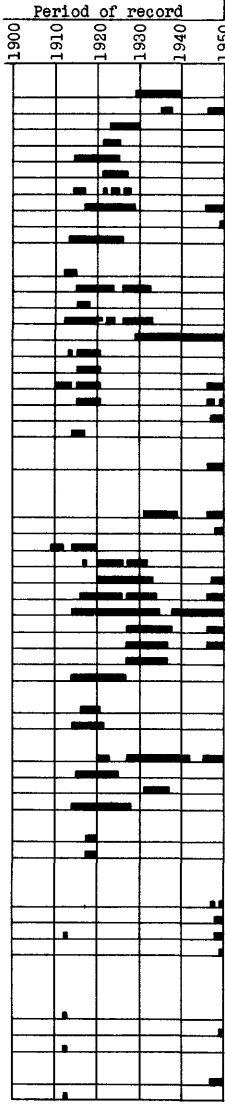
Professional Paper 135. Composition of river and lake waters of the United States, 1924.
Bulletin 770. The data of geochemistry, 1924.
Water-Supply Paper 372. A water-power reconnaissance in south-central Alaska, 1915.
Water-Supply Paper 418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.

[3]Hazen, Allen, A new color standard for natural waters: Am. Chem. Jour., vol. 12, p. 427-428.

The following bar chart shows the period of record of discharge of streams and contents of reservoirs for all stations compiled in this report through Sept. 30, 1950. Regular sampling stations for which records of quality of water are published herein are indicated by an asterisk (*). The streams are listed in order proceeding around the coast line in a general south to north direction. Stations are listed in downstream order with stations on tributary streams indicated by indention. The stations are numbered consecutively and the number is used to identify the station on the map (pl. 1) showing the location of gaging stations.

Bar chart of gaging-station records

Legend: Streamflow Reservoir contents



Gaging station	1/	Map no.	Page no.
Southeastern Alaska			
..Davis River near Hyder		1	20
..Winstanley Creek near Ketchikan		2	21
..Punchbowl Lake Outlet near Ketchikan		3	24
..Short Creek near Bell Island		4	24
..Shelokum Lake Outlet near Bell Island		5	25
..Tyee Creek near Wrangell		6	26
..Mill Creek near Wrangell		7	27
..Cascade Creek near Petersburg		8	28
..Scenery Creek near Petersburg		9	31
..Sweetheart Falls Creek near Juneau		10	32
Speel River:			
....Long Lake Outlet near Juneau		11	33
....Long River near Juneau		12	34
..Speel River near Juneau		13	35
..Crater Creek near Juneau		14	35
..Dorothy Creek near Juneau		15	37
..Carlson Creek at Sunny Cove, near Juneau		16	41
..Grindstone Creek near Juneau		17	42
..Sheep Creek near Juneau		18	43
..Gold Creek at Juneau		19	46
..Auke Creek near Auke Bay		20	48
..Sherman Creek at Comet		21	51
Streams on Annette Island:			
....Purple Lake Outlet near Metlakatla		22	51
Streams on Revillagigedo Island:			
Ward Creek:			
.....Perseverance Creek near Wacker		23	54
....Ward Creek near Wacker		24	57
....Ketchikan Creek at Ketchikan		25	58
....Beaver Falls Creek near Ketchikan		26	59
....Mahoney Creek near Ketchikan		27	60
....Falls Creek near Ketchikan		28	63
....Fish Creek near Ketchikan		29	67
....Ella Creek near Ketchikan		30	71
....Manzanita Creek near Ketchikan		31	75
....Grace Creek near Ketchikan		32	78
....Orchard Creek near Bell Island		33	79
Streams on Prince of Wales Island:			
....Myrtle Creek at Niblack		34	80
....Karta River near Kasaan		35	80
Streams on Baranof Island:			
....Sawmill Creek near Sitka		36	81
....Green Lake Outlet near Sitka		37	86
....Coal Creek near Baranof		38	87
....Baranof River at Baranof		39	88
Streams on Chichagof Island:			
....Porcupine River near Chichagof		40	89
....Falls Creek near Chichagof		41	89
Alaska West of Longitude 141°			
Copper River:			
....Gakona River at Gakona		42	90
....Tazlina River near Glennallen		43	91
....Klutina River at Copper Center		44	92
....Tonsina River at Tonsina		45	93
Chitina River:			
Nizina River:			
Kennicott Glacier outflow:	-		
.....McCarthy Creek near McCarthy		46	94
..Copper River near Chitina	*	47	94
..Copper River near Cordova		48	96
Eyak River:			
....Power Creek near Cordova		49	96
..Millard Creek near Ellamar		50	99

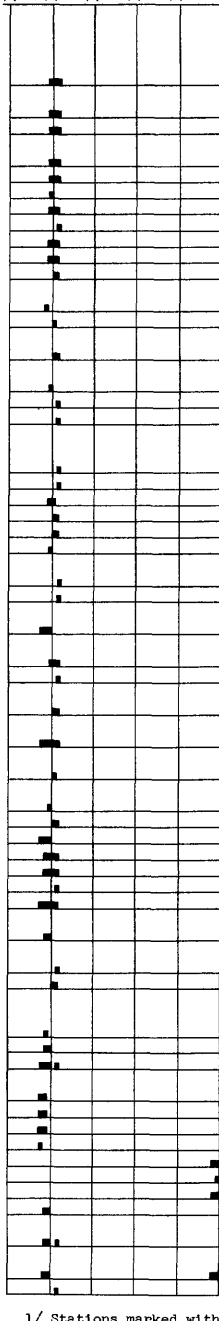
1/ Stations marked with '*' in this column are those for which records of regular quality-of-water stations are published in this report.

Bar chart of gaging-station records--Continued

Period of record 1900 1910 1920 1930 1940 1950	Gaging station	1/	Map no.	Page no.
	Alaska West of Longitude 141°--Continued			
	..Duck River near Ellamar		51	99
	..Solomon Gulch near Valdez		52	99
	..Gold Creek near Valdez		53	100
	..Uno Creek near Valdez		54	101
	..Davis Creek at Golden		55	101
	..Avery River near Golden		56	102
	..Hobo Creek near Golden		57	102
	Resurrection River:			
	Salmon Creek:			
	.....Lost Creek near Seward		58	102
	..Kasilof River near Kasilof		59	104
	Kenai River:			
	....Ptarmigan Creek at Lawing		60	105
	Trail River:			
	.....Grant Creek near Moose Pass		61	108
	....Trail River near Lawing		62	110
	.....Falls Creek near Lawing		63	113
	....Quartz Creek near Gilpatricks		64	113
	.....Crescent Creek near Cooper Landing		65	113
	..Kenai River at Cooper Landing	*	66	115
	....Cooper Creek near Cooper Landing		67	120
	..Kenai River near Cooper Landing		68	121
	....Russian River near Cooper Landing		69	121
	....Russian River at mouth, near Cooper Landing		70	123
	..Resurrection Creek at Hope		71	124
	East Fork (head of Sixmile Creek):			
	Canyon Creek:			
	.....Mills Creek near Gilpatricks		72	124
	..Sixmile Creek at Sunrise		73	125
	Campbell Creek:			
	....South Fork Campbell Creek near Anchorage		74	125
	..Ship Creek near Anchorage	*	75	128
	Eklutna Creek:			
	..Eklutna Lake near Palmer		76	134
	..Eklutna Creek near Palmer	*	77	136
	..Eklutna Creek below Eklutna diversion dam, near Palmer	*	78	142
	..Matanuska River at Palmer	*	79	143
	..Cottonwood Creek near Wasilla		80	146
	..Little Susitna River near Palmer		81	147
	..Susitna River at Gold Creek		82	148
	Willow Creek:			
	.....Craigie Creek near Wasilla		83	149
	Yukon River:			
	....Dennison Fork (head of Fortymile River) near Chicken		84	150
	Mosquito Fork:			
	.....Kechumstuk Creek near Chicken		85	150
	.....Mosquito Fork near Chicken		86	150
	.....Walker Fork at Poker Creek		87	151
	.....Walker Fork at Boundary		88	151
	.....Walker Fork near Boundary		89	152
	.....Wade Creek near Jack Wade		90	152
	.....Napoleon Creek near Franklin		91	152
	....South Fork Fortymile River (continuation of Dennison Fork) at Franklin		92	153
	Buckskin Creek:			
	.....Fortyfive Pup near Franklin		93	153
	.....North Fork Fortymile River above Middle Fork, near Franklin		94	154
	Hutchinson Creek:			
	.....Confederate Creek near Franklin		95	154
	.....Hutchinson Creek below Confederate Creek, near Franklin		96	154
	.....Montana Creek near Franklin		97	155
	.....Hutchinson Creek below Montana Creek, near Franklin		98	155
	.....North Fork Fortymile River near Franklin		99	156
	.....King Solomon Creek (head of O'Brien Creek) at Liberty		100	156
	.....Dome Creek near Dome Creek		101	156
	....Fortymile River at Steel Creek		102	157
	.....Steel Creek at Steel Creek		103	157
	Canyon Creek:			
	.....Squaw Gulch near Bonanza Bar		104	158
	.....Canyon Creek near Bonanza Bar		105	158
	..Yukon River at Eagle		106	159
	....Mission Creek near Eagle		107	160
	.....Wolf Creek near Eagle		108	160
	.....American Creek near Gravel Gulch		109	160

1/ Stations marked with '*' in this column are those for which records of regular quality-of-water stations are published in this report.

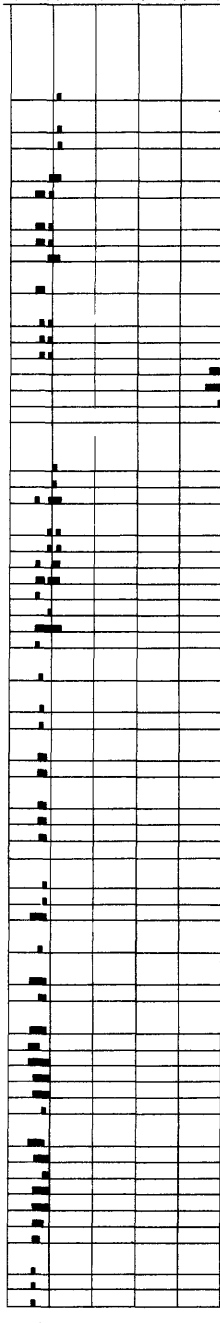
Bar chart of gaging-station records--Continued



Gaging station	1/	Map no.	Page no.
Alaska West of Longitude 141°--Continued			
Yukon River--Continued			
Mission Creek--Continued			
American Creek--Continued			
.....Discovery Fork American Creek near Gravel Gulch		110	161
.....American Creek at Eagle		111	161
....Seventymile River above Flume Creek, near Crooked Creek		112	161
.....Flume Creek near Crooked Creek		113	162
.....Alder Creek near Crooked Creek		114	162
.....Barney Creek near Crooked Creek		115	163
.....Sonickson Creek near Crooked Creek		116	163
.....Washington Creek near Crooked Creek		117	164
....Seventymile River near Crooked Creek		118	164
.....Crooked Creek at Crooked Creek		119	165
.....Fox Creek near Crooked Creek		120	165
Ptarmigan Creek (head of Birch Creek):			
.....Mastodon Fork Eagle Creek near Miller House		121	165
....Birch Creek above Twelvemile Creek, near Miller House		122	166
....Birch Creek below Twelvemile Creek, near Miller House		123	166
.....Fryingpan Creek near Miller House		124	167
.....Great Unknown Creek near Miller House		125	167
....Birch Creek below Great Unknown Creek, near Miller House		126	167
Munson Creek (head of Clums Fork):			
.....Lawson Creek near Chena Hot Springs		127	168
.....Clums Fork near Chena Hot Springs		128	168
....Birch Creek below Clums Fork, near Miller House		129	168
....Birch Creek near Circle Springs		130	169
.....Buckley Bar Creek near Circle Springs		131	169
.....Porcupine Creek (head of Crooked Creek) above ditch intake, near Miller House		132	169
.....Porcupine ditch at intake, near Miller House		133	170
.....Porcupine Creek below ditch intake, near Miller House		134	170
.....Bonanza Creek above ditch intake, near Miller House		135	171
.....Bonanza ditch at intake, near Miller House		136	171
.....Bonanza ditch below Porcupine ditch, near Miller House		137	171
.....Bonanza Creek below ditch intake, near Miller House		138	172
.....Porcupine Creek below Bonanza Creek, near Miller House		139	172
.....Independence Creek (head of Mammoth Creek) near Miller House		140	173
.....Mammoth Creek ditch near Miller House		141	173
.....Miller Creek near Miller House		142	173
.....Mammoth Creek at Miller House		143	174
.....Crooked Creek at Central		144	174
.....Deadwood Creek near Central		145	175
.....Portage Creek near Circle Springs		146	175
....Birch Creek near Circle		147	176
Preacher Creek:			
.....Bachelor Creek near Miller House		148	176
Beaver Creek:			
.....Nome Creek near Chatanika		149	176
.....Nome Creek above Ophir Creek, near Chatanika		150	177
Hess Creek:			
Troublesome Creek:			
.....Quail Creek near Rampart		151	177
.....Quail Creek at mouth, near Rampart		152	178
.....Troublesome Creek near Rampart		153	178
Minook Creek:			
.....Hoosier Creek near Rampart		154	178
....Minook Creek near Rampart		155	179
.....Little Minook Creek near Rampart		156	179
.....Hunter Creek near Rampart		157	180
....Tanana River at Northway Junction		158	180
....Tanana River near Tok Junction		159	181
....Tanana River at Big Delta	*	160	182
.....Banner Creek at Richardson		161	187
Salcha River:			
.....Junction Creek (head of Redmond Creek) near Richardson		162	187
.....Salcha River near Salchaket		163	188
.....Chena River near Chena Hot Springs		164	189

1/ Stations marked with '*' in this column are those for which records of regular quality-of-water stations are published in this report.

Bar chart of gaging-station records--Continued



Gaging station	1/	Map no.	Page no.
Alaska West of Longitude 141°--Continued			
Yukon River--Continued			
Tanana River--Continued			
Chena River--Continued			
West Fork Chena River:			
.....North Fork Chena River near Chena Hot Springs		165	190
.....Monument Creek at Chena Hot Springs		166	190
.....North Fork Chena River below Monument Creek, near Chena Hot Springs		167	190
.....Chena River near Fairbanks		168	191
.....Little Chena River above Sorrels Creek, near Chatanika		169	191
.....Sorrels Creek near Chatanika		170	191
.....Elliott Creek near Chatanika		171	192
.....Fish Creek below Solo Creek, near Chatanika		172	192
.....Fish Creek above Fairbanks Creek, near Chatanika		173	193
.....Miller Creek near Chatanika		174	193
.....Fish Creek at mouth, near Chatanika		175	194
.....Little Chena River near Chatanika		176	194
.....Chena Slough near Fairbanks		177	195
.....Chena River at Fairbanks		178	196
.....Nenana River near Windy		179	199
.....Nenana River at Healy	*	180	200
Tolovana River:			
McManus Creek (head of Chatanika River):			
.....Smith Creek near Chena Hot Springs		181	202
.....Pool Creek near Chena Hot Springs		182	202
.....McManus Creek near Chena Hot Springs		183	202
Hope Creek (head of Faith Creek):			
.....Charity Creek near Chena Hot Springs		184	203
.....Homestake Creek near Chena Hot Springs		185	203
.....Faith Creek near Chena Hot Springs		186	204
.....Chatanika River near Chena Hot Springs		187	204
.....Kokomo Creek near Chatanika		188	205
.....Chatanika ditch near Chatanika		189	205
.....Chatanika River near Chatanika		190	206
.....Goldstream Creek near Fox		191	206
Tatalina River:			
.....Washington Creek above Aggie Creek, near Martin		192	206
.....Aggie Creek near Martin		193	207
.....Washington Creek near Martin		194	207
Baker Creek:			
.....New York Creek near Eureka		195	207
.....California Creek near Eureka		196	208
Eureka Creek:			
.....Pioneer Creek near Eureka		197	208
.....Hutlinana Creek near Eureka		198	209
.....Sullivan Creek (head of Patterson Creek) at Tofty		199	209
..Yukon River at Anvik	*	199-A	210
Fish River:			
....Pargon River near Boston		200	212
.....Pargon ditch at intake, near Boston		201	212
.....Pargon ditch below Helen Creek, near Boston		202	212
Niukluk River:			
.....Casadepaga River near Casadepaga		203	213
Ophir Creek:			
.....Canyon ditch near intake, near Council		204	213
..Solomon River at East Fork		205	213
Buffalo Creek (head of Nome River):			
....Campion ditch at Black Point, near Nome		206	214
..Nome River above Miocene ditch intake, near Nome		207	214
....Miocene ditch at Black Point, near Nome		208	215
....Miocene ditch above Hobson Creek, near Nome		209	215
....Miocene ditch below Hobson Creek, near Nome		210	215
..Nome River below Miocene ditch intake, near Nome		211	216
David Creek:			
.....David Creek ditch near Nome		212	216
....Seward ditch at intake, near Nome		213	217
....Seward ditch below Hobson branch, near Nome		214	217
....Pioneer ditch at intake, near Nome		215	217
..Nome River near Nome		216	218
....Hobson Creek near Nome		217	218
..Snake River near Nome		218	219
Penny River:			
....Sutton ditch at intake, near Oregon		219	219
..Penny River near Oregon		220	219
..Sinuk River near Nome		221	220

1/ Stations marked with '*' in this column are those for which records of regular quality-of-water stations are published in this report.

Bar chart of gaging-station records--Continued

Gaging station	1/	Map no.	Page no.
Alaska West of Longitude 141°--Continued			
Sinuk River--Continued			
....Windy Creek near Nome		222	220
......North Star Creek near Nome		223	220
Kruzgamepa River:			
..West Fork Grand Central River (head of Kruzgamepa River) at pipe intake, near Iron Creek		224	221
..West Fork Grand Central River at ditch intake, near Iron Creek		225	221
....Crater Lake Outlet near Iron Creek		226	221
..West Fork Grand Central River near Iron Creek		227	222
....North Fork Grand Central River at pipe intake, near Iron Creek		228	222
....North Fork Grand Central River near ditch intake, near Iron Creek		229	223
....North Fork Grand Central River near Iron Creek		230	223
..Grand Central River below the forks, near Iron Creek		231	223
....Gold Run near Iron Creek		232	224
....Thompson Creek near Iron Creek		233	224
Nugget Creek:			
......Grand Central ditch near Iron Creek		234	225
..Grand Central River near Iron Creek		235	225
Jett Creek:			
......Jett Creek ditch near Iron Creek		236	225
..Kruzgamepa River near Iron Creek		237	226
..Kruzgamepa River at Iron Creek		238	226
....Iron Creek near Iron Creek		239	227
....Pass Creek near Pilgrim Springs		240	227
....Smith Creek near Marys Igloo		241	228
Kuzitrin River:			
....Kougarok River near Taylor		242	228
......Homestake ditch at intake, near Taylor		243	228
Taylor Creek:			
........North Star ditch near Taylor		244	229
......Taylor Creek near Taylor		245	229
......Henry Creek near Taylor		246	230
....Kougarok River below Henry Creek, near Taylor		247	230
....Kougarok River above Coarse Gold Creek, near Taylor		248	230
......Coarse Gold Creek near Taylor		249	231
......North Fork Kougarok River near Taylor		250	231
..Kuzitrin River near Bunker Hill		251	232
..Goodhope River near Cottonwood		252	232
..Inmachuk River at Utica		253	232
Kugruk River:			
....Fairhaven ditch at intake, near Utica		254	233
....Fairhaven ditch at Camp 2, near Utica		255	233
....Fairhaven ditch at Snow Gulch, near Utica		256	233
..Kugruk River near Utica		257	234
..Kugruk River near Candle		258	234
Kiwalik River:			
....Quartz Creek near Candle		259	234
....Glacier Creek near Candle		260	235
....Hunter Creek near Candle		261	235
..Kiwalik River at Candle		262	236

1/ Stations marked with '*' in this column are those for which records of regular quality-of-water stations are published in this report.

SOUTHEASTERN ALASKA

1. Davis River near Hyder 1/

Location.--Lat 55°45', long. 130°12', 1 mile upstream from mouth and 14 miles southwest of Hyder.

Drainage area.--About 80 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is about 300 ft (by topographic map). Prior to Dec. 15, 1930, staff gage at same site and datum. Dec. 17, 1932, to Apr. 18, 1933, staff gage at site 1 mile downstream at different datum.

Average discharge.--10 years (1930-40), 920 cfs.

Extremes.--1930-40: Maximum discharge, 19,500 cfs Nov. 12, 1936 (gage height, 13.30 ft), from rating curve extended above 7,300 cfs; minimum, 28 cfs Feb. 28, 1937 (gage height, 1.58 ft).

Remarks.--No diversion or regulation above station. Records for 1938-40 not previously published.

Cooperation.--Records furnished by Portland Canal Power Company and U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	-	-	-	-	1,490	1,350	-
1931	1,180	1,150	450	195	201	202	490	1,150	2,220	1,810	1,550	992	970
1932	1,270	342	524	378	264	109	371	1,050	1,730	1,920	1,810	1,780	967
1933	929	544	140	143	84.9	45.2	213	1,130	1,540	1,780	2,080	974	805
1934	1,060	†1,590	154	296	207	158	810	1,520	1,880	1,830	1,690	1,210	†1,040
1935	1,110	452	176	182	281	99.2	148	916	1,710	1,790	1,640	1,150	809
1936	930	568	392	110	52.3	82.4	430	1,150	2,370	1,710	1,560	891	857
1937	1,850	1,600	414	44.5	30.9	94.5	341	940	1,880	1,790	1,540	1,300	989
1938	‡1,450	‡198	‡267	‡101	‡203	‡190	‡387	‡1,070	‡1,450	‡1,780	‡1,590	‡1,670	‡868
1939	‡886	‡267	‡179	‡108	‡74.0	‡67.5	‡222	‡1,190	‡2,170	‡1,880	‡1,510	‡1,470	‡839
1940	‡1,390	‡859	‡356	‡171	‡169	‡92.5	‡103	‡637	‡2,200	‡2,410	‡2,490	‡1,820	‡1,060

† Corrected.
‡ Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	-	-	-	-	91,600	80,300	-
1931	72,600	68,400	27,700	12,000	11,200	12,400	29,200	70,700	132,000	111,000	95,300	59,000	702,000
1932	78,100	20,400	32,200	23,200	15,200	6,700	22,100	64,600	103,000	118,000	111,000	106,000	700,000
1933	57,100	32,400	8,610	8,790	4,720	2,780	12,700	69,500	91,600	109,000	128,000	58,000	583,000
1934	65,200	†94,700	9,470	18,200	11,500	9,720	48,200	93,500	112,000	113,000	104,000	72,000	†751,000
1935	68,200	26,900	10,800	11,200	15,600	6,100	8,810	56,300	102,000	110,000	101,000	68,400	585,000
1936	57,200	33,800	24,100	6,760	2,900	5,070	25,600	70,700	141,000	105,000	95,900	53,000	621,000
1937	114,000	95,200	25,500	2,740	1,720	5,810	20,300	57,800	112,000	110,000	94,700	77,400	717,000
1938	‡89,400	‡11,800	‡16,400	‡6,200	‡1,300	‡1,700	‡23,000	‡65,800	‡86,300	‡109,000	‡97,800	‡99,200	‡628,000
1939	‡54,500	†‡15,900	‡11,000	‡6,630	‡4,100	‡4,200	‡13,200	‡73,200	‡129,000	‡115,000	‡92,700	‡87,600	‡607,000
1940	‡85,500	‡51,100	‡21,900	‡10,500	‡9,720	‡5,660	‡6,130	‡39,200	‡131,000	‡148,000	‡153,000	‡108,000	‡770,000

† Corrected.
‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	836	-	-	-	-	-	-	-
1931	(a)	*8,730	Nov. 22, 1930	113	970	702,000	917	664,000
1932	(a)	11,200	Sept.16, 1932	75	967	700,000	921	668,000
1933	(a)	6,070	Nov. 18, 1932	31	805	583,000	904	654,000
1934	(a)	10,600	Nov. 11, 1933	85	†1,040	†751,000	950	688,000
1935	(a)	7,800	Oct. 11, 1934	55	809	585,000	821	595,000
1936	(a)	19,300	Oct. 23, 1935	42	857	621,000	1,020	741,000
1937	(a)	19,500	Nov. 12, 1936	28	989	717,000	828	600,000
1938	-	‡18,500	Oct. 21, 1937	‡65	‡868	‡628,000	‡818	‡592,000
1939	-	‡10,500	Sept.19, 1939	‡50	‡839	‡607,000	‡945	‡684,000
1940	-	‡13,500	Aug. 29, 1940	‡67	‡1,060	‡770,000	-	-

* Revised.
† Corrected.
‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers in Southeast Alaska, 1947."
Note.--Records for December 1928 to July 1930 published in Bulletin 836 were determined from inadequate base data. Those records are not published herein and should not be used.

1/ Formerly published as Davis River at Portland Canal.

2. Winstanley Creek near Ketchikan 1/

Location.--Lat 55°25', long. 130°52', on right bank 0.3 mile downstream from Lower Winstanley Lake, 1.1 miles upstream from mouth, and 31 miles east of Ketchikan.

Drainage area.--13 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 290 ft (by barometer).

Average discharge.--5 years (1936-38, 1947-50), 154 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.11, 1947	b856	c3.56	Aug. 9, 1947	29	1.11
1948	Sept. 3, 1948	b1,040	c3.84	Apr. 10,11, 1948	17	c.93
1949	Sept.22, 1949	b1,430	4.38	Feb. 21-23, 1949	d14	-
1950	Oct. 14, 1949	b904	3.64	Jan.29 to Feb.2,1950	d7	-

a Period August to September.
b From rating curve extended above 420 cfs by logarithmic plotting.
c From recorded range in stage.
d Minimum daily.

1936-38, 1947-50: Maximum discharge, 1,430 cfs Sept. 22, 1949 (gage height, 4.38 ft), from rating curve extended above 420 cfs by logarithmic plotting; minimum daily, 7 cfs Jan. 29 to Feb. 2, 1950.

Maximum stage known, 4.85 ft sometime during period October 1938 to July 1947 (discharge, about 1,800 cfs), from high-water mark in well.

Remarks.--Records for the water years 1947-50 good except those for periods of doubtful or no gage-height record, which are fair. Upper and Lower Winstanley Lakes above gage have areas of 465 and 175 acres, respectively.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	-	-	‡87.3	*207	-
1937	*296	*305	132	26.8	14.0	132	85.4	167	187	149	*178	135	*151
1938	223	97.2	228	173	115	99.7	168	181	223	106	93.4	208	160

* Revised.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	-	-	‡5,370	*12,330	-
1937	*18,170	*18,130	8,120	1,650	780	8,130	5,080	10,280	11,110	9,150	*10,950	8,060	*109,600
1938	13,690	5,790	14,050	10,620	6,370	6,130	9,990	11,140	13,300	6,510	5,740	12,390	115,700

* Revised.
‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	(a)	-	-	-	-	-	-	-
1937	(a)	*1,140	Oct. 7, 1936	9	*151	*109,600	*136	*98,720
1938	-	1,010	Dec. 20, 1937	-	160	115,700	-	-

* Revised.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

Note.--Records for water year 1938 not previously published; computed by usual methods on the basis of gage-height record and discharge measurements.

1/ Published as Winstanley Creek at Behm Canal, 1936-38.

Winstanley Creek near Ketchikan--Continued

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a44	689	9	29	175	17	58	a250	25	41	125
2	a41	530	10	43	170	18	69	a190	26	44	106
3	a38	342	11	52	a650	19	72	a160	27	73	90
4	a36	266	12	54	a750	20	70	a180	28	135	78
5	a34	230	13	54	a550	21	65	a210	29	334	69
6	*33	220	14	52	a450	22	57	a200	30	334	72
7	30	214	15	50	a400	23	50	*170	31	350	-
8	30	191	16	49	a330	24	45	151			
Total										2,466	8,208
Mean										79.5	274
Ac-ft										4,890	16,280

Peak discharge (base, 650 cfs).--Sept. 1 (3 p.m.) 802 cfs; Sept. 12 (time unknown) 856 cfs.

* Discharge measurement made on this day.

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

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	145	188	180	74	24	26	72	256	108	153	197
2	280	130	155	160	63	24	25	74	246	100	144	249
3	377	120	153	130	52	23	23	78	217	120	124	667
4	377	112	120	110	48	45	22	86	202	170	102	850
5	273	105	90	102	45	105	21	100	188	160	86	485
6	202	100	81	97	43	110	20	140	328	135	76	318
7	153	100	76	91	42	100	19	160	555	115	65	342
8	125	120	68	85	43	85	18	155	404	100	58	334
9	106	125	61	82	43	75	18	150	292	90	52	610
10	94	150	56	76	40	*69	17	140	249	82	46	790
11	118	180	54	69	37	63	17	140	233	76	41	445
12	263	180	69	68	34	56	20	145	220	70	41	270
13	368	170	92	114	35	49	22	160	202	65	40	188
14	490	140	90	151	34	44	22	185	186	60	38	142
15	540	125	82	142	32	40	23	210	180	56	35	114
16	404	115	151	120	30	36	30	230	175	52	33	96
17	299	120	153	104	30	34	38	270	172	49	30	88
18	253	110	144	99	29	33	45	310	165	47	28	155
19	259	115	120	106	28	32	50	310	151	45	27	292
20	256	105	124	163	27	31	50	300	144	45	26	460
21	208	96	124	698	27	38	55	320	140	100	24	662
22	180	90	102	718	27	36	70	350	129	160	22	490
23	160	86	88	480	26	32	100	390	118	150	116	299
24	220	100	86	330	27	29	120	400	106	*124	236	208
25	200	180	88	239	29	27	110	*395	97	124	322	355
26	210	230	82	180	28	26	90	372	97	127	246	550
27	290	208	80	148	26	25	80	364	111	120	178	364
28	270	172	95	127	25	24	74	386	122	160	133	239
29	210	256	90	129	25	23	70	368	116	224	111	175
30	180	246	86	146	-	22	70	318	114	200	118	133
31	160	-	120	100	-	25	-	277	-	165	175	-
Total	7,665	4,231	3,168	5,544	1,049	1,385	1,365	7,355	5,915	3,399	2,926	10,567
Mean	247	141	102	179	36.2	44.7	45.5	237	197	110	94.4	352
Ac-ft	15,200	8,390	6,280	11,000	2,080	2,750	2,710	14,590	11,730	6,740	5,800	20,960

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 850 Min 17 Mean 149 Ac-ft 108,230

Peak discharge (base, 650 cfs).--Jan. 21 (8 p.m.) 874 cfs; Sept. 3 (12 p.m.) 1,040 cfs; Sept. 10 (12:30 a.m.) 940 cfs; Sept. 21 (1 p.m.) 689 cfs.

*Discharge measurement made on this day.

Note.--No gage-height record Oct. 22 to Nov. 24, Dec. 26 to Jan. 5, Feb. 19 to Mar. 9, Mar. 18 to May 24; discharge estimated on basis of recorded ranges in stage and records for nearby stations. Doubtful gage-height record July 1-23; discharge estimated on basis of records for nearby stations.

Winstanley Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	178	90	54	36	148	107	197	194	270		64
2	90	142	90	52	33	191	122	165	211	259		88
3	81	146	79	60	31	211	142	144	303	224		112
4	91	194	69	80	29	191	175	124	426	194		109
5	94	188	61	120	27	165	183	133	480	200		96
6	106	170	56	180	26	151	158	217	426	211		85
7	106	144	49	130	24	133	155	236	426	191		76
8	102	146	43	110	23	114	144	263	334	172	250	67
9	194	239	39	90	22	99	135	326	273	158		59
10	310	404	38	80	21	86	153	372	288	155		53
11	299	338	37	72	20	79	155	500	326	158		46
12	359	277	36	64	19	76	146	485	299	160		42
13	*292	217	35	70	18	72	135	368	310	168		46
14	273	168	35	81	17	65	135	303	306	188		94
15	220	144	34	81	17	59	144	263	280	178		131
16	178	133	34	160	16	53	137	224	253	168	230	125
17	239	120	37	162	16	47	188	208	233	183	*202	127
18	220	116	50	133	15	47	230	295	230	180	175	125
19	233	106	70	109	15	47	246	322	227	165	142	125
20	395	94	120	92	15	47	242	303	224	153	120	165
21	288	124	100	78	14	53	236	292	227	155	102	732
22	217	227	90	67	14	57	236	303	220	160	91	1,210
23	359	277	90	63	14	*58	205	295	230	140	81	766
24	436	256	90	59	19	65	172	284	263	130	73	580
25	730	197	80	57	27	72	153	299	239		65	364
26	601	153	95	55	42	73	252	263	205		59	239
27	500	124	85	52	84	73	368	224	205		55	172
28	431	104	78	49	112	69	338	*205	217	170	53	131
29	299	90	70	47	-	69	299	200	205		49	114
30	273	79	64	43	-	70	246	188	217		47	185
31	230	-	58	39	-	76	-	180	-		52	-
Total	8,353	5,295	2,002	2,589	766	2,816	5,737	8,181	8,277	5,510	5,346	6,328
Mean	269	176	64.6	83.5	27.4	90.8	191	264	276	178	172	211
Ac-ft	16,570	10,500	3,970	5,140	1,520	5,590	11,380	16,230	16,420	10,930	10,600	12,550

Calendar year 1948: Max 850 Min 17 Mean 151 Ac-ft 109,400
Water year 1948-49: Max 1,210 Min 14 Mean 168 Ac-ft 121,400

Peak discharge (base, 650 cfs).--Oct. 25 (6 p.m.) 808 cfs; July 31 or Aug. 1 (time unknown) 1,390 cfs; Sept. 22 (2 a.m.) 1,430 cfs. * Discharge measurement made on this day.

Note.--No gage-height record Dec. 10 to Jan. 11, Feb. 1-21, July 23 to Aug. 16; discharge estimated on the basis of recorded ranges in stage, weather records for Ketchikan, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	338	550	197	23	7	42	41	75	180	132	217	254
2	368	480	182	22	7	45	42	92	186	117	359	269
3	299	334	137	21	8	60	42	120	308	101	346	254
4	266	292	112	22	8	87	47	146	400	92	296	226
5	227	288	97	23	8	87	52	158	346	88	324	247
6	178	256	85	22	8	76	60	146	277	105	320	308
7	140	224	73	20	8	65	67	128	269	113	265	285
8	247	188	78	18	9	55	63	124	288	103	204	201
9	418	160	85	16	9	*43	55	213	284	90	158	151
10	330	137	78	15	9.3	42	50	350	258	82	126	115
11	386	114	72	15	9.8	37	50	414	250	75	100	92
12	422	97	63	14	11	34	65	428	265	80	82	73
13	560	94	56	14	14	30	78	329	284	87	67	60
14	850	151	*61	13	20	29	87	258	296	88	58	51
15	628	186	79	12	20	27	92	201	296	83	50	46
16	395	168	79	12	18	28	87	172	308	80	45	40
17	259	292	72	12	19	28	78	153	*312	114	42	37
18	183	359	61	11	24	27	70	132	316	*316	38	*34
19	146	310	55	11	29	28	63	135	300	320	35	36
20	125	233	52	10	30	29	87	161	292	273	33	94
21	230	180	47	10	30	30	98	156	250	213	30	207
22	334	170	44	10	39	31	94	142	204	172	30	265
23	280	205	40	9	46	34	*85	124	169	139	28	296
24	256	194	38	9	51	34	78	120	148	172	28	292
25	*220	172	41	9	58	38	70	180	132	236	34	292
26	197	165	38	8	56	42	65	265	122	296	127	276
27	224	197	32	8	48	42	57	300	117	284	372	233
28	299	220	30	8	45	45	55	265	122	223	414	192
29	436	253	28	7	-	46	58	236	144	183	395	148
30	606	246	26	7	-	44	63	223	146	166	324	117
31	700	-	24	7	-	41	-	204	-	139	250	-
Total	10,547	6,925	2,142	418	649.1	1,326	1,999	6,150	7,269	4,762	5,197	5,171
Mean	340	231	69.1	13.5	23.2	42.8	66.6	198	242	154	168	172
Ac-ft	20,920	13,740	4,250	829	1,290	2,630	3,960	12,200	14,420	9,450	10,310	10,260

Calendar year 1949: Max 1,210 Min 14 Mean 178 Ac-ft 129,300
Water year 1949-50: Max 850 Min 7 Mean 144 Ac-ft 104,300

Peak discharge (base, 650 cfs).--Oct. 14 (9 a.m.) 904 cfs; Oct. 31 (3 a.m.) 790 cfs.
* Discharge measurement made on this day.

Note.--No gage-height record Dec. 19, Dec. 29 to Feb. 9; discharge interpolated, and estimated on the basis of weather records for Ketchikan, and records for nearby stations.

3. Punchbowl Lake Outlet near Ketchikan 1/

Location.--Lat 55°31', long. 130°44' (revised), at outlet of Punchbowl Lake, 0.7 of a mile upstream from mouth, and 37 miles northeast of Ketchikan.

Drainage area.--12 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 580 ft.

Average discharge.--6 years (1923-29), 153 cfs.

Extremes.--1923-30: Maximum daily discharge, 710 cfs Dec. 7, 1925, from rating curve extended above 300 cfs; minimum daily, not determined.

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by U. S. Forest Service and Zellerbach Paper Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	177	314	281	163	174	112	100	206	215	111	54.5	214	176
1925	256	251	201	42.9	*21.0	61.0	121	237	178	179	77.4	60.3	*141
1926	37.7	229	343	351	200	196	158	132	118	64.5	68.3	37.9	161
1927	207	184	209	147	76.1	90.8	116	203	198	158	39.2	116	146
1928	297	113	97.0	204	134	169	134	226	163	107	112	115	156
1929	234	186	174	155	40.4	131	78.4	136	138	118	171	83.1	138
1930	272	383	185	35.0	125	-	-	-	-	-	-	-	-

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	10,900	18,700	17,300	10,000	10,000	6,890	5,950	12,700	12,800	6,820	3,350	12,700	128,000
1925	15,700	14,900	12,400	2,640	*1,200	3,750	7,200	14,600	10,600	11,000	4,760	3,590	*102,000
1926	2,320	13,600	21,100	21,600	11,100	12,100	9,400	8,120	7,030	3,970	4,200	2,260	117,000
1927	12,700	10,900	12,900	9,040	4,230	5,580	6,900	12,500	11,800	9,720	2,410	6,900	106,000
1928	18,300	6,720	5,960	12,500	7,710	10,400	7,970	13,900	9,700	6,580	6,890	6,840	113,000
1929	14,400	11,100	10,700	9,530	2,240	8,060	4,670	8,360	8,210	7,260	10,500	4,940	100,000
1930	16,700	22,800	11,400	2,150	6,940	-	-	-	-	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	836	676	Nov. 5, 1923	16	176	128,000	171	124,000
1925	836	a502	Nov. 30, 1924	*9	*141	*102,000	*133	*96,400
1926	836	a710	Dec. 7, 1925*	-	161	117,000	161	116,000
1927	836	a362	Oct. 27, 1926	-	146	106,000	138	100,000
1928	836	470	Oct. 13, 1927	13	156	113,000	163	119,000
1929	836	369	Oct. 24, 1928	26	138	100,000	158	115,000
1930	836	-	-	-	-	-	-	-

* Revised.
a Maximum daily discharge.

4. Short Creek near Bell Island 2/

Location.--Lat 56°01' (revised), long. 131°32', one-eighth of a mile upstream from East Fork, half a mile upstream from mouth, 1 mile downstream from Lake Reflection, and 6 miles north of Bell Island.

Drainage area.--20 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 25 ft.

Extremes.--1923-25: Maximum discharge, 1,000 cfs (revised) Sept. 5, 1924 (gage height, 3.10 ft), from rating curve extended above 300 cfs by logarithmic plotting; minimum, not determined, occurred during period of no gage-height record.

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by U. S. Forest Service.

1/ Formerly published as Punchbowl Lake Outlet at Rudyerd Bay.

2/ Formerly published as Short Creek at Short Bay.

Short Creek near Bell Island--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	227	99.3	310	-
1923	285	357	129	37.8	93	105	260	365	330	141	200	408	226
1924	215	378	245	161	208	139	164	454	368	241	189	378	261
1925	340	*218	*128	*28	‡15	‡90	‡160	441	322	276	156	155	‡195
1926	169	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published; estimated on the basis of records for Orchard Creek near Bell Island.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	14,000	6,110	18,400	-
1923	17,500	21,200	7,930	2,320	5,160	6,460	15,500	22,400	19,600	8,670	12,300	24,300	163,000
1924	13,200	22,500	15,100	9,900	12,000	8,550	9,760	27,900	21,900	14,800	11,600	22,500	190,000
1925	20,900	*13,000	*7,860	*1,720	‡833	‡5,530	‡9,530	27,100	19,200	17,000	9,590	9,220	‡141,000
1926	10,400	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published; estimated on the basis of records for Orchard Creek near Bell Island.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	836	-	-	-	-	-	-	-
1923	836	-	-	-	226	163,000	231	168,000
1924	836	*1,000	Sept. 5, 1924	53	261	190,000	*249	*181,000
1925	836	-	-	-	‡195	‡141,000	-	-
1926	836	-	-	-	-	-	-	-

* Revised.
‡ Not previously published.

5. Shelokum Lake Outlet near Bell Island 1/

Location.--Lat 55°59', long. 131°39', 250 ft upstream from Shelokum Lake Outlet, three-quarters of a mile upstream from mouth at Bailey Bay, and 4½ miles northwest of Bell Island.

Drainage area.--18 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 340 ft (by barometer). Prior to October 1922, at datum 0.18 ft lower.

Average discharge.--9 years (1915-21, 1922-25), 216 cfs.

Extremes.--1915-25: Maximum discharge, 3,100 cfs Dec. 18, 1919 (gage height, 7.23 ft), from rating curve extended above 2,300 cfs; minimum daily, 9 cfs Feb. 11, 1916, but may have been less during periods of no gage-height record.

Remarks.--No diversion or regulation above gage.

Cooperation.--Records for 1921-25 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	233	61.2	129	101	-
1916	401	146	106	20.8	112	55.6	160	279	424	324	194	232	205
1917	255	122	56.9	*50	*130	*18	*118	*363	*365	310	342	259	*199
1918	384	780	84.9	186	67	42	132	*370	*373	210	309	122	*256
1919	425	231	125	145	45	47.8	258	288	319	274	193	211	214
1920	200	*285	264	125	65	30	94.8	245	416	251	411	187	*215
1921	234	182	85.7	60.5	200	72.3	130	338	374	233	181	319	200
1922	497	225	-	-	-	-	-	-	-	-	-	-	-
1923	264	375	116	34	93	94	294	466	334	130	207	367	231
1924	195	326	190	116	187	125	129	470	331	217	170	340	233
1925	318	231	140	25	13	80	121	382	355	‡301	‡140	‡130	‡187

* Revised.
‡ Not previously published; estimated on the basis of records for Orchard Creek near Bell Island.

1/ Formerly published as Shelockum Lake Outlet at Bailey Bay.

Shelokum Lake Outlet near Bell Island--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	13,900	3,760	7,930	6,010	-
1916	24,700	8,690	6,520	1,280	6,440	3,420	9,520	17,200	25,200	19,900	11,900	13,800	149,000
1917	15,700	7,260	3,500	*3,070	*7,220	*1,110	*7,020	*22,300	*21,700	19,100	21,000	15,400	*144,000
1918	23,600	46,400	5,220	11,400	3,720	2,580	7,860	*22,800	*22,200	12,900	19,000	7,260	*185,000
1919	26,100	13,700	7,690	8,920	2,500	2,940	15,400	17,700	19,000	16,800	11,900	12,600	155,000
1920	12,300	‡17,000	16,200	7,690	3,740	1,840	5,640	15,100	24,800	15,400	25,300	11,000	*156,000
1921	14,400	10,800	5,270	3,720	11,100	4,450	7,740	20,800	22,300	14,300	11,100	19,000	145,000
1922	30,600	13,400	-	-	-	-	-	-	-	-	-	-	-
1923	16,200	22,300	7,130	2,090	5,160	5,780	17,500	28,700	19,900	7,990	12,700	21,800	167,000
1924	12,000	19,400	11,700	7,130	10,800	7,690	7,680	28,900	19,700	13,300	10,500	20,200	169,000
1925	19,600	13,700	8,610	1,500	720	4,900	7,200	23,500	21,100	‡18,500	‡8,610	‡7,740	‡136,000

* Revised.
‡ Not previously published; estimated on the basis of records for Orchard Creek near Bell Island.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	662	-	-	-	-	-	-	-
1916	662	2,440	Oct. 15, 1915	9	205	149,000	186	135,000
1917	692,836	‡1,190	Aug. 16, 1917	-	*199	*144,000	*267	*193,000
1918	712	2,780	Nov. 1, 1917	21	*256	*185,000	*217	*157,000
1919	714	‡1,480	Sept.18, 1919	-	214	155,000	*212	*153,000
1920	722,836	‡3,100	Dec. 18, 1919	-	*215	*156,000	194	141,000
1921	836	‡1,580	Nov. 1, 1920	25	200	145,000	-	-
1922	836	-	-	-	-	-	-	-
1923	836	-	-	-	231	167,000	228	165,000
1924	836	-	-	33	233	169,000	231	168,000
1925	(a)	-	-	-	‡187	‡136,000	-	-

* Revised.
‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

6. Tyee Creek near Wrangell

Location.--Lat 56°12', long. 131°31', 1 mile upstream from mouth, 1 mile downstream from Tyee Lake, and 38 miles southeast of Wrangell.

Drainage area.--14 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 250 ft (from topographic map).

Extremes.--1922-27: Maximum discharge recorded, 1,060 cfs Oct. 5, 1926, corrected, (gage height, 6.33 ft), from rating curve extended above 480 cfs; minimum not determined.

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	‡172	‡158	-	-	-	-	-	371	268	185	278	-
1923	238	‡263	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	410	337	245	-	-
1925	-	-	-	-	-	-	-	288	340	343	205	134	-
1926	128	179	280	240	77	117	146	210	270	256	199	140	188
1927	313	140	112	67.2	30	34.8	49.5	167	380	299	191	226	168

‡ Not previously published; partly estimated on basis of records for nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	‡10,200	‡9,870	-	-	-	-	-	22,100	16,400	11,400	16,500	-
1923	14,600	‡15,700	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	24,400	20,700	15,100	-	-
1925	-	-	-	-	-	-	-	17,700	20,200	21,100	12,600	7,970	-
1926	7,870	10,700	17,200	14,800	4,280	7,190	8,690	12,900	16,100	15,700	12,200	8,330	136,000
1927	19,200	8,330	6,890	4,120	1,670	2,150	2,950	10,300	22,600	18,400	11,700	13,400	122,000

‡ Not previously published; partly estimated on basis of records for nearby streams.

Tyee Creek near Wrangell--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1922	836	-	-	-	-	-	-	-	-	-	-
1923	836	-	-	-	-	-	-	-	-	-	-
1924	836	-	-	-	-	-	-	-	-	-	-
1925	836	-	-	-	-	-	-	-	-	-	-
1926	(a)	-	-	-	188	13.4	182.15	136,000	186	180.42	135,000
1927	(a)	1,060	Oct. 5, 1926†	-	168	12.0	163.14	122,000	-	-	-

† Corrected.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

7. Mill Creek near Wrangell

Location.--Lat 56°28', long. 132°12', a quarter of a mile downstream from Lake Virginia, half a mile upstream from mouth, and 7 miles east of Wrangell.

Drainage area.--37 sq mi (revised), approximately.

Gage.--Water-stage recorder. Altitude of gage is 80 ft (from topographic map). Prior to October 1922, at site a quarter of a mile upstream at different datum.

Extremes.--1915-17, 1922-25, 1927-28: Maximum discharge recorded, 3,310 cfs Oct. 16, 1915 (gage height, 8.0 ft, site and datum then in use), from rating curve extended above 1,100 cfs; minimum recorded, 14 cfs (corrected) Feb. 10, 11, 1916 (gage height, 0.02 ft, site and datum then in use).

Remarks.--No diversion or regulation above station.

Cooperation.--Records subsequent to 1917 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	442	645	639	-
1916	672	207	175	39.0	131	63.5	245	402	806	808	728	649	410
1917	674	248	98.9	89.7	231	51.2	137	524	667	723	788	725	413
1923	618	672	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	1,070	890	750	730	831	-
1925	607	*446	182	57.4	80	140	220	851	797	851	-	-	-
1927	-	-	-	-	-	-	-	-	841	711	568	845	-
1928	-	-	-	-	-	-	-	934	809	821	438	-	-

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	27,200	39,700	38,000	-
1916	41,300	12,300	10,800	2,400	7,540	3,900	14,600	24,700	48,000	49,700	44,800	38,600	299,000
1917	41,400	14,800	6,080	5,520	12,800	3,150	8,150	32,200	39,700	44,500	48,500	43,100	300,000
1923	36,800	40,000	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	25,400	53,000	46,100	44,900	49,400	-
1925	37,300	*26,600	11,200	3,530	4,400	8,600	13,100	52,300	47,400	52,300	-	-	-
1927	-	-	-	-	-	-	-	-	50,000	43,700	34,900	50,300	-
1928	-	-	-	-	-	-	-	16,700	48,100	50,500	1,740	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1915	662	-	-	-	-	-	-	-	-	-	-
1916	662	3,310	Oct. 16, 1915	14	410	11.1	151.27	299,000	408	150.21	297,000
1917	692	-	-	34	413	11.2	152.01	300,000	-	-	-
1923	(a)	-	-	-	-	-	-	-	-	-	-
1924	(a)	-	-	-	-	-	-	-	-	-	-
1925	(a)	‡2,500	July 7, 1925	-	-	-	-	-	-	-	-
1927	(a)	-	-	-	-	-	-	-	-	-	-
1928	(a)	‡3,140	July 21, 1928	-	-	-	-	-	-	-	-

‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

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8. Cascade Creek near Petersburg 1/

Location.--Lat 57°01', long. 132°47', on right bank 0.25 mile upstream from mouth on east shore of south arm of Thomas Bay, 2¾ miles downstream from Swan Lake, and 15 miles northeast of Petersburg.

Drainage area.--23.0 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 120 ft (by barometer). Prior to October 1946, at different datum.

Average discharge.--15 years (1917-28, 1946-50), 251 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947	Sept.11, 1947a	b3,280	c10.0	Feb.12,13,1947	29	1.50
1948	Sept. 9, 1948	1,850	7.75	Mar. 27, 1948	d11	.68
1949	Sept.23, 1949	1,850	7.75	Feb. 8, 1949	e20	-
1950	Sept.22, 1950	1,400	6.93	-	(f)	-

a Probable date.
b From rating curve extended above 1,000 cfs.
c From flood marks.
d Result of low temperature.
e Minimum daily.
f Not determined; occurred during period of no gage-height record.

1917-28, 1946-50: Maximum discharge, 3,280 cfs Sept. 11, 1947 (gage height, 10.0 ft, from floodmark), from rating curve extended above 1,000 cfs; minimum, 11 cfs Mar. 27, 1948 (result of low temperature).

Remarks.--Records for water years 1947-50 good except those for periods of no gage-height record, which are fair. Swan Lake, at elevation about 1,500 ft, has an area of 614 acres and a drainage area of 18.9 sq mi. No diversion or regulation above station.

Cooperation.--Records for 1921-28 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	589	657	73.8	65.9	27.3	20.3	50.5	195	482	532	656	400	314
1919	376	185	90.8	161	27.0	27.4	74.6	155	322	476	571	487	248
1920	334	102	72.5	77.9	60	32.7	34.1	99.4	441	549	676	332	235
1921	158	128	34.8	33.1	41.2	40.3	34.5	200	510	432	370	403	199
1922	566	124	147	50	25	20	65	181	310	473	502	395	240
1923	252	253	64.3	27.7	41.1	†54.8	90.1	248	511	450	507	555	255
1924	385	238	78.0	36.5	25	44.7	65	292	594	529	517	684	291
1925	357	204	85.3	18.6	20	24.9	33.3	334	488	623	451	315	248
1926	210	184	346	405	74.1	139	272	288	410	412	326	231	276
1927	389	162	135	54	20	31.2	32.5	165	551	481	420	530	249
1928	299	84.5	32.4	141	48.7	66.0	71.7	365	571	588	442	424	262
1929	‡271	‡177	-	-	-	-	-	-	-	-	-	-	-

† Corrected.
‡ Not previously published; partly estimated on basis of record for Sawmill Creek near Sitka.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	36,200	39,100	4,540	4,050	1,520	1,250	3,000	12,000	28,700	32,700	40,300	23,800	227,000
1919	23,100	11,000	5,580	9,900	1,500	1,680	4,440	9,530	19,200	29,300	35,100	29,000	179,000
1920	20,500	6,070	4,460	4,790	3,450	2,010	2,030	6,110	26,200	33,800	41,600	19,800	171,000
1921	9,720	7,620	2,140	2,040	2,290	2,480	2,050	12,300	30,300	26,600	22,700	24,000	144,000
1922	34,800	7,380	9,040	3,070	1,390	1,230	3,870	11,100	18,400	29,100	30,900	23,500	174,000
1923	15,500	15,100	3,950	1,700	2,280	3,370	5,360	15,200	30,400	27,700	31,200	33,000	185,000
1924	23,700	14,200	4,800	2,240	1,440	2,750	3,870	18,000	35,300	32,500	31,800	40,700	211,000
1925	22,000	12,100	5,240	1,140	1,110	1,530	1,980	20,500	29,000	38,300	27,700	18,700	179,000
1926	12,900	10,900	21,300	24,900	4,120	8,550	16,200	17,700	24,400	25,300	20,000	13,700	200,000
1927	23,900	9,640	8,300	3,320	1,110	1,920	1,930	10,100	32,800	29,600	25,800	31,500	180,000
1928	18,400	5,030	1,990	8,670	2,800	4,060	4,270	22,400	34,000	36,200	27,200	25,200	190,000
1929	‡16,700	‡10,500	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on basis of record for Sawmill Creek near Sitka.

1/ Published as Cascade Creek at Thomas Bay, near Petersburg, October 1917 to September 1920.

Cascade Creek near Petersburg--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1918	712,836	1,980	Nov. 18, 1917	18	314	13.7	185.33	227,000	†259	152.59	187,000
1919	714	1,570	Sept.21, 1919	-	248	10.8	146.18	179,000	236	139.14	171,000
1920	722	2,540	Aug. 6, 1920	23	235	10.2	139.25	171,000	219	129.79	159,000
1921	836	-	-	23	199	8.65	117.59	144,000	245	144.80	176,000
1922	836	-	-	-	240	10.4	141.68	174,000	217	128.05	157,000
1923	836	‡2,000	Aug. 31, 1923	24	255	11.1	150.66	185,000	267	157.29	193,000
1924	836	2,680	Sept. 4, 1924	-	291	12.7	172.19	211,000	286	169.50	208,000
1925	836	-	-	-	248	10.8	146.27	179,000	256	151.01	185,000
1926	836	‡1,040	Dec. 9, 1925	-	276	12.0	163.05	200,000	272	160.37	197,000
1927	836	‡2,000	Sept. 8, 1927	-	249	10.8	146.77	180,000	226	133.34	164,000
1928	836	‡2,400	July 21, 1928	-	262	11.4	155.05	190,000	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-

† Corrected.
‡ Not previously published.

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	*92	45	32	37	48	73	234	598	660	362	750
2	90	105	42	32	36	45	69	200	*532	441	372	500
3	150	196	41	32	35	*43	65	183	550	348	425	400
4	200	444	40	42	34	41	62	152	587	331	360	320
5	300	417	39	43	33	40	60	140	622	331	297	270
6	350	284	39	44	32	43	59	149	550	380	249	240
7	280	206	38	50	32	44	61	168	484	425	226	220
8	260	245	38	74	31	41	63	203	520	544	226	200
9	350	450	37	51	31	39	60	253	632	568	230	240
10	700	331	36	45	31	38	57	230	598	453	259	1,200
11	600	276	35	44	30	37	58	315	526	428	236	2,000
12	450	810	35	43	30	39	73	282	461	391	222	1,400
13	300	920	34	42	31	186	68	241	461	360	221	750
14	200	484	34	41	46	535	61	208	411	355	255	680
15	140	299	33	40	41	598	60	186	355	336	265	600
16	110	205	32	40	36	615	74	170	343	331	351	400
17	95	153	34	39	33	447	88	150	626	343	556	300
18	100	121	42	38	32	324	117	140	713	391	428	250
19	98	103	44	37	31	293	164	172	556	505	304	600
20	92	90	37	36	36	447	137	245	447	481	230	550
21	86	78	34	*36	45	380	126	236	476	425	194	700
22	80	70	33	76	60	295	137	269	520	380	183	800
23	86	65	35	50	80	226	145	308	439	355	172	600
24	80	62	68	42	75	178	138	388	428	348	159	400
25	76	57	42	40	60	145	364	505	380	322	174	300
26	73	56	38	40	50	132	650	650	343	313	390	220
27	69	54	37	40	52	126	615	800	350	322	674	190
28	66	52	36	41	50	109	511	900	388	315	860	170
29	63	50	35	41	-	95	393	820	562	301	1,000	200
30	101	48	34	40	-	84	297	671	832	290	900	350
31	109	-	33	39	-	77	-	565	-	293	650	-
Total	5,844	6,823	1,180	1,330	1,150	5,790	4,905	10,133	15,290	12,066	11,430	15,800
Mean	189	227	38.1	42.9	41.1	187	164	327	510	389	369	527
Cfsm	8.22	9.87	1.66	1.87	1.79	8.13	7.13	14.2	22.2	16.9	16.0	22.9
In.	9.45	11.03	1.91	2.15	1.86	9.36	7.93	16.38	24.72	19.51	18.48	25.55
Ac-ft	11,590	13,530	2,340	2,640	2,280	11,480	9,730	20,100	30,330	23,930	22,670	31,340

Calendar year 1946: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1946-47: Max 2,000 Min 30 Mean 251 Cfsm 10.9 In. 148.33 Ac-ft 182,000

Peak discharge (base, 1,100 cfs).--Nov. 12 (8:00 p.m.) 1,380 cfs; probably Sept. 11 (time unknown) 3,280 cfs.

* Discharge measurement made on this date.

Note.--No gage-height record, Oct. 1-22, 24, 25, 27, Dec. 12-16, 31, Jan. 1, 13, 14, Jan. 28 to Feb. 5, Feb. 20 to Mar. 2, Aug. 29 to Sept. 30, discharge estimated on basis of recorded range in stages and records for other stations in region.

Cascade Creek near Petersburg--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a400	83	172	a50	a60	26	22	36	636	255	1,260	526
2	a420	78	138	a48	a56	26	22	36	544	243	828	496
3	a500	74	117	a46	a52	25	22	36	461	439	484	444
4	a350	72	105	a45	a49	28	22	46	422	428	338	556
5	a250	68	94	a44	a47	48	22	50	385	368	282	372
6	a200	74	82	a43	a45	38	22	55	797	*365	253	341
7	a160	84	72	a42	a44	32	22	59	880	365	226	871
8	a130	73	68	a41	a42	30	22	56	618	353	206	1,520
9	a120	93	66	a40	a41	28	23	59	496	322	198	1,740
10	a130	140	67	a39	a40	28	23	61	496	290	206	1,100
11	a160	131	67	a38	a50	27	23	65	532	276	206	632
12	a180	131	62	a37	a70	a27	24	76	547	271	224	391
13	a170	111	59	a120	a62	a26	24	136	541	276	226	273
14	a250	90	69	a180	a60	a26	24	178	532	280	226	203
15	a230	77	79	a110	a42	a26	25	205	568	273	230	166
16	a190	77	65	a80	a37	25	27	239	547	278	237	137
17	a180	85	63	a68	a34	25	24	259	580	284	255	212
18	a170	89	60	a80	a32	25	23	276	590	299	247	338
19	a150	73	64	91	b30	25	22	301	550	317	212	598
20	123	74	63	199	b29	25	23	604	502	443	185	668
21	107	154	64	253	b28	25	24	1,010	430	702	166	508
22	98	222	60	178	b27	25	37	944	348	505	186	333
23	108	301	56	146	27	25	36	732	295	414	1,010	232
24	127	336	54	120	27	25	29	598	271	370	868	185
25	152	301	52	98	28	24	27	643	261	388	499	514
26	153	234	49	85	27	24	26	604	378	331	313	409
27	163	432	46	74	26	21	27	615	528	355	217	276
28	141	490	46	70	26	24	27	702	490	804	164	196
29	120	326	69	69	26	23	30	720	368	788	154	154
30	106	226	59	a66	-	23	35	736	297	832	392	127
31	93	-	54	a63	-	23	-	671	-	594	580	-
Total	5,831	4,799	2,241	2,663	1,164	828	759	10,808	14,888	12,508	11,078	14,518
Mean	188	160	72.3	85.9	40.1	26.7	25.3	349	496	403	357	484
Cfsm	8.17	6.96	3.14	3.73	1.74	1.16	1.10	15.2	21.6	17.5	15.5	21.0
In.	9.43	7.76	3.62	4.31	1.88	1.34	1.23	17.48	24.07	20.22	17.91	23.47
Ac-ft	11,570	9,520	4,440	5,280	2,310	1,640	1,510	21,440	29,530	24,810	21,970	28,800

Calendar year 1947: Max 2,000 Min 30 Mean 249 Cfsm 10.8 In. 146.75 Ac-ft 180,000
Water year 1947-48: Max 1,740 Min 21 Mean 224 Cfsm 9.74 In. 132.72 Ac-ft 162,800

Peak discharge (base 1,100 cfs).--May 21 (4 a.m.) 1,100 cfs; Aug. 1 (8 a.m.) 1,500 cfs; Aug. 23 (1 p.m.) 1,160 cfs; Sept. 9 (11 a.m.) 1,850 cfs.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for other stations in the region. b Stage-discharge relation affected by ice.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	134	61		26	48	39	101	406	390	860	577
2	102	113	59		26	44	38	95	401	375	916	650
3	220	106	57		24	39	42	89	535	350	820	571
4	257	102	54		23	46	42	81	481	358	710	436
5	196	99	52		22	50	34	81	453	398	601	362
6	159	94	50		21	47	33	91	457	409	544	336
7	129	98	b42		21	45	38	86	414	385	514	320
8	121	118	45	60	20	41	34	95	345	396	532	290
9	188	297	43		22	38	34	198	353	436	740	*245
10	188	304	41		23	36	44	280	390	529	740	203
11	196	411	40		23	34	50	499	388	577	535	175
12	271	370	39		23	34	44	484	383	612	436	166
13	213	269	38		23	33	42	414	467	702	*490	249
14	188	196	37		22	32	48	358	433	682	568	383
15	153	157	36		23	31	52	315	362	565	499	393
16	195	129		45	26	30	46	273	345	514	385	308
17	208	110		40	25	29	82	310	360	496	324	313
18	200	97		36	25	*28	66	470	383	447	284	259
19	217	86		b34	23	26	68	406	436	436	259	224
20	205	80		b34	22	29	64	396	508	562	249	213
21	180	148		32	21	30	69	411	553	668	255	518
22	271	156		b31	21	33	70	439	529	511	261	1,450
23	331	128	50	b30	21	32	63	447	748	433	271	1,680
24	368	113		b29	23	35	61	401	688	428	269	1,100
25	331	97		b29	25	32	59	*383	529	473	263	654
26	226	88		b28	30	30	87	324	455	478	265	425
27	417	79		28	46	30	109	297	398	436	276	324
28	280	71		28	44	28	121	288	375	505	273	251
29	243	67		28	-	28	126	290	353	601	276	239
30	201	64		27	-	28	116	288	422	505	317	350
31	162	-		27	-	31	-	308	-	696	538	-
Total	6,726	4,381	1,494	1,406	694	1,079	1,819	8,998	13,360	15,353	14,270	13,664
Mean	217	146	48.2	45.4	24.8	34.8	60.6	290	445	495	460	455
Cfsm	9.43	6.35	2.10	1.97	1.08	1.51	2.63	12.6	19.3	21.5	20.0	19.8
In.	10.88	7.08	2.42	2.27	1.12	1.74	2.94	14.55	21.60	24.83	23.07	22.09
Ac-ft	13,340	8,690	2,960	2,790	1,380	2,140	3,610	17,850	26,500	30,450	28,300	27,100

Calendar year 1948: Max 1,740 Min 21 Mean 224 Cfsm 9.74 In. 132.29 Ac-ft 162,300
Water year 1948-49: Max 1,680 Min 20 Mean 228 Cfsm 9.91 In. 134.59 Ac-ft 165,100

Peak discharge (base 1,100 cfs).--Sept. 23 (3 p.m.) 1,850 cfs.

* Discharge measurement made on this day. b Stage-discharge relation affected by ice.

Note.--No gage-height records Dec. 8 to Jan. 17, Feb. 3-25, Mar. 5-17; discharge estimated on basis of records for nearby streams and rainfall records.

Cascade Creek near Petersburg--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	467	587	107			28	20	48	205	428	490	453
2	390	1,040	99			29	20	58	291	372	450	511
3	368	888	91			30	22	66	428	320	383	601
4	295	812	85			28	24	69	414	293	428	696
5	228	808	83			26	22	59	388	368	425	828
6	164	936	78			25	20	58	414	559	355	622
7	140	713	74			24	19	63	490	490	297	414
8	208	481	90			24	18	95	559	375	255	288
9	219	338	75			23	18	156	*580	313	239	203
10	178	239	*70			22	18	137	541	288	236	169
11	166	177	68			22	22	328	529	290	239	156
12	159	146	65			21	35	338	568	322	245	149
13	530	142	63			21	31	313	626	345	247	145
14	968	175	60			21	29	265	626	*329	255	142
15	553	141	58			20	31	221	622	304	243	142
16	360	153	55	25	20	20	25	183	650	322	196	138
17	253	439	53			20	23	172	720	646	172	132
18	198	414	52			20	23	156	800	1,010	164	131
19	194	326	50			21	28	150	828	868	172	216
20	359	245	50			21	41	146	864	594	206	505
21	920	253	48			20	29	136	688	453	245	796
22	612	295	48			20	26	125	514	420	255	1,240
23	481	290	47			21	26	118	411	576	269	1,080
24	368	241	46			21	27	125	393	896	355	1,020
25	313	200	45			21	27	180	380	880	490	706
26	331	157	44			24	26	232	345	912	996	464
27	326	153	44			24	27	257	341	640	880	336
28	304	133	42			24	33	217	372	441	756	237
29	336	131	40		-	22	50	186	478	453	864	178
30	601	119	38		-	21	44	221	490	598	736	149
31	674	-	37		-	20	-	208	-	508	484	-
Total	11,663	11,172	1,905	775	560	704	804	5,086	15,555	15,613	12,027	12,847
Mean	376	372	61.5	25	20	22.7	26.8	164	518	504	388	428
Cfsm	16.3	16.2	2.67	1.09	0.870	0.987	1.17	7.13	22.5	21.9	16.9	18.6
In.	18.86	18.06	3.08	1.25	0.91	1.14	1.30	8.22	25.15	25.25	19.45	20.77
Ac-ft	23,150	22,160	3,780	1,540	1,110	1,400	1,590	10,090	30,850	30,970	23,860	25,480

Calendar year 1949: Max 1,680 Min 20 Mean 261 Cfsm 11.3 In. 154.21 Ac-ft 189,200
Water year 1949-50: Max 1,240 Min - Mean 243 Cfsm 10.6 In. 143.44 Ac-ft 176,000

Peak discharge (base, 1,100 cfs).--Oct. 13 (11 p.m.) 1,230 cfs; Oct. 21 (9:30 a.m.) 1,130 cfs; Nov. 2 (2 a.m.) 1,200 cfs; Aug. 28 (10:30 a.m.) 1,160 cfs; Sept. 22 (5 a.m.) 1,400 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 24 to Mar. 6, discharge estimated on the basis of records for Medvetcha River near Sitka and weather records at Petersburg.

9. Scenery Creek near Petersburg

Location.--Lat 57°05', long 132°47', on right bank, at east end of Scenery Cove on Thomas Bay, a quarter of a mile upstream from mouth, and about 20 miles northeast of Petersburg.

Drainage area.--30.0 sq mi.

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

Extremes.--1949: Maximum discharge during September, 4,300 cfs Sept. 23 (gage height, 5.28 ft), from rating curve extended above 1,500 cfs; minimum daily, 232 cfs Sept. 12.
1949-50: Maximum discharge during water year, 2,420 cfs Nov. 1 (gage height, 4.10 ft); minimum not determined, occurred during period of no gage-height record.

Remarks.--Records good except those for periods of doubtful or no gage heights, which are fair. Scenery Lake, about 3 miles above station, has an area of 544 acres.

Discharge, in cubic feet per second, September 1949

Day	Discharge	Day	Discharge	Day	Discharge
Sept. 10	*269	Sept. 17	325	Sept. 24	1,550
11	240	18	288	25	760
12	232	19	269	26	506
13	317	20	280	27	386
14	424	21	1,030	28	314
15	398	22	2,670	29	299
16	328	23	3,250	30	364

Peak discharge (base, 1,600 cfs).--Sept. 23 (2:30 a.m.) 4,300 cfs.
* Discharge measurement made on this day.
Note.--Discharge measurement made at this site Mar. 18, 1949, 51.2 cfs.

Scenery Creek near Petersburg--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	424	941					31	90	269	453	579	552
2	370	*1,560					30	110	361	401	521	664
3	414	1,190					31	155	434	355	453	740
4	320	940					33	163	411	331	488	843
5	269	964					33	153	405	395	440	1,020
6	223	1,090					31	159	450	540	389	770
7	193	781				(*)	29	172	517	488	340	532
8	305	552					26	271	*579	401	308	401
9	297	408					26	488	600	358	294	325
10	238	314	(*)				26	398	571	343	288	277
11	214	253					31	612	571	340	291	242
12	218	200					40	484	608	355	297	223
13	1,170	207					50	424	655	*358	299	207
14	1,060	255					48	367	646	349	305	*189
15	583	195	80	35	25	30	56	314	651	334	285	187
16	401	225					52	277	701	373	258	180
17	299	571					41	255	781	866	242	174
18	245	421					*36	232	849	1,090	238	176
19	230	340					35	240	876	893	255	340
20	529	285					80	232	893	669	285	765
21	994	322					60	209	735	540	299	1,040
22	559	355					48	193	563	488	317	1,860
23	540	334					48	187	470	669	330	1,460
24	417	291					50	238	450	976	408	1,430
25	417	264					50	317	421	990	771	812
26	417	216					45	322	386	1,060	1,340	514
27	395	214					48	325	383	765	1,050	380
28	370	182					60	288	414	559	983	305
29	459	174			-		95	269	506	625	1,030	250
30	1,090	160			-		70	294	502	687	812	209
31	871	-			-		-	272	-	587	547	-
Total	14,531	14,204	2,480	1,085	700	930	1,339	8,510	16,658	17,638	14,742	17,067
Mean	469	473	80	35	25	30	44.6	275	555	569	476	569
Cfsm	15.6	15.8	2.67	1.17	0.833	1.00	1.49	9.17	18.5	19.0	15.9	19.0
In.	18.01	17.61	3.07	1.35	0.87	1.15	1.66	10.55	20.65	21.87	18.28	21.16
Ac-ft	28,820	28,170	4,920	2,150	1,390	1,840	2,660	16,880	33,040	34,980	29,240	33,850

Calendar year 1949: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1949-50: Max 1,860 Min - Mean 301 Cfsm 10.0 In. 136.23 Ac-ft 217,900

Peak discharge (base, 1,600 cfs).--Oct. 13 (10:30 p.m.) 2,220 cfs; Oct. 21 (2 a.m.) 1,640 cfs; Nov. 1 (12 p.m.) 2,420 cfs; Aug. 21 (9 a.m.) 1,650 cfs; Sept. 22 (4 a.m.) 2,410 cfs.

* Discharge measurement made on this day.

Note.--Doubtful or no gage-height record Nov. 30 to Mar. 31, Apr. 7-12, and Apr. 20 to May 2, discharge estimated on basis of weather records for Petersburg and records for Cascade Creek near Petersburg and Medvetcha River near Sitka.

10. Sweetheart Falls Creek near Juneau 1/

Location.--Lat 57°57', long. 133°41', 300 ft upstream from mouth, 2 miles downstream from Sweetheart Lake, and 37 miles southeast of Juneau.

Drainage area.--27 sq mi (approximately).

Gage.--Water-stage recorder. Altitude of gage is 50 ft (from topographic map).

Average discharge.--10 years (1915-16, 1918-27), 335 cfs.

Extremes.--1915-17, 1918-27: Maximum discharge, 2,880 cfs Sept. 26, 1918 (gage height, 7.15 ft), from rating curve extended above 1,300 cfs by logarithmic plotting; minimum daily, 18 cfs several days in February 1916 and January 1917.

Remarks.--No diversion or regulation above station.

Cooperation.--Records subsequent to 1920 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	501	524	-
1916	412	168	101	38.3	38.1	43.0	156	368	787	501	582	636	319
1917	621	194	87.7	56.5	127	49.5	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	753	623	666	619	-
1919	376	393	193	256	53.9	42.2	147	342	535	613	577	604	346
1920	489	154	136	227	93.4	39.3	50.9	237	622	568	640	418	308
1921	349	275	53.0	63.0	95.0	64.0	115	395	630	479	428	425	282
1922	598	163	292	91.0	30.0	25.0	115	419	677	574	551	525	341
1923	346	403	116	57.9	93.6	133	230	475	626	483	362	710	336
1924	495	488	203	67.3	40.0	74.4	115	586	829	774	585	821	424
1925	458	287	163	38.5	30.0	44.8	84.1	477	692	637	372	423	311
1926	304	353	491	574	144	263	422	363	451	344	301	238	356
1927	489	313	223	108	37.3	77.3	97.3	396	767	481	342	592	328

1/ Formerly published as Sweetheart Falls Creek at Port Snettisham.

Sweetheart Falls Creek near Juneau--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	30,800	31,200	-
1916	25,300	10,000	6,210	2,360	2,190	2,640	9,280	22,600	46,800	30,800	35,800	37,800	232,000
1917	38,200	11,500	5,390	3,480	7,010	3,010	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	44,800	38,300	41,000	36,800	-
1919	23,100	23,400	11,900	15,700	2,990	2,590	8,750	21,000	31,800	37,700	35,500	35,900	250,000
1920	30,100	9,160	8,360	14,000	5,370	2,420	3,030	14,600	37,000	34,900	39,400	24,900	223,000
1921	21,500	16,400	3,260	3,870	5,280	3,940	6,840	24,300	37,500	29,500	26,300	25,300	204,000
1922	36,800	9,700	18,000	5,600	1,670	1,540	6,840	25,800	40,300	35,300	33,900	31,200	247,000
1923	21,300	24,000	7,130	3,560	5,200	8,180	13,700	29,200	37,200	29,700	22,300	42,200	244,000
1924	30,400	29,000	12,500	4,140	2,300	4,570	6,840	36,000	49,300	47,600	36,000	48,900	308,000
1925	28,200	17,100	10,000	2,370	1,670	2,750	5,000	29,300	41,200	39,200	22,900	25,200	225,000
1926	18,700	21,000	30,200	35,300	8,000	16,200	25,100	22,300	26,800	21,200	18,500	14,200	258,000
1927	30,100	18,600	13,700	6,640	2,070	4,750	5,790	24,300	45,600	29,600	21,000	35,200	237,000

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	662	-	-	-	-	-	-	-
1916	662	-	-	18	319	232,000	338	245,000
1917	692	-	-	18	-	-	-	-
1918	712	2,880	Sept.26, 1918	-	-	-	-	-
1919	714	-	-	29	346	250,000	331	240,000
1920	722	2,260	Oct. 6, 1919	28	308	223,000	298	217,000
1921	836	-	-	-	282	204,000	314	227,000
1922	836	-	-	-	341	247,000	324	235,000
1923	836	1,530	Sept. 7, 1923	46	336	244,000	364	263,000
1924	836	2,270	(a)	-	424	308,000	401	291,000
1925	836	-	-	-	311	225,000	331	239,000
1926	836	-	-	90	356	258,000	345	250,000
1927	836	2,270	Sept.10, 1927	-	328	237,000	-	-

a Occurred sometime in October 1923.

11. Long Lake Outlet near Juneau 1/

Location.--Lat 58°10'00", long. 133°43'30", 30 ft upstream from outlet of Long Lake, 5 miles upstream from mouth, and 26 miles southeast of Juneau.

Drainage area.--30.2 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).

Extremes.--1913-15: Maximum daily discharge, 4,250 cfs Oct. 20, 1913; minimum daily, 32 cfs several days in January and February 1914.

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	120	143	131	449	1,120	1,900	1,760	1,270	-
1914	1,150	375	163	50.0	67.8	83.3	111	338	724	1,210	1,060	629	501
1915	554	273	121	96	46	125	202	529	841	1,100	1,260	1,000	515
1916	507	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	6,660	8,790	7,800	27,600	66,600	117,000	108,000	75,600	-
1914	70,700	22,300	10,000	3,070	3,770	5,120	6,600	20,800	43,100	74,400	65,200	37,400	362,000
1915	34,100	16,200	7,440	5,900	2,650	7,690	12,000	32,500	50,000	67,600	77,500	59,500	373,000
1916	31,200	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1913	662	-	-	-	-	-	-	-	-	-	-
1914	662	a4,250	Oct. 20, 1913	32	501	16.6	225.20	362,000	438	196.88	317,000
1915	662,836	-	-	-	515	17.1	231.27	373,000	-	-	-
1916	662	-	-	-	-	-	-	-	-	-	-

a Maximum daily.

1/ Formerly published as Long Lake Outlet at Port Snettisham.

12. Long River near Juneau 1/

Location.--Lat 58°10'00", long. 133°41'50", three-eighths of a mile upstream from Indian Lake, 1 mile downstream from Long Lake, and 27 miles southeast of Juneau.

Drainage area.--32.5 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 183 ft (from topographic map). Prior to Oct. 1, 1929, at site 600 ft upstream at different datum.

Average discharge.--14 years (1915-24, 1927-32), 457 cfs.

Extremes.--1915-24, 1927-33: Maximum discharge, 6,000 cfs Sept. 10, 1927 (gage height, 10.2 ft, site and datum then in use), from rating curve extended above 1,700 cfs by logarithmic plotting; minimum recorded, 22 cfs Mar. 22, 1933.

Remarks.--No diversion or regulation above station.

Cooperation.--Records January 1921 to September 1924 and June 1927 to May 1933 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	527	136	98.2	49.9	49.4	50	129	253	864	855	1,070	1,040	428
1917	605	145	86.4	87.6	130	51.9	66.5	335	695	995	1,290	923	454
1918	652	660	94.6	97.5	41	26	71.1	300	744	1,070	1,220	1,060	505
1919	504	342	181	209	55	50	125	309	545	864	1,050	1,000	437
1920	526	192	128	180	94.7	45.6	52	235	580	918	1,200	641	401
1921	381	262	60	68	95	69	*110	388	715	851	857	709	*382
1922	688	208	278	91	30	25	116	405	705	912	1,050	829	448
1923	476	523	104	62	85	117	179	436	724	930	973	1,140	480
1924	563	521	221	78.0	50.0	90.0	135	575	910	1,170	1,050	1,080	538
1927	‡495	‡335	‡280	-	-	-	-	-	893	960	966	960	-
1928	347	126	50	186	137	121	219	554	815	1,080	887	831	447
1929	525	364	315	197	42.8	105	83.1	348	826	885	836	754	443
1930	1,080	486	144	20	45	60	136	317	712	900	1,080	820	486
1931	548	560	329	152	265	51.6	124	489	961	955	1,090	821	530
1932	689	181	84.4	55	55	60	108	357	756	821	877	974	419
1933	699	122	*73.6	*45	*40	*41.2	301	539	-	-	-	-	-

* Revised.
‡ Not previously published; estimated on basis of partial gage-height record, and records for Crater Creek near Juneau.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	32,400	8,090	6,040	3,070	2,840	3,070	7,680	15,600	51,400	52,600	65,800	61,900	310,000
1917	37,200	8,630	5,310	5,390	7,220	3,190	3,960	20,600	41,400	61,200	79,300	54,900	328,000
1918	40,100	39,300	5,820	6,000	2,280	1,600	4,230	18,400	44,300	65,800	75,000	63,100	366,000
1919	31,000	20,400	11,100	12,900	3,050	3,070	7,440	19,000	32,400	53,100	64,600	59,500	318,000
1920	32,300	11,400	7,870	11,100	5,450	2,800	3,090	14,400	34,500	56,400	73,800	38,100	291,000
1921	23,400	15,600	3,690	4,180	5,280	4,240	*6,550	23,900	42,500	52,300	52,700	42,100	*276,000
1922	42,300	12,400	17,100	5,600	1,670	1,540	6,900	24,900	42,000	56,100	64,600	49,300	324,000
1923	29,300	31,100	6,400	3,810	4,720	7,190	11,000	26,800	43,100	57,200	59,800	67,800	348,000
1924	34,600	31,000	13,600	4,800	2,880	5,530	8,030	35,400	54,100	71,900	64,600	64,300	391,000
1927	‡30,400	‡19,900	‡17,200	-	-	-	-	-	53,100	59,000	59,400	57,100	-
1928	21,300	7,500	3,070	11,400	7,880	7,440	13,000	34,100	48,500	66,400	54,500	49,400	324,000
1929	32,300	21,700	19,400	12,100	2,380	6,460	4,940	21,400	49,200	54,400	51,400	44,900	321,000
1930	66,400	28,900	8,860	1,230	2,500	3,690	8,090	19,500	42,400	55,300	66,400	48,800	352,000
1931	33,700	33,300	20,200	9,350	14,700	3,180	7,380	30,100	57,200	58,700	67,000	48,900	384,000
1932	42,400	10,800	5,190	3,380	3,160	3,690	6,430	22,000	45,000	50,500	53,900	58,000	304,000
1933	41,100	7,260	*4,530	*2,770	*2,220	*2,540	17,900	33,100	-	-	-	-	-

* Revised.
‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1916	662	2,340	Sept.19, 1916	-	428	13.2	179.13	310,000	434	181.77	315,000
1917	692	2,900	Aug. 20, 1917	37	454	14.0	189.48	328,000	501	209.14	362,000
1918	712	5,300	Sept.27, 1918	-	505	15.5	210.90	366,000	474	197.81	343,000
1919	714	-	-	-	437	13.4	183.15	318,000	424	176.92	307,000
1920	722	4,300	Aug. 6, 1920	-	401	12.3	168.06	291,000	389	162.88	282,000
1921	836	-	-	-	*382	*11.8	*159.54	*276,000	*422	*176.30	*306,000
1922	836	2,170	Oct. 7, 1921	-	448	13.8	186.95	324,000	441	184.08	319,000
1923	836	-	-	-	480	14.8	200.67	348,000	498	207.83	361,000
1924	836	-	-	-	538	16.6	225.50	391,000	-	-	-

* Revised.

1/ Formerly published as Long River below Second Lake, at Port Snettisham.

Long River near Juneau--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1927	836	6,000	Sept.10, 1927	-	-	-	-	-	-	-	-
1928	836	4,180	July 21, 1928	-	447	13.8	187.16	324,000	504	211.09	366,000
1929	836	2,230	Sept.13, 1929	27	443	13.6	184.89	321,000	485	202.65	351,000
1930	836	2,880	Aug. 12, 1930	-	486	15.0	203.08	352,000	463	193.32	335,000
1931	(a)	2,500	Aug. 29, 1931	37	530	16.3	221.45	384,000	490	204.79	355,000
1932	(a)	2,260	Oct. 11, 1931	-	419	12.9	175.60	304,000	412	172.46	299,000
1933	(a)	-	-	-	-	-	-	-	-	-	-

a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

13. Speel River near Juneau 1/

Location.--Lat 58°12'10", long. 133°36'55", half a mile downstream from Long River, 8 miles upstream from mouth, and 30 miles southeast of Juneau.

Drainage area.--226 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map).

Extremes.--1916-18: Maximum discharge, about 35,600 cfs (estimated) Sept. 27, 1918; minimum daily, 127 cfs Mar. 28-31, 1918.

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	5,420	7,050	6,220	-
1917	2,890	760	420	356	500	170	329	1,700	3,570	5,670	8,500	5,120	2,500
1918	4,230	3,550	500	378	181	141	357	1,570	3,960	6,300	7,400	7,150	2,980

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	333,000	433,000	370,000	-
1917	178,000	45,200	25,800	21,900	27,800	10,500	19,600	105,000	212,000	349,000	523,000	305,000	1,820,000
1918	260,000	211,000	30,700	23,200	10,100	8,670	21,200	96,500	236,000	387,000	455,000	425,000	2,160,000

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	662	-	-	-	-	-	-	-
1917	692	18,000	Sept.19, 1917	-	2,500	1,820,000	2,860	2,080,000
1918	712	a35,600	Sept.27, 1918	127	2,980	2,160,000	-	-

a Estimated.

14. Crater Creek near Juneau 2/

Location.--Lat 58°08'15", long. 133°46'15", 100 ft upstream from outlet of Crater Lake, 1 mile upstream from mouth, and 26 miles southeast of Juneau.

Drainage area.--11.4 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 1,010 ft (from topographic map). Winter records obtained from staff gages 1 mile downstream at different datums.

Average discharge.--12 years (1913-20, 1927-32), 193 cfs.

Extremes.--1913-20, 1927-32: Maximum discharge, 3,100 cfs Sept. 9, 1927 (gage height, 8.25 ft), from rating curve extended above 1,200 cfs by logarithmic plotting; minimum, not determined.

Remarks.--No diversion or regulation above station.

Cooperation.--Records for 1913-15 furnished by Speel River Project and records for 1921-33 furnished by U. S. Forest Service and George T. Cameron.

1/ Formerly published as Speel River at Port Snettisham.
2/ Formerly published as Crater Lake Outlet at Port Snettisham.

Crater Creek near Juneau--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	47.0	48.3	57.3	203	531	830	858	491	-
1914	260	108	38.2	20.9	45	36.7	52.8	144	272	517	409	266	182
1915	313	104	23.9	36.1	17.2	44.6	74	235	414	497	469	389	219
1916	185	44.9	33	18	18	19	44	90	370	370	464	470	†178
1917	270	51.2	32.7	34.9	44.5	22.5	23.8	142	305	441	539	361	†190
1918	251	250	35	33.2	16.8	12.7	20.7	129	347	482	591	411	219
1919	202	133	65.4	68.4	14.6	12	47	118	217	417	511	420	187
1920	209	67	45	100	35	16	20	53.4	177	406	532	262	161
1921	140	91.8	24.7	-	-	-	-	-	305	399	360	-	-
1923	202	158	40.7	-	-	-	-	-	297	452	483	502	-
1924	-	-	-	-	-	-	-	-	400	584	566	581	-
1927	-	-	-	-	-	-	-	-	350	377	357	352	-
1928	135	48	25	88.7	30.7	40.3	42.3	193	381	528	377	343	187
1929	194	113	81.9	76.0	19.1	49.4	29.3	91.9	382	419	404	347	185
1930	463	222	60.2	4.9	9.0	14.7	34.4	104	308	420	484	359	208
1931	225	256	146	68.2	102	22.3	45.3	211	402	417	474	361	228
1932	334	72.7	27.6	20.0	20.0	15.0	32.9	105	284	362	366	429	173
1933	316	42.2	26.5	-	-	-	-	-	-	-	-	-	-

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	2,610	2,970	3,410	12,500	31,600	51,000	52,800	29,200	-
1914	16,000	6,430	2,350	1,290	2,500	2,260	3,140	8,850	16,200	31,800	25,100	15,800	132,000
1915	19,200	6,190	1,470	2,220	955	2,740	4,400	14,400	24,600	30,600	28,800	23,100	159,000
1916	11,400	2,670	2,030	1,110	1,040	1,170	2,620	5,530	22,000	22,800	28,500	28,000	†129,000
1917	16,600	3,050	2,010	2,150	2,470	1,380	1,420	8,730	18,100	27,100	33,100	21,500	138,000
1918	15,400	14,900	2,150	2,040	933	781	1,230	7,930	20,600	29,600	36,300	24,500	156,000
1919	12,400	7,910	4,020	4,210	811	738	2,800	7,260	12,900	25,600	31,400	25,000	135,000
1920	12,900	3,990	2,770	6,150	2,010	984	1,190	3,280	10,500	25,000	32,700	15,600	117,000
1921	8,610	5,460	1,520	-	-	-	-	-	18,100	24,500	22,100	-	-
1923	12,400	9,400	2,500	-	-	-	-	-	17,700	27,800	29,700	29,900	-
1924	-	-	-	-	-	-	-	-	23,800	35,900	34,800	34,600	-
1927	-	-	-	-	-	-	-	-	20,800	23,200	22,000	20,900	-
1928	8,300	2,860	1,540	5,450	1,770	2,460	2,520	11,900	22,700	32,500	23,200	20,400	136,000
1929	11,900	6,720	5,040	4,670	1,060	3,030	1,740	5,650	22,700	25,800	24,800	20,600	134,000
1930	28,500	13,200	3,700	301	500	904	2,050	6,400	18,300	25,800	29,800	21,400	151,000
1931	13,800	15,200	8,980	4,190	5,660	1,370	2,700	13,000	23,900	25,600	29,100	21,500	165,000
1932	20,500	4,330	1,700	1,230	1,150	922	1,960	6,460	16,900	22,300	22,500	25,500	126,000
1933	19,400	2,510	1,630	-	-	-	-	-	-	-	-	-	-

† Corrected.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1913	662	-	-	-	-	-	-	-
1914	662	-	-	6	182	132,000	185	134,000
1915	662	1,680	Aug. 13, 1915	10	219	159,000	204	148,000
1916	662	-	-	5	†178	†129,000	185	134,000
1917	692	1,270	Aug. 19, 1917	12	†190	138,000	207	148,000
1918	712	2,300	Sept.26, 1918	10	219	156,000	206	148,000
1919	714	-	-	5	187	135,000	180	130,000
1920	722	2,100	Aug. 6, 1920	-	161	117,000	156	113,000
1921	a,836	-	-	-	-	-	-	-
1923	a,836	-	-	-	-	-	-	-
1924	(a)	-	-	-	-	-	-	-
1927	836	3,100	Sept. 9, 1927	-	-	-	-	-
1928	836	2,890	July 27, 1928	8	187	136,000	202	147,000
1929	836	1,380	Sept.13, 1929	12	185	134,000	215	155,000
1930	836	1,920	Aug. 12, 1930	-	208	151,000	198	143,000
1931	(a)	-	-	-	228	165,000	212	154,000
1932	(a)	1,780	Oct. 11, 1931	-	173	126,000	169	122,000
1933	(a)	-	-	-	-	-	-	-

† Corrected.

a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

15. Dorothy Creek near Juneau 1/

Location.--Lat 58°13'40", long. 134°02'25", on left bank 0.7 mile downstream from Lake Bart, 0.8 mile upstream from mouth, 3 miles downstream from Lake Dorothy, and 14 miles southeast of Juneau.

Drainage area.--15.2 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map). Prior to Sept. 14, 1937, at site 100 ft upstream from mouth at different datum.

Average discharge.--19 years (1929-41, 1942-43, 1944-50), 149 cfs.

Extremes.--Maximum and minimum discharges for water years 1946-50, are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1946	Oct. 13, 1945	a1,100	4.87	Jan. 21 to Feb. 12, 1946	b14	-
1947	Sept.22, 1947c	a1,600	d5.6	Mar.10-13,1947	14	-
1948	Sept. 9, 1948	a1,680	5.72	Apr.24-28,1948	11	1.40
1949	Sept.24, 1949	792	4.40	-	(e)	-
1950	Nov. 3, 1949	a1,780	5.85	-	(e)	-

a From rating curve extended above 560 cfs.
b Minimum daily.
c Probable date.
d From floodmark.
e Not determined; occurred during period of no gage-height record.

1929-41, 1942-50: Maximum discharge, 1,780 cfs Nov. 3, 1949 (gage height, 5.85 ft), from rating curve extended above 560 cfs; minimum recorded, 6 cfs (revised) Mar. 23, 25, 28, 1933.

Remarks.--Records for water years 1946-50 good except those for periods of no gage-height record which are fair. Dorothy Lake (area, 952 acres) lies at an altitude of 2,423 ft, less than 4 miles from the mouth of Dorothy Creek; Lieuy Lake (area, 80 acres) lies at an altitude of 1,711 ft; and Bart Lake (area, 250 acres) lies at an altitude of 986 ft.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	342	152	64.4	10.6	13.2	20.8	48.1	75.2	197	330	373	283	160
1931	195	194	100	47.0	70.9	22.3	34.0	117	329	311	361	300	174
1932	209	64.1	17.0	18.4	13.9	13.4	26.8	70.6	250	290	281	274	128
1933	214	42.6	22.6	19.4	15.6	10.5	21.8	86.7	150	251	269	184	108
1934	169	158	32.0	10	12	15	20	60	250	277	406	250	139
1935	215	82.5	53.9	17.1	10	18.0	19.1	54.4	164	396	304	202	129
1936	202	57.7	82.5	18.0	13	19.0	35.7	109	317	299	272	357	149
1937	455	284	113	25.0	15.0	22.7	26.1	66.4	298	250	300	340	184
1938	384	85.9	48.9	42.6	37.6	68.1	21.2	125	205	279	245	391	161
1939	232	74.7	55.0	32.1	23.8	17.3	23.4	72.7	225	342	436	258	150
1940	258	140	74.8	26.7	33.2	16.5	37.3	115	216	320	403	316	163
1941	223	69.9	31.7	17.3	23.3	*23	53.5	94.9	251	323	217	148	*124
1942	203	-	-	-	-	-	-	-	-	-	-	‡287	-
1943	*252	*53.4	*31.2	*37.3	*20	*40	*62.3	*95.1	*226	*383	*338	*383	*161
1944	*394	*158	*110	-	-	-	-	-	*336	*296	*290	*213	-
1945	*320	*140	*84.2	*20.2	*14.3	*24.8	*27.1	*117	*243	*330	*262	*310	*159

* Revised.
‡ Not previously published; partly estimated on basis of weather records.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	21,000	9,040	3,960	652	733	1,280	2,860	4,620	11,700	20,300	22,900	16,800	116,000
1931	12,000	11,500	6,150	2,890	3,940	1,370	2,020	7,190	19,600	19,100	22,200	17,900	126,000
1932	12,900	3,810	1,050	1,130	800	824	1,590	4,340	14,900	17,800	17,300	16,300	92,700
1933	13,200	2,530	1,390	1,190	866	646	1,300	5,330	8,930	15,400	16,500	10,900	78,200
1934	10,400	9,400	1,970	615	722	922	1,190	3,690	14,900	17,000	25,000	14,900	101,000
1935	13,200	4,890	3,310	1,050	555	1,110	1,140	3,340	9,760	24,300	18,800	12,100	93,600
1936	12,400	3,430	5,070	1,110	748	1,170	2,120	6,700	18,900	18,400	16,700	21,200	108,000
1937	28,000	16,900	6,950	1,540	833	1,400	1,550	4,080	17,700	15,400	18,400	20,200	133,000
1938	23,600	5,110	3,010	2,620	2,090	4,190	1,260	7,690	12,200	17,200	15,100	23,300	117,300
1939	14,280	4,440	3,380	1,970	1,320	1,060	1,410	4,470	13,380	21,050	26,780	15,340	108,900
1940	15,860	8,360	4,600	1,640	1,900	1,020	2,220	7,090	12,860	19,670	24,790	18,770	118,800
1941	13,730	4,160	1,950	1,060	1,290	*1,410	3,180	5,840	14,960	19,860	13,320	8,810	*89,570
1942	12,480	-	-	-	-	-	-	-	-	-	-	‡17,100	-
1943	*15,510	*3,180	*1,920	*2,290	*1,110	*2,460	*3,710	*5,850	*13,460	*23,550	*20,810	*22,820	*116,700
1944	*24,210	*9,380	*6,750	-	-	-	-	-	*19,990	*18,200	*17,860	*12,660	-
1945	*19,680	*8,300	*5,170	*1,240	*793	*1,530	*1,610	*7,180	*14,480	*20,290	*16,130	*18,430	*114,800

* Revised.
‡ Not previously published; partly estimated on basis of weather records.

1/ Formerly published as Dorothy Creek at Taku Inlet.

Dorothy Creek near Juneau--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	836	847	Aug. 14, 1930	-	160	116,000	154	111,000
1931	(a)	770	Aug. 30, 1931	-	174	126,000	157	114,000
1932	(a)	605	June 13, 1932	10	128	92,700	127	92,100
1933	(a)	553	Oct. 5, 1932	6	108	78,200	115	82,800
1934	(a)	785	Aug. 22, 1934	-	139	101,000	138	100,000
1935	(a)	949	July 13, 1935	-	129	93,600	128	93,000
1936	(a)	808	Sept.26, 1936	-	149	108,000	191	139,000
1937	(a)	b966	Sept.14, 1937	-	184	133,000	156	113,000
1938	(a)	1,590	Oct. 23, 1937	-	161	117,300	149	108,000
1939	(a)	1,550	Aug. 4, 1939	14	150	108,900	160	115,600
1940	(a)	884	Aug. 6, 1940	14	163	118,800	151	109,800
1941	(a)	670	July 15, 1941	15	*124	*89,570	-	-
1942	(a)	-	-	-	-	-	-	-
1943	(a)	*1,170	Sept.25, 1943	-	*161	*116,700	*188	*136,400
1944	(a)	*1,520	Oct. 8, 1943	*14	-	-	-	-
1945	(a)	*676	Sept.12, 1945	*12	*159	*114,800	*152	*110,100

* Revised.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Maximum daily.

Discharge, in cubic feet per second, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	354	106	23	17	14	17	18	25	280	260	351	193
2	512	100	23	18	14	17	18	27	300	300	323	184
3	567	98	23	18	14	18	18	30	330	350	303	178
4	576	92	22	17	14	18	17	33	380	340	296	169
5	539	85	22	17	14	18	17	37	360	300	300	160
6	468	80	21	17	14	17	17	43	320	270	293	155
7	414	74	21	17	14	17	17	52	290	260	286	146
8	464	68	20	16	14	17	17	62	280	250	289	141
9	459	63	20	16	14	17	17	72	290	250	289	136
10	426	57	20	15	14	17	17	84	330	250	289	133
11	372	50	20	15	14	16	17	92	320	250	293	130
12	417	45	21	15	14	16	17	100	290	240	296	133
13	972	41	21	15	15	16	17	100	270	240	300	141
14	1,010	38	21	15	15	16	18	110	250	240	313	149
15	772	35	21	16	15	16	18	110	250	230	327	155
16	576	32	20	16	15	16	19	120	240	230	313	155
17	434	29	20	16	15	17	19	120	240	230	300	152
18	351	27	19	15	15	17	19	130	230	230	296	209
19	303	26	19	15	15	17	19	140	230	220	285	434
20	267	25	19	15	15	17	20	150	240	220	280	503
21	238	25	18	14	15	17	20	160	260	230	407	414
22	225	25	18	14	16	17	20	170	290	230	669	340
23	241	24	18	14	16	17	21	180	320	240	718	372
24	228	24	18	14	16	18	21	200	330	250	553	406
25	216	24	17	14	16	18	21	220	300	270	414	361
26	196	24	17	14	16	18	21	260	270	300	330	313
27	178	24	17	14	17	18	21	280	250	290	283	273
28	160	24	17	14	17	18	22	300	240	289	248	244
29	144	24	17	14	-	18	23	310	230	289	228	228
30	133	24	17	14	-	18	23	310	240	327	212	212
31	120	-	17	14	-	18	-	300	-	361	203	-
Total	12,332	1,413	607	475	417	532	569	4,327	8,450	8,236	10,285	6,919
Mean	398	47.1	19.6	15.3	14.9	17.2	19.0	140	282	266	332	231
Cfsm	26.2	3.10	1.29	1.01	0.980	1.13	1.25	9.21	18.6	17.5	21.8	15.2
In.	30.17	3.46	1.49	1.16	1.02	1.30	1.39	10.59	20.67	20.15	25.16	16.93
Ac-ft	24,460	2,800	1,200	942	827	1,060	1,130	8,580	16,760	16,340	20,400	13,720

Calendar year 1945: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1945-46: Max 1,010 Min 14 Mean 149 Cfsm 9.80 In. 133.49 Ac-ft 108,200

Peak discharge (base, 400 cfs).---Oct. 3 (1 a.m.) 586 cfs; Oct. 13 (9 p.m.) 1,100 cfs; Aug. 23 (1 a.m.) 778 cfs; Sept. 20 (2:30 a.m.) 530 cfs.
Note.--No gage-height record Nov. 11-19, Nov. 25 to Jan. 2, Jan. 8 to Mar. 11, and Apr. 12 to July 27; discharge estimated on basis of weather records.

Dorothy Creek near Juneau--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	64	44	20	b22	16	74	81	347	264	254	a460
2	184	60	40	20	b22	16	68	80	337	260	273	a430
3	184	63	37	21	b22	15	63	76	320	248	296	a380
4	181	126	34	23	b21	15	56	73	310	235	303	a320
5	187	123	33	22	b21	15	50	71	303	222	286	a270
6	206	133	32	23	21	15	45	71	293	219	264	a220
7	209	136	30	23	20	15	42	71	280	228	251	a200
8	*212	136	30	24	20	15	40	74	270	248	238	a170
9	206	155	28	24	19	15	37	80	276	267	232	a190
10	244	157	27	24	19	14	35	80	286	270	238	a260
11	434	172	26	24	18	14	33	92	293	276	235	a460
12	472	219	25	24	18	14	33	90	296	289	228	a570
13	394	244	24	23	18	27	34	90	300	300	225	a490
14	320	241	24	23	18	70	32	88	300	293	222	a390
15	270	225	23	23	17	100	30	86	280	280	219	a360
16	*238	206	23	23	17	138	*30	85	264	270	222	a320
17	209	187	22	23	17	166	32	83	257	264	232	a270
18	190	169	22	22	17	178	37	81	264	260	235	a250
19	172	152	22	22	16	190	39	81	270	267	228	a260
20	157	136	22	22	16	193	34	83	276	273	216	a320
21	146	123	22	22	16	184	34	83	280	289	203	a530
22	133	110	22	23	16	175	40	104	280	306	193	a830
23	123	100	22	*23	17	163	38	104	273	306	184	a1,180
24	116	90	22	24	17	152	40	118	267	300	175	a760
25	106	81	22	24	17	138	58	133	254	283	172	a460
26	98	73	22	24	16	126	58	155	238	270	187	a290
27	88	65	21	b24	16	116	70	184	*228	260	193	a220
28	83	58	21	b23	*16	106	78	228	222	251	206	a200
29	76	53	21	b23	-	96	81	276	235	244	300	a190
30	74	47	21	b23	-	86	81	320	254	244	a390	a260
31	70	-	21	b23	-	81	-	344	-	248	a430	-
Total	5,982	3,904	805	709	510	2,664	1,422	3,665	8,353	8,234	7,530	11,510
Mean	193	130	26.0	22.9	18.2	85.9	47.4	118	278	266	243	384
Cfsm	12.7	8.55	1.71	1.51	1.20	5.65	3.12	7.76	18.3	17.5	16.0	25.3
In.	14.64	9.55	1.97	1.73	1.25	6.52	3.48	8.97	20.44	20.15	18.42	28.16
Ac-ft	11,870	7,740	1,600	1,410	1,010	5,280	2,820	7,270	16,570	16,330	14,940	22,830

Calendar year 1946: Max 718 Min 14 Mean 139 Cfsm 9.14 In. 124.53 Ac-ft 101,000
Water year 1946-47: Max 1,180 Min 14 Mean 151 Cfsm 9.93 In. 135.28 Ac-ft 109,700

Peak discharge (base, 400 cfs).--Oct. 12 (2 a.m.) 494 cfs; Sept. 1 (time and discharge unknown); Sept. 12 (time and discharge unknown); Sept. 22 (time unknown) 1,600 cfs.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Cascade Creek near Petersburg and Medvetcha River near Sitka and weather records at Juneau.

b Stage-discharge relation affected by ice; discharge estimated on same basis as for periods of no gage-height record.

Dorothy Creek near Juneau--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a390	a100	136	33	30	a15	16	14	365	254	a500	203
2	a400	a85	130	32	28	a15	16	14	361	244	a530	219
3	a460	a74	123	31	27	a15	16	13	330	241	a430	241
4	a430	a68	118	30	25	*17	16	14	296	248	a360	260
5	a320	a63	108	30	24	18	15	15	276	251	a320	264
6	a250	a71	102	30	23	18	15	18	273	257	a290	257
7	a170	a88	94	30	23	18	15	18	313	260	a270	276
8	a140	a130	86	29	22	18	14	19	361	267	a240	473
9	a120	a160	80	28	22	18	14	20	354	270	a220	1,450
10	a130	a170	73	28	21	18	14	24	344	267	a200	1,160
11	a170	a160	67	27	20	17	14	28	334	264	a220	718
12	a230	a150	63	27	19	17	13	32	323	257	a240	521
13	a260	a110	57	40	18	17	13	44	313	248	a250	398
14	a250	a80	54	40	18	17	13	60	303	241	a250	334
15	a290	a57	50	40	17	16	13	68	296	238	a250	289
16	a260	a45	47	40	a17	16	12	76	303	238	a240	254
17	a220	a39	44	41	a17	16	12	*85	317	235	a250	244
18	a190	*41	43	47	a16	15	12	90	337	235	a290	257
19	a160	40	41	43	a16	15	12	108	358	244	a270	317
20	a160	37	40	44	a16	15	12	141	390	273	a250	434
21	a140	36	38	52	a16	15	12	187	406	317	241	472
22	a120	45	38	47	a16	15	12	222	383	344	228	406
23	a100	71	38	46	a16	15	12	251	344	361	244	340
24	a110	83	37	43	a16	15	11	270	310	365	267	*293
25	a140	94	37	40	a15	15	11	289	283	a360	267	289
26	a170	100	36	38	a15	15	11	303	264	a340	254	289
27	a190	102	35	37	a15	15	11	317	264	a310	228	270
28	a190	123	34	35	a15	15	11	330	270	a320	209	248
29	a160	133	33	34	a15	16	13	347	273	a460	190	222
30	a140	136	33	33	-	16	13	361	264	a570	178	203
31	a120	-	33	32	-	16	-	365	-	a640	184	-
Total	6,580	2,691	1,948	1,127	558	499	394	4,143	9,608	9,419	8,460	11,601
Mean	212	89.7	62.8	36.4	19.2	16.1	13.1	134	320	304	273	387
Cfsm	13.9	5.90	4.13	2.39	1.26	1.06	0.862	8.82	21.1	20.0	18.0	25.5
In.	16.10	6.58	4.77	2.76	1.37	1.22	0.96	10.14	23.51	23.05	20.70	28.38
Ac-ft	13,050	5,340	3,860	2,240	1,110	990	781	8,220	19,060	18,680	16,780	23,010

Calendar year 1947: Max 1,180 Min 14 Mean 153 Cfsm 10.1 In. 136.57 Ac-ft 110,700
Water year 1947-48: Max 1,450 Min 11 Mean 156 Cfsm 10.3 In. 139.54 Ac-ft 113,100

Peak discharge (base, 400 cfs).--Oct 3 (time and discharge unknown); June 21 (7 a.m.) 410 cfs; Aug. 1 (time unknown) 707 cfs; Sept. 9 (3 p.m.) 1,680 cfs; Sept. 21 (6 a.m.) 495 cfs.

a No gage-height record; discharge estimated on basis of recorded ranges in stage and records for other stations in region.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	113	57			19	17	40	160	233	394	187
2	184	106	53			20	17	38	162	227	424	207
3	184	102	48			20	18	37	172	215	459	239
4	190	98				23	19	36	177	209	432	267
5	184	90				24	19	36	184	207	398	271
6	175	85				23	20	37	193	207	394	267
7	166	94				23	21	36	195	207	382	258
8	155	113				22	22	36	190	*207	390	248
9	163	130				21	22	47	182	207	441	233
10	169	157				21	23	71	182	209	487	215
11	166	187				21	25	98	180	221	424	198
12	166	196				20	27	109	180	236	362	184
13	160	200				20	26	119	184	288	331	180
14	155	190				19	*26	125	190	342	331	180
15	146	178			15	19	28	130	187	358	323	184
16	149	169		31		18	28	130	182	342	305	187
17	146	157	35			18	30	138	180	323	284	195
18	144	146				17	32	143	180	312	274	193
19	163	133				17	33	148	187	294	264	187
20	172	123				16	34	150	195	284	248	182
21	175	123				16	35	162	215	298	233	190
22	178	116				16	36	172	236	302	221	224
23	175	108				16	36	182	267	291	215	467
24	169	102				16	36	182	288	277	209	764
25	160	96				16	34	180	288	274	201	611
26	155	88				16	35	174	277	274	193	477
27	155	81				15	40	172	261	271	190	398
28	144	74			18	15	42	170	248	284	184	339
29	138	68			-	15	43	164	233	320	180	298
30	130	64			-	16	42	160	239	335	177	274
31	120	-			-	16	-	160	-	358	180	-
Total	5,026	3,687	1,138	961	423	574	866	3,582	6,194	8,412	9,530	8,304
Mean	162	123	36.7	31	15.1	18.5	28.9	116	206	271	307	277
Cfsm	10.7	8.09	2.41	2.04	0.993	1.22	1.90	7.63	13.6	17.8	20.2	18.2
In.	12.30	9.02	2.78	2.35	1.03	1.40	2.12	8.76	15.15	20.58	23.32	20.32
Ac-ft	9,970	7,310	2,260	1,910	839	1,140	1,720	7,100	12,290	16,680	18,900	16,470

Calendar year 1948: Max 1,450 Min 11 Mean 152 Cfsm 10.0 In. 136.19 Ac-ft 110,400
Water year 1948-49: Max 764 Min - Mean 133 Cfsm 8.75 In. 119.13 Ac-ft 96,590

Peak discharge (base, 400 cfs).--Aug. 10 (5 a.m.) 501 cfs; Sept. 24 (7 a.m.) 792 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 4 to Feb. 27; discharge estimated on basis of records for nearby streams and weather records.

Dorothy Creek near Juneau--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	274	477	85	17			14	19	85	264	335	366
2	264	1,180	79	16	(*)		13	21	92	258	316	424
3	248	1,690	74	16			13	22	100	245	284	419
4	233	1,300	68	16			12	27	108	233	258	394
5	215	892	63	15			12	26	113	227	242	411
6	193	730	57	15			12	27	*123	224	224	378
7	177	575	53	15			12	30	138	224	209	312
8	167	432	49	14			12	36	150	221	198	264
9	157	335	45	14			12	56	164	209	190	233
10	148	274	42	14			11	62	172	204	182	209
11	138	230	39	14			11	88	180	198	177	193
12	128	201	36	13			*11	92	184	195	172	182
13	134	180	34	13			12	96	190	193	172	172
14	*134	167	32	13			12	100	195	195	174	164
15	132	152	30	13	10	11	12	98	201	195	174	155
16	130	140	29	13			12	96	215	193	174	150
17	125	145	28	12			12	96	236	221	172	145
18	121	145	26	12			13	95	274	288	167	138
19	117	138	25	12			13	95	320	366	164	140
20	134	132	24	12			16	95	370	370	162	174
21	148	128	23	12			15	92	382	350	160	218
22	143	128	23	12			15	88	350	323	162	436
23	143	125	22	11			15	85	308	316	164	654
24	140	123	21	11			15	84	284	403	172	692
25	140	117	20	11			15	90	271	450	190	565
26	145	111	20	11			16	90	264	*468	312	428
27	150	106	19	11			16	90	255	450	468	331
28	150	100	18	11			16	90	251	390	525	271
29	157	95	18	10	-		19	88	251	342	*545	233
30	236	90	17	10	-		18	88	258	342	506	209
31	403	-	17	10	-	15	-	85	-	350	415	-
Total	5,324	10,638	1,136	399	280	345	407	2,247	6,484	8,907	7,765	9,060
Mean	172	355	36.6	12.9	10	11.1	13.6	72.5	216	287	250	302
Cfsm	11.3	23.4	2.41	0.849	0.658	0.730	0.895	4.77	14.2	18.9	16.4	19.9
In.	13.03	26.03	2.78	0.98	0.69	0.84	1.00	5.50	15.86	21.79	19.00	22.17
Ac-ft	10,560	21,100	2,250	791	555	684	807	4,460	12,860	17,670	15,400	17,970

Calendar year 1949: Max 1,690 Min - Mean 153 Cfsm 10.1 In. 136.87 Ac-ft 111,000
Water year 1949-50: Max 1,690 Min - Mean 145 Cfsm 9.54 In. 129.67 Ac-ft 105,100

Peak discharge (base, 400 cfs).--Nov. 3 (11 a.m.) 1,780 cfs; July 26 (3 p.m.) 482 cfs; Aug. 29 (6 a.m.) 555 cfs; Sept. 2 (5 p.m.) 432 cfs; Sept. 24 (5 a.m.) 720 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 16 to Mar. 30; discharge estimated on basis of records for nearby stations and weather records.

16. Carlson Creek at Sunny Cove, near Juneau 1/

Location.--Lat 58°19', long. 134°11', 2 miles upstream from mouth and 8 miles east of Juneau.

Drainage area.--22.3 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 250 ft (from topographic map). Prior to June 18, 1916, staff gage at same site and datum.

Extremes.--1914, 1915-20: Maximum discharge, 6,200 cfs Sept. 26, 1918 (gage height, 8.10 ft), from rating extended above 2,000 cfs by logarithmic plotting; minimum discharge observed, 10.3 cfs Mar. 27, 1918 (discharge measurement).

Remarks.--No diversion or regulation above station.

Cooperation.--Prior to June 18, 1916, records furnished by Alaska Gastineau Mining Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	22	30	31	101	420	425	575	534	483	-
1916	428	106	*70	-	-	-	-	-	-	‡522	533	640	-
1917	455	122	58.2	50	80	40	60	374	704	848	838	601	355
1918	487	486	64	66.6	18	11	45.2	282	779	762	739	634	366
1919	360	270	125	137	28	20	96.5	327	581	688	620	617	324
1920	412	130	106	110	42	18	25	240	724	687	733	414	305
1921	265	161	33	-	-	-	-	-	-	-	-	-	-

* Revised.

‡ Not previously published; records partly furnished by Alaska Gastineau Mining Company.

1/ Formerly published as Carlson Creek at Sunny Cove, Taku Inlet.

Carlson Creek at Sunny Cove, near Juneau--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	1,350	1,670	1,910	6,010	25,800	25,300	35,400	32,800	28,700	-
1916	26,300	6,310	*4,300	-	-	-	-	-	-	‡32,100	32,800	38,100	-
1917	28,000	7,260	3,600	3,070	4,440	2,460	3,570	23,000	41,900	52,100	51,500	35,800	257,000
1918	29,900	28,900	3,940	4,100	1,000	676	2,690	17,300	46,400	46,900	45,400	37,700	265,000
1919	22,100	16,100	7,690	8,420	1,560	1,230	5,740	20,100	34,600	42,300	38,100	36,700	235,000
1920	25,300	7,740	6,520	6,760	2,420	1,110	1,490	14,800	43,100	42,200	45,100	24,600	221,000
1921	16,300	9,580	2,030	-	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published; records partly furnished by Alaska Gastineau Mining Company.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	(a)	-	-	-	-	-	-	-
1916	a,662	*3,680	Sept.18, 1916	-	-	-	-	-
1917	692	*4,300	Aug. 19, 1917	-	355	257,000	388	281,000
1918	712	6,200	Sept.26, 1918	-	366	265,000	341	248,000
1919	714	4,440	Sept.13, 1919	-	324	235,000	314	228,000
1920	722	4,950	Aug. 5, 1920	-	305	221,000	289	209,000
1921	722	-	-	-	-	-	-	-

* Revised.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

17. Grindstone Creek near Juneau 1/

Location.--Lat 58°13', long. 134°11', 200 ft upstream from mouth and 11 miles southeast of Juneau.

Drainage area.--3.6 sq mi (approximately).

Gage.--Water-stage recorder. Altitude of gage is 50 ft (from topographic map).

Extremes.--1916-20: Maximum discharge, 700 cfs Sept. 26, 1918 (gage height, 6.00 ft), from rating curve extended above 120 cfs by logarithmic plotting; minimum, 2.6 cfs Apr. 5-7, 1918.

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	‡38.4	‡78.7	-	-	‡66.7	-
1917	79.5	29.3	15.5	9.50	14.7	7.03	15.2	49.0	81.9	86.9	90.7	43.0	43.8
1918	64.7	82.3	16.0	12.2	6.24	3.05	7.19	38.5	64.9	36.6	68.8	68.1	39.1
1919	55.0	39.0	24.8	19.3	7.00	3.82	19.3	31.8	54.6	69.9	48.8	68.0	36.9
1920	61.9	22.3	14.7	16.6	12.1	6.12	11.5	34.8	81.7	51.4	53.0	31.4	33.2
1921	26.7	26.1	7.74	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	‡2,360	‡4,680	-	-	‡3,970	-
1917	4,890	1,740	953	584	816	432	904	3,010	4,870	5,340	5,580	2,560	31,700
1918	3,980	4,900	984	750	347	188	428	2,370	3,860	2,250	4,230	4,050	28,300
1919	3,380	2,320	1,530	1,190	389	235	1,150	1,960	3,250	4,300	3,000	4,050	26,800
1920	3,810	1,330	904	1,020	696	376	684	2,140	4,860	3,160	3,260	1,870	24,100
1921	1,640	1,550	476	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	662	-	-	-	-	-	-	-
1917	692	600	Aug. 19, 1917	5.0	43.8	31,700	46.9	34,000
1918	712	700	Sept.26, 1918	2.6	39.1	28,300	35.4	25,700
1919	714	-	-	3.0	36.9	26,800	35.3	25,600
1920	722	*413	Oct. 3, 1919	3.5	33.2	24,100	29.9	21,700
1921	836	-	-	-	-	-	-	-

* Revised.

1/ Formerly published as Grindstone Creek at Taku Inlet.

18. Sheep Creek near Juneau 1/

Location.--Lat 58°16'30", long. 134°18'50", on right bank 0.3 mile upstream from diversion dam of Alaska-Juneau Gold Mining Company's Sheep Creek powerplant, 1 mile northeast of Thane, 1¼ miles upstream from mouth, and 4 miles southeast of Juneau.

Drainage area.--4.30 sq mi (revised).

Gage.--Water-stage recorder and wooden control. Datum of gage is 643.5 ft above mean sea level (levels by Conservation Division, U. S. Geological Survey). Prior to August 1916, staff gage at same site and datum.

Average discharge.--10 years (1911-13, 1916-20, 1946-50), 49.7 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947	Sept.21, 1947	a690	3.20	Feb. 19-21, 1947	b2.7	-
1948	Sept. 8, 1948	a840	3.60	Apr. 3-22, 1948	0	-
1949	Nov. 11, 1948	a588	2.91	-	(c)	-
1950	Nov. 2, 1949	a478	2.56	Feb.10 to Apr.19,1950	0	-

a From rating curve extended above 170 cfs.
b Minimum daily.
c Not determined; occurred during period of no gage-height record.

1911-13, 1916-20, 1946-50: Maximum discharge, 840 cfs Sept. 8, 1948 (gage height, 3.60 ft), from rating curve extended above 170 cfs; no flow at times at gage site but probably some flow at all times at diversion dam 0.3 mile downstream (records for period 1916-20 based on measurements at diversion dam).

Remarks.--Records for water years 1947-50 good except those for periods of no gage-height record or shifting control, which are fair. No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	9.76	8.64	6.83	5.04	43.9	92.4	92.7	74.8	40.3	-
1912	61.8	20.2	34.2	9.60	20.0	11.9	20.1	93.2	72.3	48.0	46.7	48.3	40.6
1913	43.9	20.4	29.3	11.9	18.2	15.5	32.4	65.8	68.0	84.6	65.9	60.5	43.2
1914	53.0	15.0	31.4	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	77.5	94.5	-
1917	83.9	32.3	14.8	5.68	19.6	9.21	9.18	60.0	90.3	99.4	96.5	84.3	50.6
1918	89.7	107	18.3	10.3	6.92	4.26	5.91	63.6	103	69.3	86.4	76.4	53.6
1919	65.2	62.9	37.7	29.6	7.87	4.92	25.3	61.4	86.8	96.3	76.3	91.8	54.0
1920	86.8	28.2	17.5	33.5	15.5	9.81	7.70	47.6	116	85.5	84.0	55.6	49.2
1921	52.2	44.7	11.4	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	600	480	420	300	2,700	5,500	5,700	4,600	2,400	-
1912	3,800	1,200	2,100	590	1,150	732	1,200	5,730	4,300	2,950	2,870	2,870	29,500
1913	2,700	1,210	1,800	732	1,010	953	1,930	4,050	4,050	5,200	4,050	3,600	31,300
1914	3,260	893	1,930	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	4,770	5,620	-
1917	5,160	1,920	910	349	1,090	566	546	3,690	5,370	6,110	5,930	5,020	36,700
1918	5,520	6,370	1,130	633	384	262	352	3,910	6,130	4,260	5,310	4,550	38,800
1919	4,010	3,740	2,320	1,820	437	303	1,510	3,780	5,160	5,920	4,690	5,460	39,100
1920	5,340	1,680	1,080	2,060	892	603	458	2,930	6,900	5,260	5,160	3,310	35,700
1921	3,210	2,660	701	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Wster yesr ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	(a)	-	-	-	-	-	41.2	29,800
1912	(a)	-	-	-	40.6	29,500	38.7	28,100
1913	(a)	-	-	-	43.2	31,300	42.9	31,700
1914	(a)	-	-	-	-	-	-	-
1916	662	-	-	-	-	-	-	-
1917	692	-	-	1.0	50.6	36,700	57.6	41,700
1918	712	820	Sept.26, 1918	-	53.6	38,800	49.3	35,900
1919	714	437	Sept.21, 1919	4.0	54.0	39,100	51.3	37,200
1920	722	490	Oct. 6, 1919	5.6	49.2	35,700	47.1	34,100
1921	836	-	-	-	-	-	-	-

a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeaat Alaska, 1947."

1/ Formerly published as Sheep Creek near Thane.

Sheep Creek near Juneau--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	35	14	5.8	5.2	6	*19	77	118	93	55	145
2	45	38	14	5.5	4.6	7	18	63	103	74	48	122
3	70	53	13	5.5	4.6	7	16	55	98	68	48	105
4	80	158	13	6.1	4.4	6	15	50	103	68	38	93
5	100	93	12	8.2	4.1	6	14	48	91	68	34	*77
6	120	79	12	9	3.9	8	13	51	79	77	35	61
7	90	68	11	9.6	3.8	9	13	57	79	77	37	53
8	80	168	11	10	3.6	8	13	66	98	118	30	51
9	80	200	10	11	3.5	7	13	88	105	*93	37	72
10	220	95	10	12	3.4	6	13	70	103	77	*35	286
11	200	292	9	12	*3.3	6	14	93	103	72	27	160
12	150	325	8.5	11	3.2	8	15	81	95	70	24	112
13	108	132	8	11	3.1	30	18	72	93	68	32	103
14	*77	60	7.5	11	3	120	19	63	91	59	40	158
15	59	50	7	9.5	3	150	19	57	72	55	29	108
16	51	50	6.6	8.5	2.9	100	19	53	68	57	40	81
17	46	45	6.4	8	2.8	60	24	51	93	59	38	66
18	53	40	6.4	7	2.8	45	34	50	79	63	29	61
19	44	36	6.1	6	2.7	65	37	59	72	68	24	220
20	*37	32	6.1	5.5	2.7	55	30	61	77	59	21	93
21	37	27	6.4	6	2.7	75	30	53	93	61	20	278
22	34	24	6.4	7	3	70	42	108	72	51	19	380
23	32	22	6.4	9	4	60	*40	132	74	46	18	216
24	37	20	6.7	8.5	3.5	*55	60	132	77	40	20	132
25	34	19	6.7	*7.6	*3.3	53	177	142	83	38	34	98
26	29	18	7	7.6	3.2	50	115	*162	83	37	140	75
27	*27	18	7	6.6	3.5	44	122	170	77	37	140	60
28	26	17	6.7	7	5	30	125	168	74	37	129	64
29	26	16	6.4	7	-	35	103	150	105	37	176	266
30	53	15	6.4	6.2	-	30	88	132	93	51	118	266
31	48	-	6.1	5.6	-	23	-	122	-	68	215	-
Total	2,138	2,245	283.8	250.3	99.0	1,234	1,278	2,736	2,611	1,946	1,730	4,062
Mean	69.0	74.8	8.51	8.07	3.54	39.8	42.6	88.3	87.0	62.8	55.8	135
Cfsm	16.0	17.4	1.98	1.88	0.823	9.26	9.91	20.5	20.2	14.6	13.0	31.4
In.	18.49	19.42	2.28	2.16	0.86	10.67	11.05	23.66	22.58	16.83	14.96	35.13
Ac-ft	4,240	4,450	523	496	196	2,450	2,530	5,430	5,180	3,860	3,430	8,060

Calendar year 1946: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1946-47: Max 380 Min 2.7 Mean 56.4 Cfsm 13.1 In. 178.09 Ac-ft 40,840

Peak discharge (base, 460 cfs).--Nov. 9 (2 a.m.) 511 cfs; Nov. 11 (11:30 p.m.) 557 cfs; Sept. 21 (4:30 p.m.) 690 cfs; Sept. 29 (11:30 p.m.) 481 cfs. *Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-11, Nov. 14-19, Dec. 9-16, Jan. 15-24, Jan. 27 to Mar 23, Mar. 28-31; discharge estimated on basis of recorded range in stage, weather records at Juneau, and records for nearby stations. Shifting-control method used Apr. 24 to Sept. 21.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	38	62	9.0	13	4.3	0.2	1.7	108	47	183	48
2	158	35	52	8.5	11	4.1	.1	2.4	100	56	115	44
3	150	34	46	8.2	*10	3.9	0	3.0	85	128	80	47
4	102	35	42	7.9	10	3.9	0	3.7	75	75	64	44
5	80	30	40	7.6	10	*3.9	0	4.5	68	75	54	40
6	66	45	40	7.3	10	3.9	0	5.5	160	70	47	88
7	56	100	34	7.0	11	3.9	0	9.0	115	66	41	158
8	47	160	31	7.0	12	3.7	0	18	85	58	38	565
9	42	165	29	6.7	11	3.7	0	28	90	48	41	430
10	50	110	25	6.1	11	3.7	0	34	105	46	46	158
11	75	80	25	5.5	10	3.5	0	40	95	42	50	108
12	80	70	29	5.3	10	3.4	0	50	82	44	62	75
13	75	60	27	24	10	3.2	0	80	82	42	52	60
14	112	*48	24	14	9.6	2.9	0	92	82	41	48	48
15	100	42	22	13	9.6	2.9	0	95	*88	41	46	41
16	80	38	21	9.0	9.0	2.8	0	92	90	41	52	41
17	66	34	20	11	8.5	2.6	0	82	92	42	56	120
18	62	30	16	36	7.6	2.4	0	*75	90	41	46	58
19	54	28	12	28	7.3	2.0	0	180	102	58	33	128
20	48	25	10	35	7.3	1.8	0	199	90	78	26	140
21	44	28	10	45	7.0	1.8	0	204	60	92	22	85
22	44	75	9.6	33	6.4	1.6	0	180	50	128	28	64
23	47	165	12	28	5.8	1.2	.1	142	46	125	*52	52
24	88	145	9.6	26	5.8	1.0	.1	148	44	152	35	94
25	85	132	9.6	24	5.5	.8	.2	173	41	105	31	92
26	98	110	9.6	23	5.3	.5	.2	160	98	80	28	58
27	90	80	9.0	22	4.9	.4	.2	165	105	122	27	48
28	70	148	9.0	20	4.5	.4	.3	155	54	191	24	42
29	58	125	8.5	18	4.5	.3	.4	135	47	207	22	38
30	48	78	8.5	17	-	.2	.8	122	48	188	24	38
31	44	-	9.0	15	-	.2	-	112	-	374	46	-
Total	2,377	2,293	711.4	527.1	247.6	74.9	2.6	2,790.8	2,477	2,903	1,519	3,052
Mean	76.7	76.4	22.9	17.0	8.54	2.42	0.09	90.0	82.6	93.6	49.0	102
Cfsm	17.8	17.8	5.33	3.95	1.99	0.563	0.021	20.9	19.2	21.8	11.4	23.7
In.	20.56	19.83	6.15	4.56	2.14	0.65	0.02	24.14	21.42	25.11	13.14	26.40
Ac-ft	4,710	4,550	1,410	1,050	491	149	5.2	5,540	4,910	5,760	3,010	6,050

Calendar year 1947: Max 380 Min 2.7 Mean 58.4 Cfsm 13.6 In. 184.44 Ac-ft 42,300
Water year 1947-48: Max 565 Min 0 Mean 51.8 Cfsm 12.0 In. 164.12 Ac-ft 37,640

Peak discharge (base, 460 cfs).--July 31 (6 p.m.) 714 cfs; Sept. 8 (11 p.m.) 840 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 6-13, Jan. 20 to Feb. 2, Aug. 9-22; discharge estimated on basis of recorded ranges in stage, weather records at Juneau, and records for nearby stations.

Sheep Creek near Juneau--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	45	14		3.2	10	6.1	42	105	112	135	22
2	40	50	13			12	5.8	35	108	98	135	100
3	46	90	13			13	5.8	29	145	86	120	120
4	41	90	12	9		15	5.8	26	122	95	105	110
5	36	60	12			14	5.8	23	115	105	100	75
6	34	45	11			13	6.1	22	115	*91	110	55
7	33	110	10			13	6.4	22	115	91	150	45
8	30	*229	10			*13	6.7	22	98	77	160	37
9	66	400	9.0	6.4		14	7.0	50	95	83	223	*32
10	72	346		6.4		13	7.0	108	105	93	148	29
11	98	466		6.7		13	7.3	165	98	95	118	29
12	95	160		7.6		12	7.6	125	118	112	110	34
13	85	95		10		11	7.9	105	155	118	180	37
14	66	74		11		11	9.0	91	158	91	125	48
15	56	55		13	3.0	10	*11	81	122	*86	100	46
16	138	44		13		10	12	74	112	77	88	37
17	98	37		13		9.0	13	81	110	72	88	61
18	90	32		12		8.5	17	100	120	72	120	44
19	110	27		11		8.5	26	115	128	72	84	44
20	78	27	8.5	10		7.9	51	*135	140	132	64	55
21	105	46		8.5		7.6	48	150	185	145	54	74
22	110	40		8.2		7.3	46	160	158	110	46	100
23	90	35		7.6		7.0	44	148	218	93	39	195
24	70	30		6.7		7.0	37	125	160	77	34	98
25	55	23		6.1		7.0	35	108	128	66	31	77
26	50	20		5.5		7.0	34	93	118	57	28	74
27	120	18		5.1		6.7	40	86	100	51	26	61
28	100	17		4.7		6.4	51	83	93	120	24	51
29	85	16		4.3	-	6.4	55	79	120	83	22	50
30	70	15		3.7	-	6.1	51	77	152	86	21	50
31	55	-		*3.5	-	6.1	-	86	-	170	21	-
Total	2,282	2,742	291.0	256.0	84.2	305.5	665.3	2,646	3,816	2,916	2,809	1,890
Mean	73.6	91.4	9.39	8.26	3.01	9.85	22.2	85.4	127	94.1	90.6	63.0
Cfsm	17.1	21.3	2.18	1.92	0.700	2.29	5.16	19.9	29.5	21.9	21.1	14.7
In.	19.74	23.72	2.52	2.21	0.73	2.64	5.75	22.88	33.00	25.22	24.29	16.35
Ac-ft	4,530	5,440	577	508	167	606	1,320	5,250	7,570	5,780	5,570	3,750

Calendar year 1948: Max 565 Min 0 Mean 51.7 Cfsm 12.0 In. 163.56 Ac-ft 37,510
Water year 1948-49: Max 466 Min - Mean 56.7 Cfsm 13.2 In. 179.05 Ac-ft 41,070

Peak discharge (base, 460 cfs).--Nov. 8 (10 p.m.) 517 cfs; Nov. 11 (6:00 a.m.) 588 cfs.
* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record Oct. 22 to Nov. 7, Nov. 9, Dec. 10 to Jan. 8, Feb. 2 to Mar. 7, Aug. 18 to Sept. 8; discharge estimated on basis of recorded ranges in stage, weather records at Juneau, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	178	28	5.8	0.4		0	14	48	40	78	70
2	50	310	27	5.5	.4	(*)	0	18	78	38	78	98
3	55	251	25	5.5	.4		0	24	78	35	66	66
4	46	188	24	5.3	.4		0	46	66	35	*66	88
5	37	160	22	5.1	.4		0	44	70	38	58	120
6	34	150	21	5.1	a.3		0	40	82	56	54	85
7	29	122	20	4.9	a.3		0	40	90	*50	48	68
8	a90	98	19	4.9	.2		0	50	90	40	47	56
9	a65	75	18	4.7	.2		0	102	80	41	46	48
10	a55	60	17	4.7	.1		0	80	70	44	40	47
11	48	50	16	*4.7	0		0	102	66	42	38	44
12	50	44	16	4.3	0		0	75	70	40	36	40
13	115	46	14	4.1	0		0	60	68	36	35	35
14	77	42	13	3.7	0		0	52	66	34	33	33
15	59	40	13	3.2	0		0	46	70	31	30	31
16	51	38	13	2.9	0		0	*46	88	40	27	29
17	44	62	12	2.8	0		0	47	100	150	23	29
18	42	80	11	2.6	0		0	46	95	145	25	29
19	44	60	11	a2.3	0		0	50	92	108	27	47
20	155	52	11	a2.0	0		.1	48	80	122	25	92
21	168	*52	9.6	1.8	0		.4	44	54	100	25	68
22	95	58	8.5	1.7	0		1.7	40	46	82	25	120
23	88	50	8.5	1.6	0		3.7	38	47	88	27	102
24	72	46	8.2	1.6	0		5.1	44	48	105	34	115
25	81	41	7.9	1.4	0		6.4	58	42	85	41	98
26	105	35	7.6	1.2	0		7.0	58	40	88	120	72
27	100	34	7.3	1.1	0		7.3	54	42	82	54	60
28	81	33	6.7	1.0	0		7.9	50	46	66	56	52
29	128	31	6.4	.8	-		8.2	52	56	105	95	46
30	316	30	6.1	.6	-		10	48	47	100	*82	40
31	150	-	5.8	.5	-		-	46	-	90	58	-
Total	2,604	2,514	433.6	97.4	3.1	0	57.8	1,562	2,015	2,156	1,497	1,928
Mean	84.0	83.8	14.0	3.14	0.11	0	1.93	50.4	67.2	69.5	48.3	64.3
Cfsm	19.5	19.5	3.26	0.730	0.026	0	0.449	11.7	15.6	16.2	11.2	15.0
In.	22.52	21.74	3.75	0.84	0.03	0	0.50	13.51	17.43	18.65	12.95	16.67
Ac-ft	5,160	4,990	860	193	6.1	0	115	3,100	4,000	4,280	2,970	3,820

Calendar year 1949: Max 316 Min - Mean 57.4 Cfsm 13.3 In. 181.08 Ac-ft 41,530
Water year 1949-50: Max 316 Min 0 Mean 40.7 Cfsm 9.47 In. 128.59 Ac-ft 29,490

Peak discharge (base, 460 cfs).--Oct. 30 (2 a.m.) 472 cfs; Nov. 2 (3:30 a.m.) 478 cfs.
* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of weather records at Juneau and records for nearby stations.

19. Gold Creek at Juneau

Location.--Lat 58°18'25", long. 134°24'05", on left bank immediately downstream from highway bridge, 150 ft upstream from Alaska Electric Light and Power Company dam and diversion, and 1 mile upstream from mouth.

Drainage area.--9.76 sq mi (revised). At site September 1946 to September 1948, 10.3 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 245 ft (from topographic map). July 20, 1916, to Dec. 31, 1920, water-stage recorder at site 50 ft upstream at different datum. Sept. 11, 1946, to Sept. 30, 1948, staff gage at site 0.7 mile downstream at different datum.

Average discharge.--7 years (1916-20, 1946-48, 1950), 110 cfs.

Extremes.--1946-47 (combined flow): Maximum discharge during water year, 2,190 cfs Oct. 10; minimum daily, 2 cfs Feb. 7-21.
1947-48 (combined flow): Maximum discharge during water year, about 2,300 cfs Sept. 8; minimum daily, 2 cfs Mar. 28 to Apr. 20.
1949-50: Maximum discharge during water year, 1,190 cfs Nov. 2 (gage height, 5.51 ft); minimum daily, 0.2 cfs Mar. 24 to Apr. 13.
1916-20, 1946-48, 1949-50: Maximum discharge, 2,600 cfs Sept. 26, 1918 (gage height, 6.8 ft, site and datum then in use), from rating curve extended above 520 cfs; minimum daily determined, 0.2 cfs Mar. 24 to Apr. 13, 1950.

Remarks.--Records fair for water year 1947, poor for water year 1948, and good for water year 1950. Records for water years 1947-48 include diversion by Alaska Electric Light and Power Company and are considered equivalent to early and later records. Maximum flow through powerplant about 80 cfs, plant generally in full operation during floods. Discharge measurements made at this site during 1949 water year are as follows: Oct. 7, 1948, 54.8 cfs; Feb. 1, 1949, 4.81 cfs; May 13, 1949, 160 cfs; July 13, 1949, 325 cfs; Sept. 22, 1949, 319 cfs; Sept. 23, 1949, 779 cfs. Discharge measurements made at former site, 0.7 mile downstream, are as follows: Oct. 7, 1948, 3.3 cfs; Feb. 1, 1949, 3.1 cfs; May 13, 1949, 110 cfs; Feb. 10, 1950, 2.97 cfs; Mar. 31, 1950, 2.69 cfs.

Cooperation.--Power output records furnished by Alaska Electric Light and Power Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	209	226	-
1917	177	45.8	13.2	7.85	27	8.42	17.3	118	216	251	220	157	105
1918	139	158	18.7	11.1	4	1	7.8	105	212	209	260	195	111
1919	113	118	34.3	26.6	9.54	5	35	79.8	159	237	176	192	99.1
1920	115	39	27	47.6	14.4	3.91	10.4	64.5	248	256	252	161	104
1921	89.7	106	11.0	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	12,900	13,400	-
1917	10,900	2,730	812	483	1,500	518	1,030	7,260	12,900	15,400	13,500	9,340	76,400
1918	8,550	9,400	1,150	682	222	61	464	6,460	12,600	12,900	16,000	11,600	80,100
1919	6,950	7,020	2,110	1,640	530	307	2,080	4,910	9,480	14,600	10,800	11,400	71,800
1920	7,070	2,320	1,660	2,930	828	240	619	3,970	14,800	15,700	15,500	9,580	75,200
1921	5,520	6,310	676	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	662	-	-	-	-	-	-	-
1917	692	‡1,000	Aug. 19, 1917	4.0	105	76,400	112	81,000
1918	712	2,600	Sept.26, 1918	-	111	80,100	106	77,100
1919	714	1,300	Sept.13, 1919	-	99.1	71,800	92.2	66,800
1920	722	1,600	Aug. 5, 1920	1.5	104	75,200	106	76,700
1921	722	-	-	-	-	-	-	-

‡ Not previously published.

Gold Creek at Juneau--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	63	30	6	6	17	32	109	269	229	166	542
2	89	72	29	10	5	17	44	93	251	197	158	293
3	162	169	28	27	4	16	37	85	234	184	a153	230
4	209	570	26	40	3	15	35	73	203	185	148	177
5	271	170	25	30	3	16	34	80	176	185	134	144
6	301	122	24	28	3	27	35	84	183	219	135	126
7	208	98	23	22	2	21	34	89	185	240	111	123
8	167	144	17	27	2	18	33	97	315	323	100	122
9	*166	469	17	22	2	16	34	244	315	321	93	126
10	898	842	18	17	2	15	32	227	299	286	*95	346
11	745	843	17	14	2	15	31	218	279	197	90	333
12	363	1,370	17	12	2	18	42	140	284	167	90	243
13	195	233	15	13	2	116	59	102	283	186	91	a233
14	121	109	13	10	2	*787	47	89	254	230	123	a352
15	101	95	12	9	2	*896	43	88	225	176	91	a333
16	97	94	11	a8	2	513	43	89	204	176	88	a252
17	83	86	14	a8	2	*306	57	88	206	167	82	a203
18	106	75	21	a7	2	93	76	88	179	168	84	a174
19	93	69	19	7	2	*185	80	125	184	168	76	a383
20	82	61	14	6	2	189	65	151	225	166	70	a302
21	74	57	11	11	2	191	60	255	283	152	69	a481
22	68	52	10	43	8	142	82	230	a215	140	69	a580
23	68	49	12	26	32	112	*77	231	161	133	70	a480
24	70	46	19	*18	19	95	97	*257	164	125	112	a302
25	63	43	13	14	18	a85	*364	294	183	123	144	a202
26	56	39	11	10	13	77	194	*251	185	122	445	114
27	51	37	10	8	15	66	284	287	a176	a111	352	144
28	51	34	9	10	19	43	294	306	165	102	187	251
29	51	32	8	10	-	54	271	306	183	103	441	374
30	119	31	9	8	-	54	136	306	160	111	697	399
31	74	-	7	7	-	46	-	287	-	179	623	-
Total	5,292	6,174	509	488	178	4,261	2,752	5,369	6,628	5,571	5,387	8,344
Mean	171	206	16.4	15.7	6.4	137	91.7	173	221	180	174	278
Cfsm	16.6	20.0	1.59	1.52	0.62	13.3	8.90	16.8	21.5	17.5	16.9	27.0
In.	19.11	22.29	1.84	1.76	0.64	15.39	9.94	19.39	23.93	20.12	19.45	30.13
Ac-ft	10,500	12,250	1,010	970	350	8,450	5,460	10,650	13,150	11,050	10,680	16,550

Calendar year 1946: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1946-47: Max 1,370 Min 2 Mean 140 Cfsm 13.6 In. 183.99 Ac-ft 101,100

* Discharge measurement made on this day.
a No gage-height record for river channel; discharge estimated on basis of records for Sheep Creek near Juneau.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	319	72	122	36	27	3	2	23	243	153	503	108
2	282	66	100	32	26	3	2	24	233	174	325	103
3	302	65	89	29	24	3	2	24	212	283	213	123
4	180	66	82	27	*21	3	2	26	193	242	156	112
5	150	59	78	26	20	3	2	35	172	194	123	102
6	121	83	76	25	19	3	2	46	378	163	108	203
7	100	187	67	24	13	3	2	51	272	154	98	403
8	84	281	61	23	11	3	2	58	192	143	92	*1,280
9	75	292	57	22	16	3	2	73	173	134	93	*1,080
10	77	211	50	21	15	3	2	90	195	123	102	419
11	105	160	52	19	17	3	2	77	228	113	106	283
12	140	131	59	20	17	3	2	96	155	108	112	203
13	132	110	60	74	13	3	2	129	143	102	110	163
14	202	96	51	57	10	3	2	120	144	103	103	103
15	182	83	47	45	11	3	2	127	150	104	98	98
16	141	65	50	39	10	3	2	215	184	108	102	89
17	123	61	45	37	9	3	2	217	224	114	113	233
18	112	55	42	65	9	3	2	331	232	107	85	170
19	100	50	41	58	8	3	2	432	214	134	77	202
20	90	49	37	69	7	4	2	456	173	171	69	281
21	80	58	40	84	5	5	3	521	148	213	62	181
22	81	142	40	75	4	4	5	345	144	263	68	142
23	85	281	46	62	3	4	7	282	133	273	102	113
24	163	260	39	51	7	3	6	355	149	303	77	193
25	172	229	36	45	6	3	6	402	173	252	62	222
26	180	190	33	40	4	3	7	374	231	211	54	138
27	163	150	31	39	5	3	8	440	243	232	51	*122
28	130	271	30	38	4	2	10	453	198	373	47	101
29	113	220	29	34	3	2	15	416	163	411	46	91
30	84	150	32	31	-	2	22	331	160	402	69	92
31	78	-	41	29	-	2	-	251	-	682	102	-
Total	4,346	4,193	1,663	1,276	344	94	129	6,820	5,852	6,542	3,528	7,153
Mean	140	140	53.6	41.2	11.9	3.0	4.3	220	195	211	114	238
Cfsm	13.6	13.6	5.20	4.00	1.16	0.29	0.42	21.4	18.9	20.5	11.1	23.1
In.	15.69	15.14	6.00	4.61	1.24	0.34	0.47	24.62	21.13	23.62	12.74	25.83
Ac-ft	8,620	8,320	3,300	2,530	680	190	260	13,530	11,610	12,980	7,000	14,190

Calendar year 1947: Max 896 Min 2 Mean 135 Cfsm 13.5 In. 177.58 Ac-ft 97,550
Water year 1947-48: Max 1,280 Min 2 Mean 115 Cfsm 11.2 In. 151.43 Ac-ft 83,210

* Discharge measurement made on this day.
Note.--No gage-height record except Feb. 4, Apr. 1, 2, May 9-22, 24, 26, 27, 29, June 6, 10-12, 15, 18, 21, 24-26, 28, 30, Aug. 2, Sept. 8, 9; discharge estimated on basis of available gage heights, 4 discharge measurements, weather records, and records for Sheep Creek near Juneau.

Gold Creek at Juneau--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	435	50	7.4	2.1	0.7	0.2	18	84	126	174	174
2	147	809	45	7.0	2.1	.9	.2	22	212	104	176	291
3	144	726	40	6.8	2.0	*1.5	.2	*35	214	115	144	184
4	*130	438	36	6.5	2.0	2.8	.2	74	171	104	*152	233
5	105	376	33	*6.2	1.9	2.2	.2	73	178	128	126	321
6	85	369	30	6.0	1.8	2.2	.2	56	214	144	104	*214
7	70	330	28	5.8	1.8	1.8	.2	57	241	142	88	159
8	149	230	*26	5.7	1.8	1.5	.2	94	247	104	78	119
9	140	156	24	5.6	1.7	1.3	.2	*250	217	111	84	96
10	110	*93	23	5.5	*1.7	1.1	.2	204	188	140	82	90
11	90	80	22	5.4	1.6	.9	.2	297	178	133	78	82
12	100	75	21	5.2	1.5	.7	.2	184	186	126	78	89
13	408	80	20	5.0	1.4	.6	.2	128	191	121	76	58
14	209	72	19	4.8	1.2	.5	.3	96	186	98	73	57
15	135	68	18	4.5	1.1	.4	.4	74	204	78	69	57
16	110	65	17	4.2	1.0	*.4	.6	76	264	108	58	48
17	90	100	16	4.0	1.0	.4	1.0	*80	297	360	48	48
18	80	196	15	3.8	.9	.4	*3.0	*76	294	366	52	51
19	100	150	14	3.6	.9	.3	3.9	80	294	306	64	126
20	270	110	14	3.4	.8	.3	13	73	278	318	57	240
21	289	110	13	3.3	.8	.3	7.0	64	178	264	62	204
22	156	126	12	3.1	.7	.3	6.2	54	133	220	62	312
23	137	95	12	3.0	*.7	.3	5.7	48	147	269	74	283
24	110	80	11	2.8	.7	.2	5.2	65	166	275	*119	286
25	159	70	10	2.7	.7	.2	*6.2	124	159	236	147	225
26	247	65	10	2.6	.7	.2	6.2	119	137	236	312	*149
27	233	65	9.5	*2.5	.7	.2	6.6	119	150	244	209	*114
28	181	75	9	2.4	.7	.2	8.1	106	160	171	*209	*92
29	278	70	8.5	2.3	-	.2	23	98	190	312	252	*78
30	926	60	8	2.2	-	.2	18	92	*159	264	217	66
31	385	-	7.6	2.2	-	*.2	-	78	-	209	133	-
Total	5,990	5,774	621.6	135.5	36.0	23.4	117.0	3,014	5,917	5,932	3,657	4,526
Mean	193	192	20.1	4.37	1.29	0.75	3.90	97.2	197	191	118	151
Cfsm	19.8	19.7	2.06	0.448	0.132	0.077	0.400	9.96	20.2	19.6	12.1	15.5
In.	22.82	22.00	2.37	0.52	0.14	0.09	0.45	11.48	22.55	22.60	13.93	17.24
Ac-ft	11,880	11,450	1,230	269	71	46	232	5,980	11,740	11,770	7,250	8,980

Calendar year 1949: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1949-50: Max 926 Min 0.2 Mean 97.9 Cfsm 10.0 In. 136.19 Ac-ft 70,900

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 4-7, 10-12, 16-19, 24, 25, Nov. 10-17, 19-21, Nov. 23 to Mar. 2, Mar. 9 to Apr. 17, June 27-29; discharge estimated on basis of records for Sheep Creek near Juneau and weather records for Juneau.

20. Auke Creek near Auke Bay

Location.--Lat 58°23'05", long. 134°38'00", on downstream side of Glacier Highway bridge at outlet of Auke Lake, 0.4 mile upstream from mouth, half a mile east of Auke Bay, and 10 miles northwest of Juneau.

Drainage area.--3.75 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 65 ft (by barometer).

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.22, 1947	143	b3.75	Aug. 24, 1947	c4.0	1.75
1948	Sept. 9, 1948	235	b4.32	July 20, 1948	c1.9	1.52
1949	Nov. 11, 1948	d213	4.20	-	(e)	-
1950	Nov. 2, 1949	d348	4.85	-	(e)	-

a Period August to September.
b From graph based on gage readings.
c Minimum observed.
d Maximum observed.
e Not determined; occurred during period of no gage-height record.

Note.--Maximums are from rating curve extended above 110 cfs on basis of velocity-area study.

1947-50: Maximum discharge observed, 348 cfs Nov. 2, 1949 (gage height, 4.85 ft), from rating curve extended above 110 cfs on basis of velocity-area study; minimum not determined, occurred during period of no gage-height record.

Remarks.--Records fair. Discontinued Sept. 30, 1950.

Auke Creek near Auke Bay--Continued

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	81	9	-	21	17	-	32	25	4.6	32
2	-	63	10	-	43	18	-	24	26	36	26
3	-	51	11	-	*106	19	-	55	27	103	23
4	-	42	12	-	84	20	-	43	28	72	21
5	-	30	13	-	64	21	-	75	29	*70	50
6	-	21	14	-	86	22	-	136	30	55	111
7	-	16	15	-	72	23	-	111	31	64	-
8	-	20	16	-	46	24	*4.0	57			
Total										-	1,642
Mean										-	54.7
Cfsm										-	14.6
In.										-	16.28
Ac-ft										-	3,260

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	a5.6	21	a14	a5.5	2.4	2.5	a11	a40	8.6	103	24
2	53	a5.0	16	14	5.5	2.4	2.5	a13	39	8.2	74	26
3	56	a4.5	13	a11	5.1	2.4	a2.5	15	37	a10	46	28
4	41	4.3	12	a9.0	4.6	a2.4	a2.5	16	34	a14	30	a26
5	28	4.3	12	7.6	*4.2	2.4	2.5	18	a32	12	21	a25
6	19	4.6	a12	6.9	4.1	a2.5	2.5	24	a48	10	15	30
7	14	5.3	a12	6.4	a3.8	2.5	*2.5	26	44	8.9	a10	34
8	12	5.1	12	6.0	a3.5	2.5	2.5	a29	32	6.9	a8.0	129
9	9.5	10	12	6.0	3.3	2.5	a2.5	a34	26	5.5	6.9	188
10	7.6	33	11	a5.8	3.1	2.5	a2.5	37	22	a4.5	6.9	95
11	11	41	10	a5.8	3.0	2.5	a2.5	36	18	a3.5	6.0	60
12	15	35	9.5	5.5	2.8	2.5	2.5	38	a15	3.3	5.5	40
13	28	28	a12	26	2.8	a2.5	2.5	39	a11	3.1	5.5	26
14	30	21	a13	33	a2.7	a2.5	2.5	50	8	2.7	a6.0	20
15	24	a16	12	30	a2.6	2.5	2.5	a52	6	2.5	a5.5	16
16	*18	a12	14	26	2.5	2.5	2.5	a48	4.8	2.5	a5.0	14
17	16	10	14	26	2.5	2.5	a2.6	43	4.5	a2.4	a4.0	26
18	13	8.9	13	34	2.5	2.5	a2.6	38	4.2	a2.3	a3.5	a22
19	11	8.2	12	34	2.2	2.5	2.7	*50	a5.0	2.1	a5.0	a40
20	8.9	6.4	a10	41	2.2	a2.5	2.7	97	a4.8	1.9	a4.5	*58
21	7.6	6.4	a9.0	68	a2.2	a2.5	2.7	126	4.1	2.9	a4.0	50
22	6.4	a25	8.9	48	a2.2	a2.4	2.8	86	4.0	11	a7.0	40
23	7.6	a60	9.5	34	2.2	a2.4	2.8	60	3.3	46	24	26
24	8.9	61	10	a26	2.2	a2.3	a3.0	46	3.2	a80	23	38
25	11	54	a10	a20	2.4	a2.3	a3.0	a43	2.8	a70	17	a44
26	12	43	10	17	2.5	a2.2	3.1	39	a3.5	60	13	a40
27	11	32	a9.5	13	2.5	a2.2	3.3	37	a6.0	64	10	34
28	8.9	28	a8.9	9.5	a2.5	a2.2	3.8	42	17	66	a8	26
29	7.6	30	8.2	7.6	a2.4	a2.2	5.0	a45	14	71	a6	18
30	6.9	26	7.6	6.0	-	a2.3	9.0	a43	12	83	4.6	20
31	64	-	12	a5.8	-	a2.4	-	a41	-	117	8.6	-
Total	590.3	633.6	356.1	602.9	89.6	74.9	89.1	1,322	505.2	785.8	496.5	1,263
Mean	19.0	21.1	11.5	19.4	3.09	2.42	2.97	42.6	16.8	25.3	16.0	42.1
Cfsm	5.07	5.63	3.07	5.17	0.824	0.645	0.792	11.4	4.48	6.75	4.27	11.2
In.	5.85	6.28	3.53	5.98	0.89	0.74	0.88	13.11	5.01	7.79	4.92	12.53
Ac-ft	1,170	1,260	706	1,200	178	149	177	2,620	1,000	1,560	985	2,510

Calendar year : Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year : Max 188 Min 1.9 Mean 18.6 Cfsm 4.96 In. 67.51 Ac-ft 13,520

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for adjacent days or for nearby stations and weather records.

Auke Creek near Auke Bay--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a22	a20			a3.6	10	13	a30	35	37	50	2.8
2	a25	a25			*3.3	21	a15	26	43	a30	44	a8.0
3	a30	a40				22	a18	22	55	a25	41	a15
4	a20	a40				*24	21	20	51	a20	30	a15
5	a14	a30				a23	20	19	46	16	22	a12
6	a11	a20				a22	20	18	46	14	a20	9.3
7	a9.0	33				22	20	17	42	12	a19	6.4
8	a10	145				23	20	17	39	9.7	20	5.1
9	a11	180				22	a20	32	37	7.7	28	4.1
10	a12	143				20	a19	60	41	8.1	37	3.6
11	13	204				19	19	102	a40	5.4	26	3.3
12	24	112				a12	*29	77	a50	6.6	22	3.7
13	24	48				a8.0	30	55	a60	13	a25	6.1
14	32	33				6.6	26	44	a60	*28	a38	12
15	30	23	a3.0	a2.5	a3.5	6.1	28	39	a50	28	32	14
16	a55	18				5.6	a30	37	a45	19	24	14
17	a40	12				5.6	a32	41	a40	21	22	16
18	32	11				4.6	35	58	a40	17	26	14
19	32	10				a4.0	37	59	a45	14	22	12
20	32	a8.0				3.6	38	60	a50	15	a15	14
21	34	a6.0				3.3	41	55	a60	25	12	20
22	38	4.1				3.3	28	50	64	23	10	40
23	a45	4.1				3.6	a27	46	66	17	8.0	77
24	a37	3.8				3.8	a26	43	64	13	6.6	60
25	a30	a3.4				4.6	26	41	a40	12	5.4	42
26	a25	3.1				a5.0	33	38	a32	a12	4.1	40
27	a48	a2.8				a6.0	38	35	26	a11	a3.5	38
28	a40	a2.5			5.6	a7.0	44	33	22	15	a3.0	28
29	a40	a2.3			-	8.0	41	33	20	26	2.8	21
30	a35	a2.2			-	11	a35	32	26	23	2.8	20
31	a27	-			-	12	-	32	-	62	2.8	-
Total	877.0	1,189.3	93.0	77.5	100.0	351.7	829	1,271	1,335	583.5	622.0	576.4
Mean	28.3	39.6	3.0	2.5	3.57	11.3	27.6	41.0	44.5	18.8	20.1	19.2
Cfsm	7.55	10.6	0.800	0.667	0.952	3.01	7.36	10.9	11.9	5.01	5.36	5.12
In.	8.70	11.79	0.92	0.77	0.99	3.49	8.22	12.60	13.24	5.79	6.17	5.72
Ac-ft	1,740	2,360	184	154	198	698	1,640	2,520	2,650	1,160	1,230	1,140

Calendar year : Max 204 Min - Mean 20.2 Cfsm 5.39 In. 73.26 Ac-ft 14,660
Water year : Max 204 Min - Mean 21.7 Cfsm 5.79 In. 78.40 Ac-ft 15,670

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations and weather records.

Discharge, in cubic feet per second, water year October 1949 to September 1950.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a50	74	8.3			a1.8	a2.4	22	22	1.7	32	24
2	a35	324	8.3			a2.0	a2.4	22	*16	a1.7	33	a35
3	a40	196	a7.5			a2.0	*2.4	26	a18	1.7	*27	a25
4	a27	113	a7.0			a2.0	2.4	34	a18	a1.7	a26	a30
5	a19	75	6.6			a2.0	2.1	37	18	1.7	22	35
6	a14	54	6.6			2.1	2.1	a30	18	2.0	a17	33
7	a17	40	5.4			2.1	2.1	a30	18	2.1	14	a23
8	a70	34	5.4			2.1	a1.8	a35	18	a2.1	12	a16
9	a65	24	4.1			2.1	a1.8	64	a11	2.0	9.0	a12
10	a35	18	a4.1			2.1	2.1	81	a7.0	a1.9	6.9	a14
11	a25	a16	a5.4			a2.1	2.1	72	a5.5	1.8	5.6	a11
12	a25	a15	5.4			a2.1	2.1	57	4.6	1.7	a4.5	8.0
13	a90	a14	4.1	(*)		2.1	2.1	a45	a3.8	1.7	a3.8	a6.0
14	a70	14	4.1			2.1	2.4	a38	3.3	1.8	3.4	a5.0
15	a45	14	4.1	a1.8	a1.5	1.8	a2.8	32	a3.0	1.8	2.8	a4.0
16	a32	*14	4.1			1.8	a4.5	26	2.7	1.8	2.7	a4.0
17	a23	51	a4.1			2.1	6.6	22	2.6	12	2.4	a3.5
18	a25	53	a4.1			a2.0	8.3	22	a2.4	48	2.4	a3.5
19	a32	35	4.1			a2.0	10	24	2.2	66	a2.2	a5.0
20	a140	26	4.1			1.8	14	a27	2.0	45	a2.1	16
21	a130	21	4.1			1.8	18	a26	2.0	39	2.0	a35
22	a95	16	a3.5			1.8	a14	24	1.9	a30	1.9	113
23	a65	10	a3.5			2.1	a10	22	1.8	a25	1.6	a70
24	a70	a9.0	a3.0			2.1	12	22	1.7	30	2.4	a45
25	a45	8.3	a3.0			a2.1	14	32	a1.6	29	3.4	30
26	a30	a7.5	a3.0			a2.1	12	43	a1.6	28	18	a28
27	a35	a7.0	a3.0			2.1	12	a40	1.6	19	6.6	19
28	a25	6.6	a3.0			2.4	14	a35	1.6	a15	*22	a17
29	a70	10	a2.5		-	2.4	a16	32	1.7	a11	30	12
30	a300	10	a2.5		-	2.4	a18	a26	1.7	a15	38	a9.0
31	98	-	a2.5		-	2.4	-	22	-	a20	a30	-
Total	1,842	1,309.4	140.5	55.8	42.0	63.9	216.5	1,070	215.3	461.2	386.7	691.0
Mean	59.4	43.6	4.53	1.8	1.5	2.06	7.22	34.5	7.18	14.9	12.5	23.0
Cfsm	15.8	11.6	1.21	0.480	0.400	0.549	1.93	9.20	1.91	3.97	3.33	6.13
In.	18.27	12.99	1.39	0.55	0.42	0.63	2.15	10.61	2.14	4.57	3.84	6.85
Ac-ft	3,650	2,600	279	111	83	127	429	2,120	427	915	767	1,370

Calendar year : Max 324 Min - Mean 24.8 Cfsm 6.61 In. 89.64 Ac-ft 17,920
Water year : Max 324 Min - Mean 17.8 Cfsm 4.75 In. 64.41 Ac-ft 12,880

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations and weather records.

21. Sherman Creek at Comet 1/

Location.--Lat 58°52'05", long. 135°07'05", 0.8 mile upstream from mouth and 0.8 mile east of Comet.

Drainage area.--3.65 sq mi.

Gage.--Staff gage and wooden flume. Altitude of gage is 400 ft (from topographic map).

Extremes.--1914-16: Maximum discharge observed, 208 cfs Oct. 15, 1915 (gage height, 2.0 ft); minimum observed, 2.8 cfs Jan. 25 to Feb. 4, Feb. 8-10, 1916.

Remarks.--No diversion or regulation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	-	-	-	30.1	-
1915	32.8	18.3	6.05	9.81	3.95	28.7	39.3	42.4	38.1	24.6	44.9	45.6	28.0
1916	48.5	15.3	7.21	3.85	11.3	3.57	17.5	51.8	83.6	50.0	55.4	62.7	34.2
1917	49.7	26.7	5.89	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	-	-	-	1,790	-
1915	2,020	1,090	372	603	219	1,760	2,340	2,610	2,270	1,510	2,760	2,710	20,300
1916	2,980	910	443	237	650	220	1,040	3,190	4,970	3,070	3,410	3,730	24,800
1917	3,060	1,590	362	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	662	-	-	-	-	-	-	-
1915	662	180	Aug. 14, 1915	3.3	28.0	20,300	29.2	21,100
1916	662	208	Oct. 15, 1915	2.8	34.2	24,800	35.2	25,500

22. Purple Lake Outlet near Metlakatla

Location.--Lat 55°06', long. 131°26', on Annette Island, on right bank 1,200 ft downstream from outlet of Purple Lake, 2½ miles above mouth, and about 6 miles east of Metlakatla.

Drainage area.--6.8 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (by barometer).

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.11, 1947	201	3.43	Aug. 9, 1947	6.2	-0.29
1948	Oct. 14, 1947	329	4.79	Aug. 22, 1948	b14	.08
1949	Apr. 27, 1949	c716	5.15	July 24, 1949	15	.00
1950	Oct. 30, 1949	463	4.00	Jan.30 to Feb.1, 1950	d2	-

a Period July to September.
b Minimum recorded; may have been less during period of no gage-height record.
c From rating curve extended above 380 cfs.
d Minimum daily.

1947-50: Maximum discharge, 716 cfs Apr. 27, 1949 (gage height, 5.15 ft), from rating curve extended above 380 cfs; maximum gage height, 5.5 ft Apr. 26, 1949; minimum daily discharge, 2 cfs Jan. 30 to Feb. 1, 1950.

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

1/ Formerly published as Sherman Creek at Kensington Mine.

Purple Lake Outlet near Metlakatla--Continued

Discharge, in cubic feet per second, July to September 1947

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	107	12	166	9	84	6.5	66	17	72	18	83	25	25	9.8	36
2	87	11	153	10	118	32	99	18	62	17	69	26	22	12	31
3	87	9.8	125	11	156	29	181	19	53	16	60	27	20	15	*28
4	146	8.8	101	12	177	27	171	20	45	15	60	28	18	44	26
5	132	7.8	84	13	171	25	137	21	39	14	60	29	16	100	24
6	106	7.3	88	14	141	23	127	22	35	13	52	30	15	121	46
7	87	7.1	80	15	109	21	130	23	31	12	46	31	13	110	-
8	74	6.5	70	16	87	19	103	24	27	10	41				
Total													2,362	779.6	2,543
Mean													76.2	25.1	84.8
Ac-ft													4,680	1,550	5,040

Peak discharge (base, 300 cfs).--No peaks above base.
* Discharge measurement made on this day.
Note.--A discharge of 11.2 cfs was measured on June 7, 1947.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*94	134	70	185	119	48	30	42	47	25	40	156
2	129	147	68	167	97	43	29	41	49	23	37	212
3	144	130	62	153	82	39	27	42	46	24	32	262
4	*151	111	54	142	70	92	25	46	42	26	28	248
5	123	101	49	144	60	186	23	55	38	25	25	231
6	97	98	50	134	52	182	21	67	78	23	22	215
7	78	96	53	111	49	153	20	67	103	21	20	198
8	*66	92	50	105	44	126	19	66	91	19	18	182
9	68	84	46	104	38	103	18	66	79	18	17	164
10	96	90	52	92	34	87	18	62	72	17	15	160
11	153	78	80	84	34	77	17	60	65	15	15	147
12	196	76	112	110	56	70	20	58	58	15	26	135
13	189	74	106	247	53	64	22	58	51	15	27	123
14	302	65	95	226	58	57	22	59	45	15	24	111
15	291	56	120	183	62	51	23	60	41	15	22	100
16	230	52	209	148	50	46	26	63	37	15	20	90
17	190	64	190	120	46	42	32	72	32	15	*18	79
18	190	64	167	103	43	43	37	81	28	15	17	100
19	190	66	150	94	36	40	41	81	26	15	15	200
20	170	61	176	157	37	37	42	81	27	15	16	230
21	130	54	194	239	46	45	45	80	28	31	16	220
22	120	53	184	201	47	44	56	76	25	26	14	180
23	140	53	172	170	45	38	64	76	23	22	47	160
24	190	64	146	139	67	35	63	70	21	18	54	150
25	200	*103	138	111	70	33	60	64	19	49	54	210
26	230	99	113	91	66	31	54	61	20	72	48	200
27	300	83	133	100	59	29	50	56	20	66	41	150
28	250	78	138	130	52	28	46	*52	19	61	35	100
29	210	93	111	159	49	27	44	50	19	56	40	80
30	180	81	153	144	-	26	43	46	26	49	80	65
31	164	-	175	143	-	28	-	44	-	44	168	-
Total	5,261	2,500	3,616	4,436	1,621	1,950	1,037	1,902	1,275	865	1,051	4,858
Mean	170	83.3	117	143	55.9	62.9	34.6	61.4	42.5	27.9	33.9	162
Ac-ft	10,440	4,960	7,170	8,800	3,220	3,870	2,060	3,770	2,530	1,720	2,080	9,640

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 302 Min 14 Mean 83.0 Ac-ft 60,260

Peak discharge (base, 300 cfs).--Oct. 14 (12 m.) 329 cfs; Oct. 27 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 16-30, Mar. 21 to Apr. 16, Sept. 18-30; discharge estimated on basis of recorded range in stage, weather records at Annette, and records for nearby stations.

Purple Lake Outlet near Metlakatla--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	209	145	75	42	150	68	166	57	219	270	34
2	80	193	136	63	37	250	75	126	72	157	229	41
3	75	244	116	101	32	200	90	103	130	118	196	42
4	75	259	98	194	28	150	105	86	135	95	234	39
5	76	220	92	277	26	120	98	139	127	80	186	36
6	78	197	80	240	24	100	90	160	115	69	134	31
7	80	160	66	193	23	80	85	136	94	60	105	28
8	80	131	55	152	22	70	80	122	79	52	86	26
9	150	160	47	121	21	60	90	114	87	47	96	22
10	200	194	42	99	20	52	100	112	190	42	120	20
11	210	176	40	84	19	45	105	156	186	39	105	17
12	200	160	34	79	18	40	90	139	155	36	89	16
13	175	138	30	94	17	35	80	116	144	34	99	60
14	156	160	27	92	17	30	95	98	116	31	167	223
15	128	163	24	125	17	28	88	86	95	28	*135	186
16	119	146	22	221	16	27	80	76	80	26	114	134
17	165	136	30	183	16	27	170	71	70	24	94	104
18	145	183	89	147	16	26	230	78	62	22	78	84
19	143	157	124	118	16	26	260	74	55	20	64	75
20	137	132	114	101	16	27	270	71	51	19	54	156
21	112	203	96	86	16	28	270	66	49	19	47	349
22	110	219	88	70	17	30	265	64	46	18	41	546
23	169	256	139	59	18	35	*259	60	43	17	37	388
24	173	226	128	54	21	42	230	58	40	21	33	258
25	295	182	121	77	30	50	223	60	36	68	30	176
26	282	146	169	74	40	60	385	58	36	62	27	125
27	322	130	138	63	55	70	640	*54	68	54	24	96
28	275	120	128	65	80	60	449	52	64	59	21	78
29	284	112	114	60	-	52	320	48	62	64	19	69
30	294	116	101	52	-	48	230	47	231	72	17	74
31	246	-	89	47	-	58	-	50	-	186	19	-
Total	5,119	5,228	2,722	3,466	720	2,076	5,620	2,846	2,775	1,858	2,970	3,533
Mean	165	174	87.8	112	25.7	67.0	187	91.8	92.5	59.9	95.8	118
Ac-ft	10,150	10,370	5,400	6,870	1,430	4,120	11,150	5,640	5,500	3,690	5,890	7,010

Calendar year 1948: Max 322 Min 14 Mean 87.6 Ac-ft 63,610
Water year 1948-49: Max 640 Min 16 Mean 107 Ac-ft 77,220

Peak discharge (base, 300 cfs).--Oct. 27 (9 a.m.) 346 cfs; Oct. 29 (4:30 p.m.) 335 cfs; Apr. 27 (5 a.m.) 716 cfs; Sept. 22 (7:30 a.m.) 588 cfs. * Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-12, Jan. 31 to Apr. 22; discharge estimated on basis of recorded range in stage, weather records at Annette, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	311	118	15	2.0	94	62	60	70	38	154	197
2	64	301	108	13	5	156	58	60	90	34	139	161
3	114	223	93	13	10	191	57	65	120	32	111	147
4	143	252	78	12	13	164	80	75	100	29	106	170
5	158	232	71	12	15	126	85	90	90	29	118	308
6	162	205	61	12	17	100	86	75	85	31	102	259
7	122	220	52	11	18	82	79	65	80	29	83	187
8	227	173	64	9.6	19	70	70	60	75	26	72	136
9	216	133	62	8.2	20	60	60	90	70	24	61	106
10	213	104	54	6.5	21	51	56	140	65	22	54	86
11	399	83	47	5.7	22	46	103	200	60	25	47	72
12	291	69	43	4.9	35	41	132	180	*57	62	41	61
13	373	62	*39	4.5	48	37	140	130	56	90	37	53
14	378	74	53	4.2	66	34	150	100	55	80	32	46
15	265	70	63	3.9	60	36	110	85	53	69	29	41
16	182	76	55	3.6	57	44	90	70	51	*60	27	*36
17	129	173	48	3.3	61	40	75	60	49	77	23	32
18	100	146	42	3.1	84	42	65	55	47	149	21	28
19	92	114	38	2.9	89	44	80	55	46	120	18	67
20	86	88	36	2.7	78	48	120	60	46	97	17	203
21	106	93	33	2.6	78	55	100	50	43	82	16	246
22	96	122	33	2.5	117	61	80	45	43	70	14	229
23	131	128	30	2.4	125	66	70	45	43	79	13	220
24	120	115	31	2.3	152	60	70	45	39	166	13	191
25	126	99	36	2.3	132	60	60	60	36	262	53	175
26	152	122	33	2.2	105	64	55	80	34	286	288	142
27	202	134	29	2.2	84	64	50	100	32	214	276	116
28	250	119	26	2.1	84	62	45	100	32	153	288	94
29	276	113	23	2.1	-	56	50	90	43	134	225	79
30	371	109	20	2.0	-	50	60	80	41	117	169	66
31	*373	-	18	2.0	-	56	-	75	-	98	137	-
Total	5,965	4,263	1,537	175.8	1,617	2,160	2,398	2,545	1,751	2,784	2,784	3,954
Mean	193	142	49.6	5.67	57.8	69.7	79.9	82.1	58.4	89.8	89.8	132
Ac-ft	11,870	8,460	3,050	3,490	3,210	4,280	4,760	5,050	3,470	5,520	5,520	7,840

Calendar year 1949: Max 640 Min 16 Mean 103 Ac-ft 74,680
Water year 1949-50: Max 399 Min 2 Mean 87.5 Ac-ft 66,520

Peak discharge (base, 300 cfs).--Oct. 11 (7 a.m.) 447 cfs; Oct. 14 (12:30 a.m.) 441 cfs; Oct. 30 (9 p.m.) 485 cfs; July 25 (5 p.m.) 346 cfs; Aug. 26 (2:30 p.m.) 330 cfs; Sept. 5 (1:30 a.m.) 359 cfs.
*Discharge measurement made on this day.
Note.--No gage-height record Jan. 13 to Feb. 9, Apr. 13 to June 11; discharge estimated on basis of recorded range in stage, weather records at Annette, and records for nearby stations.

23. Perseverance Creek near Wacker

Location.--Lat 55°24'40", long. 131°40'05", on Revillagigedo Island, on right bank 500 ft downstream from Perseverance Lake, 1.5 miles upstream from mouth, 2 miles east of Wacker, and 4 miles north of Ketchikan.

Drainage area.--2.81 sq mi (revised).

Gage.--Water-stage recorder and wooden control. Altitude of gage is 600 ft (from topographic map). Prior to October 1946, at site 100 ft upstream at different datum.

Average discharge.--11 years (1931-38, 1946-50), 37.1 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947	Oct. 6, 1946	506	5.23	Aug. 5,6,8, 1947	0.5	-
1948	Oct. 14, 1947	265	3.88	July 18-20, 1948	2.2	1.43
1949	Apr. 26, 1949	a339	4.33	(b)	c3.5	-
1950	Oct. 30, 1949	543	5.26	-	(d)	-

a Maximum recorded.
b Occurred on Dec. 16, 17, 1948, Jan. 1, 2, Aug. 28-30, Sept. 11, 12, 1949.
c Minimum daily.
d Not determined; probably occurred during period of no gage-height record.
Note.--Maximums are from rating curves extended above 130 cfs for water years 1947-49 and above 150 cfs for water year 1950.

1931-39, 1946-50: Maximum discharge, 543 cfs Oct. 30, 1949 (gage height, 5.26 ft), from rating curve extended above 150 cfs; minimum, 0.5 cfs Aug. 5, 6, 8, 1947.

Remarks.--Records for water years 1947-50 good except those for periods of no gage-height record, which are fair. No diversion or regulation above station. Records prior to October 1946 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	76.1	28.9	28.6	51.1	45.0	22.7	18.2	37.6	32.4	40.3	22.6	70.7	39.7
1933	45.7	58.3	30.9	32.5	13.6	20.3	29.7	36.0	44.0	40.0	33.0	20.2	33.8
1934	51.2	84.5	16.3	76.3	20.0	30.8	33.0	33.6	28.5	14.5	8.74	36.3	36.1
1935	74.7	72.1	68.5	28.4	57.6	31.0	24.8	50.1	21.6	24.7	30.9	13.2	41.4
1936	30.7	43.6	96.9	55.1	12.3	60.1	37.3	45.6	6.50	38.4	25.0	25.5	40.0
1937	47.5	69.0	36	11	13	35	32	50	31.8	18.2	23.1	36.0	33.6
1938	52.7	25.3	42.7	53.7	39.0	15.7	54.5	30.8	32.8	15.2	7.39	67.8	36.5
1939	-	40.6	-	-	-	-	-	-	24.6	25.5	43.4	45.3	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	4,680	1,720	1,760	3,140	2,590	1,400	1,080	2,310	1,930	2,480	1,390	4,210	28,700
1933	2,810	3,470	1,900	2,000	755	1,250	1,770	2,210	2,620	2,460	2,030	1,200	24,500
1934	3,150	5,030	1,000	4,690	1,110	1,890	1,960	2,070	1,700	892	537	2,160	26,200
1935	4,590	4,290	4,210	1,750	3,200	1,910	1,480	3,080	1,290	1,520	1,900	786	30,000
1936	1,890	2,590	5,960	3,390	708	3,700	2,220	2,800	387	2,360	1,540	1,520	29,100
1937	2,920	4,110	2,210	676	722	2,150	1,900	3,070	1,890	1,120	1,420	2,140	24,300
1938	3,240	1,500	2,630	3,300	2,170	965	3,240	1,890	1,950	935	454	4,030	26,300
1939	-	2,420	-	-	-	-	-	-	1,470	1,570	2,670	2,790	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1932	(a)	359	Feb. 23, 1932	5	39.7	14.1	192.22	28,700	39.7	192.50	28,700
1933	(a)	-	-	6	33.8	12.0	163.37	24,500	35.2	170.03	25,500
1934	(a)	-	-	4	36.1	12.8	174.73	26,200	41.6	200.87	30,100
1935	(a)	-	-	5	41.4	14.7	200.12	30,000	37.8	182.40	27,400
1936	(a)	-	-	5	40.0	14.2	193.88	29,100	38.4	185.88	27,900
1937	(a)	-	-	-	33.6	12.0	162.43	24,300	31.0	149.96	22,500
1938	-	420	Oct. 22, 1937	-	36.5	13.0	175.68	26,300	-	-	-
1939	-	213	Sept.18, 1939	-	-	-	-	-	-	-	-

a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
Note.--Records for October 1937 to September 1939 not previously published; computed by usual methods on the basis of gage-height records and discharge measurements.

Perseverance Creek near Wacker--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	50	4.0	14	7.1	18	9	29	9.6	52	1.5	118
2	*32	60	4.0	12	6.3	16	8	25	8.1	29	*1.2	58
3	28	90	4.3	9.6	5.6	13	7	23	7.6	23	.7	29
4	28	*116	6.6	46	28	11	6	21	*6.3	47	.6	20
5	24	85	7.1	72	110	9.1	5	20	5.9	*36	.5	14
6	291	51	10	45	52	12	7	21	5.0	28	.5	13
7	181	39	10	47	30	*14	10	23	4.6	21	.6	11
8	75	55	9.1	64	20	13	14	26	4.6	17	.5	8.6
9	40	88	8.1	101	16	11	17	32	4.6	29	.6	13
10	30	56	16	52	12	9.6	18	37	5.6	47	42	58
11	45	33	18	32	12	8.6	25	35	6.3	68	29	200
12	40	26	14	20	15	17	40	31	27	87	17	90
13	30	65	12	13	38	152	35	27	27	52	11	44
14	20	50	11	*11	59	300	25	24	21	34	7.1	22
15	14	32	11	12	48	120	18	22	15	23	5.3	18
16	10	22	9.6	13	33	80	15	20	12	16	4.3	16
17	7.0	17	39	16	22	60	17	19	67	11	3.3	15
18	7.0	14	71	25	15	50	30	18	83	8.6	5.3	11
19	15	9.6	96	23	12	40	70	18	69	6.6	5.3	8.1
20	80	7.6	75	19	14	70	50	18	42	5.3	4.6	10
21	50	6.3	46	21	32	140	30	19	40	5.0	3.3	13
22	30	5.3	30	90	84	100	23	19	29	4.0	2.8	12
23	22	5.0	37	122	143	60	20	20	20	3.6	2.7	9.6
24	20	4.3	70	80	66	40	25	21	14	3.1	2.3	7.6
25	19	4.0	153	52	41	27	90	20	9.6	3.0	2.2	5.9
26	15	4.0	85	32	31	21	100	19	7.6	2.8	4.0	5.0
27	10	4.0	43	21	25	17	80	18	5.9	2.7	9.1	4.3
28	7.0	4.0	26	15	20	14	60	17	5.3	2.3	58	3.9
29	6.8	4.0	18	12	-	12	45	15	9.1	2.2	126	3.6
30	7.0	4.0	18	9.1	-	11	35	12	93	1.9	69	7.0
31	15	-	18	8.1	-	10	-	11	-	1.7	54	-
Total	1,298.6	1,011.1	979.8	1,108.8	997.0	1,476.3	934	680	664.7	652.8	474.3	848.6
Mean	41.9	33.7	31.6	35.8	35.6	47.6	31.1	21.9	22.2	21.1	15.3	28.3
Cfsm	14.9	12.0	11.2	12.7	12.7	16.9	11.1	7.79	7.90	7.51	5.44	10.1
In.	17.19	13.38	12.97	14.67	13.20	19.54	12.36	9.00	8.80	8.64	6.28	11.23
Ac-ft	2,580	2,010	1,940	2,200	1,980	2,930	1,850	1,350	1,320	1,290	940	1,680

Calendar year 1946: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1946-47: Max 300 Min 0.5 Mean 30.5 Cfsm 10.9 In. 147.26 Ac-ft 22,070

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1, Oct. 10 to Nov. 3, Jan. 12, 13, 16-22, Mar. 15 to May 22, Sept. 28-30; discharge estimated on basis of recorded ranges in stage, weather records, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	24	30	90	18	6.3	5.0	12	51	14	10	96
2	160	24	23	70	14	5.9	5.3	13	49	11	9.0	143
3	140	22	18	50	11	5.9	5.0	16	38	11	7.0	169
4	100	18	14	35	9.1	120	4.6	26	31	14	5.8	81
5	70	16	12	30	7.6	158	4.6	37	26	13	5.0	45
6	50	16	13	27	7.1	70	4.3	46	71	9.6	4.3	44
7	35	25	11	22	6.6	36	4.3	42	65	7.1	3.8	45
8	28	30	10	21	6.6	22	4.3	37	43	5.6	3.4	36
9	30	29	9	19	5.9	15	4.3	38	32	5.0	3.0	101
10	*35	40	11	16	5.0	11	4.3	35	28	4.3	2.8	72
11	110	36	25	14	7.6	9.1	4.0	32	24	4.0	2.7	39
12	168	34	45	22	16	8.1	4.3	32	21	3.6	8.0	23
13	100	31	40	162	14	*6.6	4.3	35	17	3.3	8.0	14
14	203	25	37	103	14	6.6	4.3	40	16	3.1	*6.6	11
15	121	19	40	48	12	6.3	4.6	45	14	3.0	5.9	8.1
16	74	16	70	29	9	5.9	11	52	13	2.7	5.0	6.3
17	59	21	60	21	7	5.9	18	60	12	2.5	4.0	9.1
18	74	18	50	18	6	5.9	17	70	10	2.3	3.3	60
19	70	18	45	21	5	5.6	14	66	9.1	2.2	3.1	116
20	55	15	60	111	6	6.3	12	60	9.1	2.8	3.1	115
21	38	*14	80	167	10	8.1	14	64	9.1	17	3.1	108
22	40	14	65	73	10	8.1	30	70	9.1	19	3.1	70
23	52	15	60	48	9	6.6	41	76	7.6	14	21	39
24	74	31	50	30	20	6.3	32	80	6.6	10	28	30
25	51	88	40	20	20	5.6	22	74	5.9	29	28	152
26	80	55	32	14	16	5.3	17	60	6.6	40	18	79
27	123	34	40	18	12	5.0	14	50	7.6	25	12	40
28	68	43	40	35	9	4.6	12	56	7.6	19	9.6	22
29	55	65	35	44	7	4.6	11	*48	7.1	16	27	14
30	44	40	40	32	-	4.3	12	44	14	13	88	11
31	34	-	60	25	-	4.6	-	42	-	11	177	-
Total	2,366	876	1,165	1,435	300.5	579.5	344.5	1,458	660.4	337.1	518.6	1,798.5
Mean	76.3	29.2	37.6	46.3	10.4	18.7	11.5	47.0	22.0	10.9	16.7	60.0
Cfsm	27.2	10.4	13.4	16.5	3.70	6.65	4.09	16.7	7.83	3.88	5.94	21.4
In.	31.31	11.59	15.42	18.99	3.98	7.67	4.56	19.30	8.74	4.46	6.86	23.80
Ac-ft	4,690	1,740	2,310	2,850	600	1,150	680	2,890	1,310	670	1,030	3,570

Calendar year 1947: Max 300 Min .5 Mean 33.5 Cfsm 11.9 In. 162.04 Ac-ft 24,280
Water year 1947-48: Max 203 Min 2.2 Mean 32.3 Cfsm 11.5 In. 156.68 Ac-ft 23,490

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-9, Nov. 14-20, Nov. 30 to Jan. 10, Feb. 16 to Mar. 1, May 10-28, July 28 to Aug. 13; discharge estimated on basis of recorded ranges in stage, weather records, and records for nearby stations.

Perseverance Creek near Wacker--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	45	20	3.5	5.2	169	63	40	74	102	166	37
2	7.1	60	17	3.5	5.0	114	63	31	92	57	96	40
3	7.1	110	14	14	4.3	68	70	27	189	38	78	20
4	7.6	80	12	80	4.0	46	74	22	122	29	84	12
5	7.0	35	10	120	3.6	35	56	44	105	25	57	8.0
6	9.5	45	9.0	50	3.6	31	48	74	89	23	33	6.0
7	7.0	20	8.0	25	3.6	25	48	59	63	22	27	5.0
8	10	17	6.5	15	3.6	19	35	67	49	21	25	4.5
9	270	150	6.0	10	5.6	14	36	83	*66	22	58	4.0
10	110	110	5.5	8.5	6.3	12	62	106	121	24	82	3.7
11	77	48	5.0	8.1	5.6	11	66	202	110	24	77	3.5
12	112	32	4.5	9.6	5.2	11	48	121	78	24	48	3.5
13	62	25	4.2	19	5.6	10	38	78	78	24	35	80
14	80	35	4.0	24	5.6	9.1	44	67	66	23	110	210
15	30	45	3.7	22	6.3	8.1	52	57	60	20	60	80
16	25	32	3.5	74	7.6	7.1	41	52	54	19	35	30
17	50	26	3.5	52	6.6	6.3	97	56	53	18	23	22
18	30	45	23	32	5.9	8.6	121	89	50	17	15	23
19	75	30	40	19	5.6	11	101	73	50	13	11	32
20	45	15	18	13	5.0	13	79	69	48	16	*8.6	110
21	20	90	10	10	4.6	*18	104	73	49	22	7.0	250
22	45	70	7.0	8.1	5.2	21	84	76	44	19	5.5	270
23	150	100	23	6.6	13	18	62	72	44	16	5.2	120
24	90	55	12	5.9	43	38	48	70	37	19	5.0	70
25	200	32	32	12	54	38	46	82	30	68	4.5	35
26	70	22	50	12	70	32	202	65	32	49	4.0	18
27	170	18	25	9.6	96	34	281	51	56	30	3.7	12
28	55	14	14	8.6	90	25	132	51	53	41	3.5	8.0
29	80	12	9.0	8.1	-	26	86	51	44	41	3.5	13
30	60	11	6.0	7.1	-	24	59	52	153	52	3.5	45
31	39	-	4.5	5.9	-	29	-	65	-	218	5.0	-
Total	2,007.9	1,429	409.9	696.1	479.6	931.2	2,346	2,125	2,159	1,136	1,179.0	1,575.2
Mean	64.8	47.6	13.2	22.5	17.1	30.0	78.2	68.5	72.0	36.6	38.0	52.5
Cfsm	23.1	16.9	4.70	8.01	6.09	10.7	27.8	24.4	25.6	13.0	13.5	18.7
In.	26.57	18.91	5.42	9.21	6.35	12.32	31.05	28.12	28.57	15.03	15.60	20.85
Ac-ft	3,980	2,830	813	1,380	951	1,850	4,650	4,210	4,280	2,250	2,340	3,120

Calendar year 1948: Max 270 Min 2.2 Mean 30.8 Cfsm 11.0 In. 149.26 Ac-ft 22,370
Water year 1948-49: Max 281 Min 3.5 Mean 45.1 Cfsm 16.0 In. 218.00 Ac-ft 32,650

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 5-10, 14-30, Nov. 1 to Dec. 13, Dec. 15 to Jan. 10, Aug. 13-19, Aug. 21 to Sept. 30; discharge estimated on basis of recorded ranges in stage, weather records and records for Ward Creek near Wacker.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	198	40			13	9.5	40	34	26	60	83
2	35	192	28			16	9.5	40	46	19	60	66
3	110	94	21			26	9.5	46	85	15	35	48
4	100	159	16			28	15	70	65	13	44	48
5	60	121	15			15	20	63	44	13	68	186
6	40	86	14			12	23	48	37	22	39	102
7	20	73	10			11	23	36	53	19	23	46
8	160	54	40			9.8	18	36	62	14	15	24
9	90	34	25			8.2	14	190	56	12	11	14
10	45	23	19			7.2	11	150	46	11	7.8	10
11	140	16	14		3.0	6.3	19	213	50	11	6.1	6.8
12	80	12	13			*5.1	36	118	60	37	4.6	4.9
13	290	20	12			4.3	41	59	*66	60	4.2	4.2
14	160	101	15			4.0	46	42	61	38	4.0	4.0
15	80	57	30			4.0	50	32	58	24	3.9	3.9
16	40	53	17	2.5		14	30	29	57	*17	3.8	3.9
17	20	162	12			13	22	27	58	29	3.8	4.0
18	11	75	*9.2			10	17	24	58	96	3.8	4.4
19	13	41	7.7			15	18	28	53	53	3.7	60
20	17	26	7.5			20	61	40	52	30	3.6	254
21	32	38	6.8			24	46	34	37	20	3.6	176
22	25	60	6.8			27	30	30	32	15	3.5	132
23	*158	48	6.1		3.2	29	21	26	28	21	3.4	133
24	75	44	6.3		3.2	17	18	27	26	88	3.4	74
25	63	44	7.7		6.3	17	16	57	23	158	27	71
26	83	50	7.4		12	18	*14	78	19	153	334	46
27	104	80	6.1		11	21	12	66	19	72	170	28
28	109	45	4.5		11	16	13	46	25	34	139	18
29	118	50	4.0		-	14	31	46	50	33	96	13
30	478	70	3.7		-	12	42	46	36	32	48	10
31	212	-	3.5		-	10	-	39	-	22	28	-
Total	3,008	2,126	428.3	77.5	112.7	446.9	735.5	1,826	1,396	1,207	1,260.2	1,678.1
Mean	97.0	70.9	13.8	2.5	4.02	14.4	24.5	58.9	46.5	38.9	40.6	55.9
Cfsm	34.5	25.2	4.91	0.890	1.43	5.12	8.72	21.0	16.5	13.8	14.4	19.9
In.	39.81	28.14	5.67	1.03	1.49	5.91	9.73	24.17	18.48	15.97	16.68	22.21
Ac-ft	5,970	4,220	850	154	224	886	1,460	3,620	2,770	2,390	2,500	3,330

Calendar year 1949: Max 478 Min 3.5 Mean 49.8 Cfsm 17.7 In. 240.72 Ac-ft 36,070
Water year 1949-50: Max 478 Min - Mean 39.2 Cfsm 14.0 In. 189.29 Ac-ft 28,370

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-22, Nov. 26 to Dec. 17, Dec. 29 to Feb. 22, Mar. 16-31, discharge estimated on basis of recorded ranges in stage, weather records and records for Ward Creek near Wacker.

24. Ward Creek near Wacker

Location.--Lat 55°26', long. 131°40', on Revillagigedo Island, on right bank 160 ft downstream from Forest Service bridge, an eighth of a mile downstream from outlet of Lake Connell, 2½ miles northeast of Wacker, and 6 miles north of Ketchikan.

Drainage area.--12.8 sq mi.

Gage.--Water-stage recorder. Datum of gage is 190.29 ft above mean sea level (levels by Ketchikan Pulp Company). Prior to Apr. 13, 1949, at site 140 ft downstream at datum 0.50 ft higher.

Extremes.--1948-49: Maximum discharge during water year, 2,250 cfs Apr. 26 (gage height, 6.25 ft); minimum, 7.5 cfs Aug. 30 (gage height, 0.85 ft).
1949-50: Maximum discharge during water year, 2,390 cfs Oct. 30 (gage height, 6.48 ft); minimum not determined, occurred during period of no gage-height record.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Lake Connell, an eighth of a mile above gage, has an area of 75 acres.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	107	82	a22	18	708	256	106	*190	273	499	141
2	21	194	71	18	18	363	205	93	256	126	256	150
3	24	489	45	76	a18	195	363	80	630	76	248	112
4	27	347	35	446	a18	123	375	65	323	63	386	52
5	25	183	a30	625	18	96	161	275	317	58	162	35
6	33	208	25	223	a18	96	125	299	243	54	75	25
7	24	92	22	103	18	75	195	185	143	52	76	18
8	32	88	22	37	18	54	101	245	102	52	89	15
9	1,210	504	22	a24	a25	46	217	311	255	55	172	13
10	317	387	20	19	28	38	416	361	523	61	220	10
11	*223	192	20	*27	a23	38	239	603	302	60	282	9.0
12	516	133	18	19	a19	44	138	326	173	61	124	8.5
13	140	94	18	41	20	36	128	225	97	61	111	260
14	273	146	18	55	a20	29	202	197	187	54	364	837
15	94	195	18	44	22	27	217	173	190	44	178	265
16	82	140	17	420	20	27	128	157	139	45	104	102
17	226	112	16	170	20	24	370	190	137	47	65	69
18	112	205	130	82	a20	38	399	*383	124	39	47	71
19	332	101	230	45	20	67	383	214	124	35	33	102
20	156	67	101	38	a19	60	314	*227	114	39	26	432
21	71	387	55	27	18	*96	430	243	122	47	21	988
22	164	325	37	22	28	94	302	243	104	37	18	1,060
23	770	458	130	a20	67	67	230	214	112	33	16	423
24	437	214	86	23	262	170	197	187	84	40	15	217
25	1,080	96	170	a37	214	156	210	251	*60	204	13	89
26	280	55	262	a35	280	107	1,400	171	71	114	10	52
27	924	46	80	33	325	138	1,070	*132	207	60	9.5	36
28	232	41	62	32	310	69	419	143	139	110	9.5	27
29	348	36	49	27	-	118	273	139	93	108	8.5	44
30	256	35	37	a27	-	76	159	128	534	122	8.5	152
31	105	-	a27	27	-	82	-	175	-	611	21	-
Total	8,558	5,677	1,955	2,844	1,904	3,357	9,622	6,741	6,095	2,841	3,667.0	5,814.5
Mean	276	189	63.1	91.7	68.0	108	321	217	203	91.6	118	194
Cfsm	21.6	14.8	4.93	7.16	5.31	8.44	25.1	17.0	15.9	7.16	9.22	15.2
In.	24.87	16.49	5.68	8.26	5.53	9.75	27.96	19.59	17.71	8.25	10.65	16.89
Ac-ft	16,970	11,260	3,880	5,640	3,780	6,660	19,080	13,370	12,090	5,640	7,270	11,530

Calendar year 1948: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1948-49: Max 1,400 Min 8.5 Mean 162 Cfsm 12.7 In. 171.63 Ac-ft 117,200

* Discharge measurement made on this day.
a No gage-height records; discharge estimated or interpolated on basis of records for Perseverance Creek near Wacker and weather records for Ketchikan.

Ward Creek near Wacker--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	137	580	217	5.0		35	69	171	132	71	262	558
2	135	577	141	4.8		45	60	185	192	58	268	238
3	440	277	93	5.0		90	52	217	354	48	124	192
4	406	586	68	6.0		100	157	299	235	45	146	224
5	232	399	63	7.5		60	185	225	150	54	230	878
6	164	308	54	7.0		45	139	183	139	84	112	341
7	71	243	39	6.0		40	110	139	245	58	65	126
8	664	168	157	6.0		35	78	146	248	42	45	65
9	265	95	106	6.0		25	52	639	180	39	34	44
10	209	60	60	5.5		22	42	437	157	36	26	35
11	558	44	37	5.5		22	198	796	190	45	21	27
12	227	35	31	5.5		18	386	357	230	146	18	21
13	1,220	75	26	4.4		17	293	183	238	168	16	17
14	696	354	54	5.5		15	311	135	207	95	15	15
15	204	155	106		6.5	16	262	118	210	58	13	13
16	93	140	57			52	114	128	210	45	11	12
17	55	685	34			48	80	116	217	120	9.5	9.5
18	42	220	21			33	65	104	202	347	8.5	8.5
19	54	95	18			63	98	124	171	137	8.5	152
20	76	60	18			80	377	141	157	75	8.0	996
21	124	224	18			89	171	130	104	52	7.0	654
22	93	329	18			108	108	122	98	41	6.5	538
23	596	183	21	4.5		112	76	104	93	72	5.5	924
24	222	183	22			66	75	116	85	268	5.0	288
25	227	212	13			68	71	212	69	547	194	296
26	370	243	14			71	*58	305	61	499	1,460	159
27	406	320	22			80	55	230	71	262	510	70
28	377	157	11			75	73	171	112	95	361	48
29	312	197	9.5		-	54	171	254	200	93	311	35
30	*1,810	276	7.5		-	41	192	195	110	98	150	28
31	669	-	6.5		-	41	-	143	-	60	118	-
Total	11,154	7,480	1,562.5	156.2	182.0	1,666	4,178	6,825	5,067	3,858	4,568.5	7,012
Mean	360	249	50.4	5.04	6.5	53.7	139	220	169	124	147	234
Cfsm	28.1	19.5	3.94	0.394	0.508	4.20	10.9	17.2	13.2	9.69	11.5	18.3
In.	32.41	21.73	4.54	0.45	0.53	4.84	12.14	19.83	14.72	11.21	13.27	20.37
Ac-ft	22,120	14,840	3,100	310	361	3,300	8,290	13,540	10,050	7,650	9,060	13,910

Calendar year 1949: Max 1,810 Min 6.5 Mean 173 Cfsm 13.5 In. 183.27 Ac-ft 125,100
Water year 1949-50: Max 1,810 Min - Mean 147 Cfsm 11.5 In. 156.04 Ac-ft 106,500

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 10, Jan. 15 to Mar. 9, Mar. 25, Sept. 27-30; discharge estimated or interpolated on basis of records for Perseverance Creek near Wacker and weather records for Ketchikan.

25. Ketchikan Creek at Ketchikan

Location.--Lat 55°20'40", long. 131°38'05", on Revillagigedo Island, at Ketchikan, 200 ft downstream from Schoenbar Creek, a quarter of a mile upstream from mouth, and 1¼ miles downstream from Ketchikan Lakes.

Drainage area.--13.5 sq mi (revised).

Gage.--Staff gage. Altitude of gage is 50 ft.

Average discharge.--5 years (1910-11, 1915-19), 219 cfs.

Extremes.--1909-12, 1915-19: Maximum discharge observed, 4,400 cfs Nov. 18, 1917 (gage height, 8.3 ft), from rating curve extended above 1,500 cfs; minimum observed, 34 cfs Sept. 23, 24, 1915 (gage height, 0.28 ft).

Remarks.--Regulation by Ketchikan Lakes (combined capacity, 20,000 acre-ft). Small diversion for industrial and domestic use above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	-	130	76.5	76.3	82.0	237	135	291	330	374	256	183	-
1911	550	211	339	125	70	100	162	249	334	297	128	189	231
1912	173	169	411	151	214	62.1	95.2	187	112	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	86.6	303	106	-
1916	371	238	190	47.8	109	110	155	199	241	281	165	228	195
1917	233	201	110	106	179	54.8	114	192	249	240	455	146	190
1918	402	1,170	98.7	167	90.1	54.3	152	227	144	140	234	81.0	247
1919	480	357	231	247	92.1	98.9	294	238	195	137	135	266	231
1920	107	406	‡169	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

Ketchikan Creek at Ketchikan--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	-	7,740	4,700	4,690	4,550	14,600	8,030	17,900	19,600	23,000	15,700	10,900	-
1911	33,800	12,600	20,800	7,690	3,890	6,150	9,640	15,300	19,900	18,300	7,870	11,200	167,000
1912	10,600	10,100	25,300	9,280	12,300	3,820	5,660	11,500	6,660	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	5,320	18,600	6,310	-
1916	22,800	14,200	11,700	2,940	6,270	6,760	9,220	12,200	14,300	17,300	10,100	13,600	141,000
1917	14,300	12,000	6,760	6,520	9,940	3,370	6,780	11,800	14,800	14,800	28,000	8,690	138,000
1918	24,700	69,600	6,090	10,300	5,000	3,340	9,040	14,000	8,570	8,610	14,400	4,820	178,000
1919	29,500	21,200	14,200	15,200	5,120	6,080	17,500	14,600	11,600	8,420	8,300	15,800	168,000
1920	6,580	24,200	‡10,400	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1910	662	-	-	36	-	-	-	-	257	258.72	186,000
1911	662	a2,220	Oct. 28, 1910	-	231	17.1	232.20	167,000	201	202.55	146,000
1912	662	a3,400	Dec. 2, 1911	40	-	-	-	-	-	-	-
1915	662	-	-	34	-	-	-	-	-	-	-
1916	662	a1,490	July 29, 1916	-	195	14.4	196.49	141,000	173	174.85	126,000
1917	714	a3,160	Aug. 19, 1917	42	190	14.1	191.27	138,000	283	284.82	205,000
1918	714	a4,400	Nov. 18, 1917	43	247	18.3	247.96	178,000	198	198.71	143,000
1919	714	a1,950	Nov. 29, 1918	51	231	17.1	232.85	168,000	‡199	‡199.71	‡144,000
1920	714	-	-	-	-	-	-	-	-	-	-

‡ Not previously published.
a Maximum observed.

26. Beaver Falls Creek near Ketchikan 1/

Location.--Lat 55°22'55", long. 131°28'25", on Revillagigedo Island, a quarter of a mile upstream from mouth and 7 miles northeast of Ketchikan.

Drainage area.--5.8 sq mi (revised), approximately.

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

Average discharge.--10 years (1920-25, 1927-32), 110 cfs.

Extremes.--1920-25, 1927-32: Maximum discharge, 2,180 cfs Nov. 7, 1929 (gage height, 7.37 ft); minimum recorded, 4 cfs Mar. 10, 1932 (gage height, 0.05 ft).

Remarks.--No diversion or regulation above station.

Cooperation.--Records 1920-25, 1927-32 furnished by U. S. Forest Service and Zellerbach Paper Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	162	109	-
1920	-	-	-	-	-	-	-	-	-	-	-	‡113	-
1921	146	76.6	49.0	31.7	133	41.1	46.3	127	212	118	98.1	152	102
1922	248	127	195	25	13.5	†21.2	71.3	155	196	91.3	64.4	174	†116
1923	186	219	57	16.4	73	77.6	142	181	141	59.6	73.3	122	112
1924	103	247	121	73	119	54.4	64.4	219	130	125	57.1	203	126
1925	185	173	71.3	29.2	15	45	70.5	163	144	143	74.0	30.6	95.9
1926	91.9	186	248	-	-	-	-	-	-	-	-	-	-
1928	168	32.7	51.1	168	63.6	130	67.7	166	113	91.3	64.2	58.3	98.3
1929	153	118	110	120	13.4	55.4	46.5	97.7	125	109	165	15.8	94.8
1930	179	212	53.3	11.8	74.1	48.7	81.1	118	184	76.8	24.7	105	97.1
1931	222	235	255	148	96.8	64.6	109	163	105	94.2	91.9	103	141
1932	170	105	55.0	90.0	91.0	55.0	90.4	155	167	138	66.8	170	113

† Corrected.
‡ Not previously published; partly estimated on basis of records for nearby streams.

1/ Formerly published as Beaver Falls Creek at George Inlet.

Beaver Falls Creek near Ketchikan--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	9,960	6,490	-
1920	-	-	-	-	-	-	-	-	-	-	-	‡6,700	-
1921	8,980	4,560	3,010	1,950	7,390	2,530	2,760	7,810	12,600	7,260	6,030	9,040	73,900
1922	15,200	7,560	12,000	1,540	750	†1,300	4,240	9,530	11,700	5,610	3,960	10,400	†83,800
1923	11,400	13,000	3,500	1,010	4,050	4,770	8,450	11,100	8,390	3,660	4,510	7,260	81,100
1924	6,330	14,700	7,440	4,490	6,840	3,340	3,830	13,500	7,740	7,690	3,510	12,100	91,500
1925	11,400	10,300	4,380	1,800	833	2,770	4,200	10,000	8,570	8,790	4,550	1,820	69,400
1926	5,650	11,100	15,200	-	-	-	-	-	-	-	-	-	-
1928	10,300	1,950	3,140	10,300	3,660	7,990	4,030	10,200	6,720	5,610	3,950	3,470	71,300
1929	9,410	7,020	6,760	7,380	744	3,410	2,770	6,010	7,440	6,700	10,100	940	68,700
1930	11,000	12,600	3,280	726	4,120	2,990	4,830	7,260	10,900	4,720	1,520	6,250	70,200
1931	13,600	14,000	15,700	9,100	5,380	3,970	6,490	10,000	6,250	5,790	5,650	6,130	102,000
1932	10,500	6,250	3,380	5,530	5,230	3,380	5,380	9,530	9,940	8,480	4,110	10,100	81,800

† Corrected.
‡ Not previously published; partly estimated on basis of records for nearby streams.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1917	722	-	-	-	-	-	-	-	-	-	-
1920	836	-	-	-	-	-	-	-	-	-	-
1921	836	-	-	9	102	17.6	239.04	73,900	127	297.97	92,100
1922	836	-	-	-	†116	†20.0	†270.95	†83,800	†106	†248.85	†76,900
1923	836	-	-	-	112	19.3	262.48	81,100	113	264.30	81,700
1924	836	-	-	18	126	21.7	295.75	91,500	123	288.36	89,100
1925	836	-	-	-	95.9	16.5	224.45	69,400	104	243.56	75,300
1926	836	-	-	-	-	-	-	-	-	-	-
1928	836	970	Mar. 19, 1928	-	98.3	16.9	230.62	71,300	109	255.74	79,100
1929	836	1,150	Jan. 7, 1929	6	94.8	16.3	221.95	68,700	100	234.21	72,400
1930	836	2,180	Nov. 7, 1929	-	97.1	16.7	227.28	70,200	120	280.11	86,600
1931	(a)	1,590	Oct. 2, 1930	14	141	24.3	329.92	102,000	109	254.89	78,900
1932	(a)	684	Sept.13, 1932	4	113	19.5	264.52	81,800	-	-	-

† Corrected.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

27. Mahoney Creek near Ketchikan 1/

Location.--Lat 55°25'30", long. 131°30'45", on Revillagigedo Island, on right bank one eighth of a mile downstream from Mahoney Lake, and 8 miles northeast of Ketchikan.

Drainage area.--5.70 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 45 ft (by barometer). Prior to October 1947, at different datum.

Average discharge.--15 years (1920-25, 1926-33, 1947-50), 109 cfs.

Extremes.--1947-48: Maximum discharge during water year, 1,210 cfs Aug. 31 (gage height, 3.63 ft); minimum daily, 10 cfs Apr. 10.
1948-49: Maximum discharge during water year, 1,260 cfs Sept. 21 (gage height, 3.68 ft); minimum daily, 16 cfs Dec. 13-16, Feb. 14-22.
1949-50: Maximum discharge during water year, 1,640 cfs Sept. 5 (gage height, 4.00 ft); minimum daily, 1.5 cfs Jan. 30 to Feb. 1.
1920-25, 1926-33, 1947-50: Maximum discharge, 2,400 cfs Oct. 2, 1930 (gage height, 4.60 ft, datum then in use), from rating curve extended above 1,100 cfs; minimum daily, 1.5 cfs Jan. 30 to Feb. 1, 1950.

Remarks.--Records for water years 1947-49 poor; record for 1950 good except for periods of no gage height record, which are poor. Area of Mahoney Lake at elevation 76 ft is 163 acres. No diversion or regulation above station.

Cooperation.--Records September 1920 to October 1933 furnished by U. S. Forest Service and Zellerbach Paper Company.

1/ Published as Mahoney Creek at George Inlet, 1920-25, 1926-33.

Mahoney Creek near Ketchikan--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	-	-	-	-	-	-	-	-	-	-	-	‡101	-
1921	114	72	46.3	34	†124	24	36	89	183	113	106	142	†90.3
1922	188	82.4	172	25	13.5	†21	60	121	151	106	72.1	162	†98.4
1923	158	210	54.9	19.0	77.1	62.5	116	143	134	92.1	129	165	113
1924	103	270	140	82.2	131	54.0	50.7	197	146	170	84.2	175	133
1925	200	203	76.8	28.4	15.0	47.8	68.0	153	193	185	82.3	29.5	107
1926	‡72.5	-	-	-	-	-	-	-	-	-	-	‡25.6	-
1927	163	76.0	†106	56.3	29.7	55.1	54.4	106	154	144	116	136	†100
1928	178	35.8	42.2	177	66.3	134	68.2	149	133	124	79.4	64.1	105
1929	161	138	105	108	14.9	58.8	31.1	94.3	147	144	226	18.9	105
1930	204	185	36.6	10	79.8	40.9	62.3	85.7	179	76.6	32	81.2	89.1
1931	218	199	289	140	75.4	57.3	91.0	154	110	109	81.7	119	137
1932	181	69.7	51.5	88.7	84.2	54.6	68.6	126	165	167	88.4	183	111
1933	138	130	42	53	20	43	107	139	143	202	194	102	110
1934	144	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.
‡ Not previously published; partly estimated on basis of records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	-	-	-	-	-	-	-	-	-	-	-	‡6,020	-
1921	7,010	4,280	2,850	2,090	†6,870	1,480	2,140	5,470	11,300	6,950	6,520	8,450	†65,400
1922	11,600	4,900	10,600	1,540	750	†1,290	3,570	7,440	8,980	6,520	4,430	9,640	†71,300
1923	9,720	12,500	3,380	1,170	4,280	3,840	6,900	8,790	7,970	5,660	7,930	9,820	82,000
1924	6,330	16,100	8,610	5,050	7,540	3,320	3,020	12,100	8,690	10,500	5,180	10,400	96,800
1925	12,300	12,100	4,720	1,750	830	2,940	4,050	9,410	11,500	11,400	5,060	1,760	77,800
1926	‡4,450	-	-	-	-	-	-	-	-	-	-	‡1,520	-
1927	10,000	4,520	†6,520	3,460	1,650	3,390	3,240	6,520	9,160	8,850	7,130	8,090	†72,500
1928	10,900	2,130	2,590	10,900	3,810	8,240	4,060	9,160	7,910	7,620	4,880	3,810	76,000
1929	9,900	8,210	6,460	6,640	828	3,620	1,850	5,800	8,750	8,850	13,900	1,120	75,900
1930	12,500	11,000	2,250	615	4,430	2,520	3,710	5,270	10,700	4,710	1,970	4,830	64,500
1931	13,400	11,800	17,800	8,610	4,190	3,520	5,410	9,470	6,540	6,700	5,020	7,080	99,500
1932	11,100	4,150	3,170	5,450	4,840	3,360	4,080	7,750	9,820	10,300	5,440	10,900	80,400
1933	8,490	7,740	2,580	3,260	1,110	2,640	6,400	8,500	8,510	12,400	11,900	6,070	79,600
1934	8,850	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.
‡ Not previously published; partly estimated on basis of records for nearby stations.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1920	722	-	-	-	-	-	-	-	-	-	-
1921	836	-	-	4	†90.3	†15.8	†214.98	†65,400	†108	†257.49	†78,400
1922	836	-	-	-	†98.4	†17.3	†234.40	†71,300	†96.4	†229.52	†69,800
1923	836	*1,850	Aug. 31, 1923	3	113	19.8	269.46	82,000	121	287.14	87,400
1924	836	-	-	15	133	23.3	318.14	96,800	131	311.97	94,900
1925	836	-	-	-	107	18.8	255.60	77,800	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-
1927	a,836	-	-	9	†100	†17.5	†238.60	†72,500	†92.7	220.79	67,100
1928	836	762	(b)	5	105	18.4	250.09	76,000	117	279.43	85,000
1929	836	1,460	Aug. 21, 1929	7	105	18.4	249.68	75,900	107	253.77	77,100
1930	836	1,920	Nov. 8, 1929	-	89.1	15.6	212.15	64,500	113	268.66	81,800
1931	(a)	2,400	Oct. 2, 1930†	22	137	24.0	327.39	99,500	104	246.73	75,000
1932	(a)	1,250	Oct. 13, 1931	-	111	19.5	264.43	80,400	111	265.40	80,800
1933	(a)	1,090	Sept.20, 1933	5	110	19.3	261.89	79,600	-	-	-
1934	(a)	-	-	-	-	-	-	-	-	-	-

* Revised.
† Corrected.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Oct. 12, 1927, and Jan. 5, 1928.

Mahoney Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	65	70	200	42	15	15	40	165	90	125	268
2	300	74	56	170	35	13	14	42	150	75	100	703
3	200	64	45	130	30	12	13	48	135	80	85	703
4	110	54	36	90	25	113	13	60	120	160	72	279
5	80	48	31	80	22	190	12	80	110	140	62	119
6	60	45	33	70	21	150	12	100	350	120	55	142
7	50	50	29	60	21	90	11	90	300	100	49	129
8	40	59	27	60	20	60	11	85	230	85	45	95
9	42	60	25	50	18	45	11	85	180	75	42	249
10	132	93	30	40	17	35	10	80	160	70	40	225
11	469	91	50	35	20	29	11	80	180	65	39	92
12	599	76	90	50	20	*26	12	84	155	60	*76	62
13	270	70	75	250	19	23	12	90	135	56	75	49
14	836	55	65	*178	18	21	13	100	125	52	58	41
15	392	44	60	85	18	20	13	110	120	49	48	34
16	217	37	140	58	17	19	18	125	115	47	43	29
17	193	37	130	46	17	19	25	140	110	45	40	27
18	193	36	100	40	17	18	35	150	105	43	36	35
19	150	38	85	40	16	17	33	150	100	42	33	504
20	111	35	110	122	16	18	30	140	92	50	33	444
21	79	30	150	404	15	21	35	150	84	110	33	450
22	111	*28	120	209	15	20	60	160	76	100	31	209
23	193	28	95	110	16	18	80	180	68	80	61	96
24	350	58	100	70	18	17	75	185	64	75	95	66
25	225	200	85	53	20	16	60	180	60	200	103	455
26	225	120	60	44	20	15	48	174	66	300	66	267
27	546	90	70	45	18	14	42	182	74	220	48	103
28	288	110	80	56	16	13	40	221	70	150	39	56
29	205	140	70	65	15	13	38	210	70	180	49	41
30	137	90	75	56	-	14	40	185	100	140	271	34
31	90	-	120	48	-	15	-	170	-	120	720	-
Total	7,043	2,025	2,312	3,014	582	1,109	842	3,876	3,869	3,179	2,672	6,026
Mean	227	67.5	74.6	97.2	20.1	35.8	28.1	125	129	103	86.2	202
Cfsm	39.8	11.8	13.1	17.1	3.53	6.28	4.93	21.9	22.6	18.1	15.1	35.3
In.	45.89	13.17	15.10	19.71	3.81	7.24	5.50	25.25	25.21	20.87	17.41	35.32
Ac-ft	13,970	4,020	4,590	5,980	1,150	2,200	1,670	7,690	7,670	6,310	5,300	11,950

Calendar year 1947: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1947-48: Max 836 Min 10 Mean 99.9 Cfsm 17.5 In. 238.48 Ac-ft 72,500

Peak discharge (base, 950 cfs).--Oct. 11 (12 p.m.) 1,160 cfs; Oct. 14 (2 p.m.) 1,080 cfs; Aug. 31 (4 a.m.) 1,190 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-9, Nov. 19-21, Nov. 25 to Jan. 13, Feb. 6-13, 15-23, Mar. 5-11, Mar. 13 to May 25, May 29 to Aug. 9; discharge estimated on basis of recorded ranges in stage and records for nearby stations.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	86	35	23	22	100	78	89	159	392	473	197
2	26	70	36	22	20	250	84	68	169	180	295	167
3	24	180	32	30	18	180	105	57	389	116	242	136
4	25	210	29	45	18	130	125	49	305	97	430	96
5	26	116	28	80	17	100	100	78	242	91	337	74
6	27	88	25	150	17	80	96	142	259	91	161	65
7	28	57	22	100	17	65	90	121	177	91	114	60
8	28	50	21	70	17	55	64	116	120	91	99	54
9	299	179	20	50	18	45	63	147	120	93	121	47
10	271	254	19	42	17	38	99	194	320	116	286	42
11	284	164	18	36	17	33	105	330	320	136	295	38
12	485	136	17	32	17	30	82	282	203	138	177	36
13	161	84	16	35	17	27	71	177	222	161	160	321
14	167	73	16	40	16	25	70	142	194	149	539	708
15	85	77	16	60	16	23	78	127	156	120	277	254
16	73	79	16	*120	16	22	63	112	140	116	184	118
17	*207	58	18	69	16	20	187	110	136	118	136	85
18	133	73	25	46	16	20	194	184	136	100	107	72
19	177	58	50	37	16	21	203	190	136	94	85	68
20	156	44	60	32	16	21	190	172	138	105	69	382
21	81	118	45	28	16	23	187	167	142	120	*57	842
22	150	187	35	26	16	*26	164	172	140	102	58	809
23	473	214	40	24	18	27	120	177	154	91	58	320
24	325	131	42	24	21	35	82	159	149	107	55	164
25	692	71	40	24	25	41	76	197	114	356	52	89
26	226	47	42	24	30	44	317	164	97	226	51	59
27	723	40	40	24	40	48	708	129	272	147	53	46
28	230	36	35	24	60	43	362	123	230	138	56	38
29	204	33	30	24	-	41	197	125	151	200	58	40
30	183	32	28	24	-	38	129	125	590	166	63	97
31	91	-	25	23	-	43	-	*136	-	532	99	-
Total	6,090	3,045	921	1,388	570	1,694	4,489	4,561	6,080	4,780	5,247	5,524
Mean	196	102	29.7	44.8	20.4	54.6	150	147	203	154	169	184
Cfsm	34.4	17.9	5.21	7.86	3.58	9.58	26.3	25.8	35.6	27.0	29.6	32.3
In.	39.73	19.87	6.01	9.06	3.72	11.05	29.29	29.76	39.67	31.19	34.23	36.04
Ac-ft	12,080	6,040	1,830	2,750	1,130	3,360	8,900	9,050	12,060	9,480	10,410	10,960

Calendar year 1948: Max 723 Min 10 Mean 96.3 Cfsm 16.9 In. 230.11 Ac-ft 69,930
Water year 1948-49: Max 842 Min 16 Mean 122 Cfsm 21.4 In. 289.62 Ac-ft 88,050

Peak discharge (base, 950 cfs).--Oct. 27 (10 a.m.) 1,210 cfs; Sept. 14 (4 a.m.) 1,130 cfs; Sept. 21 (11 p.m.) 1,260 cfs.

* Discharge measurement made on this date.

Note.--No gage-height record Dec. 14 to Jan. 15, Feb. 25 to Mar. 14; discharge estimated on basis of weather records for Purple Lake Outlet near Metlakatla and Perseverance Creek near Wacker.

Mahoney Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	305	74	13	1.5	50	23	52	90	152	260	379
2	112	442	58	12	2	70	23	55	109	122	252	230
3	394	167	46	12	4	88	22	62	200	98	145	179
4	350	282	38	11	6	82	29	103	197	100	122	209
5	234	268	34	11	8	58	34	101	142	145	200	881
6	147	268	31	10	9	44	36	80	118	187	131	230
7	85	335	26	9	10	36	36	60	157	145	87	118
8	432	184	34	7	11	30	34	59	200	103	69	69
9	242	102	37	5.5	12	25	29	242	184	92	61	53
10	149	66	32	5	14	22	26	245	162	93	57	42
11	356	47	29	4.5	17	20	28	357	184	109	56	35
12	174	37	27	4	21	*18	95	277	230	305	54	32
13	788	39	25	3.8	25	16	124	187	285	346	51	30
14	512	144	26	3.5	31	15	120	154	256	187	49	28
15	156	100	32	3.2	30	15	98	118	245	116	46	26
16	79	90	31	3.0	29	16	59	90	245	93	44	26
17	51	567	*27	2.8	35	15	45	77	256	*151	43	*24
18	41	197	25	2.6	40	15	36	69	269	346	41	23
19	38	93	23	2.4	42	16	34	70	264	206	42	128
20	39	56	22	2.3	40	16	79	73	260	131	45	640
21	73	72	20	2.2	40	18	73	70	193	118	46	480
22	*88	174	19	2.1	50	20	53	64	154	118	46	298
23	248	164	18	2.0	60	23	41	59	147	178	44	424
24	187	125	18	1.9	70	24	38	62	145	346	43	216
25	172	116	18	1.8	60	23	*34	109	131	574	134	249
26	305	112	18	1.7	50	24	30	184	122	448	927	154
27	384	144	17	1.7	40	24	26	200	131	245	371	88
28	330	100	17	1.6	40	24	26	140	179	129	438	59
29	350	99	16	1.6	-	24	36	140	298	114	249	44
30	986	82	15	1.5	-	22	49	131	216	142	142	35
31	480	-	14	1.5	-	22	-	107	-	103	94	-
Total	8,096	4,977	867	147.2	797.5	915	1,416	3,797	5,769	5,742	4,389	5,429
Mean	261	166	28.0	4.75	28.5	29.5	47.2	122	192	185	142	181
Cfsm	45.8	29.1	4.91	0.833	5.00	5.18	8.28	21.4	33.7	32.5	24.9	31.8
In.	52.82	32.47	5.66	0.96	5.20	5.97	9.24	24.77	37.64	37.46	28.64	35.43
Ac-ft	16,060	9,870	1,720	292	1,580	1,810	2,810	7,530	11,440	11,390	8,710	10,770

Calendar year 1949: Max 986 Min 14 Mean 132 Cfsm 23.2 In. 314.96 Ac-ft 95,750
Water year 1949-50: Max 986 Min 1.5 Mean 116 Cfsm 20.4 In. 276.26 Ac-ft 83,980

Peak discharge (base, 950 cfs).--Oct. 13 (11 p.m.) 1,070 cfs; Oct. 30 (8 p.m.) 1,310 cfs; Aug. 26 (9 a.m.) 1,190 cfs; Sept. 5 (5 a.m.) 1,640 cfs; Sept. 20 (5 a.m.) 952 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 29 to Mar. 2; discharge estimated on basis of weather records and records for Purple Lake Outlet near Metlakatla and Fish Creek near Ketchikan.

28. Falls Creek near Ketchikan 1/

Location.--Lat 55°36'50", long. 131°20'55", on Revillagigedo Island, on left bank 1,100 ft upstream from mouth on east shore of Carroll Inlet, 1.1 miles downstream from Swan Lake, and 22 miles northeast of Ketchikan.

Drainage area.--36.5 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 130 ft (from topographic map). August 1916 to January 1926 and September 1927 to November 1933, at site 1,000 ft upstream at different datum.

Average discharge.--19 years (1916-25, 1927-33, 1946-50), 464 cfs.

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947	Sept.11, 1947	2,660	5.46	Dec. 2, 1946	78	2.11
1948	Sept.21, 1948	2,970	5.70	Mar. 2,3, 1948	50	1.99
1949	Sept.22, 1949	4,470	6.80	Feb. 21-23, 1949	38	1.92
1950	Oct. 13, 1949	3,840	6.35	Feb. 1-2, 1950	†23	-

† Minimum daily discharge.

1916-26, 1927-33, 1946-50: Maximum discharge, about 5,500 cfs Nov. 1, 1917; minimum daily, 19 cfs Feb. 21-25, 1925.

Remarks.--Records for water years 1947-50 good except those for periods of doubtful or no gage-height record, which are fair. Swan Lake has an area of 1,050 acres. No diversion or regulation above station.

Cooperation.--Records 1921-26, 1927-33 furnished by U. S. Forest Service and Zellerbach Paper Company.

1/ Formerly published as Swan Lake Outlet at Carroll Inlet.

Falls Creek near Ketchikan--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	437	-
1917	496	353	172	168	319	59	211	609	682	558	618	681	415
1918	870	*1,800	200	450	180	90	290	678	716	432	531	201	*537
1919	946	610	392	437	120	166	571	629	546	424	366	400	470
1920	340	534	638	287	223	99.5	211	404	590	323	640	362	388
1921	597	426	227	185	506	172	177	436	695	391	231	748	397
1922	1,370	827	455	119	54	97	229	659	646	312	164	800	480
1923	700	1,100	264	116	311	287	655	718	527	240	313	765	499
1924	494	1,010	663	370	475	252	251	950	540	466	289	739	541
1925	773	820	391	81.7	40.8	201	292	790	599	564	227	192	417
1926	256	814	994	979	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	479	-
1928	951	182	163	588	260	491	321	687	498	411	290	464	444
1929	627	460	478	354	101	304	185	450	532	426	717	121	399
1930	971	949	250	79.7	338	255	341	456	810	371	123	317	438
1931	824	940	1,130	611	365	248	500	708	521	393	321	429	584
1932	884	442	216	392	389	264	393	621	633	558	388	828	501
1933	592	652	179	247	147	193	336	710	777	722	659	429	472
1934	595	‡963	‡250	-	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published; estimated on the basis of records for Fish Creek near Ketchikan.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	26,000	-
1917	30,500	21,000	10,600	10,300	17,700	3,600	15,600	37,400	40,600	34,300	38,000	†40,600	300,000
1918	53,500	*107,000	12,300	27,700	10,000	5,530	17,300	41,700	42,600	26,600	32,600	12,000	*389,000
1919	58,200	36,300	24,100	26,900	6,660	10,200	34,000	38,700	32,500	26,100	22,500	23,800	340,000
1920	20,900	31,800	39,200	17,600	12,800	6,120	12,600	24,800	35,100	19,900	39,400	21,500	282,000
1921	36,700	25,300	14,000	11,400	28,200	10,600	10,500	26,800	41,400	24,000	14,200	44,500	288,000
1922	84,400	49,200	28,000	7,320	3,000	5,960	13,600	40,500	38,400	19,200	10,100	47,600	347,000
1923	43,000	65,400	16,200	7,130	17,300	17,600	39,000	44,100	31,500	15,000	19,200	45,500	361,000
1924	30,400	60,100	40,800	22,800	27,300	15,500	14,900	58,400	32,100	28,700	17,800	44,000	393,000
1925	47,500	48,800	24,000	5,020	2,270	12,400	17,400	48,600	35,600	34,700	14,000	11,400	302,000
1926	15,700	48,400	61,100	60,200	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	28,500	-
1928	58,500	10,800	10,000	36,200	15,000	30,200	19,100	42,200	29,600	25,300	17,800	27,600	322,000
1929	38,600	27,400	29,400	31,800	5,610	18,700	11,200	27,700	31,700	26,200	44,100	7,200	†300,000
1930	59,700	56,500	15,400	4,900	18,800	15,700	20,300	28,000	48,200	22,800	7,560	18,900	317,000
1931	50,700	55,900	69,500	37,600	20,200	15,200	29,800	43,500	31,000	24,200	19,700	25,500	423,000
1932	54,400	26,300	13,300	24,100	22,400	16,200	23,400	38,200	37,700	34,300	23,900	49,300	364,000
1933	36,400	38,800	11,000	15,200	8,160	11,900	20,000	43,700	46,300	44,400	40,500	25,500	342,000
1934	36,600	‡57,300	‡15,400	-	-	-	-	-	-	-	-	-	-

* Revised.
† Corrected.
‡ Not previously published; estimated on the basis of records for Fish Creek near Ketchikan.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1916	662	-	-	-	-	-	-	-	-	-	-
1917	692	1,900	Aug. 19, 1917	40	415	11.4	152.66	300,000	*564	209.58	*411,000
1918	a,712	5,500	Nov. 1, 1917	-	*537	14.7	199.77	*389,000	462	171.36	335,000
1919	714	2,320	Apr. 1, 1919	43	470	12.9	174.62	340,000	433	160.90	313,000
1920	722	3,700	Dec. 18, 1919	59	388	10.6	144.74	282,000	366	136.57	266,000
1921	836	-	-	47	397	10.9	147.70	288,000	516	191.64	373,000
1922	836	-	-	44	480	13.2	178.38	347,000	429	159.54	310,000
1923	836	4,000	Aug. 31, 1923	59	499	13.7	185.46	361,000	507	188.70	368,000
1924	836	2,960	Nov. 15, 1923	96	541	14.8	201.66	393,000	526	196.10	382,000
1925	836	-	-	19	417	11.4	154.98	302,000	424	157.53	307,000
1926	836	-	-	-	-	-	-	-	-	-	-
1927	836	-	-	-	-	-	-	-	-	-	-
1928	836	2,560	Oct. 12, 1927	56	444	12.2	165.64	322,000	466	173.82	338,000
1929	836	2,590	Aug. 21, 1929	56	399	10.9	148.55	†300,000	450	167.20	336,000
1930	836	2,960	June 10, 1930	33	438	12.0	162.72	317,000	499	185.63	361,000
1931	(a)	3,040	Oct. 2, 1930	113	584	16.0	217.23	423,000	471	175.06	341,000
1932	(a)	3,040	Oct. 13, 1921	104	501	13.7	186.61	364,000	490	182.59	356,000
1933	(a)	3,040	Nov. 3, 1932	103	472	12.9	175.53	342,000	504	187.39	365,000
1934	(a)	-	-	-	-	-	-	-	-	-	-

* Revised.
† Corrected.
a From report of Federal Power Commission and U. S. Forest Service, "Water Power Southeast Alaska, 1947."

Falls Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,100	485	82	150	120	280	168	701	440	675	130	940
2	850	515	80	138	115	250	153	708	410	485	125	866
3	700	754	88	125	110	220	142	642	390	390	120	662
4	600	1,380	100	138	180	195	132	491	430	446	115	527
5	550	1,220	102	159	230	174	125	415	405	425	108	420
6	1,000	824	110	162	240	168	120	395	355	420	102	380
7	1,400	*604	110	174	210	159	138	395	330	375	100	345
8	1,200	527	102	257	185	148	189	410	350	365	95	290
9	850	895	98	321	170	142	238	430	385	480	110	290
10	700	761	100	290	160	138	242	410	405	564	217	593
11	750	527	98	253	155	130	257	450	395	623	231	1,940
12	650	497	92	201	200	125	390	440	425	623	201	1,780
13	550	734	90	171	280	244	441	410	708	515	177	1,110
14	400	610	88	156	370	970	405	380	754	425	159	859
15	300	446	85	*150	380	1,050	350	360	584	350	153	831
16	240	350	80	148	350	895	340	350	452	298	150	623
17	*204	285	95	142	280	768	425	340	630	*257	192	458
18	321	220	135	162	230	610	616	340	978	228	395	345
19	370	180	204	159	200	497	727	350	1,000	*228	350	303
20	415	159	265	150	230	1,060	630	410	782	224	277	503
21	436	140	249	156	300	1,380	463	390	649	210	210	610
22	380	125	204	375	450	955	380	420	539	195	177	597
23	335	115	195	503	600	656	370	460	425	180	156	485
24	340	108	261	480	580	458	375	515	345	174	138	380
25	345	105	521	390	480	380	597	550	303	165	125	298
26	312	100	527	308	400	316	873	590	265	159	142	238
27	265	95	410	253	350	285	1,190	620	234	150	220	198
28	224	92	312	210	310	261	1,480	600	214	145	428	174
29	210	88	245	175	-	228	1,150	570	224	145	845	168
30	249	86	198	145	-	204	873	530	584	145	714	204
31	604	-	174	125	-	186	-	480	-	138	597	-
Total	16,850	13,029	5,500	6,726	7,865	13,532	13,979	14,552	14,390	10,202	7,259	17,417
Mean	544	434	177	217	281	437	466	469	480	329	234	581
Cfsm	14.9	11.9	4.85	5.95	7.70	12.0	12.8	12.8	13.2	9.01	6.41	15.9
In.	17.17	13.28	5.60	6.85	8.01	13.79	14.24	14.83	14.66	10.39	7.40	17.75
Ac-ft	33,420	25,840	10,910	13,340	15,600	26,840	27,730	28,860	28,540	20,240	14,400	34,550

Calendar year 1946: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1946-47: Max 1,940 Min 80 Mean 387 Cfsm 10.6 In. 143.97 Ac-ft 280,300

Peak discharge (base, 1,800 cfs).--Sept. 11 (7 p.m.) 2,660 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-16, Jan. 28 to Mar. 4, May 11-23, May 25 to June 4; discharge estimated on basis of weather records and records for stations on nearby streams.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	662	450	441	616	198	54	68	204	895	345	395	955
2	1,050	400	335	515	171	52	68	210	866	321	370	1,620
3	978	350	277	390	150	50	64	224	761	380	303	2,640
4	845	320	234	308	135	184	61	277	701	480	238	1,940
5	597	300	207	303	122	395	59	345	642	425	207	1,020
6	450	290	198	290	112	385	57	468	1,230	385	183	824
7	370	320	192	260	108	298	54	527	1,510	350	168	859
8	320	310	180	270	98	245	54	509	1,110	316	156	761
9	300	300	168	250	90	201	54	527	918	294	145	1,440
10	400	450	162	230	82	174	52	515	866	269	138	1,320
11	700	480	192	210	78	150	54	533	859	245	132	831
12	1,200	450	312	200	82	138	57	558	831	231	148	558
13	1,100	420	321	308	82	125	61	636	775	224	150	395
14	1,800	350	277	521	85	115	64	740	734	217	145	298
15	1,900	280	242	420	82	108	70	796	747	210	138	231
16	1,400	240	365	316	75	100	92	859	754	207	130	195
17	1,000	260	385	249	68	95	108	992	754	207	122	210
18	1,050	250	335	220	61	92	122	978	708	207	115	350
19	1,050	270	298	228	57	90	128	880	616	207	110	1,540
20	950	250	285	448	57	88	130	962	558	228	108	2,100
21	800	230	345	1,230	57	92	142	1,110	497	452	105	2,580
22	720	220	365	1,070	57	88	201	1,230	430	474	102	1,590
23	700	210	452	796	57	82	298	1,240	380	380	405	880
24	900	*253	436	545	66	78	312	1,200	355	316	590	623
25	1,100	552	385	385	68	73	285	1,200	330	390	604	1,540
26	1,400	768	303	290	66	68	238	1,120	350	527	430	1,400
27	1,450	610	326	253	61	66	210	*1,140	385	446	308	852
28	1,100	521	430	245	59	64	195	1,200	380	527	231	558
29	850	720	365	290	57	61	192	1,170	345	571	214	390
30	700	616	345	277	-	64	198	1,080	355	491	*443	294
31	550	-	491	245	-	68	-	970	-	405	1,090	-
Total	28,392	11,440	9,649	12,178	2,541	3,943	3,748	24,400	20,642	10,727	8,123	30,794
Mean	916	381	311	393	87.6	127	125	787	688	346	262	1,026
Cfsm	25.1	10.4	8.52	10.8	2.40	3.48	3.42	21.6	18.8	9.48	7.18	28.1
In.	28.93	11.66	9.83	12.41	2.59	4.02	3.82	24.86	21.03	10.93	8.28	31.38
Ac-ft	56,310	22,690	19,140	24,150	5,040	7,820	7,430	48,400	40,940	21,280	16,110	61,080

Calendar year 1947: Max 1,940 Min 95 Mean 426 Cfsm 11.7 In. 158.34 Ac-ft 308,200
Water year 1947-48: Max 2,640 Min 50 Mean 455 Cfsm 12.5 In. 169.74 Ac-ft 330,400

Peak discharge (base, 1,800 cfs).--Oct. 15 (time and discharge unknown); Sept. 3 (5 p.m.) 2,900 cfs; Sept. 9 (7 p.m.) 1,860 cfs; Sept. 21 (3 a.m.) 2,970 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 6 to Nov. 23, Jan. 7-12; discharge estimated on basis of weather records and records for stations on nearby streams.

Falls Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	228	474	174	98	73	578	340	604	740	1,160	2,080	400
2	189	410	165	88	66	662	390	480	817	918	1,480	491
3	174	623	145	115	61	580	440	400	1,130	720	1,120	491
4	189	720	132	220	57	470	480	330	1,160	578	1,060	400
5	189	630	122	415	52	380	470	400	1,240	552	910	330
6	186	521	118	436	50	320	470	623	1,230	558	682	277
7	177	425	108	345	49	280	490	675	992	527	564	234
8	189	420	98	261	49	240	460	782	796	509	545	207
9	1,030	727	88	198	49	200	460	970	761	527	604	186
10	1,300	992	85	165	49	185	470	1,120	1,100	584	768	171
11	1,050	873	80	142	49	170	480	1,480	1,180	623	720	153
12	1,270	768	78	128	49	160	460	1,350	955	649	584	145
13	918	578	70	132	50	150	450	1,070	910	688	515	339
14	768	441	66	142	49	140	460	925	918	701	866	1,040
15	558	400	61	140	49	135	450	817	852	604	866	940
16	463	400	59	273	50	130	440	720	782	539	688	668
17	675	345	61	303	50	125	620	727	768	578	552	545
18	578	335	110	257	49	125	740	1,040	775	533	452	441
19	694	290	153	198	47	120	740	1,050	768	509	375	441
20	824	245	162	165	45	120	708	1,020	754	491	316	1,030
21	597	330	148	142	40	125	761	1,010	789	533	285	2,840
22	527	590	135	125	40	135	754	1,030	768	485	253	3,730
23	1,090	688	145	112	44	150	668	1,020	817	430	238	2,260
24	1,230	623	145	102	66	190	539	925	838	436	224	1,310
25	2,360	458	135	105	82	220	474	925	694	708	210	817
26	1,530	340	145	105	125	250	775	810	636	817	201	552
27	1,950	273	135	100	189	270	1,430	714	902	675	195	395
28	1,330	224	128	95	277	250	1,330	694	910	682	192	303
29	895	192	120	92	-	240	1,040	688	768	701	189	294
30	768	177	112	85	-	230	796	656	1,060	668	195	533
31	590	-	108	80	-	260	-	662	-	1,370	269	-
Total	24,516	14,512	3,591	5,364	1,905	7,590	18,585	25,717	26,810	20,053	18,198	21,963
Mean	791	484	116	173	68.0	245	620	830	894	647	587	732
Cfsm	21.7	13.3	3.18	4.74	1.86	6.71	17.0	22.7	24.5	17.7	16.1	20.1
In.	24.98	14.79	3.66	5.47	1.94	7.73	18.94	26.20	27.32	20.43	18.54	22.38
Ac-ft	48,630	28,780	7,120	10,640	3,780	15,050	36,860	51,010	53,180	39,770	36,100	43,560

Calendar year 1948: Max 2,640 Min 50 Mean 436 Cfsm 11.9 In. 162.75 Ac-ft 316,800
Water year 1948-49: Max 3,730 Min 40 Mean 517 Cfsm 14.2 In. 192.38 Ac-ft 374,500

Peak discharge (base 1,800 cfs).--Oct. 25 (12 m) 2,740 cfs; Oct. 27 (12:30 p.m.) 2,210 cfs; Aug. 1 (7 a.m.) 2,200 cfs; Sept. 22 (2 a.m.) 4,470 cfs.

Note.--No gage-height record Mar. 3 to Apr. 19; discharge estimated on basis of weather records and records for stations on nearby streams.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	747	1,200	480	59	23	148	122	321	642	604	720	955
2	831	1,400	415	57	23	180	120	415	688	497	962	1,150
3	918	940	345	57	26	242	120	558	955	430	761	1,010
4	1,000	992	290	54	30	294	138	668	1,080	410	675	932
5	796	1,110	238	54	34	253	171	630	932	430	782	1,540
6	610	1,210	204	52	38	210	195	552	782	545	688	1,470
7	452	978	183	52	42	180	204	485	759	584	590	948
8	775	761	207	50	45	156	195	474	978	480	446	642
9	880	578	210	49	47	140	180	902	948	420	365	446
10	754	436	186	47	47	125	165	1,190	873	385	298	335
11	1,020	335	168	45	47	*112	180	1,590	873	395	253	257
12	925	273	153	42	54	100	303	1,410	940	527	228	220
13	2,130	257	140	40	75	92	390	978	1,030	649	201	189
14	3,000	474	150	39	105	82	420	761	1,050	584	186	174
15	1,370	463	177	37	110	75	474	610	*1,040	474	174	159
16	831	425	171	36	110	75	405	533	1,080	400	165	142
17	597	1,290	*156	35	108	73	326	491	1,080	519	153	125
18	405	1,240	138	33	120	73	277	425	1,110	1,020	145	110
19	355	824	122	32	140	78	245	420	1,090	895	142	136
20	390	558	118	31	138	82	316	468	1,040	694	142	582
21	*720	521	115	30	130	88	326	474	866	539	140	902
22	668	727	110	29	168	95	298	463	694	452	132	1,150
23	727	789	105	29	192	110	261	425	584	420	132	1,910
24	720	694	102	28	224	110	238	410	571	623	130	2,550
25	727	701	105	27	238	112	*228	503	533	932	162	2,080
26	1,380	636	100	26	210	120	217	688	509	1,190	1,010	1,160
27	1,420	761	90	25	183	128	204	803	515	970	1,480	817
28	1,090	708	80	25	159	132	207	761	571	694	1,140	571
29	1,000	668	75	24	-	132	234	747	754	590	1,060	400
30	1,640	590	70	24	-	130	265	754	727	597	852	298
31	1,710	-	64	24	-	122	-	694	-	491	642	-
Total	30,588	22,539	5,267	1,192	2,866	4,049	7,424	20,603	25,294	18,440	14,956	23,360
Mean	987	751	170	38.5	102	131	247	665	843	595	482	779
Cfsm	27.0	20.6	4.66	1.05	2.79	3.59	6.77	18.2	23.1	16.3	13.2	21.3
In.	31.17	22.97	5.37	1.21	2.92	4.13	7.56	20.99	25.77	18.79	15.24	23.80
Ac-ft	60,670	44,710	10,450	2,360	5,680	8,030	14,730	40,870	50,170	36,580	29,660	46,330

Calendar year 1949: Max 3,730 Min 40 Mean 560 Cfsm 15.3 In. 208.46 Ac-ft 405,800
Water year 1949-50: Max 3,000 Min 23 Mean 484 Cfsm 13.3 In. 179.92 Ac-ft 350,200

Peak discharge (base 1,800 cfs).--Oct. 13 (12 p.m.) 3,840 cfs; Oct. 30 (11:30 p.m.) 2,250 cfs; Sept. 24 (8 a.m.) 2,780 cfs.

* Discharge measurement made on this day.

Note.--Doubtful or no gage-height record Jan. 9 to Feb. 5; discharge estimated on basis of weather records and records for Fish Creek near Ketchikan.

29. Fish Creek near Ketchikan 1/

Location.--Lat 55°23'30", long. 131°11'40", on Revillagigedo Island, on right bank 50 ft upstream from outlet of Low Lake, 600 ft from mouth at head of Thorne Arm, and 18 miles east of Ketchikan.

Drainage area.--32.1 sq mi, excludes that of Granite Lake drainage basin.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (by barometer). May 1915 to November 1935 at same site at different datum.

Average discharge.--32 years (1915-35, 1938-50), 417 cfs.

Extremes.--Maximum and minimum discharges for water years 1946-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1946	Oct. 14, 1945	a2,720	4.06	Sept.11, 1946	47	0.70
1947	Sept.11, 1947	a2,900	4.20	Aug. 8, 1947	50	.72
1948	Sept. 3, 1948	a2,690	4.04	Aug. 22, 1948	58	.78
1949	Sept.22, 1949	b3,900	4.93	Feb. 22, 1949	60	.79
1950	Oct. 14, 1949	b3,690	4.77	Feb. 1, 1950	23	.48

a From rating curve extended above 960 cfs.
b From rating curve extended above 1,100 cfs.

1915-35, 1938-50: Maximum discharge, 4,600 cfs Nov. 1, 1917 (gage height, 5.33 ft, datum then in use), from rating curve extended above 1,400 cfs; minimum daily, 20 cfs Sept. 9, 10, 1928.

Remarks.--Records for water years 1946-50 good except those for periods of no gage-height record, which are fair. Lakes in the basin are as follows: Basin Lake (240 acres), Mirror Lake (1,350 acres), Third Lake (180 acres), Big Lake (358 acres), and Low Lake (55 acres). No diversion or regulation above station.

Cooperation.--Records for 1921-35, 1938-45 furnished by U. S. Forest Service and Zellerbach Paper Company.

Revisions.--Revised figure of discharge, in cubic feet per second, for the high-water period in the water year 1918 superseding figure published in Bulletin 692 is given herewith:

Nov. 3, 1917..... 1920

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	352	122	433	274	-
1916	988	455	393	73.5	295	190	412	456	584	466	338	372	419
1917	504	374	196	212	266	80.2	196	520	619	418	601	524	376
1918	727	*1,770	220	479	182	105	264	562	529	324	498	181	*487
1919	721	530	414	473	155	157	558	504	428	296	260	271	399
1920	294	489	573	333	228	102	220	421	490	284	581	289	359
1921	460	400	233	210	513	194	224	370	573	343	249	547	358
1922	996	666	360	151	*54.8	*125	291	569	510	229	127	638	*394
1923	664	1,060	283	136	287	273	608	559	340	120	224	586	427
1924	410	912	625	347	500	252	246	726	496	406	244	804	496
1925	828	871	331	124	64.9	233	290	605	454	470	245	237	398
1926	237	745	912	976	580	500	470	420	230	241	248	138	475
1927	775	361	503	314	206	287	262	448	486	363	209	416	387
1928	876	173	202	667	305	504	255	582	366	306	246	359	405
1929	547	440	496	358	75.1	330	181	327	368	340	607	104	351
1930	842	868	286	84.3	486	270	310	387	632	308	100	260	401
1931	762	800	1,080	602	383	277	460	579	338	275	288	337	517
1932	686	427	261	454	402	264	348	562	509	519	334	779	462
1933	570	683	190	268	169	207	327	422	563	596	563	354	411
1934	†638	1,050	280	661	567	452	380	432	463	281	170	274	471
1935	643	544	456	307	638	163	197	521	496	299	447	231	410
1936	475	-	-	-	-	-	-	-	-	-	-	-	-
1939	740	586	533	582	178	140	423	578	425	313	517	620	472
1940	855	1,037	595	245	199	323	328	404	344	205	713	266	461
1941	388	431	569	458	266	245	271	324	234	228	96.7	301	318
1942	820	742	295	649	185	275	455	450	201	121	99.7	209	376
1943	726	461	399	504	497	91.0	392	474	264	411	297	420	411
1944	470	869	558	415	187	386	411	426	330	260	276	366	413
1945	935	512	253	396	198	210	230	462	523	330	124	269	371

* Revised.
† Corrected.

Note.--Records for October 1938 to September 1945 recomputed on the basis of additional data and supersede those previously published in report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

1/ Published as Fish Creek near Sea Level, 1915-20; also published as Fish Creek at Thorne Arm, 1915-35, 1938-45.

Fish Creek near Ketchikan--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	20,900	7,500	26,600	16,300	-
1916	60,800	27,100	24,200	4,520	17,000	11,700	24,500	28,000	34,800	28,700	20,700	22,200	304,000
1917	31,000	22,200	11,900	13,000	14,800	4,930	11,700	32,200	36,800	25,700	37,000	31,300	273,000
1918	44,700	*105,000	13,500	29,500	10,100	6,460	15,700	34,600	31,500	19,900	30,600	10,800	*352,000
1919	44,300	31,500	25,500	29,100	8,610	9,650	33,200	31,000	25,500	18,200	16,000	16,100	289,000
1920	18,100	29,100	35,200	20,500	13,100	6,270	13,100	25,900	29,200	17,500	35,700	17,200	261,000
1921	28,300	23,800	14,300	12,900	28,500	11,900	13,300	22,800	34,100	21,100	15,300	32,500	259,000
1922	61,200	39,600	22,100	9,280	*3,040	*7,690	17,300	35,000	30,300	14,100	7,810	38,000	*285,000
1923	40,800	63,100	17,400	8,360	15,900	16,800	36,200	34,400	20,200	7,380	13,800	34,900	309,000
1924	25,200	54,300	38,400	21,300	28,800	15,500	14,600	44,600	29,500	25,000	15,000	47,800	360,000
1925	50,900	51,800	20,400	7,620	3,600	14,300	17,300	37,200	27,000	28,900	15,100	14,100	288,000
1926	14,600	44,300	56,100	60,000	32,200	30,700	28,000	25,800	13,700	14,800	15,200	8,210	344,000
1927	47,700	21,500	30,900	19,300	11,400	17,600	15,600	27,500	28,900	22,300	12,900	24,800	280,000
1928	53,900	10,300	12,400	41,000	17,500	31,000	15,200	35,800	21,800	18,800	15,100	21,400	294,000
1929	33,600	26,200	30,500	22,000	4,170	20,300	10,800	20,100	21,900	20,900	37,300	6,190	254,000
1930	51,800	51,600	17,600	5,180	27,000	16,600	18,400	23,800	37,600	18,900	6,150	15,500	290,000
1931	46,900	47,600	66,400	37,000	21,300	17,000	27,400	35,600	20,100	16,900	17,700	20,100	374,000
1932	42,200	25,400	16,000	27,900	23,100	16,200	20,700	34,600	30,300	31,900	20,500	46,400	335,000
1933	35,000	40,600	11,700	16,500	9,390	12,700	19,500	25,900	33,500	36,600	34,600	21,100	297,000
1934	39,200	62,500	17,200	40,500	31,500	27,800	22,600	26,600	27,600	17,300	10,500	16,300	341,000
1935	39,500	32,400	28,000	18,900	35,400	10,000	11,700	32,000	29,500	18,400	27,500	13,700	297,000
1936	29,200	-	-	-	-	-	-	-	-	-	-	-	-
1939	45,500	34,900	32,800	35,810	9,890	8,620	25,160	35,560	25,270	19,230	31,770	36,900	341,400
1940	52,590	61,720	36,610	15,070	11,420	19,890	19,520	24,840	20,450	12,590	43,830	15,830	334,400
1941	23,880	25,640	35,010	28,160	14,770	15,080	16,100	19,920	13,950	14,010	5,950	17,920	230,400
1942	50,410	44,130	18,110	39,880	10,280	16,900	27,100	27,650	11,960	7,430	6,130	12,450	272,400
1943	44,640	27,440	24,560	30,990	27,620	5,600	23,340	29,130	15,730	25,260	18,280	24,980	297,600
1944	28,920	51,710	34,290	25,530	10,730	23,760	24,480	26,180	19,640	15,990	17,000	21,810	300,000
1945	57,490	30,490	15,540	24,360	11,010	12,900	13,670	28,420	31,130	20,300	7,600	16,030	268,900

* Revised.

Note.--Records for October 1938 to September 1945 recomputed on the basis of additional data and supersede those previously published in report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff	
		Discharge	Date				Inches / Acre-feet		Inches	Acre-feet
1915	662	-	-	-	-	-	-	-	-	-
1916	662	4,020	Oct. 16, 1915†	22	419	13.1	177.58 / 304,000	354	150.23	257,000
1917	692	‡2,540	Aug. 19, 1917	57	376	11.7	159.00 / 273,000	*512	‡216.46	*370,000
1918	712	4,600	Nov. 1, 1917	50	*487	*15.2	‡205.89 / *352,000	401	169.54	290,000
1919	714	‡2,240	Jan. 8, 1919	40	399	12.4	168.62 / 289,000	373	157.61	270,000
1920	722	4,110	Aug. 6, 1920	50	359	11.2	152.37 / 261,000	337	143.03	245,000
1921	836	‡2,600	Feb. 26, 1921	52	358	11.2	151.24 / 259,000	437	184.30	315,000
1922	836	‡3,480	Sept.23, 1922	-	*394	*12.3	166.81 / *285,000	*392	165.96	*284,000
1923	836	‡3,430	Nov. 21, 1922	32	427	13.3	180.73 / 309,000	422	178.58	306,000
1924	836	‡3,910	Nov. 4, 1923	96	496	15.5	210.29 / 360,000	503	213.34	365,000
1925	836	-	-	32	398	12.4	168.32 / 288,000	387	163.59	280,000
1926	836	-	-	30	475	14.8	200.73 / 344,000	454	191.98	329,000
1927	836	‡2,430	Oct. 20, 1926	44	387	12.1	163.77 / 280,000	355	150.08	257,000
1928	836	‡2,550	Oct. 13, 1927	20	405	12.6	171.80 / 294,000	424	179.84	308,000
1929	836	‡2,550	Aug. 22, 1929	30	351	10.9	148.39 / 254,000	393	166.28	285,000
1930	836	‡2,610	Nov. 13, 1929	25	401	12.5	169.50 / 290,000	456	192.81	330,000
1931	(a)	‡3,170	Oct. 3, 1930	91	517	16.1	218.52 / 374,000	410	173.39	297,000
1932	(a)	-	-	-	462	14.4	195.78 / 335,000	467	197.95	339,000
1933	(a)	‡2,150	Aug. 13, 1933	80	411	12.8	173.56 / 297,000	454	191.98	329,000
1934	(a)	‡2,940	Jan. 8, 1934	71	471	14.7	198.48 / 341,000	443	187.39	321,000
1935	(a)	‡2,980	Feb. 2, 1935	61	410	12.8	173.53 / 297,000	-	-	-
1936	(a)	-	-	-	-	-	- / -	-	-	-
1939	-	‡1,850	Sept.20, 1939	86	472	14.7	199.44 / 341,400	524	221.47	379,100
1940	-	‡2,740	Aug. 10, 1940	57	461	14.4	195.29 / 334,400	369	156.51	268,000
1941	-	‡2,810	Dec. 4, 1940	*41	318	9.91	134.58 / 230,400	357	151.01	258,500
1942	-	‡2,100	Nov. 8, 1941	42	376	11.7	159.11 / 272,400	354	149.77	256,400
1943	-	‡3,170	Jan. 9, 1943	60	411	12.8	173.82 / 297,600	436	184.48	315,800
1944	-	‡2,480	Nov. 16, 1943	54	413	12.9	175.25 / 300,000	398	168.60	288,600
1945	-	‡2,620	(b)	47	371	11.6	157.08 / 268,900	328	138.56	237,200

* Revised.
† Corrected.
‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Occurred sometime in October 1944.

Note.--Records for October 1938 to September 1945 recomputed on the basis of additional data and supersede those previously published in report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

Fish Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	438	138	182	476	98	396	116	360	620	408	1,110	103
2	426	169	205	697	92	384	103	326	641	445	828	94
3	580	451	315	704	84	349	94	420	760	553	586	84
4	669	690	304	573	76	390	90	648	760	753	445	76
5	790	534	271	445	73	378	90	775	655	760	420	71
6	1,180	378	235	355	70	315	90	746	580	676	384	*64
7	918	260	196	384	70	282	94	704	546	566	309	61
8	835	192	156	360	138	271	98	732	546	494	260	57
9	790	149	160	293	164	332	96	812	566	408	255	53
10	620	123	174	220	156	326	106	865	546	349	230	50
11	527	108	169	182	145	282	116	820	514	360	205	47
12	600	98	149	260	153	240	215	746	482	414	182	58
13	1,850	92	127	309	245	205	250	669	445	390	164	174
14	2,430	88	113	298	260	196	378	573	426	332	174	600
15	1,600	82	100	326	255	187	476	520	432	287	196	805
16	1,390	78	92	349	225	192	438	540	426	255	192	607
17	1,050	73	84	390	192	164	420	593	396	230	.169	420
18	858	68	76	343	156	153	355	540	378	215	145	343
19	669	64	75	277	130	149	315	494	414	225	123	520
20	520	68	71	255	130	187	332	488	432	271	113	850
21	451	116	68	266	160	326	390	501	408	293	281	782
22	402	215	64	298	210	293	469	534	384	287	1,120	683
23	1,310	320	61	255	315	250	438	607	414	255	1,700	1,170
24	1,200	402	58	205	332	282	384	662	432	245	1,120	1,070
25	842	414	57	164	332	360	384	662	420	360	683	746
26	600	378	54	149	338	320	408	662	414	501	457	527
27	426	332	53	138	378	293	527	711	408	760	320	402
28	315	277	127	123	378	245	540	775	390	753	235	384
29	235	245	192	110	-	196	501	858	384	573	182	501
30	182	200	240	103	-	160	438	828	390	488	145	998
31	149	-	326	98	-	134	-	697	-	835	118	-
Total	24,852	6,802	4,554	9,405	5,355	8,237	8,751	19,868	14,609	13,741	12,851	12,400
Mean	802	227	147	303	191	266	292	641	487	443	415	413
Cfsm	25.0	7.07	4.58	9.44	5.95	8.29	9.10	20.0	15.2	13.8	12.9	12.9
In.	28.79	7.88	5.28	10.90	6.20	9.54	10.14	23.02	16.93	15.92	14.89	14.37
Ac-ft	49,290	13,490	9,030	18,650	10,620	16,340	17,360	39,410	28,980	27,250	25,490	24,600

Calendar year 1945: Max 2,430 Min 47 Mean 328 Cfsm 10.2 In. 138.56 Ac-ft 237,200
Water year 1945-46: Max 2,430 Min 47 Mean 387 Cfsm 12.1 In. 163.86 Ac-ft 280,500

Peak discharge (base, 1,800 cfs).--Oct. 14 (1 a.m.) 2,720 cfs; Aug. 23 (8 a.m.) 1,820 cfs.
* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	586	84	182	113	304	174	a560	a380	a660	76	1,110
2	850	655	82	149	100	271	153	a450	a360	a480	73	1,050
3	627	895	110	127	96	240	138	a390	a350	*451	68	768
4	553	1,310	130	149	160	205	123	a360	a330	414	63	600
5	482	1,280	120	182	230	178	113	a340	309	366	58	482
6	916	*982	149	205	255	*174	123	a360	a290	338	55	396
7	1,690	711	138	245	230	164	156	a390	a270	315	53	332
8	1,270	600	123	338	200	153	210	a440	a250	360	57	266
9	*858	820	118	501	178	142	277	a500	a240	527	78	230
10	607	828	138	438	156	127	282	a540	a250	600	187	368
11	669	607	127	343	153	118	326	a560	a300	669	255	2,010
12	725	469	118	266	182	127	514	a520	a450	648	225	2,240
13	593	669	116	205	250	350	540	a470	a500	573	174	1,270
14	469	704	113	174	378	1,420	482	a420	a400	469	145	888
15	355	540	113	164	414	1,590	396	a380	a350	372	123	828
16	271	408	108	*169	372	1,100	338	a350	a300	293	113	648
17	220	315	138	196	309	828	343	a330	a800	235	118	476
18	210	245	205	266	250	655	501	a320	a1,200	200	192	349
19	309	187	355	277	205	520	798	a320	a1,300	182	266	277
20	488	153	508	250	205	865	775	a330	a1,100	164	245	349
21	514	120	463	260	255	1,460	593	a350	a900	149	196	494
22	476	100	360	593	414	1,100	451	a360	a800	134	153	501
23	402	90	343	926	683	746	396	a370	a600	118	127	438
24	390	82	426	902	718	534	a420	384	a400	*110	106	355
25	366	94	850	620	586	420	a800	a410	a300	103	94	271
26	315	90	895	438	476	349	a1,500	a450	a220	96	100	215
27	260	82	620	320	402	298	a1,400	a480	a185	92	182	174
28	225	82	438	245	343	271	a1,100	a500	a190	90	369	145
29	210	80	326	192	-	240	a900	a470	a350	86	902	130
30	210	86	260	149	-	215	a700	a430	a700	84	910	187
31	463	-	225	123	-	196	-	a400	-	82	775	-
Total	17,193	13,870	8,299	9,594	8,313	15,360	15,022	12,934	14,374	9,460	6,538	17,847
Mean	555	462	268	309	297	495	501	417	479	305	211	595
Cfsm	17.3	14.4	8.35	9.63	9.25	15.4	15.6	13.0	14.9	9.50	6.57	18.5
In.	19.92	16.07	9.61	11.12	9.63	17.80	17.40	14.98	16.65	10.96	7.57	20.68
Ac-ft	34,100	27,510	16,460	19,030	16,490	30,470	29,800	25,650	28,510	18,760	12,970	35,400

Calendar year 1946: Max 1,700 Min 47 Mean 396 Cfsm 12.3 In. 167.51 Ac-ft 286,800
Water year 1946-47: Max 2,240 Min 53 Mean 408 Cfsm 12.7 In. 172.39 Ac-ft 295,200

Peak discharge (base, 1,800 cfs).--Oct. 7 (8 a.m.) 1,800 cfs; Mar. 14 (11 p.m.) 1,850 cfs; Sept. 11 (10 p.m.) 2,900 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded ranges in stage, weather records, and records for nearby stations.

Fish Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	690	451	438	655	260	78	84	220	746	277	298	945
2	982	384	343	580	205	76	82	225	746	255	282	1,300
3	998	338	277	445	164	75	80	235	683	332	240	2,310
4	790	287	220	343	138	170	76	271	641	438	192	2,010
5	553	260	187	326	120	550	73	326	600	396	156	1,110
6	402	250	187	309	108	500	70	426	966	332	130	872
7	293	260	174	271	103	380	66	488	1,250	271	116	895
8	235	298	156	271	96	290	66	476	950	235	103	790
9	225	309	142	260	90	220	64	463	739	210	92	1,210
10	282	408	153	235	84	178	64	451	669	187	84	1,320
11	461	501	225	200	82	149	63	445	655	164	78	842
12	990	494	366	220	100	130	71	457	627	149	80	553
13	1,160	488	414	534	100	116	76	488	573	138	78	396
14	1,850	402	343	690	115	106	76	560	534	127	78	293
15	2,040	309	298	580	110	98	82	607	520	120	78	225
16	1,630	260	514	426	100	94	96	641	514	116	73	174
17	1,100	282	508	315	92	94	116	718	508	113	68	149
18	1,050	271	432	266	88	94	149	805	482	110	63	205
19	1,050	287	366	260	86	92	169	798	438	108	61	803
20	1,010	266	432	634	85	98	182	746	396	116	61	1,650
21	775	230	527	1,370	90	106	200	842	360	271	60	2,520
22	690	196	469	1,170	88	103	255	910	315	402	61	1,840
23	627	182	451	820	86	98	349	958	277	360	240	1,010
24	880	245	457	586	90	94	378	950	250	293	d501	634
25	1,040	438	445	432	96	88	343	982	235	293	d573	955
26	1,350	648	349	320	92	84	287	*934	245	355	d438	1,410
27	1,600	593	396	343	86	80	245	888	277	338	d304	895
28	1,220	476	476	438	82	76	220	982	293	384	d220	580
29	966	580	396	488	80	75	210	982	287	457	192	408
30	760	573	384	390	-	78	215	880	298	402	338	298
31	593	-	482	349	-	84	-	775	-	326	704	-
Total	28,292	10,966	11,007	14,526	3,116	4,554	4,507	19,929	16,074	8,075	6,042	28,602
Mean	913	366	355	469	107	147	150	643	536	260	195	953
Cfsm	28.4	11.4	11.1	14.6	3.33	4.58	4.67	20.0	16.7	8.10	6.07	29.7
In.	32.78	12.70	12.75	16.83	3.61	5.28	5.22	23.09	18.62	9.36	7.00	33.14
Ac-ft	56,120	21,750	21,830	28,810	6,180	9,030	8,940	39,530	31,880	16,020	11,980	56,730

Calendar year 1947: Max 2,240 Min 53 Mean 438 Cfsm 13.6 In. 185.02 Ac-ft 316,800
Water year 1947-48: Max 2,520 Min 60 Mean 425 Cfsm 13.2 In. 180.38 Ac-ft 308,800

Peak discharge (base, 1,800 cfs).--Oct. 14 (10 p.m.) 2,200 cfs; Sept. 3 (7 p.m.) 2,690 cfs; Sept. 21 (1 p.m.) 2,630 cfs. * Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated same as below.
Note.---No gage-height record Feb. 9 to Mar. 9; discharge estimated on basis of weather records and records for nearby stations.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	482	210	145	86	641	378	613	534	1,050	1,860	215
2	178	396	210	127	76	746	420	482	634	865	1,340	384
3	149	482	174	169	70	676	469	408	888	655	978	445
4	145	718	149	298	70	546	534	360	985	527	850	384
5	160	697	138	553	66	438	508	445	962	488	782	304
6	182	620	123	662	64	378	494	600	910	476	607	245
7	174	469	108	546	63	326	546	620	732	438	482	205
8	169	420	108	451	61	277	438	641	593	396	426	169
9	566	684	100	293	66	235	445	711	586	378	414	142
10	1,120	1,140	98	230	71	196	476	798	948	384	607	123
11	1,060	940	96	178	71	174	508	978	1,060	414	753	110
12	1,220	820	94	149	71	160	482	1,050	910	420	600	103
13	932	634	90	149	70	156	451	895	872	445	469	159
14	820	514	85	174	68	145	482	760	828	476	607	553
15	*627	438	80	196	71	134	476	676	782	438	739	798
16	476	420	75	469	78	120	426	607	676	390	620	648
17	546	378	78	426	76	108	620	566	620	384	488	501
18	560	420	164	349	75	113	828	704	607	384	*396	414
19	534	338	298	266	70	118	828	820	586	360	320	420
20	676	266	360	215	66	118	775	798	566	343	266	812
21	573	326	320	174	63	127	782	775	573	366	225	2,400
22	501	573	277	142	64	142	820	775	566	372	196	3,600
23	940	902	287	118	86	149	704	768	573	338	178	2,310
24	1,240	850	287	106	134	210	566	718	607	304	160	1,430
25	2,450	600	255	118	149	235	508	746	553	402	149	875
26	1,670	420	315	123	178	282	888	690	476	593	134	566
27	1,580	320	266	118	266	309	1,460	593	593	527	127	383
28	1,280	255	235	118	396	255	1,410	540	711	488	120	277
29	962	215	210	116	-	240	1,100	527	620	553	118	245
30	858	187	182	106	-	220	820	514	704	540	116	383
31	634	-	174	94	-	277	-	494	-	1,160	130	-
Total	23,207	15,924	5,646	7,378	2,745	8,251	19,642	20,672	21,255	15,354	15,257	19,603
Mean	749	531	182	238	98.0	266	655	667	708	495	492	653
Cfsm	23.3	16.5	5.67	7.41	3.05	8.29	20.4	20.8	22.1	15.4	15.3	20.3
In.	26.89	18.45	6.54	8.55	3.18	9.56	22.76	23.95	24.63	17.79	17.68	22.71
Ac-ft	46,030	31,580	11,200	14,630	5,440	16,370	38,960	41,000	42,160	30,450	30,260	38,880

Calendar year 1948: Max 2,520 Min 60 Mean 410 Cfsm 12.8 In. 174.03 Ac-ft 297,900
Water year 1948-49: Max 3,600 Min 61 Mean 479 Cfsm 14.9 In. 202.69 Ac-ft 347,000

Peak discharge (base, 1,800 cfs).--Oct. 25 (9:30 a.m.) 2,740 cfs; Aug. 1 (7:30 a.m.) 1,970 cfs; Sept. 22 (6 a.m.) 3,900 cfs. * Discharge measurement made on this day

Fish Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	574	1,330	606	54	23	160	174	288	495	422	526	630
2	630	1,400	495	51	26	225	164	322	488	370	929	866
3	614	1,010	409	51	36	364	156	390	742	310	806	806
4	798	911	328	51	44	435	260	534	938	277	630	750
5	766	965	266	52	49	390	277	558	857	272	734	992
6	590	938	220	51	54	304	272	510	678	322	734	1,560
7	422	938	182	52	56	235	255	435	638	396	566	1,120
8	590	750	200	50	59	192	240	390	718	376	416	686
9	875	566	215	49	62	156	205	606	734	322	310	450
10	742	416	205	47	66	130	178	1,030	670	277	225	322
11	1,000	310	178	45	68	*111	196	1,200	638	250	200	240
12	974	240	152	43	82	94	272	1,160	670	282	160	182
13	1,890	200	130	40	105	84	352	884	734	416	141	145
14	3,220	310	133	39	156	78	480	686	758	465	122	122
15	1,820	495	164	38	149	74	518	542	758	396	111	105
16	1,040	480	*192	35	137	97	442	450	*774	322	97	90
17	654	875	178	35	137	88	358	396	782	390	90	82
18	422	1,150	149	34	196	86	294	358	790	*1,030	82	*74
19	328	848	122	32	210	100	260	352	782	965	76	80
20	288	582	111	32	192	114	396	428	750	734	72	422
21	495	510	100	31	174	137	402	435	678	534	70	1,010
22	670	654	97	29	282	156	364	396	550	402	66	1,150
23	654	758	92	29	316	156	304	358	450	334	64	1,510
24	*614	686	90	28	376	145	310	322	402	390	64	1,710
25	574	694	97	27	358	152	272	409	370	670	78	1,700
26	774	742	92	26	277	174	245	622	346	1,100	519	1,170
27	1,060	790	90	26	220	178	220	750	340	1,030	1,060	790
28	1,070	758	80	25	182	178	205	702	358	710	1,000	550
29	1,050	790	70	24	-	164	220	654	428	526	956	382
30	1,460	766	65	24	-	149	255	614	472	495	790	282
31	1,500	-	59	24	-	169	-	566	-	416	574	-
Total	28,158	21,862	5,567	1,174	4,092	5,275	8,546	17,347	18,788	15,201	12,268	19,978
Mean	908	729	180	37.9	146	170	285	560	626	490	396	666
Cfsm	28.3	22.7	5.61	1.18	4.55	5.30	8.88	17.4	19.5	15.3	12.3	20.7
In.	32.62	25.33	6.45	1.36	4.74	6.11	9.90	20.10	21.77	17.61	14.21	23.15
Ac-ft	55,850	43,360	11,040	2,330	8,120	10,460	16,950	34,410	37,270	30,150	24,330	39,630

Calendar year 1949: Max 3,600 Min 59 Mean 509 Cfsm 15.9 In. 215.21 Ac-ft 368,400
Water year 1949-50: Max 3,220 Min 23 Mean 434 Cfsm 13.5 In. 183.35 Ac-ft 313,900

Peak discharge (base, 1,800 cfs).--Oct. 14 (4:30 a.m.) 3,690 cfs; Sept. 25 (2 a.m.) 1,870 cfs.
* Discharge measurement made on this day.

30. Ella Creek near Ketchikan 1/

Location.--Lat 55°30'20", long. 131°01'25", on Revillagigedo Island, on left bank 1 mile downstream from Lower Ella Lake, 1.5 miles upstream from mouth at Ella Bay, and 28 miles northeast of Ketchikan.

Drainage area.--19.7 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 150 ft (by barometer). Prior to August 1947, at different datum.

Average discharge.--14 years (1927-38, 1947-50), 251 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.11, 1947	990	4.30	Aug. 7, 8, 1947	b35	-
1948	Oct. 14, 1947	1,240	4.81	Aug. 22, 1948	27	1.27
1949	Sept.21, 1949	1,490	5.30	-	(c)	-
1950	Oct. 14, 1949	1,210	4.74	Jan.30 to Feb.2, 1950	b12	-

a Period August to September.
b Minimum daily determined.
c Not determined; occurred during period of no gage-height record.

1927-38, 1947-50: Maximum discharge recorded, 1,720 cfs Dec. 7, 1930, corrected (gage height, 5.60 ft, datum then in use); minimum daily, 12 cfs Sept. 7-12, 1930, Jan. 30 to Feb. 2, 1950.

Remarks.--Records for water years 1947-50 good except those for periods of no gage-height record, which are fair. Ella Lake, a mile above station, has an area of 1,930 acres. No diversion or regulation above station. Discharge measurements made at this site prior to August 1947 are as follows: Sept. 5, 1946, 70.4 cfs and July 2, 1947, 206 cfs.

Cooperation.--Records prior to August 1947 furnished by U. S. Forest Service and Zellerbach Paper Company.

1/ Published as Ella Creek at Behm Canal, October 1927 to September 1937.

Ella Creek near Ketchikan--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	553	146	149	464	223	303	182	335	146	116	110	177	243
1929	336	305	315	258	58.4	245	131	187	138	160	315	69.1	211
1930	463	479	223	77.5	308	176	209	235	333	127	41.8	128	232
1931	441	521	744	417	260	206	324	315	126	93.9	143	213	318
1932	423	312	179	304	247	224	257	329	209	242	155	417	275
1933	309	465	151	227	107	139	237	258	293	273	264	188	243
1934	392	715	202	409	386	304	281	387	400	127	57.5	126	314
1935	338	319	260	130	382	90.2	121	301	229	142	214	128	220
1936	265	300	521	193	51.7	227	296	238	74.8	142	177	239	228
1937	337	461	290	75.8	53.6	292	245	386	181	191	217	205	246
1938	‡336	‡190	‡364	‡403	‡219	‡214	‡383	‡275	‡239	‡116	‡80.5	‡206	‡252

‡ Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	34,000	8,690	9,160	28,500	12,800	18,600	10,800	20,600	8,690	7,130	6,760	10,500	176,000
1929	20,700	18,100	19,400	15,900	3,240	15,100	7,800	11,500	8,210	9,840	19,400	4,110	153,000
1930	28,500	28,500	13,700	4,770	17,100	10,800	12,400	14,400	19,800	7,810	2,570	7,620	168,000
1931	27,100	31,000	45,700	25,600	14,400	12,700	19,300	19,400	7,500	5,770	8,790	12,700	230,000
1932	26,000	18,600	11,000	18,700	14,200	13,800	15,300	20,200	12,400	14,900	9,530	24,800	199,000
1933	19,000	27,700	9,290	14,000	5,940	8,500	14,100	15,900	17,400	16,800	16,200	11,100	176,000
1934	24,100	42,500	12,400	25,100	21,400	18,700	16,700	23,800	23,800	7,810	3,540	7,500	227,000
1935	20,800	19,000	16,000	8,000	21,200	5,550	7,200	18,500	13,600	8,730	13,200	7,620	159,000
1936	16,300	17,900	32,000	11,900	2,970	14,000	17,700	14,600	4,450	8,730	10,900	14,200	166,000
1937	20,700	27,400	17,800	4,660	2,980	18,000	14,600	23,700	10,800	11,700	13,300	12,200	178,000
1938	‡20,700	‡11,300	‡22,400	‡24,800	‡12,200	‡13,200	‡22,800	‡17,000	‡14,200	‡7,130	‡4,950	‡12,300	‡183,000

‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	836	‡1,340	Jan. 11, 1928	14	243	176,000	252	183,000
1929	836	‡1,100	Aug. 21, 1929	18	211	153,000	229	166,000
1930	836	‡1,210	Nov. 12, 1929	12	232	168,000	278	201,000
1931	(a)	1,720	Dec. 7, 1930†	29	318	230,000	251	182,000
1932	(a)	‡1,220	Oct. 31, 1931	33	275	199,000	275	200,000
1933	(a)	‡835	(b)	52	243	176,000	275	199,000
1934	(a)	‡1,450	Nov. 18, 1933	21	314	227,000	282	204,000
1935	(a)	‡1,100	Feb. 2, 1935	27	220	159,000	234	170,000
1936	(a)	‡1,160	Dec. 10, 1935	25	228	166,000	228	165,000
1937	(a)	‡1,080	Nov. 12, 1936	34	246	178,000	230	166,000
1938	-	‡895	Feb. 25, 1938	‡36	‡252	‡183,000	-	-

‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Occurred sometime in May 1933.
† Corrected.

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a50	476	9	a40	205	17	75	349	25	48	189
2	a46	412	10	a80	362	18	99	298	26	66	166
3	a42	385	11	*105	797	19	87	265	27	128	146
4	a39	352	12	96	654	20	78	311	28	203	128
5	a37	311	13	84	536	21	70	304	29	301	120
6	a36	286	14	78	524	22	65	283	30	298	144
7	a35	253	15	72	487	23	58	248	31	317	-
8	a35	225	16	68	412	24	53	219			
Total										2,887	9,847
Mean										93.1	328
Cfsm										4.73	16.6
In.										5.45	18.52
Ac-ft										5,730	19,530

Peak discharge (base, 700 cfs).--Sept. 11 (11 a.m.) 990 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

Ella Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	342	365	233	429	245	a60	52	137	388	114	126	295
2	429	339	213	385	213	58	47	139	368	105	116	a500
3	422	304	192	336	183	57	45	148	352	118	105	a750
4	419	268	166	295	160	206	41	170	345	156	92	a650
5	358	245	146	283	142	329	39	192	320	132	84	a450
6	308	230	137	262	126	292	37	233	502	120	78	a370
7	262	250	135	233	118	256	35	248	521	108	*73	a400
8	230	245	126	*233	103	222	34	253	454	96	66	a330
9	216	236	120	225	92	*186	34	262	412	87	58	a550
10	233	292	118	208	82	163	33	259	385	81	53	a600
11	340	274	176	192	79	146	33	274	355	75	48	a450
12	476	277	295	189	87	128	35	280	329	69	54	a350
13	509	268	277	380	84	114	37	311	298	63	50	a280
14	1,040	236	242	385	92	101	39	339	274	57	47	a230
15	1,120	205	219	336	90	90	40	349	253	52	44	a200
16	915	183	308	292	a86	79	53	372	236	48	39	a175
17	726	194	308	253	a80	78	76	391	219	46	36	a160
18	736	197	292	233	a76	75	84	405	194	41	33	a180
19	760	211	277	230	a73	69	90	395	176	39	30	a450
20	700	192	280	356	a70	70	90	412	163	39	31	a650
21	566	170	345	650	a70	78	105	429	148	146	30	a800
22	540	158	323	555	a70	73	148	451	132	122	29	a700
23	502	153	333	490	a68	69	176	444	122	110	182	a450
24	626	216	339	422	a70	62	176	465	112	101	225	a350
25	574	298	317	362	a74	59	166	456	103	112	225	a500
26	622	286	277	308	a70	54	148	440	108	126	192	a550
27	750	256	292	295	a67	50	137	462	116	116	166	a450
28	646	242	336	320	a64	48	135	465	106	148	142	a350
29	574	301	295	339	a62	46	135	447	103	151	137	a280
30	498	265	286	308	-	48	137	419	126	137	227	a240
31	426	-	388	280	-	52	-	391	-	124	352	-
Total	16,865	7,356	7,791	10,064	2,896	3,418	2,437	10,440	7,720	3,039	3,170	12,690
Mean	544	245	251	325	99.9	110	81.2	337	257	98.0	102	423
Cfsm	27.6	12.4	12.7	16.5	5.07	5.58	4.12	17.1	13.0	4.97	5.18	21.5
In.	31.82	13.83	14.64	19.02	5.47	6.43	4.60	19.71	14.50	5.73	5.97	23.99
Ac-ft	33,450	14,590	15,450	19,960	5,740	6,780	4,830	20,710	15,310	6,030	6,290	25,170

Calendar year 1947: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1947-48: Max 1,120 Min 29 Mean 240 Cfsm 12.2 In. 165.71 Ac-ft 174,300

Peak discharge (base, 700 cfs).--Oct. 14 (6 p.m.) 1,240 cfs; Oct. 27 (2 p.m.) 805 cfs; Jan. 21 (2 a.m.) 713 cfs; Sept. 3, 1948 (time unknown) 905 cfs; Sept. 21 (time unknown) 910 cfs.

* Discharge measurement made on this day.

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

Ella Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	451	230	120	58	372	253	517	323	362	570	106
2	200	388	219	120	52	381	265	447	329	323	465	124
3	190	447	192	170	45	358	311	395	419	283	429	128
4	180	494	170	250		326	358	345	433	265	433	114
5	170	469	156	395		298	345	385	447	262	395	103
6	160	447	142	391		274	329	444	426	245	336	92
7	160	402	128	340		250	336	422	385	225	298	82
8	300	405	128	300		227	314	436	345	211	268	73
9	500	586	120	260		208	311	465	339	197	277	66
10	400	590	110	230		183	349	480	517	189	317	59
11	500	543	110	200		168	365	547	524	178	342	53
12	600	494	100	180		156	349	521	483	168	295	53
13	500	419	95	178	40	139	329	487	480	173	286	103
14	*480	378	92	176		126	336	462	440	160	365	242
15	402	365	90	183		114	342	429	415	146	329	242
16	375	355	88	314		105	317	402	381	144	295	211
17	433	326	95	280		96	433	402	362	146	*268	213
18	372	320	110	248		94	465	469	336	135	236	202
19	405	286	190	211		94	462	447	317	126	208	248
20	385	253	220	170		94	458	444	301	122	178	483
21	333	342	190	140		101	513	444	298	124	158	1,110
22	323	415	170	120		108	509	440	280	116	142	1,420
23	483	157	170	100		106	462	422	286	108	124	1,090
24	570	505	170	90	70	*139	412	412	268	106	108	805
25	940	422	160	95	80	153	388	422	242	163	97	598
26	736	362	190	95	130	158	734	388	242	160	87	487
27	930	314	170	95	205	183	950	362	323	146	76	402
28	686	283	150	90	222	166	880	349	286	170	69	339
29	618	250	140	90	-	173	740	333	265	183	63	311
30	606	227	130	75	-	170	618	*314	381	211	59	372
31	521	-	130	65	-	183	-	304	-	543	69	-
Total	13,678	12,055	4,555	5,771	1,662	5,703	13,233	13,136	10,873	6,090	7,642	9,931
Mean	441	402	147	186	59.4	184	441	424	362	196	247	331
Cfsm	22.4	20.4	7.46	9.44	3.02	9.34	22.4	21.5	18.4	9.95	12.5	16.8
In.	25.82	22.76	8.60	10.89	3.14	10.77	24.98	24.80	20.53	11.50	14.43	18.75
Ac-ft	27,130	23,910	9,030	11,450	3,300	11,310	26,250	26,050	21,570	12,080	15,160	19,700

Calendar year 1948: Max 940 Min 29 Mean 235 Cfsm 11.9 In. 162.60 Ac-ft 170,900
Water year 1948-49: Max 1,420 Min - Mean 286 Cfsm 14.5 In. 196.97 Ac-ft 206,900

Peak discharge (base, 700 cfs).--Oct. 27 (8 a.m.) 1,120 cfs; Apr. 26 (9 p.m.) 1,020 cfs; Sept. 21 (5 p.m.) 1,490 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-13, Dec. 9 to Jan. 4, Jan. 7-12, Jan. 20 to Feb. 26; discharge estimated on basis of records for Manzanita Creek near Ketchikan and Winstanley Creek near Ketchikan and weather records.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	368	695	382	43	12	138	106	197	293	128	284	371
2	355	672	347	40	12	162	108	218	308	119	296	375
3	395	549	308	41	14	220	108	239	404	110	260	389
4	415	554	267	41	16	267	121	284	400	103	276	375
5	365	554	242	43	17	234	138	284	378	103	314	512
6	317	508	215	42	18	211	142	270	347	132	284	596
7	274	471	193	40	18	193	144	252	347	121	252	471
8	447	400	213	38	18	169	142	254	347	112	222	386
9	391	344	199	36	19	148	132	423	321	105	195	321
10	365	293	179	31	20	*134	121	459	302	98	173	270
11	524	254	160	29	21	121	119	541	296	93	156	232
12	480	227	144	28	26	103	158	483	296	115	140	204
13	915	220	132	26	42	101	199	423	293	136	123	179
14	1,020	321	*142	24	66	88	225	382	284	126	101	158
15	718	279	150	23	74	80	244	340	284	117	100	138
16	549	267	134	22	74	85	227	314	279	108	88	123
17	439	463	115	21	74	85	208	287	265	182	79	110
18	361	427	103	20	76	78	190	262	265	333	72	98
19	318	357	95	19	93	80	182	273	249	276	64	*103
20	311	305	93	18	100	87	249	314	237	244	58	257
21	371	299	92	17	101	90	242	299	215	215	54	324
22	327	337	88	17	148	95	*232	282	202	193	49	386
23	375	350	82	16	169	108	213	260	186	175	46	491
24	364	350	79	15	188	106	208	252	171	213	46	504
25	357	357	87	15	188	103	197	327	158	287	68	512
26	435	361	84	14	173	108	184	368	150	333	249	439
27	504	431	74	14	154	110	173	382	144	308	296	368
28	*504	404	67	13	146	115	171	347	140	262	350	308
29	584	471	60	13	-	115	179	347	152	252	393	265
30	780	427	54	12	-	110	186	347	140	232	354	227
31	708	-	49	12	-	103	-	314	-	208	305	-
Total	14,636	11,947	4,629	783	2,077	3,947	5,248	10,024	7,853	5,539	5,747	9,492
Mean	472	398	149	25.3	74.2	127	175	323	262	179	185	316
Cfsm	24.0	20.2	7.56	1.28	3.77	6.45	8.88	16.4	13.3	9.09	9.39	16.0
In.	27.63	22.55	8.74	1.48	3.92	7.45	9.91	18.92	14.83	10.46	10.85	17.92
Ac-ft	29,030	23,700	9,180	1,550	4,020	7,830	10,410	19,880	15,580	10,990	11,400	18,830

Calendar year 1949: Max 1,420 Min - Mean 288 Cfsm 14.6 In. 198.71 Ac-ft 208,800
Water year 1949-50: Max 1,020 Min 12 Mean 224 Cfsm 11.4 In. 154.66 Ac-ft 162,400

Peak discharge (base, 700 cfs).--Oct. 14 (1:30 a.m.) 1,210 cfs; Oct. 30 (8:30 p.m.) 1,060 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 13 to Feb. 11; discharge estimated on basis of records for other stations in the region and weather records.

31. Manzanita Creek near Ketchikan 1/

Location.--Lat 55°36', long. 130°59', on Revillagigedo Island, on right bank a quarter of a mile upstream from mouth at Manzanita Bay, East Behm Canal, 2 miles downstream from Manzanita Lake, and 31 miles northeast of Ketchikan.

Drainage area.--33.9 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 140 ft (by barometer).

Average discharge.--13 years (1927-37, 1947-50), 461 cfs.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.11, 1947	2,180	6.45	Aug. 8, 1947	b140	-
1948	Sept.20, 1948	2,040	6.28	Apr. 11, 1948	122	1.47
1949	Sept.21, 1949	2,930	7.30	Feb. 17-23, 1949	b120	-
1950	Oct. 13, 1949	3,870	8.19	Jan.31 to Feb.3, 1950	b90	-

a Period August to September.
b Minimum daily determined.

1927-37, 1947-50: Maximum discharge, 3,870 cfs Oct. 13, 1949 (gage height, 8.19 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum daily determined, 90 cfs Jan. 31 to Feb. 3, 1950.

A discharge of 4,480 cfs occurred sometime during the period 1938-47 (gage height, 8.7 ft, from floodmark in well).

Remarks.--Records for water years 1947-50 good except those for periods of no gage-height record, which are fair. There are two lakes above gage, Manzanita Lake (1,610 acres) and January Lake on North Fork Manzanita Creek. No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	1,070	298	247	637	348	481	354	680	453	317	298	362	464
1929	559	508	545	462	158	307	241	388	394	382	583	233	399
1930	832	932	383	192	391	292	365	475	686	344	173	241	441
1931	782	940	1,160	635	483	291	471	640	405	308	297	394	568
1932	720	487	249	416	364	365	500	623	517	522	367	782	493
1933	563	655	274	258	186	230	385	510	650	628	570	176	425
1934	675	809	284	593	624	445	472	496	513	307	192	218	467
1935	500	462	346	223	686	192	191	488	481	310	375	262	374
1936	533	588	1,020	331	163	312	464	531	334	319	353	373	445
1937	698	926	536	181	120	366	363	545	526	461	442	414	467

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	65,800	17,700	15,200	39,200	20,000	29,600	21,100	41,800	27,000	19,500	18,300	21,500	337,000
1929	34,400	30,200	33,500	28,400	8,780	18,900	14,300	23,900	23,400	23,500	35,800	13,900	289,000
1930	51,200	55,500	23,600	11,800	21,700	18,000	21,700	29,200	40,800	21,200	10,600	14,300	320,000
1931	48,100	55,900	71,300	39,000	26,800	17,900	28,000	39,400	24,100	18,900	18,300	23,400	411,000
1932	44,300	29,000	15,300	25,600	20,900	22,400	29,800	38,300	30,800	32,100	22,600	46,500	358,000
1933	34,600	39,000	16,800	15,900	10,300	14,100	22,900	31,400	38,700	38,600	35,000	10,500	308,000
1934	41,500	48,100	17,500	36,400	34,700	27,400	28,100	30,500	30,500	18,900	11,800	13,000	338,000
1935	30,700	27,500	21,300	13,700	38,100	11,800	11,400	30,000	28,600	19,100	23,100	15,600	271,000
1936	32,800	35,000	62,900	20,400	9,380	19,200	27,600	32,600	19,900	19,600	21,700	22,200	323,000
1937	42,900	55,100	33,000	11,100	6,660	22,500	21,600	33,500	31,300	28,300	27,200	24,600	338,000

1/ Published as Manzanita Creek near Manzanita Bay, 1927-37.

Manzanita Creek near Ketchikan--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	836	3,470	Oct12 or 13,1927	130	464	337,000	463	336,000
1929	836	*2,220	Aug. 21, 1929	124	399	289,000	444	321,000
1930	836	*3,230	Nov. 12, 1929	112	441	320,000	504	365,000
1931	(a)	*3,230	Dec. 7, 1930	179	568	411,000	448	324,000
1932	(a)	*2,300	Sept. 9, 1932	150	493	358,000	495	359,000
1933	(a)	*1,660	(b)	110	425	308,000	448	324,000
1934	(a)	*1,430	Nov. 13, 1933	151	467	338,000	429	311,000
1935	(a)	*1,130	(c)	-	374	271,000	445	322,000
1936	(a)	*2,070	Oct. 23, 1935	128	445	323,000	446	324,000
1937	(a)	*3,420	Nov. 12, 1936	114	467	338,000	-	-

* Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Occurred sometime in August 1933.
c Occurred sometime in November 1934.

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	165	703	9	160	355	17	251	638	25	164	390
2	160	495	10	230	822	18	238	564	26	221	350
3	155	501	11	215	1,510	19	197	546	27	282	320
4	150	471	12	200	1,040	20	188	657	28	423	300
5	150	435	13	178	884	21	180	590	29	416	290
6	145	429	14	*182	961	22	175	529	30	388	400
7	145	379	15	182	840	23	171	474	31	466	
8	140	349	16	176	728	24	166	430			

Total	6,659	17,380
Mean	215	579
Cfsm	6.34	17.1
In.	7.31	19.08
Ac-ft	13,210	34,470

Peak discharge (base, 1,700 cfs).--Sept. 11 (7 a.m.) 2,180 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 1-12, Sept. 24-30; discharge estimated on basis of recorded ranges in stage and records for adjacent stations.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	800	550	440	520	364	160	136	216	956	326	376	517
2	900	480	380	450	334	158	133	224	876	312	291	742
3	820	440	340	400	312	155	130	251	840	392	*267	*1,240
4	650	410	320	380	291	243	128	274	812	355	249	912
5	550	390	310	360	276	315	126	291	772	323	236	792
6	460	370	320	330	264	226	125	352	1,300	309	226	856
7	410	410	300	307	253	202	124	329	1,080	299	216	872
8	370	390	290	312	242	192	125	349	956	289	207	780
9	350	380	280	302	232	183	125	355	916	284	197	1,280
10	500	450	270	284	224	178	124	367	889	272	189	916
11	700	430	320	274	216	173	123	397	856	262	183	780
12	900	410	400	272	218	170	129	416	808	253	189	688
13	1,050	400	370	551	216	166	130	474	764	247	182	604
14	1,400	380	330	461	211	164	130	518	740	240	176	539
15	1,300	360	320	379	204	160	131	550	712	232	171	488
16	1,100	340	480	340	196	157	150	615	692	226	166	438
17	950	370	450	318	191	156	155	650	661	222	162	469
18	1,000	350	410	318	186	154	154	680	619	215	160	568
19	1,000	380	380	326	182	153	155	661	582	211	157	1,260
20	900	350	370	601	180	153	158	780	550	343	157	1,440
21	800	330	450	981	182	154	186	820	512	397	153	1,640
22	750	310	430	704	178	151	240	912	471	291	150	1,220
23	740	300	420	642	175	147	234	912	442	272	360	974
24	950	416	440	564	180	145	207	956	416	260	382	870
25	1,000	700	420	501	186	143	191	961	385	361	247	1,560
26	1,250	650	370	454	176	140	183	938	403	318	222	1,130
27	1,100	560	400	435	170	138	183	1,020	391	*284	209	912
28	900	500	440	491	166	136	194	1,040	355	408	199	780
29	800	600	410	512	164	135	207	1,020	343	312	213	680
30	700	540	390	426	-	136	216	979	349	304	394	597
31	620	-	550	397	-	139	-	938	-	276	571	-
Total	25,720	12,946	11,800	13,592	6,369	5,182	4,732	19,245	20,448	9,095	7,257	26,544
Mean	830	432	381	438	220	167	158	621	682	293	234	885
Cfsm	24.5	12.7	11.2	12.9	6.49	4.92	4.66	18.3	20.1	8.64	6.90	26.1
In.	28.25	14.17	12.91	14.87	7.00	5.67	5.20	21.10	22.43	9.96	7.96	29.12
Ac-ft	51,010	25,680	23,400	26,960	12,630	10,280	9,390	38,170	40,560	18,040	14,390	52,650

Calendar year 1947: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1947-48: Max 1,640 Min 123 Mean 445 Cfsm 13.1 In. 178.64 Ac-ft 323,200

Peak discharge (base, 1,700 cfs).--Oct. 14 (time and discharge unknown); June 6 (2 p.m.) 1,710 cfs; Sept. 9 (8 a.m.) 1,750 cfs; Sept. 20 (11:30 p.m.) 2,040 cfs; Sept. 25 (5 a.m.) 1,940 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Nov. 23, Nov. 25 to Jan. 6; discharge estimated on basis of recorded ranges in stage and records for adjacent stations.

Manzanita Creek near Ketchikan--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	532	796	376	170	171	400	304	720	796	776	1,100	394
2	481	716	346	160	167	370	286	669	788	708	864	400
3	458	860	318	200	162	318	355	615	997	650	860	340
4	451	884	296	300	158	291	410	568	1,010	619	880	307
5	432	788	281	400	150	284	340	704	1,030	653	776	289
6	410	716	269	520	150	279	332	772	966	590	684	274
7	370	669	253	350	150	262	376	752	889	557	646	262
8	406	716	244	280	140	247	320	796	804	536	612	249
9	992	1,170	230	242	140	236	346	868	824	529	688	240
10	832	938	220	228	140	234	426	894	1,000	525	792	230
11	938	938	210	216	140	232	432	1,090	1,090	515	692	218
12	956	812	200	213	130	230	406	1,000	974	505	600	215
13	792	712	190	251	130	218	388	956	1,010	561	619	362
14	*800	657	190	*242	130	207	426	920	984	508	836	522
15	669	692	180	232	130	200	410	868	956	478	696	445
16	688	608	180	343	130	194	413	832	872	484	*642	367
17	752	572	180	276	120	188	661	868	840	529	638	394
18	631	554	180	253	120	194	623	1,020	804	461	543	358
19	836	484		240	120	202	627	943	780	448	491	538
20	712	448		240	120	204	619	956	752	454	451	907
21	619	756		230	120	213	716	961	752	454	419	2,050
22	700	728		210	120	213	684	970	708	416	391	2,410
23	1,050	800		210	120	204	608	934	764	403	364	1,960
24	1,350	657	280	200	140	232	568	916	680	406	340	1,480
25	1,880	568		210	165	226	546	934	634	608	320	1,120
26	1,320	508		202	178	220	907	848	634	471	304	912
27	1,880	464		196	230	238	1,040	816	768	429	289	776
28	1,340	426		189	253	213	956	804	672	554	276	680
29	1,200	394		186	-	216	912	*776	631	495	267	642
30	1,080	370	180	180	-	216	804	744	844	609	258	776
31	898	-	170	176	-	253	-	736	-	1,270	318	-
Total	26,455	20,401	7,773	7,545	4,124	7,434	16,241	26,250	25,253	17,201	17,656	20,117
Mean	853	680	251	243	147	240	541	847	842	555	570	671
Cfsm	25.2	20.1	7.40	7.17	4.34	7.08	16.0	25.0	24.8	16.4	16.8	19.8
In.	29.02	22.38	8.53	8.28	4.52	8.16	17.82	28.80	27.70	18.87	19.37	22.07
Ac-ft	52,470	40,460	15,420	14,970	8,180	14,750	32,210	52,070	50,090	34,120	35,020	39,900

Calendar year 1948: Max 1,880 Min 123 Mean 457 Cfsm 13.5 In. 183.24 Ac-ft 331,400
Water year 1948-49: Max 2,410 Min 120 Mean 538 Cfsm 15.9 In. 215.52 Ac-ft 389,700

Peak discharge (base, 1,700 cfs).--Oct. 24 (12 p.m.) 2,470 cfs; Oct. 27 (9:30 a.m.) 2,450 cfs; Sept. 21 (3:30 p.m.) 2,930 cfs. * Discharge measurement made on this day.
Note.--No gage-height record Dec. 9 to Jan. 8, Jan. 19-25, Feb. 5-24; discharge estimated on basis of records for Fish Creek near Ketchikan and weather records.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	760	1,650	646	147	90	147	164	334	612	520	800	712
2	708	1,450	604	144	90	185	162	382	669	480	704	684
3	828	1,150	543	141	90	244	162	400	844	440	590	696
4	824	1,220	491	138	92	251	191	432	796	410	680	692
5	712	1,220	448	136	92	204	196	410	728	390	744	1,160
6	631	1,120	413	135	94	183	200	385	712	410	650	1,180
7	561	1,010	376	132	94	175	189	382	768	430	568	864
8	1,020	876	426	130	96	168	183	422	760	400	498	740
9	732	772	376	128	96	*162	173	780	732	370	448	642
10	756	680	340	126	98	158	167	748	712	350	416	568
11	952	604	318	122	100	154	176	889	728	330	379	505
12	804	539	291	119	102	150	242	776	744	360	352	451
13	2,580	568	272	116	104	147	264	712	752	450	323	413
14	2,450	792	334	114	108	145	289	661	748	420	302	379
15	1,650	597	*320	112	110	143	286	619	764	380	284	349
16	1,240	642	279	110	110	152	255	593	768	350	269	320
17	988	1,040	253	109	108	150	240	550	768	400	253	299
18	828	856	234	108	115	145	232	518	*780	700	242	279
19	776	716	220	107	125	152	236	557	800	600	232	320
20	804	619	215	106	125	155	329	575	780	*532	222	687
21	943	680	207	104	125	158	*276	539	700	484	213	792
22	740	732	200	102	150	158	258	512	600	448	204	816
23	876	700	191	100	173	167	244	481	550	429	197	970
24	772	752	185	98	176	158	255	495	500	564	196	1,260
25	808	692	183	97	171	165	249	653	450	744	226	1,140
26	952	732	175	96	156	170	238	704	430	764	590	952
27	*1,010	832	166	95	148	167	240	692	420	657	481	840
28	1,030	740	162	94	146	173	258	634	450	564	575	720
29	1,200	820	157	92	-	165	276	680	500	590	582	627
30	1,690	720	153	91	-	158	281	669	580	532	495	554
31	1,490	-	150	90	-	158	-	615	-	495	448	-
Total	32,115	25,521	9,328	3,539	3,284	5,167	6,911	17,799	20,145	14,993	13,163	20,611
Mean	1,036	851	301	114	117	167	230	574	672	484	425	687
Cfsm	30.6	25.1	8.88	3.36	3.45	4.93	6.78	16.9	19.8	14.3	12.5	20.3
In.	35.23	28.00	10.23	3.88	3.60	5.67	7.58	19.53	22.10	16.45	14.44	22.61
Ac-ft	63,700	50,620	18,500	7,020	6,510	10,250	13,710	35,300	39,960	29,740	26,110	40,880

Calendar year 1949: Max 2,580 Min 120 Mean 572 Cfsm 16.9 In. 229.05 Ac-ft 414,200
Water year 1949-50: Max 2,580 Min 90 Mean 473 Cfsm 14.0 In. 189.32 Ac-ft 342,500

Peak discharge (base, 1,700 cfs).--Oct. 13 (10 p.m.) 3,870 cfs; Nov. 1 (4:30 p.m.) 2,900 cfs; Sept. 5 (7 a.m.) 1,830 cfs; Sept. 24 (2 p.m.) 1,710 cfs. * Discharge measurement made on this day.
Note.--No gage-height record Dec. 31 to Jan. 4, Jan. 8 to Feb. 22, June 18 to July 19; discharge estimated on basis of records for Winstanley and Ella Creeks near Ketchikan and weather records.

32. Grace Creek near Ketchikan 1/

Location.--Lat 55°39', long. 130°58', on Revillagigedo Island, three-quarters of a mile upstream from mouth, 1¾ miles downstream from Grace Lake, and 32 miles northeast of Ketchikan.

Drainage area.--30.2 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 15 ft.

Average discharge.--10 years (1927-37), 425 cfs.

Extremes.--1927-37: Maximum discharge, 3,470 cfs Aug. 21, 1929 (gage height, 5.20 ft); minimum, 15 cfs Jan. 10, 1935 (gage height, 0.04 ft).

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by Zellerbach Paper Company and U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	879	150	156	582	250	465	310	711	441	282	232	328	401
1929	510	444	460	323	72.1	227	194	392	404	325	612	95.7	341
1930	929	903	227	74.5	384	218	322	483	738	284	95.6	259	408
1931	772	†866	1,040	559	359	203	425	681	431	291	262	335	520
1932	794	326	151	351	303	211	364	623	513	489	284	754	430
1933	495	523	199	275	157	159	296	581	660	616	473	306	396
1934	551	901	209	584	454	365	347	724	610	771	365	179	505
1935	613	538	445	290	473	113	195	615	546	267	525	182	400
1936	418	496	948	232	94.2	210	566	650	310	282	348	472	420
1937	579	842	487	161	143	311	340	579	586	355	387	381	430

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	54,000	8,920	9,590	35,800	14,400	28,600	18,400	43,700	26,200	17,300	14,300	19,500	291,000
1929	31,400	26,400	28,300	19,900	4,000	14,000	11,500	24,100	24,000	20,000	37,600	5,690	247,000
1930	57,100	53,700	14,000	4,580	21,300	13,400	19,200	29,700	43,900	17,500	5,880	15,400	296,000
1931	47,500	51,500	64,000	34,400	19,900	12,500	25,300	41,900	25,600	17,900	16,100	19,900	376,000
1932	48,800	19,400	9,280	21,600	17,400	13,000	21,700	38,300	30,500	30,100	17,500	44,900	312,000
1933	30,400	31,100	12,200	16,900	8,720	9,780	17,600	35,700	39,300	37,900	29,100	18,200	287,000
1934	33,900	53,600	12,900	35,900	25,200	22,400	20,600	44,500	36,300	47,400	22,400	10,700	366,000
1935	37,700	32,000	27,400	17,800	26,300	6,950	11,600	37,800	32,500	16,400	32,300	10,800	290,000
1936	25,700	29,500	58,300	14,300	5,420	12,900	33,700	40,000	18,400	17,300	21,400	28,100	305,000
1937	35,600	50,100	29,900	9,900	7,900	19,100	20,200	35,600	34,900	21,800	23,800	22,700	312,000

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	836	3,400	Oct. 12, 1927	30	401	291,000	419	304,000
1929	836	3,470	Aug. 21, 1929	38	341	247,000	394	286,000
1930	836	3,170	Nov. 12, 1929	25	408	296,000	461	334,000
1931	(a)	2,980	Dec. 7, 1930	75	520	376,000	402	291,000
1932	(a)	b2,220	Oct. 13, 1931	62	430	312,000	425	309,000
1933	(a)	1,760	Aug. 12, 1933	44	396	287,000	433	314,000
1934	(a)	2,110	Nov. 13, 1933	82	505	366,000	501	362,000
1935	(a)	2,250	Feb. 1, 1935	15	400	290,000	423	306,000
1936	(a)	2,670	Oct. 23, 1935	-	420	305,000	423	307,000
1937	(a)	3,390	Nov. 12, 1936	-	430	312,000	-	-

a From report of Federal Power Commission and U. S. Forest Service, "Water Powers in Southeast Alaska, 1947."
b Maximum daily discharge.

1/ Formerly published as Grace Creek at Behm Canal.

33. Orchard Creek near Bell Island 1/

Location.--Lat 55°50', long. 131°27', on Revillagigedo Island, 300 ft downstream from Orchard Lake, a third of a mile upstream from mouth at head of Shrimp Bay, and 8 miles southeast of Bell Island.

Drainage area.--59 sq mi (approximately).

Gage.--Water-stage recorder. Altitude of gage is 130 ft (from topographic map). Prior to Aug. 11, 1915, at datum 3.0 ft higher, and Aug. 11, 1915, to Aug. 17, 1916, at datum 1.0 ft higher.

Average discharge.--12 years (1915-27), 573 cfs.

Extremes.--1915-27: Maximum discharge, about 7,100 cfs Nov. 1, 1917; minimum daily, 20 cfs Feb. 11, 1916.

Remarks.--No diversion or regulation above station.

Cooperation.--Records for 1921-27 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	482	239	699	392	-
1916	1,270	495	392	64.2	319	167	568	795	1,050	891	490	553	588
1917	627	393	181	157	339	65.6	309	928	929	623	791	729	506
1918	990	2,200	233	525	200	90	433	949	956	577	757	236	680
1919	1,180	720	439	532	139	206	696	869	788	571	411	447	586
1920	500	590	791	299	257	92.8	315	656	908	520	904	386	519
1921	630	520	261	185	582	223	369	778	944	492	363	871	516
1922	1,460	636	752	150	50	240	367	984	869	394	193	924	588
1923	840	1,320	260	92.4	311	333	938	954	782	272	318	843	603
1924	450	1,170	755	436	585	326	338	1,180	872	508	360	947	659
1925	1,110	850	415	75.1	37.9	237	421	1,140	726	646	284	276	522
1926	328	884	1,100	1,200	715	580	660	600	330	375	258	190	602
1927	1,100	405	545	322	160	250	292	768	877	472	‡179	‡650	‡504

‡ Not previously published; estimated on the basis of records for Fish Creek near Ketchikan.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	28,700	14,700	43,000	23,300	-
1916	78,100	29,500	24,100	3,950	18,300	10,300	33,800	48,900	62,500	54,800	30,100	32,900	427,000
1917	38,600	23,400	11,100	9,650	18,800	4,030	18,400	57,100	55,300	38,300	48,600	43,400	367,000
1918	60,900	131,000	14,300	32,300	11,100	5,530	25,800	58,400	56,900	35,500	46,500	14,000	492,000
1919	72,600	42,800	27,000	32,700	7,720	12,700	41,400	53,400	46,900	35,100	25,300	26,600	424,000
1920	30,700	35,100	48,600	18,400	14,800	5,710	18,700	40,300	54,000	32,000	55,600	23,000	377,000
1921	38,700	30,900	16,000	11,400	32,300	13,700	22,000	47,800	56,200	30,300	22,300	51,800	373,000
1922	89,800	37,800	46,200	9,220	2,780	14,800	21,800	60,500	51,700	24,200	11,900	55,000	426,000
1923	51,600	78,600	16,000	5,680	17,300	20,500	55,800	58,700	46,500	16,700	19,600	50,200	437,000
1924	27,700	69,600	46,400	26,800	33,600	20,000	20,100	72,600	51,900	31,200	22,100	56,400	478,000
1925	68,200	50,600	25,500	4,620	2,100	14,600	25,100	70,100	43,200	39,700	17,500	16,400	378,000
1926	20,200	52,600	67,600	73,800	39,700	35,700	39,300	36,900	19,600	23,100	15,900	11,300	436,000
1927	67,600	24,100	33,500	19,800	8,890	15,400	17,400	47,200	52,200	29,000	‡11,000	‡8,700	‡365,000

‡ Not previously published; estimated on the basis of records for Fish Creek near Ketchikan.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	662	-	-	-	-	-	-	-
1916	662	6,230	Oct. 16, 1915	20	588	427,000	507	369,000
1917	692	‡3,220	Aug. 18, 1917	49	506	367,000	690	500,000
1918	712	a7,100	Nov. 1, 1917	-	680	492,000	592	428,000
1919	714	3,620	Oct. 4, 1918†	35	586	424,000	548	396,000
1920	722	6,660	Dec. 18, 1919	-	519	377,000	480	348,000
1921	836	‡2,840	Feb. 26, 1921	69	516	373,000	637	462,000
1922	836,(b)	-	-	-	588	426,000	550	398,000
1923	836	‡4,780	(c)	-	603	437,000	600	435,000
1924	836	-	-	109	659	478,000	661	479,000
1925	836	-	-	25	522	378,000	516	374,000
1926	(b)	-	-	39	602	436,000	577	420,000
1927	(b)	-	-	-	‡504	‡365,000	-	-

† Corrected.
‡ Not previously published.
a Estimated.
b From report of Federal Power Commission and U. S. Forest Service, "Water Powers in Southeast Alaska, 1947."
c Nov. 21, 1922, Apr. 15, 1923.

1/ Formerly published as Orchard Lake Outlet, or Orchard Creek, at Shrimp Bay.

34. Myrtle Creek at Niblack

Location.--Lat 55°04', long. 132°08', on Prince of Wales Island, a quarter of a mile upstream from mouth, a quarter of a mile downstream from Myrtle Lake, and 1 mile north of Niblack.

Drainage area.--3.9 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 25 ft.

Extremes.--1917-21: Maximum discharge, 387 cfs Nov. 14, (corrected) 1917 (gage height, 4.40 ft), from rating curve extended above 170 cfs; minimum daily, 24 cfs July 29, 1920.

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	68.6	69.5	-
1918	116	249	82	140	77	48	70	104	83	48	50	43	92.4
1919	105	130	104	124	69.4	48.1	100	110	85	55.8	38.6	40.8	84.3
1920	40.3	59.4	78.9	100	63.6	36.8	41.6	48.4	43.7	28.8	67.6	67.5	56.4
1921	88.4	92.1	90.2	73.2	91.7	59.8	53.7	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	4,220	4,140	-
1918	7,130	14,800	5,040	8,610	4,280	2,950	4,170	6,400	4,940	2,950	3,070	2,560	66,900
1919	6,460	7,740	6,400	7,620	3,850	2,960	5,950	6,760	5,060	3,430	2,370	2,430	61,000
1920	2,480	3,530	4,850	6,150	3,660	2,260	2,480	2,980	2,600	1,770	4,160	4,020	40,900
1921	5,430	5,480	5,550	4,500	5,090	3,680	3,200	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	692	‡152	Aug. 19, 1917	-	-	-	-	-
1918	712	387	Nov. 14, 1917†	30	92.4	66,900	83.5	60,500
1919	714	‡234	Jan. 8, 1919	28	84.3	61,000	70.8	51,300
1920	722	196	Dec. 18, 1919	24	56.4	40,900	64.1	46,500
1921	836	‡190	Nov. 1, 1920	-	-	-	-	-

† Corrected.
‡ Not previously published.

35. Karta River near Kasaan 1/

Location.--Lat 55°33'50", long. 132°35'00", on Prince of Wales Island, half a mile upstream from tidewater, 1¼ miles downstream from outlet of Little Salmon Lake, and 7 miles west of Kasaan.

Drainage area.--49.5 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 20 ft.

Average discharge.--7 years (1915-22), 459 cfs.

Extremes.--1915-22: Maximum discharge, 5,070 cfs Nov. 1, 1917 (gage height, 5.15 ft), from rating curve extended above 1,500 cfs by logarithmic plotting; minimum daily, 21 cfs Feb. 11, 1916.

Remarks.--No diversion or regulation above station.

Cooperation.--Records for 1921-22 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	82.5	382	227	-
1916	1,020	822	732	91.5	245	203	628	494	480	276	166	281	453
1917	484	697	385	348	358	112	†255	634	517	343	457	644	436
1918	977	2,020	393	839	349	121	224	808	583	193	306	236	586
1919	866	843	617	695	243	172	691	690	360	248	140	312	491
1920	335	553	719	603	366	118	274	538	485	214	393	312	409
1921	537	530	461	290	663	234	408	494	561	215	145	570	423
1922	1,120	594	680	216	80	124	274	661	424	143	70.7	579	416
1923	730	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.

1/ Formerly published as Karta River at Karta Bay.

Karta River near Kasaan--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	5,070	23,500	13,500	-
1916	62,700	48,900	45,000	5,630	14,100	12,500	37,400	30,400	28,600	17,000	10,200	16,700	329,000
1917	29,800	41,500	23,700	21,400	19,900	6,890	15,200	39,000	30,800	21,100	28,100	38,300	316,000
1918	60,100	120,000	24,200	51,600	19,400	7,440	13,300	49,700	34,700	11,900	18,800	14,000	425,000
1919	53,200	50,200	38,000	42,700	13,500	10,600	41,100	42,400	21,400	15,200	8,610	18,600	356,000
1920	20,600	32,900	44,200	37,100	21,100	7,260	16,300	33,100	28,900	13,200	24,200	18,600	297,000
1921	33,000	31,500	28,300	17,800	36,800	14,400	24,300	30,400	33,400	13,200	8,920	33,900	306,000
1922	68,900	35,300	41,800	13,300	4,440	7,620	16,300	40,600	25,200	8,790	4,350	34,500	301,000
1923	44,900	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	662	-	-	-	-	-	-	-
1916	662	3,340	Oct. 16, 1915	21	453	329,000	369	268,000
1917	692	2,350	Sept.29, 1917	83	436	316,000	587	425,000
1918	712	5,070	Nov. 1, 1917	66	586	425,000	499	362,000
1919	714	†2,760	Dec. 1, 1918	54	491	356,000	431	312,000
1920	722	3,900	Dec. 18, 1919	-	409	297,000	403	293,000
1921	836	-	-	64	423	306,000	498	359,000
1922	836	-	-	42	416	301,000	-	-

† Corrected.

36. Sawmill Creek near Sitka 1/

Location.--Lat 57°03'05", long. 135°13'40", on Baranof Island, on left bank 100 ft downstream from Sitka Public Utilities abandoned hydroelectric plant, 500 ft upstream from mouth, 1½ miles downstream from Blue Lake, and 4 miles east of Sitka.

Drainage area.--39.0 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 4 ft above mean sea level. Prior to Apr. 12, 1947, staff gages or water-stage recorders at several sites within 1,500 ft of present site at various datums.

Average discharge.--21 years (1920-22, 1928-42, 1945-50), 505 cfs.

Extremes.--Maximum and minimum discharges for water years 1946-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1946	Oct. 13, 1945	4,100	7.4	(a)	b34	-
1947	Nov. 12, 1946	6,190	9.4	Dec. 13-16, 1946	b38	0.5
1948	Sept. 8, 1948	7,100	10.20	Mar. 27-28, 1948	42	.54
1949	Nov. 9, 1948	4,900	8.20	Feb. 23,24, 1949	b60	-
1950	Oct. 30, 1949	4,430	7.73	Apr. 9, 1950	c40	-

a Feb. 6-8, 20, 21, Mar. 29 to Apr. 4, 1946.
b Minimum daily discharge.
c Minimum daily discharge determined.

1920-22, 1928-42, 1945-50: Maximum discharge, 7,100 cfs Sept. 8, 1948 (gage height, 10.20 ft), from rating curve extended above 2,600 cfs by logarithmic plotting; minimum recorded, 11 cfs Mar. 30, 31, 1922.

Remarks.--Records for water years 1946-50 good except those for period of doubtful or no gage-height record and those prior to Apr. 12, 1947, which are fair. Blue Lake, 1.6 miles upstream, has an area of 495 acres. Minor regulation above station by Sitka Public Utilities hydroelectric plant during periods 1920-23 and 1937-42.

Cooperation.--Records prior to 1945 furnished by U. S. Forest Service.

1/ Formerly published as Medvetcha River near Sitka.

Sawmill Creek near Sitka--Continued

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	-	-	-	-	-	-	-	-	-	-	-	370	-
1921	374	*334	90.3	84.9	113	64.5	127	416	*971	725	665	*793	*397
1922	*960	256	*433	136	50.1	24.8	115	488	705	640	693	*791	*444
1923	354	483	137	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	248	180	231	615	*877	763	*725	*770	-
1929	*759	444	419	358	144	257	192	600	*835	753	705	539	*503
1930	*929	*792	249	*82.7	200	139	293	565	772	719	656	*796	*517
1931	*661	*555	*818	238	*343	106	295	626	*809	736	726	*730	*555
1932	*880	354	149	227	*147	133	299	556	*860	723	683	*942	*497
1933	*727	365	144	128	135	*57.4	168	669	720	793	*888	450	*440
1934	*708	*826	*124	244	370	180	363	584	697	691	*835	546	*514
1935	*813	338	219	*140	644	155	*219	760	*1,035	*976	*1,021	*1,039	*613
1936	*600	*998	705	278	*97.7	354	*663	*861	*1,179	*898	803	*1,141	*715
1937	1,490	1,700	550	280	160	140	200	500	860	658	952	662	681
1938	1,204	271	372	216	268	213	183	583	667	575	573	822	497
1939	684	464	403	259	178	137	204	437	780	860	1,235	1,014	557
1940	1,077	498	342	173	160	130	278	478	535	482	736	755	472
1941	637	381	262	191	227	215	322	350	584	538	284	359	363
1942	903	535	121	499	230	129	259	705	550	686	670	700	†501

* Revised.
† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	-	-	-	-	-	-	-	-	-	-	-	22,000	-
1921	23,000	*19,900	5,550	5,220	6,280	3,970	7,560	25,600	*57,800	44,600	40,900	*47,200	*288,000
1922	*59,000	15,200	*26,600	8,360	2,780	1,520	6,840	30,000	42,000	39,400	41,400	*47,100	*320,000
1923	21,800	28,700	8,420	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	14,300	11,100	13,700	37,800	*52,200	46,900	*44,600	*45,800	-
1929	*46,700	26,400	25,800	22,000	8,000	15,800	11,400	36,900	*49,700	46,300	43,300	32,100	*364,000
1930	*57,100	*47,100	15,300	*5,090	11,100	8,550	17,400	34,700	45,900	44,200	40,300	*47,400	*374,000
1931	*40,600	*33,000	*50,300	14,600	*19,000	6,520	17,600	38,500	*48,100	45,300	44,600	*43,500	*402,000
1932	*54,100	21,100	9,160	14,000	*8,460	8,180	17,800	34,200	*51,200	44,500	42,000	*56,000	*361,000
1933	*44,700	21,700	8,850	7,870	7,500	*3,530	10,000	41,100	42,800	48,800	*54,600	26,800	*318,000
1934	*43,600	*49,200	*7,620	15,000	20,500	11,100	21,600	35,900	41,500	42,500	*51,300	32,500	*372,000
1935	*50,000	20,100	13,500	*8,600	35,800	9,530	*13,000	46,700	*61,600	*60,000	*62,800	*61,800	*443,000
1936	*36,900	*59,400	43,300	17,100	*5,620	21,800	*39,400	*52,900	*70,100	*55,200	49,400	*67,900	*519,000
1937	91,600	101,000	33,800	17,200	8,890	8,610	11,900	30,700	51,200	40,500	58,500	39,400	493,000
1938	74,050	16,100	22,860	13,280	14,880	13,120	10,860	35,880	36,690	35,350	35,210	48,900	357,200
1939	42,040	27,610	24,790	15,910	9,870	8,420	12,150	26,900	46,420	52,890	75,970	60,360	403,300
1940	66,220	29,660	21,040	10,650	9,180	7,990	16,550	29,400	31,800	29,620	45,270	44,950	342,300
1941	39,160	22,700	16,080	11,710	12,630	13,240	19,170	21,550	34,780	33,070	17,440	21,340	262,900
1942	55,430	31,800	7,420	30,620	12,150	7,150	14,610	43,300	32,620	42,160	41,180	41,650	†360,100

* Revised.
† Corrected.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1920	836	-	-	-	-	-	-	-	-	-	-
1921	836	-	-	16	*397	10.2	138.21	*288,000	*470	163.43	*340,000
1922	836	-	-	11	*444	11.4	154.53	*320,000	*386	134.34	*278,000
1923	836	-	-	-	-	-	-	-	-	-	-
1928	836	-	-	-	-	-	-	-	-	-	-
1929	836	*2,460	Oct. 13, 1928	54	*503	12.9	175.18	*364,000	*532	185.13	*385,000
1930	836	-	-	-	*517	13.3	179.99	*374,000	*523	182.11	*379,000
1931	(a)	-	-	37	*555	14.2	193.12	*402,000	*500	174.05	*362,000
1932	(a)	-	-	45	*497	12.7	173.37	*361,000	*484	169.01	*352,000
1933	(a)	-	-	-	*440	11.3	153.04	*318,000	*474	165.11	*343,000
1934	(a)	‡2,630	Nov. 9, 1933	-	*514	13.2	178.99	*372,000	*491	170.93	*356,000
1935	(a)	‡3,580	Sept.27, 1935	-	*613	15.7	213.19	*443,000	*690	240.13	*499,000
1936	(a)	-	-	-	*715	18.3	249.56	*519,000	*835	291.38	*606,000
1937	(a)	‡3,640	(b)	-	681	17.3	237.03	493,000	525	182.66	380,000
1938	(a)	‡4,840	Oct. 22, 1937	40	497	12.8	173.13	357,200	472	164.26	338,600
1939	(a)	‡4,290	Aug. 19, 1939	77	557	14.3	193.83	403,300	588	204.76	425,800
1940	(a)	‡2,600	Oct. 13, 1939	75	472	12.1	164.65	342,300	418	145.87	303,400
1941	(a)	‡1,920	Oct. 20, 1940	79	363	9.31	126.30	262,900	386	134.50	279,600
1942	(a)	-	-	79	†501	12.8	174.34	†360,100	-	-	-

* Revised.
† Corrected.
‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."
b Occurred sometime in August 1937.

Sawmill Creek near Sitka--Continued

Discharge, in cubic feet per second, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	760	215	130	112	66	112	34	149	1,070	960	627	339
2	1,440	309	130	170	54	112	34	170	1,370	960	586	313
3	1,370	2,060	112	192	66	112	34	215	1,580	860	548	288
4	1,950	1,370	112	192	66	130	34	449	1,250	715	548	276
5	1,580	715	112	170	54	149	43	715	1,010	586	627	263
6	1,510	449	95	130	34	130	43	627	910	548	548	251
7	1,250	365	95	130	34	112	43	586	960	586	480	239
8	1,250	288	80	130	34	112	43	586	1,010	627	480	239
9	810	239	80	130	43	95	43	760	1,310	586	480	239
10	715	215	112	112	54	95	54	910	1,070	548	513	239
11	627	215	112	95	54	80	54	910	860	586	513	239
12	1,200	170	112	95	54	80	66	760	715	670	480	313
13	3,700	130	112	149	54	80	66	670	627	627	420	548
14	2,490	130	112	130	54	66	80	513	586	627	627	548
15	1,250	130	192	130	54	66	80	548	627	627	*586	449
16	960	112	192	130	54	66	95	760	627	548	480	339
17	760	95	149	130	43	54	95	715	627	513	*670	288
18	586	*95	149	112	43	43	95	548	715	480	670	2,450
19	670	80	130	112	43	43	95	449	715	548	548	2,270
20	670	80	215	95	34	43	130	420	627	548	513	1,250
21	627	95	215	80	34	54	149	420	548	513	1,060	760
22	548	130	192	80	43	54	170	449	715	548	1,190	513
23	2,740	130	149	80	54	54	170	449	910	513	860	1,690
24	1,630	130	130	66	54	43	170	670	760	513	670	1,720
25	810	192	112	80	66	43	170	810	627	670	480	960
26	513	263	112	80	66	54	170	860	548	627	392	627
27	392	215	112	80	95	43	170	960	548	627	339	480
28	339	192	95	80	112	43	170	1,070	548	548	313	392
29	239	170	95	66	-	34	170	960	586	480	339	627
30	215	170	112	80	-	34	149	1,010	715	513	365	810
31	215	-	112	66	-	34	-	860	-	627	365	-
Total	33,816	9,149	3,969	3,484	1,516	2,270	2,919	19,978	24,771	18,929	17,317	19,959
Mean	1,091	305	128	112	54.1	73.2	97.3	644	826	611	559	665
Cfsm	28.0	7.82	3.28	2.87	1.39	1.88	2.49	16.5	21.2	15.7	14.3	17.1
In.	32.25	8.72	3.78	3.32	1.45	2.16	2.78	19.05	23.62	18.05	16.51	19.03
Ac-ft	67,070	18,150	7,870	6,910	3,010	4,500	5,790	39,630	49,130	37,550	34,350	39,590

Calendar year 1945: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1945-46: Max 3,700 Min 34 Mean 433 Cfsm 11.1 In. 150.72 Ac-ft 313,600

Peak discharge (base, 2,700 cfs).--Oct. 13 (8 a.m.) 4,100 cfs; Oct. 23 (8 a.m.) 3,660 cfs; Sept. 18 (4 p.m.) 3,610 cfs.
* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	586	513	74	107	74	207	164	414	780	679	401	1,730
2	449	392	74	125	74	185	144	344	715	559	440	1,300
3	449	420	74	164	74	164	125	317	679	532	679	1,150
4	586	2,680	60	255	60	144	107	279	679	590	574	765
5	627	1,950	60	311	74	144	107	258	586	539	437	555
6	1,370	910	60	404	74	125	107	277	532	590	350	411
7	1,010	548	60	404	74	107	*107	308	520	672	332	320
8	1,440	513	48	372	74	107	107	398	623	590	314	268
9	1,190	1,790	48	255	60	107	107	520	756	528	299	458
10	2,610	960	48	207	74	107	*107	509	800	487	332	3,010
11	3,900	2,750	48	185	74	90	107	479	697	483	320	4,070
12	1,650	4,430	48	164	74	90	112	476	648	490	294	2,160
13	910	1,870	38	144	74	164	136	424	636	472	302	1,320
14	548	860	38	144	74	810	136	356	547	448	363	1,260
15	392	547	38	144	74	1,250	134	326	448	407	360	1,150
16	313	341	38	144	74	1,070	134	317	454	388	393	765
17	263	255	60	125	74	910	160	299	566	401	611	520
18	288	207	90	107	74	586	218	288	598	454	630	430
19	288	207	164	107	74	472	263	319	555	555	454	2,060
20	263	185	164	90	90	670	260	536	*451	555	*347	1,890
21	*239	144	144	90	90	715	240	551	434	476	296	2,670
22	215	125	125	107	90	627	252	938	505	430	266	4,220
23	215	107	125	144	144	472	372	1,380	536	407	242	2,000
24	263	90	207	144	164	372	437	1,230	653	382	228	1,060
25	339	90	185	144	185	311	1,050	1,210	627	353	248	636
26	313	90	164	107	207	255	1,000	1,380	505	338	485	458
27	263	90	144	90	207	230	840	1,550	479	335	775	356
28	365	74	125	74	207	207	770	1,640	517	326	902	311
29	627	74	107	74	-	230	644	1,360	517	311	2,010	439
30	670	74	107	74	-	207	513	1,060	574	326	1,810	860
31	960	-	107	74	-	185	-	915	-	329	1,620	-
Total	23,601	23,286	2,872	5,080	2,762	11,320	8,960	20,658	17,617	14,432	17,114	38,602
Mean	761	776	92.6	164	98.6	365	299	666	587	466	552	1,287
Cfsm	19.5	19.9	2.37	4.21	2.53	9.36	7.67	17.1	15.1	11.9	14.2	33.0
In.	22.51	22.21	2.74	4.84	2.63	10.79	8.54	19.70	16.80	13.76	16.32	36.81
Ac-ft	46,810	46,190	5,700	10,080	5,480	22,450	17,770	40,970	34,940	28,630	33,950	76,570

Calendar year 1946: Max 4,430 Min 34 Mean 441 Cfsm 11.3 In. 153.43 Ac-ft 319,160
Water year 1946-47: Max 4,430 Min 38 Mean 510 Cfsm 13.1 In. 177.65 Ac-ft 369,500

Peak discharge (base, 2,700 cfs).--Oct. 11 (3 a.m.) 4,700 cfs; Nov. 4 (4 p.m.) 3,430 cfs; Nov. 12 (2 a.m.) 6,190 cfs; Sept. 10 (9 p.m.) 5,260 cfs; Sept. 22 (1:30 a.m.) 5,700 cfs.
* Discharge measurement made on this day.

Sawmill Creek near Sitka--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	940	245	417	216	131	51	66	109	715	543	1,900	502
2	930	230	323	209	121	50	59	123	657	559	1,210	993
3	1,190	271	274	181	118	50	54	140	623	935	751	1,240
4	715	266	263	168	102	54	52	156	594	985	532	935
5	472	240	363	156	95	67	49	192	570	830	434	653
6	341	310	338	144	90	64	48	285	775	780	391	540
7	263	594	277	133	84	59	47	329	1,040	720	360	1,110
8	216	563	230	121	76	56	46	344	885	631	329	4,860
9	200	532	205	111	74	54	47	363	756	566	338	4,300
10	277	2,020	181	100	74	52	49	398	870	528	385	1,980
11	509	1,710	170	95	74	51	52	414	995	509	391	1,360
12	1,340	965	183	90	73	50	55	430	985	498	448	875
13	1,260	688	238	488	71	50	56	509	920	498	465	571
14	1,580	468	216	733	70	48	59	602	920	498	430	416
15	1,280	338	192	532	68	48	61	666	975	520	411	326
16	810	268	230	385	67	47	66	697	1,040	570	444	274
17	574	282	212	335	66	52	67	785	1,090	611	566	*1,910
18	502	317	196	517	64	52	67	820	1,050	623	509	1,650
19	462	311	177	602	62	49	66	855	950	598	411	1,770
20	372	274	160	723	61	49	64	1,130	820	586	347	2,140
21	299	309	168	1,630	60	56	63	1,240	710	582	296	1,300
22	260	966	192	975	58	54	67	1,000	611	547	382	870
23	263	1,450	258	636	57	*52	68	765	547	602	2,930	567
24	375	1,140	242	448	55	47	70	742	524	586	1,580	572
25	627	875	209	329	54	46	68	1,050	494	570	805	2,010
26	619	995	181	258	53	44	68	1,140	566	615	472	1,120
27	602	697	156	221	52	43	70	1,150	785	644	326	628
28	472	547	144	209	52	44	71	1,220	765	1,620	250	416
29	378	697	134	*185	51	49	77	1,230	598	2,020	212	*309
30	317	574	131	166	-	68	92	1,070	*528	2,170	200	251
31	282	-	185	148	-	76	-	860	-	1,520	255	-
Total	18,727	19,142	6,845	11,224	2,133	1,632	1,844	20,814	23,358	24,064	18,760	36,548
Mean	604	638	221	362	73.6	52.6	61.5	671	778	776	605	1,218
Cfsm	15.5	16.4	5.67	9.28	1.89	1.35	1.58	17.2	19.9	19.9	15.5	31.2
In.	17.86	18.25	6.53	10.70	2.03	1.56	1.76	19.85	22.27	22.95	17.89	34.85
Ac-ft	37,140	37,970	13,580	22,260	4,230	3,240	3,660	41,280	46,330	47,730	37,210	72,490

Calendar year 1947: Max 4,220 Min 60 Mean 497 Cfsm 12.7 In. 172.83 Ac-ft 359,500
Water year 1947-48: Max 4,860 Min 43 Mean 506 Cfsm 13.0 In. 176.50 Ac-ft 367,100

Peak discharge (base, 2,700 cfs).--Nov. 10 (6:30 p.m.) 2,840 cfs; July 29 (10 p.m.) 2,860 cfs; Aug. 23 (8 a.m.) 3,520 cfs; Sept. 8 (6:30 p.m.) 7,100 cfs; Sept. 17 (3 p.m.) 2,800 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 14 to Mar. 4 and Mar. 6-12; discharge estimated on basis of records for Cascade Creek near Petersburg and weather records for Sitka.

Sawmill Creek near Sitka--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	239	477	142	94	106	89	106	287	660	760	830	592
2	299	501	137	92	101	94	101	245	750	725	790	719
3	283	875	124	128	97	101	106	220	1,000	690	1,010	762
4	287	916	112	202	91	163	110	195	800	655	1,120	623
5	290	618	103	342	87	214	108	177	690	640	922	597
6	255	435	97	349	85	233	106	180	800	610	747	588
7	220	1,080	96	287	80	220	105	180	1,000	740	687	537
8	284	2,170	d90	236	77	195	101	177	1,200	715	743	439
9	724	4,080	d85	208	75	168	99	251	950	610	944	362
10	766	2,660	d80	255	71	149	99	416	800	610	972	329
11	800	2,530	d75	405	70	142	101	790	705	745	757	303
12	922	1,780	d73	537	70	140	108	835	850	995	664	342
13	786	966	d70	623	80	135	110	664	1,050	1,050	597	416
14	636	610	d67	529	95	124	112	542	1,210	870	691	636
15	470	435	d67	420	90	116	112	470	933	755	673	705
16	567	345	d80	376	85	110	116	446	795	720	558	546
17	890	280	103	312	80	105	120	481	790	690	473	427
18	668	251	202	264	75	99	137	743	820	665	435	352
19	895	239	183	223	71	101	174	900	900	614	401	306
20	885	236	166	195	66	101	230	1,060	1,000	605	394	369
21	687	399	149	171	63	105	274	1,080	1,200	733	412	790
22	1,060	860	135	152	61	114	274	1,110	1,100	738	446	1,480
23	906	696	130	140	60	114	255	1,040	1,600	659	446	2,460
24	719	563	122	132	60	120	233	*820	1,300	610	423	1,760
25	563	412	122	*128	85	124	211	650	1,000	659	412	977
26	493	303	120	126	100	120	198	584	800	714	412	825
27	1,140	236	114	122	95	*114	214	558	590	636	416	757
28	922	*186	110	118	95	106	274	571	650	646	394	601
29	815	163	105	118	-	106	342	570	590	757	398	542
30	728	142	99	114	-	118	335	590	650	747	505	668
31	546	-	97	108	-	110	-	610	-	752	580	-
Total	19,745	25,444	3,455	7,506	2,271	4,048	4,971	17,442	27,183	22,115	19,252	20,810
Mean	637	848	111	242	81.1	131	166	563	906	713	621	694
Cfsm	16.3	21.7	2.85	6.21	2.08	3.36	4.26	14.4	23.2	18.3	15.9	17.8
In.	18.83	24.26	3.29	7.16	2.17	3.86	4.74	16.63	25.92	21.09	18.36	19.84
Ac-ft	39,160	50,470	6,850	14,890	4,500	8,030	9,860	34,600	53,920	43,860	38,190	41,280

Calendar year 1948: Max 4,860 Min 43 Mean 516 Cfsm 13.2 In. 180.24 Ac-ft 374,900
Water year 1948-49: Max 4,080 Min 60 Mean 477 Cfsm 12.2 In. 166.15 Ac-ft 345,600

Peak discharge (base, 2,700 cfs).--Nov. 9 (8 a.m.) 4,900 cfs; Sept. 23 (2 p.m.) 2,710 cfs.
* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on same basis as for no gage-height record.
Note.--No gage-height record Feb. 4-28, May 29 to June 13, June 18 to July 18; discharge estimated on the basis of records for nearby mainland gaging stations and rainfall record at Sitka.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	994	1,380	186				44	116	383		680	558
2	855	2,700	183				44	147	497		640	592
3	705	2,600	168				44	205	691		600	580
4	592	1,830	149				46	242	618		750	696
5	466	1,090	140				46	271	575		700	1,390
6	366	815	128				43	280	714		580	938
7	299	618	120				42	283	900		500	592
8	544	477	183				42	352	1,040		412	420
9	820	362	186				40	550	977		401	335
10	673	290	154				42	554	830		408	303
11	550	239	137				54	605	766		412	293
12	489	202	128				61	636	805		416	274
13	2,170	205	118				67	501	880		412	248
14	1,820	248	114			45	76	439	865		405	236
15	870	242	106				86	359	850		394	223
16	550	223	97	50	45		86	309	1,000	800	352	214
17	383	296	89				87	287	1,180		309	205
18	454	454	84				99	280	1,350		293	202
19	650	416	82				101	312	1,420		329	239
20	1,330	280	135				108	312	1,500		390	454
21	2,580	300	152				112	293	1,200		405	673
22	1,200	360	137				108	264	800		387	1,510
23	714	350	124				103	245	600		373	1,670
24	588	280	114				101	*251	540		390	1,480
25	529	240	114	(*)			97	349	500		431	928
26	575	230	101				96	416	470		714	610
27	597	220	96			*44	92	477	450		605	450
28	563	*214	90			44	94	450	550		1,010	366
29	825	205	85		-	44	97	398	780		1,660	299
30	3,580	192	80		-	44	-	401	800		1,090	251
31	2,470	-	75		-	44	-	383	-		691	-
Total	29,801	17,558	3,855	1,550	1,260	1,390	2,261	10,967	24,531	24,800	17,139	17,229
Mean	961	585	124	50	45	44.8	75.4	354	818	800	553	574
Cfsm	24.6	15.0	3.18	1.28	1.15	1.15	1.93	9.08	21.0	20.5	14.2	14.7
In.	28.42	16.74	3.68	1.48	1.20	1.33	2.16	10.46	23.39	23.65	16.34	16.43
Ac-ft	59,110	34,830	7,650	3,070	2,500	2,760	4,480	21,750	48,660	49,190	33,990	34,170

Calendar year 1949: Max 3,580 Min - Mean 487 Cfsm 12.5 In. 169.66 Ac-ft 352,900
Water year 1949-50: Max 3,580 Min - Mean 417 Cfsm 10.7 In. 145.28 Ac-ft 302,200

Peak discharge (base, 2,700 cfs).--Oct. 13 (4:30 p.m.) 3,170 cfs; Oct. 21 (3 a.m.) 3,190 cfs; Oct. 30 (1 p.m.) 4,430 cfs; Nov. 2 (1 p.m.) 2,940 cfs. *Discharge measurement made on this day.
Note.--No gage-height record Nov. 20-27, Dec. 27 to Mar. 28, June 15 to Aug. 7; discharge estimated on the basis of records for nearby mainland gaging stations and rainfall records at Sitka.

37. Green Lake Outlet near Sitka

Location.--Lat 56°59', long. 135°07' (revised), on Baranof Island, at outlet of Green Lake, and 9½ miles southeast of Sitka.

Drainage area.--31 sq mi (revised), approximately.

Gage.--Water-stage recorder. Altitude of gage is 220 ft (by barometer). Prior to Dec. 27, 1916, at datum 1.00 ft higher.

Average discharge.--10 years (1915-25), 293 cfs.

Extremes.--1915-25: Maximum discharge, 3,300 cfs Sept. 26, 1918 (gage height, 13.0 ft), from rating curve extended above 1,300 cfs; minimum, 10 cfs Mar. 27-29, 1919.

Remarks.--No diversion or regulation above station.

Cooperation.--Records since December 1920 furnished by U. S. Forest Service.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1916, 1917, superseding figures published in Bulletins 662 and 692, are given herewith:

Day (water year)	Discharge (cfs)	Day (water year)	Discharge (cfs)	Day (water year)	Discharge (cfs)
1915-16		1915-16		1916-17	
Dec. 1	80	Dec. 31	57	Dec. 6	64
2	132	Feb. 14	30	7	60
3	226	15	93	8	60
5	212	16	93	9	55
6	240	17	67	10	60
8	177	18	170	12	90
9	122	22	122	13	82
10	96	23	98	16	170
11	81	24	87	17	137
12	71	25	86	18	186
13	65	26	83	19	138
14	63	27	80	20	106
15	63	28	73	21	85
16	66	29	65	22	70
17	69	Mar. 1	61	23	60
18	87	2	60	24	52
19	108	29	23	25	48
20	167	30	30	26	44
21	128	31	40	27	43
22	116	Apr. 1	55	28	44
23	118	2	71	29	60
24	97			30	85
25	77	1916-17		31	70
26	71	Dec. 1	86	Jan. 1	59
27	73	2	78	2	54
28	70	3	71	3	50
29	73	4	70	4	44
30	60	5	68	5	39
				6	42

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	-	573	-
1916	487	188	*117	a23	*73.0	*40.5	*116	283	568	445	499	564	*284
1917	471	210	*96.6	*81.9	120	50	74.3	310	475	491	526	620	*295
1918	652	636	78.1	127	40.0	18.0	75.2	296	582	600	489	492	342
1919	420	378	190	231	37.9	14.8	126	255	358	488	452	500	289
1920	392	181	128	217	82.9	27.0	40.9	172	479	445	437	330	245
1921	282	254	73.6	64	112	58	69	285	542	387	309	416	239
1922	571	160	293	90.6	*35.5	27.3	83	352	466	462	500	551	*301
1923	246	400	82.3	30.7	110	117	219	341	510	390	250	648	278
1924	292	484	182	97.5	119	90.2	159	479	688	674	539	698	375
1925	437	285	162	34.4	25	50	86.2	474	520	560	395	340	282

* Revised.
a Only monthly figures revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	-	34,100	-
1916	29,900	11,200	*7,190	a1,410	*4,200	*2,490	*6,900	17,400	33,800	27,400	30,700	33,600	*206,000
1917	29,000	12,500	*5,940	*5,030	6,660	3,070	4,420	19,100	28,300	30,200	32,300	36,900	*213,000
1918	40,100	37,800	4,800	7,810	2,220	1,110	4,470	18,200	34,600	36,900	30,100	29,300	247,000
1919	25,800	22,500	11,700	14,200	2,100	910	7,500	15,700	21,300	30,000	27,800	29,800	209,000
1920	24,100	10,800	7,870	13,300	4,770	1,660	2,430	10,600	28,500	27,400	26,900	19,600	178,000
1921	17,300	15,100	4,530	3,930	6,220	3,570	4,110	17,500	32,300	23,800	19,000	24,700	172,000
1922	35,100	9,520	18,000	5,600	*1,970	1,660	5,100	21,600	27,700	28,400	30,700	33,900	*219,000
1923	15,100	23,800	5,060	1,890	6,110	7,190	13,000	21,000	30,300	24,000	15,400	38,600	201,000
1924	18,000	28,800	11,200	6,000	6,840	5,550	9,460	29,500	40,900	41,400	33,100	41,500	272,000
1925	26,900	17,000	9,960	2,120	1,400	3,100	5,130	29,100	30,900	34,400	24,300	20,200	205,000

* Revised.
a Only monthly figures revised; revised daily figures not available.

Green Lake Outlet near Sitka--Continued

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1915	662,836	-	-	-	-	-	-	-	-	-	-
1916	662,836	2,400	Sept.19, 1916	-	*284	9.16	124.72	*206,000	*283	124.18	*205,000
1917	692	-	-	15	*295	9.52	129.08	*213,000	*344	150.46	*249,000
1918	712	3,300	Sept.26, 1918	11	342	11.0	149.76	247,000	311	136.01	225,000
1919	714	2,450	Jan. 7, 1919	10	289	9.32	126.58	209,000	265	116.16	192,000
1920	722	3,000	Oct. 6, 1919	†12	245	7.90	107.64	178,000	237	104.11	172,000
1921	836	-	-	-	239	7.71	104.08	172,000	273	119.65	198,000
1922	836	-	-	12	*301	9.71	131.96	*219,000	*276	120.65	*201,000
1923	836	-	-	23	278	8.97	121.85	201,000	298	130.28	215,000
1924	836	-	-	-	375	12.1	164.71	272,000	369	162.20	268,000
1925	(a)	-	-	-	282	9.10	123.83	205,000	-	-	-

* Revised.
† Corrected.
a From report of Federal Power Commission and U. S. Forest Service "Water Powers Southeast Alaska, 1947."

38. Coal Creek near Baranof 1/

Location (revised).--Lat 57°01', long. 134°47', on Baranof Island, just upstream from mouth and 5 miles south of Baranof.

Drainage area.--28.5 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 85 ft (by barometer).

Extremes.--1922-24, 1925-26: Maximum discharge, 4,800 cfs Sept. 30, 1923 (gage height, 7.6 ft), from rating curve extended above 1,000 cfs; minimum not determined.

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	‡764	-	‡1,091	-
1923	521	576	113	64	77	164	337	519	676	815	938	1,750	546
1924	1,110	664	245	82.8	75.0	100	168	564	923	1,070	799	926	561
1925	-	-	-	-	-	-	-	518	739	910	726	-	-
1926	553	673	507	787	267	310	420	624	756	914	757	496	591
1927	‡765	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	‡47,000	-	‡64,900	-
1923	32,000	34,300	6,950	3,940	4,280	10,100	20,100	31,900	40,200	50,100	57,700	104,000	396,000
1924	68,200	39,500	15,100	5,090	4,310	6,150	10,000	34,700	54,900	65,800	49,100	55,100	408,000
1925	-	-	-	-	-	-	-	31,900	44,000	56,000	44,600	-	-
1926	34,000	40,000	31,200	48,400	14,800	19,100	25,000	38,400	45,000	56,200	46,500	29,500	428,000
1927	‡47,000	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1922	-	-			-	-	-	-	-	-	-
1923	836	4,800	Sept.30, 1923		546	19.2	260.23	396,000	615	292.84	445,000
1924	836	‡3,780	Oct. 1, 1923	-	561	19.7	268.32	408,000	-	-	-
1925	836	-	-	-	-	-	-	-	-	-	-
1926	836	‡2,140	Oct. 19, 1925	-	591	20.7	281.60	428,000	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published.

1/ Formerly published as Coal Creek at Cascade Bay.

39. Baranof River at Baranof 1/

Location.--Lat 57°05', long. 134°50' (revised), on Baranof Island, at the community of Baranof, 700 ft downstream from Baranof Lake, and 800 ft upstream from mouth.

Drainage area.--29.5 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 100 ft.

Average discharge.--12 years (1915-27), 433 cfs.

Extremes.--1915-28: Maximum discharge, 4,170 cfs Sept. 24, 1922 (gage height, 5.8 ft), from rating curve extended above 1,800 cfs; minimum daily, 27 cfs Feb. 13, 14, 1916, Jan. 31, 1923.

Remarks.--No diversion or regulation above station.

Cooperation.--Records since January 1921 furnished by U. S. Forest Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	759	910	652	-
1916	572	245	199	40.2	55.3	42.3	161	450	804	673	605	678	378
1917	524	300	99.4	78.2	90.4	47.4	99.7	504	719	724	745	745	391
1918	683	664	90.1	129	66	a38.4	99.8	436	879	980	773	722	*466
1919	675	550	210	280	60	30	210	490	649	827	750	756	459
1920	575	184	138	226	98.7	45.7	75.9	317	719	760	581	407	345
1921	346	380	55	80	120	63.6	143	433	983	729	574	726	389
1922	1,260	189	428	105	‡50	‡45	‡100	‡448	‡764	‡662	‡726	‡855	‡473
1923	413	546	113	63.8	77.2	138	293	526	714	686	591	983	429
1924	890	530	200	†82.8	†75	100	133	649	990	1,030	695	849	520
1925	607	300	273	45	35	74.1	101	601	832	862	560	441	397
1926	421	695	504	743	245	313	432	652	709	683	*447	*296	*514
1927	692	370	371	185	69.0	110	122	457	937	717	474	687	435
1928	699	141	76.3	340	-	-	-	-	-	-	-	-	-

* Revised.
† Corrected.
‡ Not previously published; partly estimated on basis of records for stations on nearby streams.
a Only monthly figures revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	46,700	56,000	38,800	-
1916	35,200	14,600	12,200	2,470	3,180	2,600	9,580	27,700	47,800	41,400	37,200	40,300	274,000
1917	32,200	17,900	6,110	4,810	5,020	2,910	5,930	31,000	42,800	44,500	45,800	44,300	283,000
1918	42,000	39,500	5,540	7,930	3,670	a2,360	5,940	26,800	52,300	60,300	47,500	43,000	*337,000
1919	41,500	32,700	12,900	17,200	3,300	1,840	12,500	30,100	38,600	50,800	46,100	45,000	333,000
1920	35,400	10,900	8,480	13,900	5,680	2,810	4,520	19,500	42,800	46,700	35,700	24,200	251,000
1921	21,300	22,600	3,380	4,920	6,660	3,910	8,510	26,600	58,500	44,800	35,300	43,200	280,000
1922	77,500	11,200	26,300	6,460	‡2,780	‡2,770	‡5,950	‡27,600	‡45,500	‡40,700	‡44,700	‡50,800	‡342,000
1923	25,400	32,500	6,950	3,920	4,290	8,480	17,400	32,300	42,500	42,200	36,300	58,500	311,000
1924	54,700	31,500	12,300	5,090	4,310	6,150	7,910	39,900	58,900	63,300	42,700	50,500	377,000
1925	37,300	17,900	16,800	2,770	1,940	4,560	6,010	37,000	49,500	53,000	34,400	26,200	287,000
1926	25,900	41,400	31,000	45,700	13,600	19,200	25,700	40,100	42,200	42,000	*27,500	*17,600	*372,000
1927	42,500	22,000	22,800	11,400	3,830	6,760	7,260	28,100	55,800	44,100	29,100	40,900	315,000
1928	43,000	8,390	4,690	20,900	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published; partly estimated on basis of records for stations on nearby streams.
a Only monthly figures revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1915	662	3,350	Aug. 10, 1915	-	-	-	-	-	-	-	-
1916	662	‡2,170	Sept.19, 1916	27	378	12.8	174.32	274,000	370	170.65	268,000
1917	692	‡2,200	Sept.28, 1917	31	391	13.3	180.08	283,000	434	199.67	314,000
1918	712	2,920	Sept.26, 1918	30	*466	15.8	214.54	*337,000	*466	214.57	*337,000
1919	714	2,640	Nov. 6, 1918	-	459	15.6	211.41	333,000	415	190.85	300,000
1920	722	2,610	Oct. 6, 1919	32	345	11.7	159.30	251,000	335	154.55	243,000
1921	836	2,000	Nov. 2, 1920	30	389	13.2	177.79	280,000	480	220.75	347,000
1922	836	4,170	Sept.24, 1922	-	‡473	16.0	217.44	‡342,000	‡403	185.66	‡292,000
1923	836	-	-	27	429	14.5	197.53	311,000	476	218.96	344,000
1924	836	-	-	-	520	17.6	240.10	377,000	484	223.22	351,000
1925	836	-	-	-	397	13.5	182.70	287,000	433	199.39	314,000
1926	836	‡2,310	Jan. 8, 1926	105	*514	*17.4	*236.36	*372,000	*499	*229.43	*361,000
1927	836	‡2,780	Sept. 9, 1927	-	435	14.7	199.91	315,000	391	180.03	283,000
1928	(a)	-	-	-	-	-	-	-	-	-	-

* Revised.
‡ Not previously published.
a From report of Federal Power Commission and U. S. Forest Service, "Water Powers Southeast Alaska, 1947."

1/ Formerly published as Baranof Lake Outlet at Baranof.

40. Porcupine River near Chichagof 1/

Location.--Lat 57°50'05", long. 136°20'25" (revised), on Chichagof Island, half a mile upstream from mouth, three-quarters of a mile downstream from Lake Elfendahl, and 15 miles northwest of the community of Chichagof.

Drainage area.--7.12 sq mi (revised).

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

Extremes.--1918-20: Maximum discharge, 1,180 cfs Jan. 7, 1920 (gage height, 4.25 ft), from rating curve extended above 140 cfs; minimum, 24 cfs Mar. 19, 28, 1919.

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	128	87.9	140	170	-
1919	124	179	130	104	41.2	28.9	66.3	102	82.0	86.5	86.3	218	104
1920	228	91.8	99.5	213	102	51.5	44.2	66.8	87.8	67.8	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	7,620	5,400	8,610	10,100	-
1919	7,620	10,700	7,990	6,400	2,290	1,780	3,950	6,270	4,880	5,320	5,310	13,000	75,500
1920	14,000	5,460	6,120	13,100	5,870	3,170	2,630	4,110	5,220	4,170	-	-	-

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1918	722	-	-	-	-	-	-	-	-	-	-
1919	722	-	-	-	104	14.6	198.56	75,500	103	196.75	74,800
1920	722	1,180	Jan. 7, 1920	-	-	-	-	-	-	-	-

41. Falls Creek near Chichagof 2/

Location.--Lat 57°48'10", long. 136°18'10", on Chichagof Island, one-eighth of a mile upstream from mouth, and 12½ miles northwest of the community of Chichagof.

Drainage area.--6.48 sq mi (revised).

Gage.--Water-stage recorder and wooden control. Altitude of gage is 20 ft (from topographic map).

Extremes.--1918-20: Maximum discharge, 665 cfs Sept. 26, 1918 (gage height, 3.45 ft), from rating curve extended above 100 cfs; minimum, 3.2 cfs Mar. 12, 1919 (gage height, 0.18 ft).

Remarks.--No diversion or regulation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	‡98.4	80.1	44.9	104	104	-
1919	78.8	103	81.1	66.3	24.2	17.5	67.0	60.7	37.5	37.3	47.8	111	61.1
1920	115	46.5	54.7	96.3	95.2	24.5	38.1	70.6	-	-	-	-	-

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	‡6,050	4,770	2,760	6,400	6,190	-
1919	4,850	6,130	4,990	4,080	1,340	1,080	3,990	3,730	2,230	2,290	2,940	6,600	44,200
1920	7,070	2,770	3,360	5,920	5,480	1,510	2,270	4,340	-	-	-	-	-

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	Bulletin no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1918	722	665	Sept.26, 1918	-	-	-	-	-	-	-	-
1919	722	-	-	-	61.1	9.43	128.62	44,200	57.3	120.10	41,500
1920	722	-	-	-	-	-	-	-	-	-	-

1/ Formerly published as Porcupine Creek near Nickel.

2/ Formerly published as Falls Creek at Nickel.

42. Gakona River at Gakona

Location.--Lat 62°18'05", long. 145°18'20", near center of span on downstream side of bridge on Glenn Highway at Gakona, 500 ft upstream from mouth, and 1.9 miles northeast of junction of Richardson and Glenn Highways.

Drainage area.--620 sq mi, approximately.

Gage.--Wire-weight gage read twice daily. Datum of gage is 1,403.03 ft above mean sea level. Aug. 8 to Sept. 13, 1948, staff gage read once daily at same site and datum.

Extremes.--1948: Maximum daily discharge during period August to September, 5,600 cfs Aug. 20; minimum discharge observed, 676 cfs Sept. 1 (gage height, 3.56 ft).
1949-50: Maximum discharge observed during water year, 3,350 cfs July 6 (gage height, 5.98 ft); minimum not determined, occurred during period of no gage-height record.

Remarks.--Records poor.

Discharge, in cubic feet per second, August, September 1948

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	*676	9	1,640	1,300	17	4,100	-	25	1,300	-
2	-	a800	10	1,410	1,210	18	4,020	-	26	1,050	-
3	-	a1,000	11	1,640	1,050	19	a4,900	-	27	1,210	-
4	-	1,130	12	1,700	900	20	a5,600	-	28	1,300	-
5	-	1,300	13	1,870	760	21	a4,900	-	29	1,300	-
6	-	1,130	14	1,740	-	22	2,000	-	30	1,050	-
7	-	1,050	15	1,870	-	23	1,660	-	31	a900	-
8	1,890	1,210	16	2,020	-	24	1,520	-			

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
Note.--Discharge measurements made at this site prior to August are as follows: June 9, 1948, 847 cfs and July 20, 1948, 2,610 cfs.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								800	1,150	2,200	2,100	1,100
2								910	1,120	2,080	2,000	1,140
3	630							1,100	1,110	2,200	2,000	870
4								1,200	1,140	2,400	2,100	835
5	(*)	200						1,400	1,120	3,000	2,200	870
6								1,600	1,180	3,350	2,430	782
7							*90	1,700	1,200	3,200	2,530	722
8				140				1,800	1,120	2,700	2,600	692
9								1,900	1,040	2,400	2,700	692
10	440	(*)						1,900	933	2,200	2,700	814
11								1,800	912	2,100	2,900	814
12				(*)				1,800	933	2,200	3,200	752
13								1,800	1,010	2,200	*3,240	752
14								1,700	1,040	2,100	3,200	662
15		170	150		90	85		1,670	1,080	1,900	3,060	*662
16								1,700	1,080	1,900	2,530	555
17								1,790	1,100	1,900	2,790	488
18							100	*1,730	1,000	2,000	2,990	511
19								1,490	1,000	2,050	2,930	511
20	310							1,110	1,000	2,100	2,730	467
21								870	1,100	2,300	3,210	467
22								980	1,100	2,200	2,660	383
23				120			150	1,100	1,180	2,500	2,990	363
24								988	1,300	2,400	3,060	344
25		160						898	1,400	2,300	2,860	344
26								996	1,560	2,200	2,060	383
27								1,100	1,870	2,400	1,670	383
28	240						420	1,200	2,020	2,300	1,290	344
29					-			1,160	2,130	*2,380	1,250	344
30					-			1,200	2,190	2,300	1,020	327
31		-			-		-	1,200	-	2,200	1,100	-
Total	12,090	5,300	4,650	4,020	2,520	2,635	4,700	42,592	37,118	71,660	76,100	18,373
Mean	390	177	150	130	90.0	85.0	157	1,374	1,237	2,312	2,455	612
Ac-ft	23,980	10,510	9,220	7,970	5,000	5,230	9,320	84,480	73,620	142,100	150,900	36,440

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 3,350 Min - Mean 772 Ac-ft 558,800

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to May 6, May 9, 13, 14 (stage-discharge relation affected by ice during most of period until May 14), May 16, 23, 27, 28, 30, 31, June 7, 17-22, 24, 25, July 1, 3-5, 7-18, 20-28, July 30 to Aug. 5, Aug. 8-12, 14; discharge estimated on basis of discharge measurements, weather records, and records for stations on nearby streams.

43. Tazlina River near Glennallen

Location.--Lat 62°03'20", long. 145°25'35", in W½ sec. 9, T. 3 N., R. 1 W., on downstream side of bridge on Richardson Highway, 2 miles upstream from mouth, 4 miles downstream from Moose Creek, and 5 miles southeast of Glennallen.

Drainage area.-- 2,670 sq mi, approximately.

Gage.--Wire-weight gage read once daily. Datum of gage is 1,109.13 ft above mean sea level, adjustment of 1952.

Extremes.--1949: Maximum daily discharge during period August to September, 17,000 cfs Aug. 7-9; minimum discharge observed, 6,080 cfs Sept. 25 (gage height, 4.46 ft).
1949-50: Maximum discharge observed during water year, 44,000 cfs Sept. 4 (gage height, 11.60 ft); minimum not determined.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Discharge measurements made at this site prior to August 1949, are as follows: June 10, 1948, 2,810 cfs; Sept. 4, 1948, 5,130 cfs; Oct. 27, 1948, 1,180 cfs; May 14, 1949, 1,030 cfs and June 23, 1949, 6,560 cfs.

Discharge, in cubic feet per second, August, September 1949

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	14,000	8,770	9	17,000	14,000	17	14,000	10,000	25	13,500	6,080
2	14,000	8,700	10	16,000	14,000	18	13,900	9,760	26	13,000	6,600
3	15,000	8,600	11	16,000	14,800	19	13,900	9,000	27	11,000	6,820
4	15,000	8,600	12	15,000	15,000	20	14,000	8,260	28	10,000	7,000
5	16,000	9,000	13	15,000	*14,100	21	14,000	7,650	29	9,300	6,870
6	16,000	11,500	14	14,500	12,200	22	14,000	7,480	30	8,700	6,750
7	17,000	12,000	15	14,100	11,700	23	14,000	6,900	31	8,700	-
8	17,000	13,000	16	14,000	11,000	24	14,500	6,400			
Total										432,100	292,540
Mean										13,940	9,751
Ac-ft										857,100	580,200

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 1-13, 16, 17, 20-22, 26-31, Sept. 2-5, 7, 9, 10, 12, 16, 17, 19, 23, 24, 26, 28; discharge estimated on basis of weather records and records for other stations in the Copper River basin.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,220								1,850	a11,000	a15,000	a19,000
2	6,170								1,900	a11,000	a15,000	23,000
3	5,950							a650	a2,000	a11,000	a16,000	a33,000
4	a5,600								a2,000	11,100	16,100	*43,000
5	*5,340	a1,500							a2,100	a11,000	a16,000	*36,800
6	5,030						(*)		2,180	10,900	a16,000	30,800
7	4,750								a2,400	11,400	a16,000	a25,000
8	a4,500					a270	a230	a1,400	a2,700	12,500	15,600	a20,000
9	a4,300								a3,300	a12,000	a15,000	a18,700
10	3,990	*1,400		a1,000					a3,900	11,400	a15,000	a17,000
11	a3,800							a2,000	a3,700	a12,000	15,700	a16,000
12	3,710							a2,100	a3,500	a13,000	14,600	a16,000
13	a3,600							a2,100	3,310	13,800	*15,100	a15,000
14	3,480							a2,100	a3,300	13,400	a15,000	a15,000
15	3,710		a1,100		a470			2,100	a3,700	a13,000	14,900	a14,000
16	a3,200							a2,000	a4,000	a13,000	a15,000	a13,000
17	2,780							a1,900	4,300	a13,000	a15,000	a12,000
18	2,700							*1,810	a5,000	13,200	15,100	a11,000
19	2,690							a1,700	a6,000	a14,000	16,000	a10,000
20	2,570	a1,300		(*)				a1,700	7,600	a15,000	a16,000	a9,000
21	2,570							a1,600	a8,600	13,900	a16,000	a8,000
22	2,440							a1,600	a9,400	*12,500	a15,000	a7,400
23	a2,300					a220	a300	1,500	9,760	a12,000	15,100	a7,000
24	2,150							1,390	a10,000	a13,000	a15,000	a6,400
25	2,280			a870				a1,400	a11,000	13,600	15,200	a5,900
26	2,140							1,560	a11,000	a13,000	a15,000	5,410
27	a2,000							a1,600	10,900	a13,000	a15,000	a5,100
28	a2,000							1,560	a11,000	a12,000	14,700	a4,800
29	a1,900				-			1,550	a11,000	a13,000	15,200	4,460
30	a1,900				-			a1,700	11,400	a14,000	16,000	a4,100
31	a1,800	-			-		-	1,810	-	14,300	a17,000	-
Total	107,570	40,900	34,100	29,570	13,160	7,570	7,950	47,030	172,800	391,000	477,300	455,870
Mean	3,470	1,363	1,100	954	470	244	265	1,517	5,760	12,610	15,400	15,200
Ac-ft	213,400	81,120	67,640	58,650	26,100	15,010	15,770	93,280	342,700	775,500	946,700	904,200

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 43,000 Min - Mean 4,890 Ac-ft 3,540,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records and records for other stations in Copper River basin.
Note.--Stage-discharge relation affected by ice Nov. 15 to May 15 (no gage-height record during most of the period; discharge estimated as explained for "a").

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44. Klutina River at Copper Center

Location.--Lat 61°57'10", long. 145°18'20", in SW¼ sec. 18, T. 2 N., R. 1 E., near center of span on downstream side of bridge on Richardson Highway, three-quarters of a mile upstream from mouth, 0.7 mile south of Copper Center, and 24 miles downstream from Klutina Lake.

Drainage area.--880 sq mi, approximately.

Supplemental records available.--May to August 1908, gage heights only.

Gage.--Wire-weight gage read once daily. Altitude of gage is 1,000 ft (from topographic map). May 19 to Aug. 31, 1908, June 17 to Oct. 31, 1913, staff gages at sites a quarter of a mile downstream at different datums.

Extremes.--1949: Maximum daily discharge during period August to September, 5,000 cfs Aug. 7, 8; minimum dischage observed, 2,070 cfs Sept. 24 (gage height, 5.68 ft).
1949-50: Maximum discharge observed during water year, 5,880 cfs June 24 (gage height, 7.87 ft); maximum gage height observed, 8.91 ft Apr. 5 (backwater from ice); minimum discharge not determined.
1913, 1949-50: Maximum discharge observed, 7,300 cfs June 29 to July 1, 1913 (gage height, 9.4 ft, site and datum then in use); minimum discharge not determined.

Remarks.--Records for water years 1949-50 good except those for periods of ice effect or no gage-height record, which are poor. Discharge measurements made at this site in 1948 and 1949 prior to beginning of record Aug. 1, 1949, are as follows: June 10, 1948, 2,010 cfs; Sept. 2, 1948, 2,260 cfs; Oct. 27, 1948, 737 cfs; June 23, 1949, 3,570 cfs and July 29, 1949, 4,740 cfs.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1913	-	6,030	3,520	1,960	1,390

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1913	-	371,000	216,000	117,000	85,500

Note.--Records of daily discharge published in WSP 372.

Discharge, in cubic feet per second, August, September 1949

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a4,500	3,120	9	a4,900	4,820	17	a4,000	3,010	25	3,500	2,160
2	a4,400	a3,100	10	a4,800	4,550	18	3,990	2,920	26	a3,400	2,640
3	a4,500	a3,000	11	a4,600	4,330	19	3,990	2,810	27	a3,300	2,860
4	a4,600	a3,000	12	a4,400	*4,190	20	a3,900	2,610	28	a3,200	3,000
5	a4,800	a3,200	13	a4,300	3,940	21	a3,900	2,500	29	a3,200	3,000
6	a4,900	3,660	14	4,180	3,740	22	a3,800	2,340	30	a3,200	2,980
7	a5,000	4,660	15	a4,000	3,500	23	3,740	2,210	31	a3,100	-
8	a5,000	4,880	16	a4,000	3,310	24	3,710	2,070			
Total										126,810	98,110
Mean										4,091	3,270
Ac-ft										251,500	194,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.

Klutina River at Copper Center--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,830	978						270	1,240	4,980	4,690	3,560
2	2,750	970						300	1,440	5,020	4,420	3,260
3	2,670	970						350	1,430	4,890	a4,400	2,950
4	2,570	932						410	1,490	4,730	4,500	*3,120
5	*2,370	910					(*)	500	1,610	4,670	4,430	3,040
6	2,330	880						600	1,820	4,640	a4,400	2,960
7	2,140	880						750	2,090	4,590	a4,500	2,810
8	2,110	850			140	130	140	850	2,070	4,710	4,590	2,610
9	2,050	800						930	2,290	4,710	4,500	2,640
10	1,950	*700						980	2,840	4,800	4,600	2,710
11	1,890	670						1,000	a2,600	4,850	4,670	2,720
12	1,760	650						1,000	2,380	a5,100	4,660	2,750
13	1,730	640						1,000	2,480	5,300	*4,840	3,020
14	1,650	640						1,000	2,530	5,120	a5,000	2,860
15	1,580	640	370	220				990	2,680	4,980	5,090	a2,800
16	1,490	640						974	a3,300	5,000	5,230	a2,700
17	1,430	650						954	3,800	a4,900	5,400	2,530
18	1,410	660		(*)			160	*908	4,080	4,760	5,360	2,400
19	1,340	690						902	4,780	5,000	5,230	2,100
20	1,320	704						902	5,200	4,780	5,160	1,950
21	1,300	678						889	5,620	4,600	5,210	a1,800
22	1,230	690			130			928	5,640	*4,620	5,210	a1,700
23	1,170	678				140	190	994	5,500	4,600	5,180	a1,800
24	1,100	658						922	5,880	4,620	5,600	a1,900
25	1,120	630						941	5,440	4,910	5,380	a1,800
26	1,110	600						980	5,270	4,780	4,910	a1,700
27	1,070	570						1,020	5,250	4,430	4,610	a1,600
28	1,020	540					230	1,130	a5,200	4,730	4,400	a1,500
29	970	510			-			1,140	a5,200	4,800	4,090	a1,500
30	392	490			-			1,200	5,120	4,760	3,790	a1,400
31	985	-			-		-	1,250	-	4,730	3,610	-
Total	51,437	21,498	11,470	6,820	3,790	4,190	5,000	26,964	106,270	149,110	147,660	72,190
Mean	1,659	717	370	220	135	135	167	870	3,542	4,810	4,763	2,406
Ac-ft	102,000	42,640	22,750	13,530	7,520	8,310	9,920	53,480	210,800	295,800	292,900	143,200

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 5,880 Min - Mean 1,661 Ac-ft 1,203,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.
Note.--Stage-discharge relation affected by ice Nov. 9-19, Nov. 25 to May 15 (no gage-height record Jan. 16, 17; Jan. 19 to Mar. 21); discharge estimated on basis of 4 discharge measurements, weather records, and records for other stations.

45. Tonsina River at Tonsina

Location.--Lat 61°39'50", long. 145°10'50", near center of span on downstream side of bridge on Richardson Highway, at Tonsina, 0.5 mile upstream from Bernard Creek, and 0.7 mile upstream from Squirrel Creek.

Drainage area.--420 sq mi, approximately.

Gage.--Wire-weight gage read once daily. Altitude of gage is 1,500 ft (from topographic map).

Extremes.--1950: Maximum discharge observed during period May to September, 5,260 cfs June 18 (gage height, 5.97 ft), from rating curve extended above 3,600 cfs; minimum daily, 130 cfs May 1, 2.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Discharge, in cubic feet per second, May to September 1950

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	130	1,180	a2,800	1,840	1,340	16	442	3,680	a2,000	2,630	a980
2	130	1,240	a2,800	a1,800	*1,280	17	491	4,500	2,000	2,550	868
3	140	1,280	a2,600	1,740	1,210	18	*469	5,110	a2,000	2,500	a800
4	150	1,300	a2,400	1,860	a1,200	19	410	5,090	a2,100	2,500	a780
5	160	1,900	2,450	a2,000	1,090	20	380	a5,000	2,190	2,430	a740
6	180	2,290	a2,400	a2,100	924	21	362	a4,800	2,320	2,550	a720
7	200	2,420	2,370	2,190	972	22	410	4,460	*2,120	2,530	a700
8	230	2,870	a2,300	2,160	948	23	390	3,910	2,400	2,550	741
9	280	3,190	a2,200	a2,100	892	24	405	a3,600	2,270	2,620	a780
10	350	3,420	a2,200	*2,130	964	25	496	a3,200	2,240	2,770	694
11	430	2,790	a2,200	2,270	988	26	430	2,840	a2,200	2,400	631
12	460	2,580	2,280	2,370	1,490	27	565	2,650	2,180	1,820	559
13	470	2,480	2,350	2,430	1,480	28	480	2,560	a2,100	1,900	541
14	486	2,430	a2,200	2,510	1,320	29	530	2,300	a2,100	1,700	496
15	430	2,740	a2,100	2,550	1,110	30	491	2,650	a2,000	1,430	458
						31	804	-	a1,900	1,400	-
Total							11,781	90,460	69,750	68,330	27,696
Mean							380	3,015	2,250	2,204	923
Ac-ft							23,370	179,400	138,300	135,500	54,930

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.
Note.--Stage-discharge relation affected by ice May 1-13 (no gage-height record for most of period; discharge estimated as explained for "a"). Discharge measurement prior to beginning of record made Apr. 1, 1950, 87.8 cfs.

46. McCarthy Creek near McCarthy

Location.--Lat 61°25', long. 142°55', in sec. 19, T. 5 S., R. 14 E., half a mile southeast of McCarthy and three-quarters of a mile upstream from mouth.

Drainage area.--71 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,500 ft (from topographic map).

Extremes.--June to November 1913: Maximum discharge observed, 876 cfs June 24; minimum not determined.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.	Nov.
1913	‡547	296	211	‡172	‡51.6	-

‡ Not previously published; partly estimated on the basis of two discharge measurements, weather records, and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.	Nov.
1913	‡32,570	18,170	12,950	‡10,210	‡3,170	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

47. Copper River near Chitina

Location.--Lat 61°28', long. 144°28', on right bank, at head of Wood Canyon, a quarter of a mile downstream from Taral Creek and abandoned Indian village of Taral, 2½ miles upstream from Tenas Creek, and 3½ miles south of Chitina.

Drainage area.--20,600 sq mi, approximately.

Supplemental records available.--Records of specific conductance of daily samples available in district office, Quality of Water Branch, at Palmer.

Gage.--Staff gage read twice daily. Altitude of gage is 400 ft (from topographic map).

Extremes.--1950: Maximum discharge observed during period July to September, 138,000 cfs Aug. 15 (gage height, 19.07 ft); minimum daily, 24,000 cfs Sept. 30.
A discharge measurement of 4,760 cfs was made Mar. 31, 1950.

Remarks.--Records of discharge fair except those for periods of doubtful or no gage-height record, which are poor.

Discharge, in cubic feet per second, July to September 1950

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	a120,000	103,000	a72,000	16	a107,000	129,000	d46,000
2	a120,000	104,000	a73,000	17	101,000	125,000	d42,000
3	a120,000	103,000	*75,000	18	100,000	129,000	d37,000
4	a110,000	102,000	79,600	19	105,000	136,000	d33,000
5	a110,000	99,400	90,000	20	109,000	131,000	d30,000
6	113,000	100,000	72,800	21	109,000	128,000	d31,000
7	110,000	102,000	61,100	22	102,000	a130,000	d31,000
8	96,000	a100,000	d54,000	23	108,000	a130,000	d31,000
9	a92,000	104,000	d49,000	24	122,000	a120,000	d30,000
10	95,200	110,000	d42,000	25	130,000	a120,000	d29,000
11	103,000	114,000	d43,000	26	127,000	115,000	d28,000
12	110,000	120,000	d46,000	27	123,000	*103,000	d27,000
13	106,000	127,000	d48,000	28	123,000	*87,400	d26,000
14	105,000	*134,000	d50,000	29	113,000	80,200	d25,000
15	109,000	137,000	d49,000	30	104,000	a75,000	d24,000
				31	103,000	a72,000	-
Total					3,405,200	3,470,000	1,374,500
Mean					109,800	111,900	45,800
Ac-ft					6,754,000	6,883,000	2,726,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on tributary streams.
d Doubtful gage-height record; discharge estimated as for "a."
Note.--Discharge measurement prior to beginning of record made Mar. 31, 1950, 4,760 cfs.

47 Copper River near Chitina

Chemical analyses, in parts per million June to November 1950

Date of collection	Mean discharge (cfs)	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
June 20, 1950	--	--	5.5	0.07	20	3.3	3.8		66	15	1.2	0.1	0.2	84	63	9	140	7.6	6
July 6, 9, 26, 27, 28	113,800	46	5.8	.13	29	4.0	7.2		103	16	2.2	.0	.3	115	89	4	198	7.4	10
Aug. 17, 19, 23	130,300	--	7.4	.07	29	3.8	7.3		98	18	3.0	--	.6	117	88	8	180	7.8	--
Sept. 4-10	64,070	--	7.0	.05	27	3.5	6.5		88	16	4.0	.3	.8	108	82	10	180	7.9	10
Sept. 11-20	42,400	--	10	.02	26	4.2	6.6	4.2	86	17	10	.4	.3	121	82	12	184	7.9	6
Sept. 21-30	28,200	--	13	.03	26	4.9	6.6		86	18	6.1	.4	.5	118	85	15	205	7.9	5
Oct. 1-10	--	--	13	.06	29	4.9	8.2		91	19	11	.0	.5	130	92	18	219	7.5	5
Oct. 11-20	--	34	11	.04	30	6.3	7.1		91	25	10	.3	.8	135	101	26	233	7.3	10
Oct. 21-31	--	--	13	.08	32	5.7	12	--	106	21	17	.0	.2	162	103	16	277	7.5	5
Nov. 1-10	--	51	19	.04	34	6.9	20		112	31	22	.3	.8	189	113	21	292	7.6	5

48. Copper River near Cordova 1/

Location.--Lat 60°41', long. 144°44', at outlet of Miles Lake and 36 miles northeast of Cordova.

Drainage area.--21,800 sq mi, approximately.

Supplemental records available.--1907-10, gage heights only in WSP 372.

Gage.--Chain gage. Altitude of gage is 100 ft.

Extremes.--June to November 1913: Maximum discharge observed, 216,000 cfs July 16 (gage height, 41.0 ft); minimum not determined.
Minimum discharge observed during 1913, 17,400 cfs Nov. 12 (result of discharge measurement).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in thousands of cubic feet per second

Year						June	July	Aug.	Sept.	Oct.	Nov.		
1913						-	‡169.1	‡108.0	‡69.15	-	-		

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in millions of acre-feet

Year						June	July	Aug.	Sept.	Oct.	Nov.		
1913						-	‡10.40	‡6.640	‡4.115	-	-		

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

49. Power Creek near Cordova

Location.--Lat 60°35', long. 145°37', on left bank at old bridge site, 1 mile upstream from Eyak Lake, and 5½ miles northeast of Cordova.

Drainage area.--20.5 sq mi.

Supplemental records available.--July to November 1913, fragmentary discharge only published in WSP 372.

Gage.--Water-stage recorder. Datum of gage is 33.5 ft above mean sea level (river-profile survey). July to November 1913, staff gage half a mile upstream at different datum.

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.18, 1947	b2,770	5.43	Sept.16, 1947	c240	2.97
1948	Oct. 1, 1947	2,850	5.50	(d)	20	1.95
1949	Sept.25, 1949	b5,540	7.65	May 5, 1949	c16	1.92
1950	Oct. 30, 1949	2,890	e5.9	Apr. 29, 1950	c13	1.50

a Period August to September.
b Maximum recorded.
c Minimum recorded.
d Mar. 16, 17, 21, 22, 30, 1948.
e From floodmarks.
Note.--Maximum discharges are from rating table extended above 420 cfs, by logarithmic plotting for water years 1947-48 and above 500 cfs for water years 1949-50.

1947-50: Maximum discharge recorded, 5,540 cfs Sept. 25, 1949 (gage height, 7.65 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum recorded, 13 cfs Apr. 29, 1950 (gage height, 1.50 ft), but may have been less during periods of no gage-height record.

Remarks.--Records good except those above 500 cfs and those for periods of ice effect or no gage-height record, which are poor.

1/ Formerly published as Copper River at Miles Glacier.

Power Creek near Cordova--Continued

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	a1,600	9	-	764	17	-	819	25	-	1,250
2	-	917	10	482	620	18	1,040	2,110	26	-	774
3	-	551	11	-	1,140	19	-	931	27	-	577
4	-	425	12	-	542	20	-	542	28	-	602
5	-	323	13	482	516	21	-	754	29	-	1,260
6	*400	*276	14	-	466	22	-	559	30	1,040	2,210
7	*323	400	15	-	323	23	-	518	31	-	-
8	-	296	16	654	256	24	1,140	1,550			
Total										-	23,871
Mean										-	796
Ac-ft										-	47,350

Peak discharge (base, 2,000 cfs).-- Sept. 18 (1 a.m.) 2,770 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on the basis of records for nearby streams.
Note.--No discharge record in August except on days shown.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,940	100	181	60	a95	*37	23	31	362	491	709	189
2	868	95	149	58	a90	37	23	33	354	948	594	189
3	736	89	173	57	a80	36	23	36	323	812	508	197
4	482	86	245	57	a75	33	23	38	346	645	425	206
5	362	86	189	56	a80	31	23	38	323	602	594	189
6	290	80	155	54	a75	31	23	42	1,180	672	559	586
7	240	80	129	54	a65	32	23	45	1,110	637	474	1,430
8	201	104	124	53	a60	31	23	48	611	594	774	914
9	173	146	120	50	a55	31	23	53	551	516	585	1,560
10	161	*113	108	50	a60	31	23	69	525	681	499	806
11	206	113	106	48	a65	30	24	115	525	568	457	383
12	185	165	100	45	a60	29	*24	146	542	482	457	284
13	173	124	95	44	a52	29	24	169	568	441	474	228
14	165	117	89	45	a47	29	25	228	620	482	534	198
15	149	102	87	b54	a44	28	27	240	602	508	620	176
16	155	93	82	b50	a41	28	26	256	594	516	736	815
17	131	87	77	b120	a39	31	24	276	654	516	764	904
18	120	82	74	377	a38	28	23	354	700	602	542	665
19	113	77	72	161	a37	26	23	466	774	792	457	301
20	106	425	72	120	a39	25	23	362	637	568	449	217
21	106	997	80	108	a38	24	23	269	534	482	416	179
22	247	1,820	74	98	a37	24	23	228	457	441	392	157
23	362	792	79	82	a39	28	23	228	385	508	354	152
24	173	709	b72	75	a42	26	23	256	362	709	*269	640
25	146	362	b69	97	a43	24	23	346	385	568	228	708
26	137	840	66	b126	a41	23	23	457	763	1,040	212	260
27	143	888	64	131	a39	23	24	551	736	1,460	201	182
28	131	508	64	108	a38	24	26	449	525	745	193	157
29	131	310	64	a86	a37	23	28	369	*457	645	189	312
30	115	218	64	a72	-	24	29	296	466	897	185	1,150
31	104	-	62	a90	-	23	-	276	-	1,120	181	-
Total	8,751	9,808	3,185	2,686	1,551	879	718	6,770	16,971	20,688	14,031	14,334
Mean	282	327	103	86.6	53.5	28.4	23.9	218	566	667	453	478
Ac-ft	17,360	19,450	6,320	5,330	3,080	1,740	1,420	13,430	33,660	41,030	27,830	28,430

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 1,940 Min 23 Mean 274 Ac-ft 199,100

Peak discharge (base, 2,000 cfs).--Oct. 1 (2 a.m.) 2,850 cfs; Nov. 22 (7 a.m.) 2,330 cfs; June 6 (7 p.m.) 2,320 cfs; Sept. 7 (9 a.m.) 2,000 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.
b Stage-discharge relation affected by ice.

Power Creek near Cordova--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	198				*b29	40	b33	290	352	456	377
2	511	198				b27	37	b33	279	365	409	710
3	329	162	a66	a54	a34	b28	35	b33	255	371	409	560
4	241	142				b42	36	b33	295	429	449	1,120
5	189	131				b69	35	b29	260	518	456	1,690
6	a160	120				b61	35	b32	284	511	511	1,630
7	a140	249				b75	33	b31	290	462	483	1,020
8	a300	352	a60	a51	a30	b60	32	b32	290	436	1,040	616
9	a570	202				b55	31	*b35	312	436	755	456
10	a400	1,440				b49	31	b50	329	462	525	359
11	a300	689				b46	30	b56	365	525	490	*367
12	a410	284				b43	30	b72	365	652	497	968
13	*371	202	a58	a59	a33	b45	30	b68	377	732	511	504
14	241	167				b41	29	b68	359	580	415	365
15	311	144				b41	28	b68	352	497	415	329
16	1,450	131				b38	28	b72	359	476	383	279
17	966	120				b37	29	b103	334	462	383	246
18	490	110	a66	a45	a27	b37	31	b109	377	442	436	217
19	371	b100				b37	32	b160	383	469	346	192
20	295	b92				b37	33	b195	595	415	318	189
21	270	b86				b38	35	b232	497	396	295	377
22	377	b81				b43	40	b320	469	402	396	518
23	250	b77		a44	a27	b42	43	279	595	429	359	274
24	206	b73				b43	42	250	546	377	346	567
25	176	b70	a54	(*)		b40	42	250	469	371	318	a5,000
26	195	a67				b38	41	274	396	396	301	a1,500
27	170	a65			a32	38	40	329	390	*402	290	a1,000
28	432	a64		a40		38	38	329	396	402	318	a500
29	312	a68			-	37	b37	274	390	422	402	a300
30	209	a75			-	37	b35	270	371	476	429	a250
31	164	-			-	38	-	284	-	422	359	-
Total	11,936	9,959	1,844	1,505	851	1,329	1,038	4,403	11,269	14,067	13,500	22,480
Mean	385	199	59.5	48.5	30.4	42.9	34.6	142	376	454	435	749
Ac-ft	23,670	11,820	3,660	2,990	1,690	2,640	2,060	8,730	22,350	27,900	26,780	44,590

Calendar year 1948: Max 1,560 Min 23 Mean 269 Ac-ft 195,100
Water year 1948-49: Max 5,000 Min - Mean 247 Ac-ft 178,900

Peak discharge (base, 2,000 cfs).--Nov. 10 (5 p.m.) 2,630 cfs; Sept. 5 (4:30 p.m.) 3,170 cfs; Sept. 25 (time unknown) 5,540 cfs. * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, discharge measurements, and weather records.
b Stage-discharge relation affected by ice, and probably during some periods of no gage-height record.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a340	1,450	97				a22	30	138	402	352	318
2	a320	a1,200	92				a21	31	145	359	390	329
3	a310	574	88	a46	a28	a34	a20	35	151	490	390	307
4	a300	371	85				a19	36	181	429	346	267
5	a290	*285	83				a20	37	298	409	383	236
6	a280	616	81				a21	37	365	429	390	407
7	a1,000	532	98				a21	64	334	359	365	1,240
8	a400	334	121	a41	a23	a32	a21	79	296	352	377	532
9	a350	240	b96				a21	93	474	490	409	792
10	a300	204	b83				a21	125	415	532	409	557
11	a270	204	b83				a22	324	415	462	383	1,610
12	a800	170	b100				a23	296	469	390	409	1,710
13	a2,000	181	b90	a36	a21	a25	a25	185	352	371	469	748
14	a600	165	b81				a25	195	565	352	518	469
15	a250	147	b75				a23	158	1,350	324	436	329
16	a200	132	b68				a22	158	1,510	307	409	258
17	a250	121	a67				a24	170	1,250	307	383	587
18	a800	112	a68	*a34	a18	a19	a29	168	1,130	312	365	725
19	a600	121	a76				*67	153	999	*318	365	1,380
20	a400	143	a80				35	130	926	409	359	1,090
21	a300	494	a74				28	115	695	415	396	870
22	a200	383	a60				24	109	553	402	409	1,210
23	a170	389	a50	a31	a21	a22	23	129	560	476	483	710
24	a300	222	a50				22	284	532	415	567	490
25	a600	168	a50				22	276	504	359	546	383
26	a400	140	a48				23	187	462	352	698	329
27	a200	122	a46		a23		24	175	469	352	659	318
28	165	115	a45	a30		a21	25	161	511	436	456	285
29	201	106	a44		-		31	142	560	539	340	244
30	1,860	101	a43		-		31	143	511	436	340	215
31	644	-	a42		-		-	136	-	422	*346	-
Total	15,100	9,542	2,264	1,120	624	786	755	4,359	17,120	12,407	13,147	18,945
Mean	487	318	73.0	36.1	22.3	25.4	25.2	141	571	400	424	632
Ac-ft	29,950	18,930	4,490	2,220	1,240	1,560	1,500	8,650	33,960	24,610	26,080	37,580

Calendar year 1949: Max 5,000 Min - Mean 267 Ac-ft 193,100
Water year 1949-50: Max 2,000 Min - Mean 263 Ac-ft 190,800

Peak discharge (base, 2,000 cfs).--Oct. 30 (8 a.m.) 2,890 cfs; Nov. 1 (8 p.m.) 2,630 cfs; Sept. 11 (4 a.m.) 2,600 cfs. * Winter discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for other stations. b Stage-discharge relation affected by ice.

50. Millard Creek near Ellamar 1/

Location.--Lat 60°55'25", long. 146°35'25", at mouth and 4 miles northeast of Ellamar.

Drainage area.--12 sq mi, approximately.

Gage.--Staff gage at sea level.

Extremes.-- May to August 1913: Maximum discharge observed, 462 cfs Aug. 27 (gage height, 3.20 ft), from rating curve extended above 160 cfs; minimum observed, 19 cfs Aug. 18 (gage height, 0.98 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.
1913	-	196	135	76.3

Monthly runoff, in acre-feet

Year	May	June	July	Aug.
1913	-	11,660	8,300	4,690

Note.--Records of daily discharge published in WSP 372.

51. Duck River near Ellamar 2/

Location.--Lat 60°56'35", long. 146°33'45", 600 ft upstream from mouth and 6 miles northeast of Ellamar.

Drainage area.--26.7 sq mi.

Gage.--Staff gage. Altitude of gage is 20 ft (from topographic map).

Extremes.-- May to December 1913: Maximum discharge not determined; minimum not determined.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1913	-	‡535	‡585	‡472	‡610	‡210	‡150	‡60

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1913	-	‡31,830	‡35,980	‡29,050	‡36,300	‡12,910	‡8,930	‡3,690

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

52. Solomon Gulch near Valdez

Location.--Lat 61°05', long. 146°19', on right bank at tidewater, half a mile downstream from small lake, and 3 miles southwest of Valdez.

Drainage area.--19 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is about 1 ft above mean sea level. Prior to May 22, 1950, staff gage at same site and datum.

Extremes.--1948: Maximum discharge observed during period July to September, 583 cfs July 26 (gage height, 5.00 ft); minimum observed, 82 cfs Sept. 3 (gage height, 4.05 ft).
1948: Maximum discharge observed during the period October to December, 286 cfs Oct. 17 (gage height, 4.60 ft); minimum observed, 4 cfs Nov. 28 to Dec. 31 (gage height, 3.20 ft).
1949-50: Maximum discharge during water year, 1,170 cfs Sept. 12 (gage height, 5.69 ft), from rating curve extended above 300 cfs by logarithmic plotting; minimum daily, 5 cfs Mar. 18-20, 28, 29, Apr. 3-13, 15-18.

Remarks.--Records poor prior to May 21, 1950, good thereafter except those above 400 cfs, which are poor.

1/ Formerly published as Bottle Creek at Galena Bay.
2/ Formerly published as Duck River at Galena Bay.

Solomon Gulch near Valdez--Continued

Discharge, in cubic feet per second, July to December 1948

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	a290	315	105	188	53	4	16	291	315	168	209	21	4
2	a350	286	93	168	54	4	17	296	347	134	286	19	4
3	a320	269	82	233	52	4	18	347	381	119	209	18	4
4	a300	258	93	209	49	4	19	381	328	105	168	16	4
5	a290	302	134	209	43	4	20	328	315	100	134	14	4
6	a300	366	188	219	38	4	21	286	296	119	64	9	4
7	a300	315	258	247	41	4	22	274	280	105	56	7	4
8	a290	417	209	274	43	4	23	291	258	134	53	5	4
9	*286	347	315	233	49	4	24	315	233	188	50	5	4
10	315	286	286	188	38	4	25	417	219	233	49	4	4
11	296	258	274	168	33	4	26	583	209	258	50	4	4
12	269	258	233	119	30	4	27	455	188	286	49	4	4
13	258	269	209	105	28	4	28	395	168	258	64	4	4
14	269	286	188	82	26	4	29	381	150	209	57	4	4
15	286	296	134	73	23	4	30	455	134	258	52	4	4
							31	381	119	-	49	-	4
Total								10,295	8,468	5,475	4,314	738	124
Mean								332	273	182	139	24.6	4.0
Ac-ft								20,420	16,800	10,860	8,560	1,460	246

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station on Power Creek near Cordova.
Note.--Discharge measurements other than those indicated were made as follows: June 22, 1949, 479 cfs; July 28, 1949, 321 cfs, and Sept. 10, 1949, 198 cfs.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	209	310	48	a20	13	13	6	18	166	275	222	*166
2	188	280	48	a19	13	14	6	20	170	250	245	170
3	170	230	48	a20	14	14	*5	23	181	328	255	166
4	136	121	45	a21	13	14	5	27	230	316	230	136
5	95	95	41	a21	13	13	5	36	316	316	230	127
6	73	73	36	a21	12	13	5	39	375	403	250	148
7	55	84	d40	a19	12	12	5	48	347	298	226	482
8	73	80	d50	a18	12	12	5	50	270	286	250	304
9	69	73	d40	a18	11	a12	5	51	322	347	255	466
10	64	64	d36	a17	11	a11	5	52	304	340	270	354
11	55	55	d40	a16	11	11	5	54	304	292	265	713
12	48	52	d48	a15	a11	a11	5	55	280	250	270	797
13	95	48	d45	a14	a10	11	5	59	245	250	322	316
14	73	64	d40	a14	a10	a9	6	64	222	270	328	174
15	64	59	d37	14	a10	7	5	84	457	226	292	113
16	55	55	d35	14	a10	6	5	108	757	209	270	86
17	48	52	d34	15	a10	6	5	136	680	188	265	172
18	55	50	d34	15	a10	5	5	*205	610	a190	245	255
19	59	52	d36	15	a10	5	7	177	600	a210	260	396
20	64	55	d38	14	11	5	11	149	590	a250	255	361
21	55	64	d34	14	12	6	9	a140	450	*250	255	298
22	52	59	d31	13	13	6	7	*133	347	270	255	328
23	48	55	d29	13	13	7	7	149	396	368	245	245
24	55	62	d27	13	12	7	7	149	389	334	270	177
25	64	59	d25	13	12	7	7	146	304	298	265	146
26	55	55	d25	14	12	6	7	140	280	280	340	118
27	52	54	d25	14	12	6	7	152	304	255	245	121
28	50	52	d24	15	12	5	9	152	347	286	230	127
29	48	51	d23	14	-	5	11	146	396	265	188	103
30	209	50	d22	14	-	6	15	149	389	255	188	88
31	255	-	d21	13	-	6	-	163	-	245	188	-
Total	2,691	2,513	1,105	490	325	271	197	3,074	11,028	8,600	7,874	7,653
Mean	86.8	83.8	35.6	15.8	11.6	8.7	6.6	99.2	368	277	254	255
Ac-ft	5,340	4,980	2,190	972	645	538	391	6,100	21,870	17,060	15,620	15,180

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 797 Min 5 Mean 126 Ac-ft 90,870

Peak discharge (base, 500 cfs).--June 16 (5 a.m.) 802 cfs; Sept. 7 (10 a.m.) 562 cfs; Sept. 12 (4 a.m.) 1,170 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station on Power Creek near Cordova.
d Doubtful gage-height record; discharge estimated as for "a".

53. Gold Creek near Valdez

Location.--Lat 61°08'10", long. 146°28'50", half a mile upstream from mouth and 7½ miles west of Valdez.

Drainage area.--9.5 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map).

Extremes.--September to November 1913: Maximum discharge observed, 2,000 cfs Sept. 23 (gage height, 5.70 ft), from rating curve extended above 40 cfs by logarithmic plotting; minimum not determined.

Remarks.--No diversion or regulation above station.

Gold Creek near Valdez--Continued

Monthly mean discharge in cubic feet per second

Year									Sept.	Oct.	Nov.		
1913									-	‡31.9	‡11.7		

‡ Not previously published; partly estimated on the basis of weather records and records for Uno Creek near Valdez.

Monthly runoff in acre-feet

Year									Sept.	Oct.	Nov.		
1913									-	‡1,960	‡696		

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

54. Uno Creek near Valdez 1/

Location.--Lat 61°08'35", long. 146°35'40", 300 ft upstream from mouth and 11 miles west of Valdez.

Drainage area.--5.0 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 20 ft (from topographic map).

Extremes.--August to October 1913: Maximum discharge observed, 85 cfs Sept. 24 (gage height, 3.62 ft); minimum observed, 2.5 cfs Nov. 20 (discharge measurement).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year								Aug.	Sept.	Oct.			
1913								‡52.0	32.1	‡11.5			

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year								Aug.	Sept.	Oct.			
1913								‡3,200	1,910	‡705			

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

55. Davis Creek at Golden

Location.--Lat 60°58'05", long. 147°59'00", a quarter of a mile southeast of Golden and half a mile upstream from mouth.

Drainage area.--7.80 sq mi.

Gage.--Staff gage. Altitude of gage is 100 ft (from topographic map).

Extremes.--August to December 1913: Maximum discharge observed, 664 cfs Sept. 23 (gage height, 7.20 ft), from rating curve extended above 200 cfs; minimum observed, 10 cfs Dec. 12 (gage height, 3.83 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year								Aug.	Sept.	Oct.	Nov.	Dec.	
1913								‡186	‡201	‡85.0	25.1	17.8	

‡ Not previously published; partly estimated on the basis of records for Avery Creek near Golden and stations on nearby streams.

Monthly runoff, in acre-feet

Year								Aug.	Sept.	Oct.	Nov.	Dec.	
1913								‡11,430	‡11,930	‡5,230	1,490	1,090	

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

1/ Formerly published as Uno Creek at Shoup Bay.

56. Avery River near Golden

Location.--Lat 60°59'45", long. 147°57'45", at mouth and 2 miles northeast of Golden.

Drainage area.--9.53 sq mi.

Gage.--Staff gage. Altitude of gage is 60 ft.

Extremes.--August to November 1913: Maximum discharge observed, 999 cfs Sept. 23 (gage height, 7.80 ft), from rating curve extended above 200 cfs; minimum observed, 36 cfs Oct. 18 (gage height, 4.08 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	Aug.	Sept.	Oct.	Nov.
1913	‡255	248	124	77.9

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	Aug.	Sept.	Oct.	Nov.
1913	‡15,680	14,760	7,620	4,640

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

57. Hobo Creek near Golden

Location.--Lat 60°57'35", long. 148°14'20", at mouth and 8½ miles west of Golden.

Drainage area.--5.1 sq mi, approximately.

Gage.--Staff gage at sea level.

Extremes.--August to November 1913: Maximum discharge observed, 119 cfs Aug. 27 (gage height, 4.70 ft); minimum observed, 19 cfs Nov. 19 (gage height, 3.79 ft), discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	Aug.	Sept.	Oct.	Nov.
1913	‡71.5	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	Aug.	Sept.	Oct.	Nov.
1913	‡4,400	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 372.

58. Lost Creek near Seward

Location.--Lat 60°11'50", long. 149°22'30", in NW¼ sec. 12, T. 1 N., R. 1 W., on left bank 0.2 mile upstream from unnamed tributary, 4.9 miles downstream from outlet of lower Lost Lake, and 6.5 miles northeast of Seward.

Drainage area.--7.96 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 300 ft (from topographic map).

Extremes.--1948: Maximum discharge observed during period August to September, 229 cfs Sept. 30 (gage height, 1.40 ft); minimum discharge observed, 10 cfs Sept. 2-5.
1948-49: Maximum discharge observed during water year, 280 cfs Sept. 27 (gage height, 1.35 ft); no flow for many days.
1949-50: Maximum discharge observed during period October to March, 95 cfs Nov. 22 (gage height, 0.55 ft); no flow for many days.

Remarks.--Records poor. Discontinued Mar. 31, 1950. Discharge measurements made at this site during 1947 and 1948 water years are as follows: Aug. 21, 1947, 16.8 cfs; Aug. 25, 1947, 54.0 cfs; Feb. 16, 1948, no flow.

Lost Creek near Seward--Continued

Discharge, in cubic feet per second, August, September 1948

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1		11	11		27	21	24	24
2		10	12		24	22	22	22
3		10	13	a33	22	23	22	a21
4		10	14		19	24	23	20
5	a34	10	15		22	25	20	19
6		11	16	42	24	26	17	19
7		14	17	36	42	27	15	18
8		17	18	32	38	28	14	17
9		27	19	29	34	29	13	36
10	*31	32	20	27	29	30	12	206
						31	12	-
Total							862	835
Mean							27.8	27.8
Ac-ft							1,710	1,660

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of 2 discharge measurements and records for station on Ptarmigan Creek at Lawing.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	22	6						170	105	42	92
2	92	20	6						180	92	41	95
3	70	17	5	2	1				180	80	38	98
4	50	14	5						170	80	39	105
5	36	11	5					5	160	105	39	120
6	33	11	4			1			150	134	41	137
7	29	14	4						140	134	42	134
8	59	17	3		0		2		140	105	59	120
9	92	12	3						130	105	61	92
10	*85	42	3	1					130	98	59	70
11	70	59	3						140	92	56	52
12	59	42	3			*1			140	88	49	47
13	42	29	3		1				*148	92	42	44
14	36	24	3						140	92	37	44
15	36	20	3					5	125	88	33	49
16	42	17	3						120	80	28	42
17	80	15	3						111	80	*26	37
18	59	14	3						128	80	25	33
19	42	12	3		0	1			157	74	25	29
20	36	*11	3						229	67	26	27
21	32	11	2						246	63	29	25
22	29	10	2						229	59	38	24
23	25	9	2	1			4	25	196	54	34	36
24	24	9	2						180	52	32	59
25	22	8	2						163	54	29	170
26	24	9	2		1				148	57	28	220
27	23	9	2						143	57	42	280
28	25	8	2			2		160	134	54	59	240
29	24	8	2		-				125	50	70	209
30	24	7	2		-				120	42	80	183
31	23	-	1		-		-		-	39	88	-
Total	1,471	511	95	36	15	37	90	1,185	4,672	2,452	1,337	2,913
Mean	47.5	17.0	3.06	1.16	.536	1.19	3.00	38.2	156	79.1	43.1	97.1
Ac-ft	2,920	1,010	188	71	30	73	179	2,350	9,270	4,860	2,650	5,780

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 280 Min 0 Mean 40.6 Ac-ft 29,380

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 20 to Mar. 31 (no gage-height record for most of period; discharge estimated on basis of discharge measurements, weather records, and records for stations on nearby streams). No gage-height record Apr. 1 to June 14 and Sept. 26, 28; discharge estimated as explained above.

Lost Creek near Seward--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	37										
2	70	61										
3	54	47										
4	47	41										
5	41	37								†121		
6	37	32										
7	37	a30	a14									
8	32	a28										
9	26	a27										
10	a24	a26										
11	a21	a26										
12	a18	a25										
13	a23	a25										
14	a21	a25				(*)						
15	a18	a25	*b11									
16	a17	a24	b10									
17	a16	a24	b9									
18	a17	a25	a7									
19	*17	29	a5									
20	a22	61	a2									
21	a21	85										
22	a20	95									†68	
23	a19	78										
24	29	61										
25	32	47										
26	52	37	0									
27	41	a33										
28	37	a29										
29	37	a26										
30	33	a23										
31	33	-										
Total	990	1,169	240	0	0	0						
Mean	31.9	39.0	7.74	0	0	0						
Ac-ft	1,960	2,320	476	0	0	0						

Calendar year 1949: Max 280 Min 0 Mean 41.5 Ac-ft 30,020
Water year 1949-50: Max - Min - Mean - Ac-ft -

† Result of discharge measurement.
* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of 2 discharge measurements, weather records, and records for station on Ptarmigan Creek at Lawing.
b Stage-discharge relation affected by ice.

59. Kasilof River near Kasilof

Location.--Lat 60°19'05", long. 151°15'35", in SW¼ sec. 30, T. 3 N., R. 11 W., near center of span on downstream side of bridge on Sterling Highway, 0.9 mile upstream from Crooked Creek, 4 miles downstream from Moosehead Rapids, 5 miles south of Kasilof, and 10 miles downstream from Tustemena Lake.

Drainage area.--738 sq mi.

Gage.--Wire-weight gage read once daily. Datum of gage is 23.37 ft above mean sea level (Corps of Engineers benchmark).

Extremes.--1949: Maximum discharge observed during period July to September, 7,860 cfs Sept. 9 (gage height, 6.06 ft); minimum observed, 2,080 cfs July 2 (gage height, 3.05 ft).
1949-50: Maximum discharge observed during water year, 8,440 cfs Aug. 27 (gage height, 6.30 ft); minimum not determined, occurred during period of no gage-height record.

Remarks.--Records good except those for periods of no gage-height record, which are fair and those for period of ice effect, which are poor.

Discharge, in cubic feet per second, July to September 1949

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	2,140	4,740	6,500	11	2,740	4,900	7,580	21	4,060	5,180	6,560
2	2,080	4,740	6,610	12	*2,960	4,980	7,550	22	4,120	5,300	6,500
3	2,190	4,740	6,900	13	3,170	5,080	7,500	23	4,250	5,300	6,390
4	a2,200	4,800	7,290	14	3,340	5,100	7,430	24	4,310	5,340	6,360
5	2,200	4,840	7,550	15	3,390	5,100	7,260	25	4,310	5,440	6,300
6	2,300	4,840	7,650	16	3,510	5,100	7,100	26	4,310	5,550	6,280
7	2,340	4,840	7,720	17	3,670	5,100	7,070	27	4,310	5,550	6,170
8	2,440	4,840	7,840	18	3,740	*5,000	6,950	28	4,540	5,550	6,140
9	2,480	4,840	7,860	19	3,870	4,900	6,860	29	4,700	5,880	6,080
10	2,700	4,840	7,790	20	3,930	4,920	6,650	30	4,740	6,120	6,010
								31	4,740	6,320	-
Total									105,780	159,770	208,450
Mean									3,412	5,154	6,948
Ac-ft									209,800	316,900	413,500

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

Kasilof River near Kasilof--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,860	2,670						a690	665	2,330	5,320	7,890
2	5,810	2,640						686	670	2,410	5,340	7,890
3	5,730	2,600						a680	675	2,480	5,340	7,890
4	5,590	2,510						675	680	2,510	5,510	7,740
5	5,480	2,420						670	680	2,640	5,510	7,530
6	5,360	2,420						a660	686	*2,700	5,660	7,460
7	5,180	2,420					600	660	710	2,760	5,770	7,360
8	5,080	2,380						a660	740	2,820	5,860	7,240
9	5,040	2,310						660	775	2,850	5,990	7,120
10	4,940	2,240						a660	810	3,010	6,030	7,000
11	4,860	2,180						660	838	3,170	6,030	7,120
12	4,760	2,110						a660	859	3,340	6,100	7,340
13	4,580	1,940						670	880	3,420	6,100	7,240
14	4,460	2,040					665	670	912	3,510	6,140	7,000
15	4,330	1,980	1,000	750	550	530	665	660	952	3,600	6,140	6,880
16	4,160	1,960					665	645	984	3,740	6,190	6,880
17	4,020	1,920					665	645	1,040	3,830	6,210	6,950
18	3,820	1,890					670	650	1,160	3,950	6,210	6,760
19	3,640	1,860				(*)	a680	655	1,260	4,210	6,250	6,540
20	3,510	1,830					698	655	1,360	4,270	*6,170	6,540
21	*3,360	2,020					a700	a660	1,420	4,340	6,430	6,650
22	3,170	2,090					698	660	1,540	4,440	6,760	6,320
23	3,070	2,100					698	660	1,640	4,560	7,000	6,100
24	2,950	2,110					698	660	1,760	4,700	7,360	5,990
25	2,930	2,090					698	a660	1,860	4,840	7,600	5,880
26	2,930	2,000					698	650	1,860	4,900	8,080	5,880
27	2,900	1,800					686	a650	1,920	5,000	8,440	5,880
28	2,900	1,600					686	655	1,970	5,100	8,320	5,550
29	2,820	1,500			-		a690	655	2,050	5,220	8,010	5,440
30	2,740	1,300			-		698	660	2,100	5,300	7,960	5,340
31	2,680	-			-		-	660	-	5,380	8,100	-
Total	128,660	62,930	31,000	23,250	15,400	16,430	19,458	20,501	35,456	117,330	201,930	203,400
Mean	4,150	2,098	1,000	750	550	530	649	661	1,182	3,785	6,514	6,780
Ac-ft	255,200	124,800	61,490	46,120	30,550	32,590	38,590	40,660	70,330	232,700	400,500	403,400

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 8,440 Min - Mean 2,399 Ac-ft 1,737,000

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.--Stage-discharge relation affected by ice Nov. 26 to Apr. 13 (no gage-height record during most of period; discharge estimated on basis of 1 discharge measurement and weather records).

60. Ptarmigan Creek at Lawing

Location.--Lat 60°24'20", long. 149°21'45", near right bank on downstream side of bridge on Seward Highway 0.2 mile north of Lawing, 0.3 mile upstream from mouth, and 3 miles downstream from Ptarmigan Lake.

Drainage area.--32.6 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 500 ft (from topographic map).

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum observed			Minimum daily	
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
1947a	May 29, June 1, 1947	366	0.92	May 1, 1947	18
1948	July 7, 1948	590	1.30	(b)	12
1949	Sept. 4,5, 1949	c500	-	Feb. 8-10, 17-21, 1949	10
1950	Nov. 23, 1949	518	1.65	Apr. 7-9, 1950	13

a Period May to September.
b Mar. 22-24, Mar. 30 to Apr. 8, 1947.
c Maximum daily (estimated).

1947-50: Maximum discharge observed, 590 cfs July 7, 1948 (gage height, 1.30 ft); minimum daily, 10 cfs Feb. 8-10, 17-21, 1948.

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

Cooperation.--Gage readings furnished by U. S. Forest Service prior to November 1949.

Ptarmigan Creek at Lawing--Continued

Discharge, in cubic feet per second, May to September 1947

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	a18	366	a160	338	144	16	27	223	a240	a175	a85
2	a19	338	a170	a320	130	17	27	223	a230	a175	a120
3	a20	254	a180	a270	120	18	27	196	a240	a175	a160
4	a22	254	a190	235	130	19	27	168	a250	a170	a150
5	a24	235	a195	a200	a140	20	27	179	a250	a170	a140
6	a26	223	a200	a180	130	21	27	196	*254	168	a130
7	*27	235	a220	168	120	22	27	179	272	*158	a120
8	a28	223	a240	168	112	23	32	196	284	158	a120
9	a29	223	a230	a180	100	24	38	168	284	a180	a140
10	a29	235	a220	a210	a100	25	56	168	284	a190	a180
11	28	a300	a215	196	a95	26	100	179	297	a180	a180
12	27	a290	a210	a190	a90	27	179	158	351	a160	a190
13	27	a260	a215	a185	a85	28	272	144	351	a150	a200
14	27	a250	a220	a180	a82	29	366	144	318	144	a230
15	27	235	a230	a180	a80	30	351	144	318	144	a250
						31	351	-	351	a150	-
Total							2,312	6,586	7,669	5,847	4,053
Mean							74.6	220	247	189	135
Ac-ft							4,590	13,060	15,210	11,600	8,040

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of records for other stations in Kenai River basin.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a270	89	425	a25	a21	a14	a12	a27	a200	284	a210	a120
2	a250	81	351	a23	a24	a14	a12	a29	198	317	a200	a115
3	a220	*75	254	a23	a23	a14	a12	a33	182	a360	198	a110
4	a200	66	196	a21	a21	a14	a12	a38	171	a400	224	a110
5	a185	56	144	20	a20	a13	a12	a45	a180	502	224	a110
6	a170	50	a120	21	a19	a13	a12	a54	a190	a560	224	a120
7	a160	50	a100	20	a18	a13	a12	a60	a210	590	a210	a130
8	a155	a50	a90	19	a18	a13	a12	a66	254	540	a190	a140
9	144	a48	81	18	a17	a13	a13	a70	a270	502	*171	a150
10	120	a46	74	a17	a17	a13	a14	a76	284	a440	182	a160
11	a140	a43	65	a18	a18	a13	a17	a90	a290	a370	182	a150
12	a135	40	58	21	a18	a13	a24	a100	a300	a320	171	a130
13	144	38	a52	a23	a17	a13	34	a110	a320	a290	254	a110
14	120	36	a48	a23	a17	a14	a60	a120	a360	284	a300	88
15	112	a35	46	a22	a16	a14	73	a150	422	a300	a330	107
16	100	a35	43	a21	a16	a14	a70	a180	a440	350	a350	a130
17	89	35	38	a22	a15	a14	a60	a210	a410	a330	350	148
18	a82	35	35	a24	a15	a14	a50	a230	422	a330	317	a140
19	a76	37	35	24	a15	a14	a43	a220	a450	317	254	a130
20	81	40	a45	a24	15	a13	a39	a200	a430	284	224	a120
21	100	50	a45	a24	a15	a13	a36	a190	386	284	a210	a105
22	120	a150	42	a23	a15	a12	*34	a180	a340	254	a230	a100
23	168	320	40	a22	a14	a12	a33	a170	317	254	254	a95
24	168	351	42	a23	a14	a12	a32	a160	*284	a270	a240	a90
25	158	284	42	a30	a15	a13	a30	a170	254	a260	a210	a85
26	158	254	39	a33	a16	a13	a28	a190	a270	a250	a180	a80
27	149	a270	a35	a32	a15	a13	a26	224	a290	a240	a160	73
28	144	522	a32	a29	a14	a13	a26	a250	317	224	a150	58
29	134	a470	29	a26	a14	a13	a26	a240	a300	198	a140	73
30	120	a450	27	a24	-	a12	a26	a220	284	171	a130	107
31	100	-	26	a23	-	a12	-	a210	-	a190	a125	-
Total	4,472	4,106	2,699	718	492	408	890	4,312	9,025	10,265	6,794	3,384
Mean	144	137	87.1	23.2	17.0	13.2	29.7	139	301	331	219	113
Ac-ft	8,870	8,140	5,350	1,420	980	810	1,770	8,550	17,900	20,360	13,480	6,710

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 590 Min 12 Mean 130 Ac-ft 94,340

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of records for other stations in Kenai River basin.
Note.--Stage-discharge relation affected by ice Nov. 12-23, Dec. 10 to Apr. 10.

Ptarmigan Creek at Lawing--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a105	88	a38	a17	a12	a13	b15	a22	335	a280	283	a420
2	a105	a88	a35	a18	a11	a12	a15	a20	362	a280	a280	a460
3	a120	88	a32	a19	a10	a13	a13	a17	a360	a280	258	a490
4	126	79	a30	a19	a11	a14	a12	a17	a320	a310	258	a500
5	118	a71	a28	a18	a12	a15	a13	a17	a270	a330	a260	a500
6	96	a64	a27	a16	a12	a14	a13	a17	235	a350	a270	a440
7	88	a68	a26	a15	a11	a15	a13	a16	a220	a370	a270	a370
8	88	64	a26	a15	a10	a13	a12	a15	212	a390	283	a320
9	a150	58	a27	a16	a10	a13	a12	14	a210	a400	a310	a270
10	*254	a80	a28	a17	a10	a12	a13	16	a210	a390	308	a230
11	284	a120	a27	a16	a11	a13	a13	a17	a210	a360	298	a200
12	212	a120	a27	a15	a12	*b15	a13	16	a220	a350	268	171
13	187	a110	a28	a14	a13	a15	a13	16	235	a360	a240	164
14	a150	a110	a27	a14	a13	a14	*14	a17	235	a370	a210	a160
15	a150	b99	a26	a13	a12	b13	a14	a17	a220	a390	193	171
16	a200	b92	a25	a13	a11	b12	a14	18	212	a400	a170	164
17	a190	a82	a26	a12	a10	b11	a15	22	a210	a410	*157	a150
18	a180	a75	a26	a11	a10	a11	16	a24	a220	410	a150	a140
19	171	a68	a25	a12	a10	a12	a18	a30	a240	410	a150	137
20	148	*b61	a26	a12	a10	a12	19	a37	a260	362	a160	a130
21	148	a55	a23	a12	a10	13	19	a50	283	a320	a180	121
22	126	a49	a22	a12	a11	a14	16	a62	a360	283	212	a110
23	a130	a47	a21	a12	a12	16	a16	*82	a440	a270	a190	106
24	a130	a44	a20	a13	a12	16	a18	258	335	a270	a180	a140
25	140	a42	a20	a12	a13	16	19	a260	a320	a280	a170	a180
26	126	a45	a19	a11	a13	a16	19	a270	308	308	174	230
27	126	a44	a18	a12	a13	a15	a22	308	a310	308	a180	330
28	107	a42	a17	a12	a13	b14	a25	a320	308	308	a220	416
29	107	a41	a17	a11	-	b15	27	a320	a330	a290	a260	386
30	a100	a39	a17	a12	-	b15	a25	283	a300	a270	a320	330
31	a90	-	a17	a12	-	b14	-	a310	-	a260	a370	-
Total	4,452	2,133	771	433	318	426	486	2,908	8,290	10,369	7,232	7,936
Mean	144	71.1	24.9	14.0	11.4	13.7	16.2	93.8	276	334	233	265
Ac-ft	8,830	4,230	1,530	859	631	845	964	5,770	16,440	20,570	14,340	15,740

Calendar year 1948: Max 590 Min 12 Mean 119 Ac-ft 86,570
Water year 1948-49: Max 500 Min 10 Mean 125 Ac-ft 90,750

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for Kenai River at Cooper Landing, Grant Creek near Moose Pass and Trail River near Lawing. b Stage-discharge relation affected by ice.
Note.--Probably some ice effect during most of period of no gage-height record in winter.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a290	121	a120			a16	a14	a33	a160	a270	190	a200
2	a250	112	a120			a17	a14	a33	a160	a260	190	a190
3	a220	128	a110	a35	a22	a17	b14	a33	a170	275	a190	a170
4	a200	115	a100			a17	a14	a33	a170	a270	210	160
5	a170	a110	a90			a17	b14	a36	a190	266	a240	149
6	a160	a120	a80			a16	b14	a38	a210	266	a270	131
7	a160	115	a72			a16	a13	a37	a220	275	266	125
8	a140	101	a66	a32	a18	a15	a13	a44	230	a270	252	125
9	a120	93	a59			a15	a13	a50	198	a260	239	a140
10	a100	85	a54			a15	a14	a64	a160	*285	a230	a200
11	a86	a80	a50			a15	14	a82	a200	336	239	275
12	76	a75	48			a15	14	a94	162	325	a250	300
13	85	a75	47	a30	a16	a15	a15	a100	149	315	a250	275
14	80	76	a46			*b15	a17	a110	155	300	252	198
15	a72	a74	b42			a15	a18	a120	162	a290	a280	190
16	a67	72	*b45			b14	18	a120	a190	a290	a270	a180
17	a64	69	a44			b14	23	a120	a230	285	a250	a180
18	63	69	a44	a31		a14	24	a110	a270	252	a240	230
19	*67	a71	a45			a14	a27	a110	a310	230	a230	252
20	80	a120	43			a14	a30	a110	352	a220	a230	352
21	76	217	a42			b14	a31	a110	a440	230	a240	410
22	a71	436	a41		a15	a14	a33	a110	440	a240	*248	380
23	a69	518	a39	a27		a14	a34	a120	428	a270	a290	a350
24	76	a440	a38			b14	a31	a130	a350	325	a350	a310
25	80	330	a37			a14	a29	a140	a300	275	410	275
26	106	a230	a36			a14	a29	a140	275	266	a410	230
27	143	a200	a34			b14	a29	a140	266	252	a340	a190
28	137	b174	a33	a26		b14	a29	a140	a260	244	285	a170
29	a130	b150	a33		-	b14	a31	a150	266	a230	239	a140
30	a140	b130	a33		-	a14	a33	a150	285	a220	222	a130
31	131	-	a33		-	b14	-	a160	-	210	a210	-
Total	3,709	4,706	1,724	931	475	460	646	2,967	7,358	8,302	8,012	6,607
Mean	120	157	55.6	30.0	17.0	14.8	21.5	95.7	245	268	258	220
Ac-ft	7,360	9,330	3,420	1,850	942	912	1,280	5,880	14,590	16,470	15,890	13,100

Calendar year 1949: Max 518 Min 10 Mean 133 Ac-ft 96,270
Water year 1949-50: Max 518 Min 13 Mean 126 Ac-ft 91,020

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for nearby stations. b Stage-discharge relation affected by ice.
Note.--Probably some ice effect during most of period of no gage-height record in winter.

61. Grant Creek near Moose Pass

Location.--Lat 60°27'25", long. 149°21'20", on right bank 0.2 mile upstream from mouth, 0.9 mile downstream from Grant Lake, and 2.3 miles south of Moose Pass.

Drainage area.--44.2 sq mi.

Gage.--Staff gage read once daily. Datum of gage is 484 ft above mean sea level (river-profile survey).

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum observed			Minimum observed		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.30, 1947	439	2.92	Sept.16, 1947	152	2.10
1948	July 7, 1948	b780	-	Apr.5-7, 1948	c14	-
1949	Sept.4,5,1949	800	-	(d)	c11	-
1950	June 21, 1950	865	4.00	Apr.5-9, 1950	c16	-

a Period Sept. 1-30.
b Maximum observed.
c Minimum daily.
d Feb. 3, 8-10, 17-21, 1949.

1947-50: Maximum discharge observed, 865 cfs June 21, 1950 (gage height, 4.00 ft); minimum daily, 11 cfs Feb. 3, 8-10, 17-21, 1949.

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

Discharge, in cubic feet per second, September 1947

Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.
1	a280	9	a220	17	184	25	324
2	a270	10	a210	18	278	26	320
3	a250	11	a200	19	288	27	327
4	a260	12	a200	20	278	28	341
5	a280	13	187	21	257	29	411
6	a260	14	a180	22	250	30	439
7	a250	15	a170	23	229	31	-
8	a230	16	152	24	282		
Total							7,807
Mean							260
Ac-ft							15,480

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

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	418	152	a500	b33	30	a18	a16	32	383	529	467	173
2	467	131	a480	b30	42	a19	b15	36	376	561	453	a160
3	404	117	a400	30	36	a18	15	42	348	569	432	152
4	362	104	a250	26	32	a18	14	52	362	585	418	152
5	327	*91	a180	25	28	a18	14	58	369	585	418	a160
6	313	78	a160	b27	b27	a17	14	78	362	765	432	166
7	306	a86	a130	b26	b26	a17	14	84	369	a780	418	180
8	278	a86	a110	b24	b25	a17	15	104	369	705	383	208
9	250	a84	a100	b23	b24	a17	16	104	383	665	355	222
10	222	a82	a94	b22	b25	16	16	104	390	665	334	236
11	243	a78	a86	b23	b26	16	19	173	411	625	*316	222
12	236	a72	a76	b26	b26	16	21	187	425	585	320	a210
13	229	a68	71	30	b24	16	23	208	482	521	348	201
14	236	a66	65	30	b23	16	28	229	553	529	453	180
15	236	a64	65	28	b22	16	35	264	585	521	505	194
16	222	a64	58	28	a22	16	42	313	625	561	545	a210
17	208	a62	52	30	*a21	16	42	320	609	545	545	a220
18	a180	a62	47	32	a21	16	42	383	665	561	505	208
19	159	a64	47	32	a20	16	*47	369	705	545	467	201
20	145	a70	71	30	a20	b16	42	348	665	529	425	180
21	138	a80	65	32	a20	b15	38	341	a600	497	397	145
22	215	a230	58	30	a20	a15	35	313	561	490	418	138
23	320	a420	71	28	a19	a15	35	306	537	497	453	117
24	313	a500	71	30	a19	a15	35	292	*505	529	418	104
25	278	a540	52	42	a20	a16	32	320	505	521	348	104
26	a280	a430	52	58	a21	a17	30	390	529	505	299	91
27	278	a350	42	58	a20	a18	30	446	545	497	257	78
28	243	a460	42	52	a19	a17	28	460	529	475	a230	65
29	243	a700	38	b44	a19	a16	30	425	505	446	a210	71
30	201	a600	35	38	-	a15	30	404	529	418	194	117
31	187	-	35	35	-	a16	-	390	-	432	180	-
Total	8,137	5,991	3,603	1,004	699	510	813	7,577	14,781	17,238	11,943	4,865
Mean	262	200	116	32.4	24.1	16.4	27.1	244	493	556	385	162
Ac-ft	16,140	11,880	7,150	1,990	1,390	1,010	1,610	15,030	29,320	34,190	23,690	9,650

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 780 Min 14 Mean 211 Ac-ft 153,000

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated or estimated on basis of discharge measurements, weather records or records for nearby stations. b Stage-discharge relation affected by ice.

Grant Creek near Moose Pass--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	128	a39	a18	a13	a14	a16	a25	a450	a380	a390	a660
2	138	128	a36	a19	a12	a13	a16	a22	467	a380	a400	a710
3	173	120	a33	a20	a11	a14	14	20	467	376	a370	a770
4	173	120	a31	a20	a12	a15	a13	20	a450	411	a370	a800
5	152	107	a29	a19	a13	a16	a14	20	a430	a470	a380	a800
6	138	100	a28	a17	a13	a15	a14	20	a380	a540	a390	a740
7	117	128	a27	a16	a12	a16	a14	a19	a350	a580	411	a610
8	320	120	a27	a16	a11	14	a13	19	a330	a590	a430	a550
9	*517	81	a28	a17	a11	14	a13	18	a320	a570	a440	a470
10	537	100	a29	a18	a11	a13	a14	19	a310	545	a430	a410
11	478	148	a28	a17	a12	*14	a14	20	a310	a530	a410	a370
12	436	148	a28	a16	a13	a16	a14	20	a320	a540	a360	a320
13	358	142	a29	a15	a14	a16	a14	a21	a340	577	a320	a300
14	324	128	a28	a15	a14	a15	*14	23	*334	a560	274	a290
15	316	114	a27	b14	a13	a14	a14	a25	a320	a540	a260	a320
16	400	107	a26	a14	a12	a13	a15	a27	a310	a510	a230	a310
17	372	94	a27	a13	a11	a12	a16	a30	a310	490	a210	a300
18	352	87	a27	a12	a11	a12	a17	38	a330	a480	a200	285
19	324	74	a26	a13	a11	a13	a18	58	369	a480	a200	a260
20	324	*62	a27	a13	a11	a13	a20	91	a400	460	*208	a250
21	260	b55	a24	a13	a11	a14	a20	110	a450	a430	218	a230
22	226	50	a23	a13	a12	a15	a18	222	a600	a400	a280	a220
23	212	48	a22	a13	a13	a17	a16	278	785	a400	a260	a210
24	198	45	a21	a14	a13	a17	18	313	a600	432	a240	a250
25	176	a43	a21	a13	a14	a17	19	320	a500	a440	a230	a330
26	162	a46	a20	a12	a14	a17	19	341	a430	a460	a230	a430
27	148	a45	a19	a13	a14	a16	23	418	397	a460	a240	a520
28	156	a43	a18	a13	a14	a15	27	a430	a390	a460	a300	a630
29	148	a42	a18	a12	-	a16	a30	432	a430	a430	a360	a550
30	142	a40	a18	a13	-	a16	a27	a410	a390	a400	a480	a470
31	128	-	a18	a13	-	a16	-	430	-	376	a560	-
Total	8,043	2,693	802	464	346	458	514	4,259	12,269	14,697	10,081	13,365
Mean	259	89.8	25.9	15.0	12.4	14.8	17.1	137	409	474	325	446
Ac-ft	15,950	5,340	1,590	920	686	908	1,020	8,450	24,340	29,150	20,000	26,510

Calendar year 1948: Max 780 Min 14 Mean 194 Ac-ft 140,800
Water year 1948-49: Max 800 Min 11 Mean 186 Ac-ft 134,900

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for nearby stations. b Stage-discharge relation affected by ice.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a420	215	a150				a17	39	a200	545	397	327
2	a370	208	146				a17	a39	a210	529	a390	a320
3	a330	a220	a140	a43	a27	a20	a17	39	a210	545	a390	a300
4	a300	180	a130				a17	39	a220	505	432	a290
5	a270	a160	a120				a16	42	a230	497	a460	264
6	a250	a170	115				a16	47	a280	a490	482	a260
7	a250	145	100				a16	44	292	a510	a480	a250
8	a210	138	91	a40	a22	a19	a16	55	a300	a510	467	257
9	a190	120	a82				a16	61	a290	545	a450	a280
10	a170	a110	a76				a17	77	250	*565	a440	a370
11	a150	100	a68				b18	100	383	a600	a450	a450
12	a140	a92	a60				a19	110	a320	a585	467	486
13	a150	95	a58	a37	a20	a18	a20	a120	a240	570	482	a440
14	a140	91	a55				a22	139	a240	545	a480	a370
15	a130	a84	a53			(*)	23	a140	a250	505	a520	a360
16	a110	77	*b55				23	a140	a310	486	505	a350
17	a98	a74	a54				a25	a140	a420	a470	a490	348
18	a90	74	a54	a38	a19	a18	a29	a140	a540	a440	a460	a360
19	a95	81	55				a32	a140	a650	a400	453	a390
20	a110	a180	a54				a35	139	a750	a400	467	a430
21	a100	397	53				a37	139	865	a450	a480	505
22	a90	a500	a50				39	a140	a820	525	505	a470
23	a80	545	a48	a33	a19	a18	42	152	a800	665	a540	a420
24	*84	467	a46				39	a160	665	849	569	369
25	159	334	a45				a35	a170	665	a700	a640	a320
26	264	250	a44				a34	a170	a580	505	a650	a280
27	299	a230	a43		a19		a34	173	a570	a480	a600	250
28	a260	215	a42	a33		a17	a35	173	a570	a460	529	a220
29	243	a190	a41		-		37	a180	a610	a440	490	a200
30	243	159	a41		-		a39	194	665	a420	a400	a190
31	222	-	a41		-		-	a200	-	a400	a340	-
Total	6,017	5,901	2,210	1,153	592	567	782	3,641	13,395	16,136	14,905	10,126
Mean	194	197	71.3	37.2	21.1	18.3	26.1	117	446	521	481	338
Ac-ft	11,930	11,700	4,380	2,290	1,170	1,120	1,550	7,220	26,570	32,010	29,560	20,080

Calendar year 1949: Max 800 Min 11 Mean 193 Ac-ft 140,000
Water year 1949-50: Max 865 Min 16 Mean 207 Ac-ft 149,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for other stations. b Stage-discharge relation affected by ice.
Note.--Probably some ice effect during most of period of no gage-height record in winter.

62. Trail River near Lawing

Location.--Lat 60°26'00", long. 149°22'20", near left bank on downstream side of pier of abandoned bridge on old Seward-Anchorage Highway, 0.2 mile upstream from Falls Creek, 0.2 mile downstream from Lower Trail Lake, 1.9 miles upstream from mouth, and 2.1 miles north of Lawing.

Drainage area.--195 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 460 ft (from topographic map).

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum observed			Minimum daily	
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
1947a	Aug. 2, 1947	2,800	7.4	May 1, 1947	120
1948	June 20, 1948	3,340	7.9	Apr. 4-8, 1948	80
1949	Sept. 4,5, 1949	b3,000	-	Feb. 9, 10, 1949	48
1950	June 21, 1950	3,600	8.12	Apr. 10-12, 1950	63

a Period May to September.
b Maximum daily (estimated).

1947-50: Maximum discharge observed, 3,600 cfs June 21, 1950 (gage height, 8.12 ft); minimum daily, 48 cfs Feb. 9, 10, 1949.

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

Cooperation.--Prior to Oct. 24, 1949, gage readings furnished by U. S. Forest Service.

Discharge, in cubic feet per second, May to September 1947

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	a120	2,150	a1,350	2,700	1,060	16	307	1,770	a2,060	1,550	822
2	a140	2,110	a1,380	2,750	1,030	17	313	1,770	a2,130	1,500	850
3	a160	1,970	a1,450	2,310	922	18	313	1,750	a2,130	1,450	910
4	a180	1,730	a1,550	1,880	910	19	322	1,610	a2,180	1,400	850
5	a200	1,530	a1,700	1,710	862	20	307	1,570	a2,260	1,350	a820
6	a210	1,530	1,770	1,650	940	21	307	1,490	2,340	1,350	a800
7	227	1,450	1,790	1,570	a880	22	322	1,370	*2,360	*1,340	a800
8	a240	1,310	1,950	1,690	795	23	395	1,370	2,290	1,390	a800
9	a260	1,410	1,880	a1,750	795	24	439	1,300	2,290	1,610	a1,100
10	a275	1,570	1,820	a1,750	768	25	495	1,300	a2,360	1,700	1,430
11	289	1,820	1,770	1,860	740	26	520	1,310	a2,400	1,700	1,490
12	a295	1,770	1,770	1,950	715	27	655	1,290	2,550	1,610	a1,500
13	*307	2,130	1,840	1,690	a710	28	1,120	1,230	2,550	1,490	a1,550
14	322	1,950	1,860	1,610	a680	29	1,590	1,230	2,550	1,410	1,670
15	307	1,790	a2,000	1,600	a660	30	1,930	1,230	2,580	1,340	2,080
						31	2,180	-	2,650	1,200	-
Total							15,047	47,810	63,560	51,860	29,939
Mean							485	1,594	2,050	1,673	998
Ac-ft							29,850	94,830	126,100	102,900	59,380

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of weather records and records for other stations.

Trail River near Lawing--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2,200	507	a1,800	a195	150	105	85	a220	1,370	1,860	a1,750	a740
2	1,860	466	a1,600	174	170	105	85	a230	1,370	2,080	a1,700	a720
3	1,650	466	a1,400	a170	160	105	85	a240	1,230	a2,200	1,650	a700
4	a1,450	427	a1,150	a165	160	105	80	a260	1,160	a2,250	1,690	a700
5	a1,300	391	970	164	150	100	80	a280	a1,200	2,700	1,690	a700
6	a1,150	319	a800	174	150	100	80	a320	a1,250	a2,900	1,690	a740
7	a1,050	341	a680	a170	145	100	80	a370	1,200	3,100	1,690	822
8	a950	a350	a600	a160	140	100	80	a420	a1,200	a3,200	a1,500	850
9	a870	a340	a540	a150	135	100	85	a440	1,200	3,100	*1,360	910
10	a800	325	a500	a145	140	100	90	a500	a1,220	3,000	1,410	a950
11	a720	310	a480	a145	140	95	a100	507	a1,300	a2,800	1,300	a940
12	a680	289	a450	a150	140	95	a120	528	a1,450	a2,500	1,230	a900
13	715	267	a430	a160	135	95	154	a550	a1,700	2,280	a1,250	a850
14	690	262	a400	a160	135	95	a200	572	a2,100	2,040	a1,500	a760
15	665	254	a370	a150	130	95	241	a640	2,310	a2,150	a1,900	a700
16	665	254	a340	a150	130	95	a270	a740	2,550	2,220	a2,200	a740
17	690	254	325	a160	130	95	a270	a820	2,550	a2,200	2,310	795
18	a680	254	325	a170	*125	95	a290	a900	2,800	a2,200	2,260	a800
19	a670	246	341	174	120	95	a300	a940	a3,200	a2,100	1,950	a760
20	640	273	391	174	120	95	a280	a880	3,340	2,080	1,690	a720
21	559	325	a330	174	115	90	a260	822	a3,000	2,040	a1,600	a650
22	595	a800	295	164	115	90	*246	a800	a2,700	1,900	a1,700	a600
23	822	a1,500	281	160	110	90	a230	a780	2,310	1,900	1,860	a540
24	940	2,080	295	170	110	90	a230	768	*1,880	a1,950	a1,650	a540
25	910	2,130	a290	200	110	90	a220	910	a1,850	a2,050	1,370	a500
26	a880	1,770	262	190	110	95	a210	a1,200	a1,900	a2,000	1,230	a460
27	839	1,390	a250	190	110	95	a200	1,530	a1,950	a1,950	a1,100	427
28	768	1,860	a245	180	110	90	a200	1,770	1,900	a1,900	a1,000	409
29	640	a2,200	241	170	110	90	a200	a1,650	1,770	1,770	a900	391
30	572	a2,000	229	160	-	90	a210	a1,500	1,790	1,530	a820	850
31	550	-	217	150	-	85	-	a1,400	-	a1,600	a780	-
Total	28,170	22,650	16,827	5,168	3,805	2,965	5,261	23,487	56,750	69,530	47,730	21,164
Mean	909	755	543	167	131	95.6	175	758	1,892	2,243	1,540	705
Ac-ft	55,870	44,930	33,380	10,250	7,550	5,880	10,440	46,590	112,600	137,900	94,670	41,980

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 3,340 Min 80 Mean 829 Ac-ft 602,000

* 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.
Note.--Stage-discharge relation affected by ice Jan. 23 to Apr. 10 (no gage-height record Jan. 24 to Feb. 17, Feb. 19 to Apr. 10; discharge estimated as explained for "a").

Trail River near Lawing--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	475	380	190	90	55	61	73	a210	1,490	a1,500	1,490	a2,500
2	a480	a380	180	92	54	61	a73	a200	1,570	a1,500	a1,500	a2,700
3	a560	380	150	92	54	61	a73	195	a1,600	a1,500	1,450	a2,900
4	562	380	130	92	53	61	a72	174	a1,500	a1,800	a1,450	a3,000
5	495	a350	130	91	53	61	a70	174	a1,400	a2,100	a1,500	a3,000
6	455	a330	130	86	52	64	a68	174	1,310	2,310	1,700	a2,500
7	*459	a350	120	82	50	66	a69	a170	a1,300	2,360	1,770	a2,200
8	495	318	120	77	49	70	a73	a160	1,260	2,450	a1,800	a1,900
9	a900	290	120	74	48	71	a73	164	a1,200	a2,400	1,860	a1,500
10	a1,500	a350	120	74	48	72	a72	174	a1,200	a2,400	1,730	a1,400
11	1,450	a450	120	74	49	72	a70	206	a1,200	2,400	1,690	a1,300
12	1,300	a450	110	73	55	70	a70	217	a1,200	a2,400	1,610	1,260
13	1,160	a430	110	72	62	70	a69	240	*1,300	2,500	a1,600	1,200
14	1,000	a420	110	71	62	70	*69	a240	1,160	a2,400	a1,500	a1,200
15	910	398	110	70	62	70	a68	a260	1,160	2,400	1,450	1,200
16	a900	380	110	70	60	70	a68	290	1,120	a2,400	1,410	1,200
17	a1,100	333	110	65	58	70	a68	348	a1,100	a2,400	*1,290	a1,200
18	a1,000	304	110	58	58	66	73	a400	a1,200	2,310	1,230	a1,100
19	910	a270	110	58	59	66	a77	a450	a1,300	2,080	1,230	1,030
20	850	*235	110	59	59	70	84	a500	1,450	1,950	a1,400	a1,000
21	768	230	100	59	59	73	96	a650	a1,500	a1,900	a1,500	940
22	660	220	100	58	59	a73	116	a770	1,570	1,710	a1,600	a860
23	a590	220	100	58	60	73	a140	970	1,610	a1,600	1,570	795
24	a520	210	100	58	60	73	174	a1,000	1,610	a1,600	1,490	a900
25	475	210	100	58	60	73	174	1,200	a1,600	a1,600	1,370	a1,100
26	475	210	96	58	61	a75	184	a1,200	a1,600	1,690	1,300	1,450
27	455	220	95	57	61	a77	195	1,340	1,570	1,690	a1,300	2,310
28	455	210	94	54	61	78	a200	a1,500	1,570	1,690	a1,500	2,400
29	435	210	92	55	-	73	206	a1,600	1,610	1,610	a1,800	1,950
30	a410	200	90	55	-	73	a210	1,450	1,490	a1,500	a2,000	1,530
31	a390	-	90	55	-	73	-	a1,400	-	a1,500	a2,200	-
Total	22,594	9,318	3,557	2,145	1,581	2,156	3,127	18,026	41,750	61,650	48,290	49,525
Mean	729	311	115	69.2	56.5	69.5	104	581	1,392	1,989	1,558	1,651
Ac-ft	44,800	18,480	7,060	4,250	3,140	4,280	6,200	35,750	82,810	122,300	95,780	98,230

Calendar year 1948: Max 3,340 Min 80 Mean 741 Ac-ft 538,200
Water year 1948-49: Max 3,000 Min 48 Mean 723 Ac-ft 523,100

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for nearby stations.
Note.--Stage-discharge relation affected by ice about Nov. 21 to Mar. 21 (no gage-height record for most of period; discharge estimated as explained for "a").

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,300	435	880			b86	a72	138	a640	a2,100	1,610	a1,500
2	a1,200	435	850			b86	a71	146	685	a2,000	1,610	a1,400
3	a1,000	435	a800			b86	71	164	a730	1,950	a1,600	a1,300
4	a880	408	a750			a86	71	184	a770	a1,900	a1,700	a1,200
5	a800	a410	675			a86	70	206	850	1,900	a1,800	1,140
6	a730	a430	675			b86	69	a230	1,230	1,860	a1,900	1,040
7	a670	455	660			a86	a67	a250	a1,400	1,900	2,000	1,010
8	a600	455	a600	a140	a92	a86	a65	277	1,450	a2,000	1,950	1,040
9	a540	455	540			a86	a64	a280	1,450	a2,100	1,950	a1,300
10	a490	415	a450			b86	63	a300	a1,400	*2,180	a1,900	a1,700
11	a470	a380	a300			a86	63	a330	a1,300	2,310	a1,900	1,990
12	455	a350	277			a86	63	a360	1,230	2,400	a2,000	2,170
13	455	a330	264			b86	68	a390	1,160	2,400	a2,000	2,080
14	455	348	a250			b86	a70	a420	1,090	2,260	2,130	1,400
15	a450	a330	259			*86	a71	a450	1,090	a2,100	a2,300	1,320
16	a430	318	*235			84	73	475	a1,200	a2,000	a2,400	a1,300
17	a400	304	a220			84	78	495	a1,600	1,860	a2,400	a1,300
18	367	290	a220			a84	96	a520	a3,000	1,770	a2,400	1,250
19	*348	a310	a220			a84	109	a530	3,560	1,860	2,290	1,480
20	a340	a400	217			a84	a110	a530	a3,600	a1,900	a2,200	2,080
21	333	685	a210			84	116	a520	3,600	1,950	a2,200	2,360
22	a330	1,450	a200		a86	a84	a120	504	a3,500	a2,300	*2,290	2,080
23	a320	2,040	a200	a120		a84	a120	504	3,340	a2,700	a2,400	a1,800
24	318	a1,900	a200			84	123	540	a3,100	2,800	a2,700	a1,600
25	348	1,530	a190			a82	116	540	a2,800	2,650	2,900	1,250
26	540	a1,300	a180			a80	116	a540	2,400	2,310	a3,000	1,180
27	540	a1,200	a170			78	123	a540	2,130	2,080	a2,900	a1,100
28	495	a1,100	a170			78	130	540	2,130	1,860	2,660	a1,000
29	a470	a1,000	a160		-	78	a130	a560	a2,200	a1,800	a2,260	a930
30	a450	a940	a160		-	75	a130	a600	2,220	a1,700	1,900	a870
31	455	-	a160		-	73	-	635	-	1,690	a1,700	-
Total	16,979	20,838	11,342	4,020	2,498	2,590	2,708	12,698	56,855	64,590	66,950	43,170
Mean	548	695	366	130	89.2	83.5	90.3	410	1,895	2,084	2,160	1,439
Ac-ft	33,680	41,330	22,500	7,970	4,950	5,140	5,370	25,190	112,800	128,100	132,800	85,630

Calendar year 1949: Max 3,000 Min 48 Mean 760 Ac-ft 550,200
Water year 1949-50: Max 3,600 Min 63 Mean 836 Ac-ft 605,500

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for other stations. b Stage-discharge relation affected by ice.
Note.--Probably some ice effect during most of period of no gage-height record in winter.

63. Falls Creek near Lawing 1/

Location.--Lat 60°25'50", long. 149°22'10", one-eighth of a mile upstream from mouth and 2.0 miles north of Lawing.

Drainage area.--15 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 460 ft (from topographic map).

Extremes.--August to November 1913: Maximum discharge observed, 312 cfs Sept. 25 (gage height, 4.75 ft), from rating curve extended above 80 cfs; minimum observed, 9 cfs Sept. 16 (gage height, 2.50 ft).

Remarks.--One diversion for powerplant; water returned to stream above station.

Monthly mean discharge, in cubic feet per second

Year	Aug.	Sept.	Oct.	Nov.
1913	-	43.5	22.2	-

Monthly runoff, in acre-feet

Year	Aug.	Sept.	Oct.	Nov.
1913	-	2,590	1,370	-

Note.--Records of daily discharge published in WSP 372.

64. Quartz Creek near Gilpatricks 2/

Location.--Lat 60°33'00", long. 149°36'10", 1 mile upstream from Devils Creek, 4¼ miles southeast of Gilpatricks, and 7 miles upstream from mouth.

Drainage area.--30 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 780 ft (from topographic map).

Extremes.--August to November 1913: Maximum discharge observed, 135 cfs Sept. 24, 25 (gage height, 3.75 ft); minimum observed, 44 cfs Sept. 18-22, Oct. 29 (gage height, 3.05 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	Aug.	Sept.	Oct.	Nov.
1913	-	64.6	57.5	-

Monthly runoff, in acre-feet

Year	Aug.	Sept.	Oct.	Nov.
1913	-	3,840	3,540	-

Note.--Records of daily discharge published in WSP 372.

65. Crescent Creek near Cooper Landing

Location.--Lat 60°29'50", long. 149°40'40", on left bank at bridge on old Seward-Kenai Highway, 0.3 mile upstream from mouth, and 5.3 miles east of Cooper Landing.

Drainage area.--31.7 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 550 ft (from topographic map). Prior to Aug. 19, 1949, staff gage at same site and datum.

Extremes.--1949: Maximum discharge during period July to September, 220 cfs Sept. 26 (gage height, 1.61 ft); minimum, 65 cfs Sept. 21 (gage height, 0.96 ft).
1949-50: Maximum discharge during water year, 322 cfs Sept. 22 (gage height, 1.88 ft); maximum gage height, 2.18 ft Dec. 19, ice jam; minimum daily, 12 cfs Apr. 1-13.

Remarks.--Records poor. No diversion or regulation above station. Discharge measurements, in cubic feet per second, prior to beginning of daily record July 15, 1949, were made as follows:

July 21, 1947 108	Apr. 20, 1948 ..... 22.8	Oct. 9, 1948 165
Aug. 24, 1947 ..... 74.9	June 22, 1948 232	Nov. 22, 1948 ..... 61.6
Nov. 3, 1947 ..... 73.1	Aug. 14, 1948 148	Mar. 10, 1949 ..... 15.2

1/ Formerly published as Falls Creek at railroad bridge, near Roosevelt.
2/ Formerly published as Quartz Creek at Fairman's Cabin, near Roosevelt.

Crescent Creek near Cooper Landing--Continued

Discharge, in cubic feet per second, July to September 1949

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	120	89	9	-	a130	87	17	a170	*89	73	25	a140	77	115
2	-	a120	89	10	-	127	84	18	a170	a86	70	26	a140	76	174
3	-	a120	96	11	-	a120	84	19	175	84	70	27	138	79	213
4	-	a120	91	12	-	122	87	20	a170	82	67	28	a130	84	196
5	-	122	102	13	-	*115	84	21	a170	84	65	29	122	89	180
6	-	a120	100	14	-	110	79	22	169	87	68	30	a120	89	168
7	-	a120	95	15	172	104	79	23	a160	82	67	31	a120	89	-
8	-	a130	91	16	a170	99	76	24	148	81	79				
Total													-	3,157	3,018
Mean													-	102	101
Ac-ft													-	6,260	5,990

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, discharge measurements, and records for nearby stations.
Note.--Gage also read on June 9 (178 cfs) and June 13 (163 cfs).

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	157	89					12	21			a66	49
2	149	91					12	22			a66	47
3	138	87					12	22	a100		a66	45
4	128	84					12	23		a140	a68	42
5	121	82	a78	a33	a20		12	24			a70	39
6	115	82					12	23			a72	37
7	115	81					12	24			a72	37
8	106	74				a15	12	26	a120	*136	a72	34
9	100	71					12	28		157	a70	34
10	95	68					12	26		160	a69	79
11	a90	65					12	28		146	a68	84
12	a84	63					12	28		128	a67	87
13	a77	64					12		a120	121	a67	71
14	a74	63					13			115	67	68
15	a68	60	a49	a30	a15	*15	13			108	67	65
16	a65	58				15	14	a48	154	104	67	64
17	a62	57	(*)			14	14		174	98	67	128
18	a63	57				14	15		209	98	66	115
19	a74	99				14	16		238	96	*65	212
20	a67	119				14	17		264	91	65	298
21	a66	200				14	18		238	91	64	306
22	*64	242				14	19		196	91	60	306
23	63	257				14	21		186	98	57	298
24	67	209			a15	14	21		174	91	58	283
25	76	180	a38	a27		14	20	a70	163	84	61	231
26	87	160				14	20		a150	77	61	131
27	84	144				13	20		a150	76	55	91
28	82	a130				13	20		a140	71	51	81
29	82	a120			-	13	20		a150	70	49	77
30	82	a110			-	13	20		a150	70	48	76
31	81	-			-	13	-		-	69	47	-
Total	2,782	3,266	1,688	927	470	445	457	1,449	4,436	3,426	1,968	3,515
Mean	89.7	109	54.5	29.9	16.8	14.4	15.2	46.7	148	111	63.5	117
Ac-ft	5,520	6,480	3,350	1,840	932	883	906	2,870	8,800	6,800	3,900	6,970

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 306 Min 12 Mean 68.0 Ac-ft 49,250

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, discharge measurements, and records for nearby stations.
Note.--Stage-discharge relation affected by ice about Dec. 1 to Mar. 30, and Apr. 2-17.

66. Kenai River at Cooper Landing

Location.--Lat 60°29'35", long. 149°48'25", near center of span on downstream side of bridge on Sterling Highway, 0.9 mile east of Cooper Landing, 0.9 mile upstream from Bean Creek, and 1.2 miles downstream from Snug Harbor.

Drainage area.--634 sq mi.

Supplemental records available.--Records of specific conductance of daily samples available in district office, Quality of Water Branch, at Palmer.

Gage.--Wire-weight gage read once daily. Datum of gage is 430 ft above mean sea level (river-profile survey). May 1947 to Mar. 10, 1949, staff gage and Mar. 11, 1949, to Apr. 13, 1950, wire-weight gage at bridge 0.9 mile downstream at different datum.

Extremes.--Maximum and minimum observed discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Aug. 1, 1947	9,180	12.8	May 1, 1947	b350	-
1948	July 10, 1948	10,400	13.2	Feb.23 to Apr.11,1948	220	5.9
1949	Sept. 7, 1949	9,480	12.91	Feb. 8-13, 1949	220	5.9
1950	Oct. 28, 1949	11,600	13.55	Apr. 13, 1950	282	1.43

a Period May to September.
b Minimum daily (estimated).

1947-50: Maximum discharge observed, 11,600 cfs Oct. 28, 1949 (gage height, 13.55 ft); minimum observed, 220 cfs Feb. 23 to Apr. 11, 1948, and Feb. 8-13, 1949 (gage height, 5.9 ft).

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

Discharge, in cubic feet per second, May to September 1947

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	a350	5,190	4,790	9,180	5,400	16	990	5,830	6,280	5,610	2,680
2	a370	5,400	4,790	8,880	5,400	17	990	5,610	6,280	5,400	2,680
3	a400	5,400	4,790	8,320	5,190	18	1,050	5,400	6,520	5,190	2,810
4	a440	5,400	4,990	7,780	4,990	19	1,050	5,190	6,520	4,990	2,810
5	a490	5,190	5,400	7,010	4,600	20	1,110	5,190	6,520	4,790	2,950
6	a540	4,990	5,610	6,520	4,230	21	1,110	4,990	*6,760	4,790	2,950
7	a600	4,790	5,830	6,280	3,880	22	1,170	5,190	7,010	4,600	2,950
8	a650	4,600	6,050	6,050	3,550	23	1,240	4,790	7,260	4,600	2,950
9	a700	4,600	6,050	6,280	3,390	24	1,240	4,600	7,260	*4,990	3,090
10	a740	4,990	5,830	6,280	3,390	25	1,380	4,410	7,520	5,190	3,390
11	775	5,190	5,830	6,280	3,240	26	1,540	4,410	7,780	5,190	4,050
12	*825	5,400	5,830	6,280	3,090	27	1,800	4,410	8,050	5,190	4,230
13	880	5,610	6,050	6,050	3,090	28	1,990	4,410	8,320	4,990	4,410
14	935	6,050	6,050	5,830	2,810	29	2,810	4,600	8,320	4,990	4,990
15	990	6,050	6,050	5,830	2,680	30	3,710	4,600	8,600	4,990	5,830
						31	4,600	-	8,880	5,190	-
Total							37,465	152,480	201,820	183,540	111,700
Mean							1,209	5,083	6,510	5,921	3,723
Ac-ft							74,310	302,400	400,300	364,000	221,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for other stations.

Kenai River at Cooper Landing--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,280	2,310	4,990	725	420	220	220	675	4,600	6,520	6,280	3,710
2	7,520	2,090	4,600	675	420	220	220	675	4,410	6,760	6,280	3,550
3	7,520	1,990	4,410	630	385	220	220	675	4,410	6,760	6,280	3,390
4	7,260	*1,890	3,880	630	385	220	220	725	4,410	7,010	6,280	3,090
5	6,520	1,800	3,710	585	385	220	220	725	4,410	7,260	6,050	2,950
6	6,050	1,800	3,390	585	385	220	220	775	4,230	7,780	6,050	2,950
7	5,610	1,710	3,240	540	350	220	220	775	4,230	8,600	6,050	2,950
8	5,190	1,710	2,950	540	320	220	220	825	4,230	9,480	5,610	3,090
9	4,790	1,620	2,810	540	320	220	220	935	4,230	10,100	5,400	3,090
10	4,230	1,540	2,550	540	320	220	220	990	4,410	10,400	5,190	3,390
11	4,050	1,540	2,430	500	320	220	220	1,110	4,410	10,100	5,190	3,390
12	3,880	1,460	2,430	500	320	220	240	1,170	4,600	9,800	5,190	3,390
13	3,550	1,310	2,200	500	290	220	265	1,240	4,600	8,880	4,990	3,240
14	3,390	1,310	1,990	500	290	220	290	1,460	5,190	8,600	*5,190	3,240
15	3,240	1,240	1,890	460	265	220	320	1,620	5,610	8,320	5,400	3,090
16	3,090	1,240	1,710	460	240	220	320	1,890	6,280	8,050	6,280	3,090
17	2,950	1,240	1,540	500	240	220	420	2,090	6,760	8,050	6,760	3,090
18	2,810	1,170	1,460	540	240	220	500	2,430	7,260	8,050	7,010	3,090
19	2,680	1,110	1,240	540	240	220	540	2,680	7,780	8,050	6,760	3,240
20	2,550	1,110	1,170	540	240	220	*585	2,810	8,050	7,780	6,520	3,090
21	2,310	1,170	990	540	240	220	585	3,090	8,320	7,520	6,280	2,950
22	2,310	2,430	935	500	240	220	585	3,240	7,780	7,260	6,280	2,810
23	2,550	3,090	935	460	220	220	585	3,240	7,780	7,010	6,280	2,810
24	2,680	3,710	880	500	220	220	585	3,240	7,520	7,260	6,050	2,680
25	2,810	4,050	825	585	220	220	585	3,240	7,260	7,520	5,830	2,680
26	2,810	4,230	825	540	220	220	585	3,390	7,010	7,520	5,190	2,550
27	2,810	5,400	775	540	220	220	630	4,050	*7,520	7,260	4,990	2,430
28	2,680	6,050	775	500	220	220	675	4,230	6,760	7,010	4,600	2,310
29	2,680	5,610	775	500	220	220	675	4,410	6,760	6,760	4,230	2,310
30	2,550	5,190	725	460	-	220	675	4,410	6,520	6,520	3,880	2,310
31	2,430	-	725	420	-	220	-	4,600	-	6,280	3,710	-
Total	121,780	72,120	63,755	16,575	8,395	6,820	12,065	67,415	177,340	244,270	176,080	89,950
Mean	3,928	2,404	2,057	535	289	220	402	2,175	5,911	7,880	5,680	2,998
Ac-ft	241,500	143,000	126,500	32,880	16,650	13,530	23,930	133,700	351,700	484,500	349,200	178,400

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 10,400 Min 220 Mean 2,887 Ac-ft 2,095,000

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,550	2,310	1,240	460	240	265	320	420	4,600	5,400	5,190	6,520
2	2,680	2,200	1,240	460	240	265	320	420	4,600	5,400	5,190	7,010
3	2,680	2,090	1,170	420	240	265	320	440	4,990	5,190	4,990	7,780
4	2,680	1,990	1,050	420	240	265	320	440	4,990	5,190	4,990	8,600
5	2,550	1,890	9 990	420	240	265	320	440	4,790	5,610	5,190	8,880
6	2,550	1,800	825	385	240	265	320	440	4,790	5,830	5,190	9,480
7	2,680	1,800	725	385	240	265	320	460	4,600	6,280	5,190	9,480
8	*2,550	1,800	725	385	220	290	320	460	4,600	6,520	5,400	8,880
9	3,240	1,710	675	385	220	320	335	480	4,600	6,760	5,610	8,050
10	3,710	1,710	675	350	220	*335	350	480	4,600	7,010	5,830	7,520
11	4,050	1,710	630	350	220	335	350	520	4,790	7,260	6,050	6,760
12	4,230	1,710	630	350	220	320	350	480	4,790	7,260	6,050	6,050
13	4,050	1,710	630	350	220	320	*320	520	*4,600	7,780	5,610	5,830
14	3,880	1,710	585	350	265	320	335	500	4,600	8,600	5,610	5,610
15	3,880	1,620	585	320	290	320	320	520	4,600	8,600	5,400	5,610
16	3,880	1,620	585	320	290	320	320	562	4,600	8,600	5,400	5,190
17	4,050	1,540	585	320	265	320	335	562	4,230	8,600	5,190	5,190
18	4,050	1,540	585	320	265	320	320	630	4,230	8,320	*4,990	5,190
19	4,050	1,460	585	290	265	320	320	675	4,410	7,260	4,790	4,600
20	3,880	1,460	540	265	265	335	320	775	4,600	6,760	4,790	4,410
21	3,550	1,460	540	265	265	335	320	1,540	4,990	6,760	4,600	4,230
22	3,240	1,460	540	265	265	335	320	1,890	5,400	6,280	4,990	4,230
23	3,090	1,380	540	265	265	350	335	2,200	5,610	6,280	4,990	4,050
24	2,950	1,380	540	265	265	350	335	2,200	5,830	5,610	5,190	4,230
25	2,810	1,380	540	265	265	350	350	1,890	5,830	5,610	4,990	4,410
26	2,680	1,310	500	265	265	350	385	2,200	5,830	5,610	4,990	4,790
27	2,550	1,380	500	265	265	335	368	2,550	5,830	5,610	4,990	6,280
28	2,550	1,380	460	265	265	335	350	3,090	5,830	5,610	5,190	7,010
29	2,550	1,310	460	265	-	335	385	3,710	5,610	5,610	5,190	7,010
30	2,430	1,310	460	240	-	335	420	4,050	5,610	5,400	5,610	6,760
31	2,310	-	460	240	-	335	-	4,230	-	5,190	6,050	-
Total	98,580	49,130	20,795	10,170	7,025	9,775	10,103	39,774	148,980	201,800	163,430	189,640
Mean	3,180	1,638	671	328	251	315	337	1,283	4,966	6,510	5,272	6,321
Ac-ft	195,500	97,450	41,250	20,170	13,930	19,390	20,040	78,890	295,500	400,300	324,200	376,100

Calendar year 1948: Max 10,400 Min 220 Mean 2,643 Ac-ft 1,919,000
Water year 1948-49: Max 9,480 Min 220 Mean 2,601 Ac-ft 1,883,000

* Discharge measurement made on this day.

Kenai River at Cooper Landing--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,280	6,450	2,740	775	424	347	320	340	1,420	6,800	5,460	5,900
2	5,850	5,630	2,690	775	420	344	320	343	1,490	7,060	5,380	5,580
3	5,250	5,030	2,550	770	416	332	320	384	1,560	6,640	5,380	5,200
4	4,790	4,500	2,440	730	416	335	320	384	1,630	6,400	5,380	4,450
5	4,600	4,230	2,300	700	413	338	317	384	1,780	6,290	5,420	4,080
6	4,500	3,950	2,140	695	413	341	317	400	2,030	*6,120	5,620	4,000
7	4,120	3,730	2,040	690	410	341	317	433	2,330	5,960	5,740	3,810
8	3,710	3,390	1,930	680	406	338	314	450	2,530	5,880	5,940	3,840
9	3,410	3,090	1,840	670	402	338	311	450	2,700	5,840	5,960	3,840
10	3,390	2,740	1,710	666	374	338	308	468	2,830	6,400	5,920	4,320
11	3,020	2,470	1,660	630	371	335	290	485	3,120	6,840	5,900	5,200
12	2,820	2,330	1,620	608	364	335	285	525	3,120	6,530	5,880	6,580
13	2,680	2,300	1,540	608	354	335	*285	583	3,120	6,620	5,880	6,620
14	2,620	2,100	1,420	603	347	332	288	628	3,150	6,550	6,020	6,290
15	2,590	1,890	1,340	594	347	332	288	646	3,190	6,490	6,380	5,200
16	2,550	1,840	1,280	590	347	*326	288	655	3,260	6,180	6,490	5,020
17	2,530	1,720	*1,320	585	347	326	290	750	3,610	6,080	6,400	4,840
18	2,440	1,710	1,130	576	347	329	290	795	5,070	5,960	6,400	5,680
19	2,550	1,890	1,080	567	347	329	300	805	7,060	5,860	6,290	5,880
20	2,530	2,100	1,060	540	347	329	310	850	7,640	5,760	6,200	6,580
21	2,690	2,370	1,050	520	347	326	313	900	8,840	5,760	6,290	7,640
22	2,810	2,990	1,050	504	344	326	313	955	9,200	5,860	6,380	7,640
23	3,390	3,660	996	484	344	326	305	1,010	9,460	5,980	*7,260	6,880
24	*4,160	4,320	979	472	344	326	305	1,040	9,100	6,770	8,000	6,400
25	5,190	4,410	962	452	347	326	308	1,110	8,960	7,060	8,740	5,780
26	7,810	4,390	935	440	347	323	305	1,120	8,120	7,040	9,250	5,340
27	9,800	3,900	874	440	347	323	308	1,160	7,740	7,020	9,250	4,910
28	11,300	3,550	830	440	347	323	310	1,190	7,280	6,730	8,620	4,420
29	10,700	3,240	820	436	-	323	313	1,250	7,060	6,600	8,120	4,110
30	8,680	3,090	800	432	-	323	326	1,290	6,950	5,920	7,280	3,760
31	7,420	-	775	428	-	323	-	1,350	-	5,820	6,580	-
Total	146,180	99,010	45,901	18,100	10,379	10,268	9,184	23,133	145,350	196,820	203,810	159,790
Mean	4,715	3,300	1,481	584	371	331	306	746	4,845	6,349	6,575	5,326
Ac-ft	289,900	196,400	91,040	35,900	20,590	20,370	18,220	45,880	288,300	390,400	404,300	316,900

Calendar year 1949: Max 11,300 Min 220 Mean 2,936 Ac-ft 2,126,000
Water year 1949-50: Max 11,300 Min 285 Mean 2,926 Ac-ft 2,118,000

* Discharge measurement made on this day.

Kenai River at Cooper Landing

Chemical analyses, in parts per million, October 1949 and July to September 1950

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 24, 1949	4,160	3.9	--	--	--	2.1		29	7.2	1.0	--	0.9	--	29	--	67.0	6.4	--
July 7, 1950	5,960	3.7	0.05	10	1.4	2.1		31	6.9	1.2	0.1	1.0	42	31	5	68.8	7.3	4
July 18-20	5,860	4.4	.01	10	1.0	2.4		31	6.2	1.0	--	1.3	42	29	4	70.4	6.9	--
July 21-31	6,415	4.8	.01	10	.8	4.2		33	7.1	1.4	.1	1.0	42	28	1	72.0	7.2	10
Aug. 1-10	5,620	4.1	.03	10	.9	1.5	1.4	29	7.4	1.2	.4	1.4	43	29	5	70.2	7.1	10
Aug. 11-20	6,184	3.8	.02	10	.9	3.6		31	7.2	1.0	.4	1.5	44	29	3	69.2	7.0	8
Aug. 21-31	7,797	3.6	.04	10	.9	3.8		31	7.4	1.2	.4	1.3	44	29	3	70.0	7.0	12
Sept. 1-10	4,502	3.6	.04	10	.9	1.3	1.1	29	7.7	1.1	.3	1.1	41	29	5	69.6	6.9	8
Sept. 11-20	5,789	3.8	.05	10	.9	3.9		31	7.9	1.1	.3	1.5	45	29	3	70.9	7.0	10
Sept. 21-30	5,688	3.6	.07	10	.8	3.2		29	7.7	1.2	.3	1.2	42	28	4	65.6	7.0	8

Kenai River at Cooper Landing--Continued

Temperature (°F) of water, October 1949, and July to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										--	46	51
2										--	45	48
3										--	45	49
4										--	48	49
5										--	46	49
6										--	45	50
7										46	48	49
8										--	50	49
9										--	50	49
10										--	50	48
11										--	52	48
12										--	50	48
13										--	50	48
14										--	50	47
15										--	52	46
16										--	52	46
17										--	56	46
18										--	55	44
19										--	54	46
20										--	55	46
21										--	55	44
22										49	56	44
23										50	54	44
24	42									49	52	42
25										49	52	46
26										46	52	46
27										46	51	46
28										48	51	46
29										48	50	46
30										48	50	46
31										47	51	--
Average										--	51	47

67. Cooper Creek near Cooper Landing

Location.--Lat 60°26'00", long. 149°49'15", on left bank 125 ft downstream from Cooper Lake outlet, 1.4 miles upstream from Stetson Creek, and 4 miles south of Cooper Landing.

Drainage area.--31.8 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,165.5 ft above mean sea level (river-profile survey).

Extremes.--1949: Maximum discharge during period August to September, 232 cfs Sept. 27 or 28 (gage height, 2.33 ft, from recorded range in stage); minimum, 84 cfs Sept. 23 (gage height, 1.63 ft).
1949-50: Maximum discharge during water year, 298 cfs June 20 or 21 (gage height, 2.59 ft, from recorded range in stage); minimum not determined.

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

Discharge, in cubic feet per second, August, September 1949

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a150	133	9	a160	133	17	a120	104	25	104	113
2	a140	135	10	a150	129	18	115	99	26	108	155
3	a140	140	11	a150	123	19	*113	93	27	106	223
4	a140	137	12	a140	123	20	113	87	28	108	a220
5	a140	151	13	a140	117	21	117	87	29	115	a210
6	a150	151	14	a130	113	22	109	85	30	123	a200
7	a150	146	15	a130	111	23	106	85	31	131	-
8	a160	142	16	a130	108	24	104	93			
Total										3,992	3,944
Mean										129	131
Ac-ft										7,920	7,820

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, one discharge measurement, and records for other stations.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a190	108								a210	144	97
2	a180	117								a200	144	93
3	a160	119							a120	a200	144	92
4	a150	119								a200	148	87
5	a140	111	a65	a25	a15	a10		a23		a190	151	82
6	a130	111								a190	151	82
7	a130	109					a8			a190	151	82
8	a120	100							a140	a200	146	87
9	a110	95								*201	144	85
10	a100	89								213	140	104
11	a97	84								213	137	137
12	a95	84								211	135	162
13	a84	78							a140	206	133	164
14	a79	75				(*)				199	133	159
15	a73	71	a40	a23	a11			a60		191	133	153
16	a70	69								184	133	148
17	a67	66								177	129	173
18	*68	68				a9			a230	177	125	206
19	79	104								175	125	223
20	72	177								173	123	254
21	71	223								170	127	254
22	69	257								166	129	254
23	66	259					a16		a280	170	135	242
24	71	244			a10					170	*142	223
25	81	225	a30	a20				a90		164	137	206
26	95	208								157	135	187
27	104	a180								155	131	175
28	104	a140				a8			a220	151	123	162
29	104	a110			-					151	117	146
30	106	a95			-					151	109	140
31	104	-			-		-	-		148	104	-
Total	3,169	3,895	1,380	700	340	283	360	1,820	5,650	5,653	4,158	4,659
Mean	102	130	44.5	22.6	12.1	9.13	12.0	58.7	188	182	134	155
Ac-ft	6,290	7,730	2,740	1,390	674	561	714	3,610	11,210	11,210	8,250	9,240

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max - Min - Mean 87.9 Ac-ft 63,620

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, 3 discharge measurements, and records for other stations.

68. Kenai River near Cooper Landing 1/

Location.--Lat 60°29', long. 149°55', 1½ miles downstream from Cooper Creek and 3 miles west of Cooper Landing.

Drainage area.--728 sq mi.

Gage.--Staff gage. Altitude of gage is 380 ft (from topographic map).

Extremes.--September 1913 to January 1914: Maximum daily discharge, 6,070 cfs (estimated) Sept. 27-29; minimum discharge observed, 504 cfs during many days in January (gage height, 4.70 ft).

Remarks.--A few diversions for mining purposes above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	3,190	-
1914	2,670	2,050	1,010	582	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	190,000	-
1914	164,000	122,000	62,100	35,800	-	-	-	-	-	-	-	-	-

Note.--Records of daily discharge published in WSP 372.

69. Russian River near Cooper Landing

Location.--Lat 60°27'10", long. 149°59'05", on right bank 50 ft upstream from small unnamed tributary, 0.3 mile downstream from Lower Russian Lake, 3.2 miles upstream from mouth, and 6 miles southwest of Cooper Landing.

Drainage area.--61.8 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map). Prior to June 12, 1949, staff gage at same site and datum.

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum daily	
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
1947a	May 30, 1947	b414	2.05	May 1, 1947	50
1948	Nov. 28, 1947	b798	3.25	Apr. 6-8, 1948	30
1949	June 2, 1949	b254	1.85	Feb. 8-11, 1949	18
1950	Nov.23 or 24,1949	687	3.32	Apr. 9-11, 1950	24

a Period May to September.
b Maximum observed.

1947-50: Maximum discharge observed, 798 cfs Nov. 28, 1947 (gage height, 3.25 ft), from rating curve extended above 230 cfs by logarithmic plotting; minimum daily, 18 cfs Feb. 8-11, 1949.

Remarks.--Records fair except those for periods of no gage-height record, and those prior to June 12, 1949, which are poor. No diversion or regulation above station.

Discharge, in cubic feet per second, May to September 1947

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	a50	400	172	a145	81	16	159	176	124	95	68
2	a60	358	166	141	83	17	159	166	124	93	69
3	a70	318	166	135	81	18	157	187	124	90	74
4	a80	292	172	126	a80	19	159	187	120	84	a78
5	a90	268	176	116	a78	20	159	180	114	81	a76
6	a100	244	170	116	a76	21	187	176	114	78	a74
7	a110	226	a180	a112	74	22	221	187	*118	a76	a74
8	a120	226	a150	a108	75	23	244	176	122	*80	a74
9	a130	226	147	111	a72	24	268	166	122	90	a78
10	a140	232	143	107	69	25	263	155	124	84	a90
11	a150	237	135	98	80	26	292	155	124	84	a88
12	*157	228	135	98	80	27	331	166	a130	83	a86
13	159	221	135	98	81	28	372	176	a128	81	a90
14	159	210	127	98	74	29	400	172	124	81	98
15	159	198	126	a97	68	30	414	172	126	81	131
						31	400	-	147	81	-
Total							5,919	6,481	4,265	3,048	2,400
Mean							191	216	138	98.3	80.0
Ac-ft							11,740	12,850	8,460	6,050	4,760

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

1/ Formerly published as Kenai River at Kenai Dredging Co.'s camp.

Russian River near Cooper Landing--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	157	135	a640	a70	a56	a41	a32	74	223	a190	111	58
2	174	a130	a580	a66	a64	a41	a32	a80	212	a190	111	58
3	187	a120	a520	a64	a62	a40	a31	a86	a210	194	107	58
4	a170	*107	a420	a60	a60	a40	a31	a96	200	194	105	55
5	a160	a100	a340	a58	a58	a40	a31	a110	200	198	102	53
6	a150	a100	a250	a60	a58	a39	a30	a120	200	293	a110	52
7	a140	a120	a200	a60	a56	a38	a30	a130	200	311	a100	52
8	a140	131	a170	a58	a54	a38	a30	a150	200	288	a97	49
9	a130	a120	a150	a55	a54	a37	a32	a170	a190	238	a94	47
10	a120	a120	a140	a52	a56	a37	a35	a190	a190	200	92	a49
11	a130	a110	a130	a52	a56	a37	a38	a200	189	181	92	a47
12	a130	a100	116	a56	a56	a36	a42	a210	189	a170	88	a45
13	a130	a95	a110	a56	a54	a36	a48	a220	212	a150	*92	a44
14	a120	a90	a104	a56	a52	a36	a56	a240	a250	a140	98	a42
15	a120	a86	a98	a52	a52	a35	a62	258	a280	a140	98	a44
16	a110	a84	a92	a52	a50	a35	a70	a300	a290	a150	96	47
17	a110	a82	a88	a56	a50	a35	a74	a320	a270	142	98	53
18	a100	a80	a86	a60	a50	a34	a74	a350	a290	142	100	53
19	a100	a80	a86	a62	*49	a34	a72	a340	308	140	a93	52
20	a90	a90	a95	a60	a48	a34	a70	a330	287	132	a88	49
21	a110	a200	a95	a60	a46	a33	*66	a310	263	130	a82	47
22	a140	627	a90	a58	a46	a33	a64	282	a250	130	a88	47
23	a180	a700	a90	a56	a45	a33	a62	254	*228	a130	88	a45
24	a170	a730	a88	a60	a44	a33	a62	239	200	a140	87	a43
25	155	a650	a84	a70	a43	a33	a60	258	194	a140	87	a42
26	155	a560	a82	a70	a43	a34	a58	270	196	a130	78	a40
27	147	a640	a80	a68	a42	a34	a56	295	196	122	72	a37
28	139	798	a80	a66	a41	a33	a56	278	212	118	72	a34
29	135	a750	a76	a64	a41	a32	63	270	194	114	72	a35
30	a130	a700	74	a62	-	a32	70	258	194	114	68	a37
31	a120	-	74	a58	-	a32	-	230	-	118	66	-
Total	4,249	8,435	5,328	1,857	1,486	1,105	1,537	6,918	6,717	5,149	2,832	1,414
Mean	137	281	172	59.9	51.2	35.6	51.2	223	224	166	91.4	47.1
Ac-ft	8,430	16,730	10,570	3,680	2,950	2,190	3,050	13,720	13,320	10,210	5,620	2,800

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 798 Min 30 Mean 128 Ac-ft 93,270

a Doubtful or no gage-height record; discharge estimated on basis of five discharge measurements, weather records, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a45	a120	a52	a34	a20	a22	a26	a72	a250	181	107	90
2	a52	a120	a50	a34	a19	a22	a26	a71	254	169	105	95
3	a56	118	a48	a33	a19	a22	a26	a70	235	166	100	103
4	57	109	a46	a32	a20	a22	a25	a68	220	175	100	105
5	57	98	a45	a31	a20	a23	a25	a65	220	185	100	107
6	57	87	a45	a31	a20	a24	a26	a63	a210	200	100	112
7	57	a100	a43	a30	a19	a26	a27	a61	198	205	100	111
8	*82	a90	a42	a29	a18	a27	a28	a60	200	202	111	105
9	109	a80	a43	a30	a18	*28	a28	a58	196	196	114	100
10	103	a92	a43	a30	a18	a28	a27	a59	200	188	112	95
11	102	a100	a42	a28	a18	a28	a27	a61	202	188	109	90
12	102	a110	a41	a27	a19	a27	*27	a63	*202	181	107	92
13	102	a100	a41	a26	a20	a27	a26	a61	190	177	103	90
14	102	a97	a40	a25	a21	a27	a26	a63	177	166	98	87
15	109	a88	a40	a25	a21	a27	a26	a65	171	158	95	87
16	136	a78	a40	a24	a21	a26	a26	a68	164	150	92	85
17	a180	a73	a41	a23	a20	a26	a27	a73	166	148	87	84
18	a170	a68	a40	a22	a19	a25	a28	a80	185	144	84	81
19	a170	*64	a39	a22	a19	a26	a29	a95	192	144	*82	79
20	166	a62	a38	a23	a19	a27	a32	a110	209	138	81	75
21	156	a60	a38	a23	a19	a27	a37	a130	227	138	84	75
22	136	a58	a38	a22	a20	a28	a39	a140	231	138	82	75
23	132	a56	a37	a21	a20	a28	a38	a160	231	134	82	75
24	120	a56	a36	a21	a21	a28	a43	a180	220	130	81	81
25	116	a58	a35	a21	a21	a28	a50	a190	213	126	78	90
26	128	a57	a35	a20	a22	a27	a58	a210	211	122	78	116
27	120	a56	a34	a20	a22	a27	a67	a220	202	120	81	177
28	128	a55	a34	a20	a22	a27	a70	a240	202	118	81	194
29	a130	a54	a33	a20	-	a27	a72	a250	200	116	81	188
30	a120	a53	a33	a20	-	a27	a73	a240	192	112	82	173
31	a120	-	a33	a20	-	a26	-	a240	-	109	85	-
Total	3,420	2,417	1,245	787	555	810	1,085	3,586	6,170	4,824	2,882	3,117
Mean	110	80.6	40.2	25.4	19.8	26.1	36.2	116	206	156	93.0	104
Ac-ft	6,780	4,790	2,470	1,560	1,100	1,610	2,150	7,110	12,240	9,570	5,720	6,180

Calendar year 1948: Max 350 Min 30 Mean 98.6 Ac-ft 71,580
Water year 1948-49: Max 254 Min 18 Mean 84.7 Ac-ft 61,280

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of three discharge measurements, weather records, and records for nearby stations.

Russian River near Cooper Landing--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	a220	a240	a59	a33	a30	a27	47	169	a200	a94	a84
2	152	a250	a230	a59	a33	a31	a26	49	166	a190	a92	a84
3	142	a270	a220	a58	a33	a31	a26	53	169	a190	a90	a84
4	132	a260	a210	a57	a33	a30	a26	57	179	a180	a90	a84
5	122	a250	a190	a56	a33	a30	a25	62	202	a180	a93	a84
6	116	a240	a180	a55	a32	a30	a25	64	233	a180	a96	a84
7	118	a240	a160	a53	a32	a29	a25	72	250	a180	a99	a85
8	116	a240	a140	a49	a32	a29	a25	82	244	*181	a100	a87
9	114	a230	a130	a48	a32	a29	a24	100	242	188	a98	a90
10	109	a220	a120	a48	a32	a29	a24	120	231	198	a95	a110
11	103	a210	a110	a48	a32	a29	a24	136	220	198	a94	a140
12	103	a190	a100	a49	a32	a29	a25	142	202	196	a93	a150
13	102	a180	a93	a48	a31	a29	a26	148	194	192	a92	a130
14	98	a170	a92	a47	a30	a29	a26	154	a190	185	a91	a120
15	95	a160	a89	a44	a29	a29	a26	158	a190	175	a90	a110
16	92	a150	a86	a43	a28	a29	a27	166	a230	164	a89	a170
17	93	a150	a84	a44	a28	a29	a28	175	a280	a160	a88	a260
18	96	a150	*82	a44	a28	a29	29	175	a350	a150	a88	a240
19	107	a170	82	a44	a28	a29	33	173	a430	a140	a88	a350
20	*136	a200	76	a44	a28	*29	34	171	a480	a140	a88	a370
21	a130	a300	a73	a43	a28	a29	34	169	a420	a130	*90	a370
22	a120	a500	a72	a41	a29	a28	35	166	a380	a130	93	a350
23	a120	a650	a72	a39	a29	a28	35	175	a340	a140	a97	a320
24	a130	a600	a69	a38	a29	a28	36	177	a300	a140	a100	a250
25	a140	a450	a65	a38	a28	a27	39	181	a270	a130	a100	a180
26	a160	a380	a62	a38	a28	a27	40	177	a250	a120	a97	a150
27	a180	a350	a59	a38	a28	a27	42	173	a240	a110	a95	a130
28	a190	a320	a57	a37	a29	a27	42	166	a220	a110	a92	a120
29	a180	a290	a56	a36	-	a27	43	166	a210	a100	a90	a110
30	a190	a260	a56	a35	-	a27	46	166	a200	a98	a87	a100
31	a210	-	a58	a34	-	a27	-	166	-	a95	a85	-
Total	4,056	8,250	3,413	1,414	847	890	923	4,186	7,681	4,870	2,874	4,996
Mean	131	275	110	45.6	30.2	28.7	30.8	135	256	157	92.7	167
Ac-ft	8,040	16,360	6,770	2,800	1,680	1,770	1,830	8,300	15,240	9,660	5,700	9,910

Calendar year 1949: Max 650 Min 18 Mean 108 Ac-ft 78,410
Water year 1949-50: Max 650 Min 24 Mean 122 Ac-ft 88,060

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of five discharge measurements, recorded range in stage, weather records, and records for nearby stations.

70. Russian River at mouth, near Cooper Landing

Location.--Lat 60°29'10", long. 149°59'50", an eighth of a mile upstream from mouth and 5½ miles west of Cooper Landing.

Drainage area.--71.0 sq mi (revised).

Gage.--Staff gage. Altitude of gage is 350 ft (from topographic map).

Extremes.--September, October 1913: Maximum discharge observed, 510 cfs Sept. 26 (gage height, 4.30 ft); minimum observed, 57 cfs Sept. 14-22 (gage height, 3.36 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year									Sept.	Oct.			
1913									141	166			

Monthly runoff, in acre-feet

Year									Sept.	Oct.			
1913									8,390	10,210			

Note.--Records of daily discharge published in WSP 372.

71. Resurrection Creek at Hope

Location.--Lat 60°55'15", long. 149°38'40", near right bank on downstream side of pier of bridge at Hope, 0.3 mile downstream from Cripple Creek, 0.3 mile upstream from mouth, and 2.0 miles downstream from Wildhorse Creek.

Drainage area.--162 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 50 ft (from topographic map).

Extremes.--1949-50: Maximum discharge observed during water year, 2,140 cfs June 20 (gage height, 2.80 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum daily, 54 cfs Apr. 7-10.

Remarks.--Records poor. No diversion or regulation above station. Discharge measurements made at this station prior to beginning of daily record Oct. 1, 1949, were made as follows: Oct. 10, 1948, 428 cfs; June 14, 1949, 700 cfs, and Aug. 19, 1949, 180 cfs.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	253	194					55	176	750	1,260	340	180
2	242	189					55	180	810	1,240	328	180
3	226	189					55	185	1,020	1,210	316	176
4	212	189					55	189	1,120	1,070	310	172
5	208	185	110				55	194	1,140	950	304	172
6	203	180					55	198	1,150	910	286	168
7	198	180					54	203	1,170	*820	280	164
8	198	180					54	208	1,190	850	269	164
9	198	180					54	212	1,270	890	258	164
10	189	180				59	54	217	1,200	850	248	160
11	185	180					55	221	1,130	810	231	160
12	180	180					58	226	1,070	750	226	160
13	185	180					64	248	950	714	226	157
14	189	180					66	258	850	696	221	157
15	194	180	78				72	269	940	660	217	157
16	198	180		68	63		78	280	1,370	606	212	153
17	203	180					86	304	1,790	570	208	153
18	d200	203					92	316	1,980	554	198	149
19	d190	221					100	328	2,060	538	*226	149
20	d180	354					120	340	2,120	530	212	145
21	d170	940	*74			*58	130	368	1,980	506	208	145
22	d170	1,080				57	140	382	1,850	490	212	141
23	*172	940				57	141	410	1,770	482	217	141
24	242	760				57	145	458	1,710	482	208	141
25	280	466				56	149	506	1,650	482	203	138
26	280	310	72			56	153	522	1,570	474	198	138
27	242	231				56	157	538	1,430	442	194	138
28	212	185				56	160	570	1,310	410	189	134
29	208	160			-	56	164	624	1,190	382	189	134
30	208	150			-	56	172	660	1,310	375	185	134
31	198	-			-	56	-	714	-	368	180	-
Total	6,413	9,106	2,674	2,108	1,764	1,801	2,848	10,504	40,850	21,371	7,299	4,624
Mean	207	304	86.3	68.0	63.0	58.1	94.9	339	1,362	689	235	154
Ac-ft	12,720	18,060	5,300	4,180	3,500	3,570	5,650	20,830	81,020	42,390	14,480	9,170

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 2,120 Min - Mean 305 Ac-ft 220,900

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of one discharge measurement and weather records.
Note.--Stage-discharge relation affected by ice Nov. 29 to Apr. 22 (no gage-height record Nov. 30 to Dec. 20 and Dec. 22 to Mar. 20; discharge estimated on basis of 2 discharge measurements and weather records).

72. Mills Creek near Gilpatricks 1/

Location.--Lat 60°40', long. 149°25', 1½ miles upstream from Juneau Creek, 2 miles upstream from mouth, and 6 miles northeast of Gilpatricks.

Drainage area.--25 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,500 ft (from topographic map).

Extremes.--August to November 1913: Maximum discharge observed, 203 cfs Sept. 25 (gage height, 3.90 ft); minimum observed, 43 cfs Nov. 2 (gage height, 2.70 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year								Aug.	Sept.	Oct.	Nov.		
1913								-	82.1	60.1	-		

Monthly runoff, in acre-feet

Year								Aug.	Sept.	Oct.	Nov.		
1913								-	4,890	3,700	-		

Note.--Records of daily discharge published in WSP 372.

1/ Formerly published as Mills Creek 2 miles above mouth.

73. Sixmile Creek at Sunrise

Location.--Lat 60°54', long. 149°25', at Sunrise and half a mile upstream from mouth.

Drainage area.--263 sq mi (revised).

Gage.--Staff gage. Altitude of gage is 10 ft (from topographic map).

Extremes.--August to November 1913: Maximum discharge observed, 6,150 cfs Sept. 25 (gage height, 6.95 ft), discharge measurement; minimum daily, 400 cfs Nov. 28-30.

Remarks.--Small diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year								Aug.	Sept.	Oct.	Nov.		
1913								-	897	661	514		

Monthly runoff, in acre-feet

Year								Aug.	Sept.	Oct.	Nov.		
1913								-	53,380	40,640	30,590		

Note.--Records of daily discharge published in WSP 372.

74. South Fork Campbell Creek near Anchorage

Location.--Lat 61°09'55", long. 149°46'00", in NW¼ sec. 2, T. 12 N., R. 3 W., on right bank 50 ft upstream from bridge, 0.1 mile northeast of Campbell Airstrip, 2.2 miles upstream from North Fork Campbell Creek, and 5½ miles southeast of Anchorage.

Drainage area.--29.4 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 300 ft (from topographic map).

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Sept.25, 1947	b265	2.03	Aug. 18,19, 1947	33	0.90
1948	Sept.16, 1948	b205	c1.81	Apr. 24, 1948	d7.9	-
1949	June 21, 1949	b891	3.30	-	(e)	-
1950	June 19, 1950	f140	-	-	(e)	-

a Period July to September.
b From rating curve extended above 90 cfs by logarithmic plotting.
c Occurred Sept. 17, 1948.
d Result of discharge measurement.
e Not determined.
f Maximum daily (estimated).

1947-50: Maximum discharge, 891 cfs June 21, 1949 (gage height, 3.30 ft), from rating curve extended above 90 cfs by logarithmic plotting; minimum not determined.

Remarks.--Records good prior to Sept. 30, 1948, fair thereafter except those for periods of ice effect, doubtful or no gage-height record, which are poor.

Cooperation.--One discharge measurement furnished by city of Anchorage.

Discharge, in cubic feet per second, July to September 1947

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	70	86	49	9	70	48	59	17	58	36	67	25	50	56	210
2	74	90	56	10	65	44	61	18	56	34	125	26	*54	48	150
3	70	75	61	11	60	*41	59	19	55	42	92	27	56	42	121
4	72	64	53	12	58	41	58	20	54	49	75	28	52	39	103
5	76	56	49	13	58	40	63	21	53	42	79	29	50	39	96
6	80	52	51	14	60	38	58	22	53	38	71	30	56	38	90
7	76	48	55	15	58	39	53	23	53	48	73	31	80	48	-
8	72	46	56	16	*56	41	53	24	51	74	196				
Total													1,906	1,522	2,442
Mean													61.5	49.1	81.4
Ac-ft													3,780	3,020	4,840

Peak discharge (base, 150 cfs).--Sept. 25 (1:30 a.m.) 265 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record July 1-15, 17-25, July 27 to Aug. 10; discharge estimated on basis of 3 discharge measurements and record for station on Ship Creek near Anchorage.

South Fork Campbell Creek near Anchorage--Continued

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	40	32	18	29	13	11	14	64	71	60	56
2	99	38	29	17	22	14	10	15	64	106	56	54
3	89	38	28	18	19	13	9.5	15	64	117	54	52
4	82	32	29	16	21	13	9.5	15	66	94	54	50
5	82	28	30	15	22	13	*9.5	16	68	93	56	48
6	74	30	29	17	20	12	8.5	18	71	149	60	49
7	71	32	26	16	14	12	9	17	82	119	59	50
8	66	32	25	15	13	12	9.5	19	78	112	58	48
9	63	33	27	15	15	11	9.5	21	82	106	56	56
10	63	31	27	14	16	11	9.5	23	85	98	53	*56
11	61	30	25	15	*18	11	10	29	87	89	50	53
12	62	29	23	22	16	10	10	34	89	80	49	50
13	58	27	22	26	15	10	*11	38	98	75	58	48
14	56	28	24	25	14	10	12	52	104	71	98	47
15	54	23	23	29	13	10	12	65	104	71	130	46
16	51	26	21	30	13	11	10	66	104	75	125	128
17	49	28	20	35	12	11	9.5	64	*106	70	119	150
18	45	27	19	38	12	10	9	64	121	71	102	113
19	44	25	20	31	12	9.5	10	50	117	68	87	94
20	41	35	26	27	13	10	11	42	106	62	*78	87
21	42	50	27	24	13	9.5	10	44	93	56	71	79
22	42	63	25	22	14	9	9	46	85	54	87	72
23	43	42	24	21	16	9	8.5	43	80	64	104	68
24	40	40	24	20	16	10	*8	46	80	60	83	71
25	39	35	22	20	15	10	9	60	85	54	73	69
26	38	37	24	22	14	11	8.5	83	82	78	68	63
27	36	48	24	24	13	12	9	83	75	82	62	61
28	35	36	23	23	13	11	10	71	68	*65	59	59
29	33	33	21	22	13	*10	11	64	65	60	60	59
30	30	32	21	26	-	10	13	59	66	60	68	59
31	*35	-	20	28	-	11	-	60	-	68	58	-
Total	1,726	1,028	760	691	456	339.0	296.0	1,336	2,539	2,498	2,255	1,995
Mean	55.7	34.3	24.5	22.3	15.7	10.9	9.87	43.1	84.6	80.6	72.7	66.5
Ac-ft	3,420	2,040	1,510	1,370	904	672	587	2,650	5,040	4,950	4,470	3,960

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 150 Min 8 Mean 43.5 Ac-ft 31,570

Peak discharge (base, 150 cfs).--July 6 (1 p.m.) 165 cfs; Sept. 16 (11:30 a.m.) 205 cfs.
* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice, Nov. 1, 5-7, 14-21, Dec. 7-9, Dec. 12 to Apr. 24, Apr. 25 to May 4 (no gage-height record during most of period; discharge estimated on basis of discharge measurements, weather records, and records for Ship Creek near Anchorage).

South Fork Campbell Creek near Anchorage--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	37	*14			8	7	7	127	117	91	72
2	59	38				8	7	7	123	144	82	68
3	55	36			8	8	6	7	111	135	76	66
4	54	36				8	6	7	100	142	70	71
5	53	30				8	7	7	110	154	75	68
6	51	27	13			8	7	7	120	159	112	80
7	50	39				8	7	8	130	165	96	85
8	59	44		10		8	7	8	130	170	197	78
9	62	41				8	6	9	140	167	165	72
10	55	45			7	8	6	10	140	144	132	70
11	53	36				8	7	11	140	157	121	66
12	51	28				8	8	11	120	152	119	64
13	49	22				7	8	14	100	132	104	62
14	48	17				7	8	18	92	127	98	67
15	47	14	15			7	8	22	96	114	87	70
16	55	12				7	8	24	100	114	83	64
17	56	13				7	8	24	*107	112	80	61
18	50	11				7	8	31	177	*110	76	58
19	49	12				7	8	41	167	119	75	56
20	47	13			6	7	8	49	288	100	71	56
21	*45	12				7	8	63	572	94	82	60
22	43	11				7	8	72	409	89	108	58
23	43	12		9		7	8	82	256	91	94	56
24	41	12				7	8	83	188	89	85	55
25	40	12				7	7	*89	159	85	80	64
26	40	11	11			7	*7	107	135	85	*75	80
27	41	10			7	7	7	123	125	83	76	100
28	39	11				7	7	136	139	83	77	97
29	40	13			-	7	7	147	149	85	79	90
30	37	14			-	7	7	136	117	85	80	82
31	36	-			-	7	-	132	-	94	78	-
Total	1,509	669	402	294	191	229	219	1,492	4,867	3,697	2,924	2,096
Mean	48.7	22.3	13.0	9.48	6.82	7.39	7.30	48.1	162	119	94.3	69.9
Ac-ft	2,990	1,330	797	583	379	454	434	2,960	9,650	7,330	5,800	4,160

Calendar year 1948: Max 150 Min 8 Mean 40.9 Ac-ft 29,720
Water year 1948-49: Max 572 Min - Mean 50.9 Ac-ft 36,870

Peak discharge (base, 150 cfs).--May 28 (10:30 p.m.) 157 cfs; June 10 (time unknown) 182 cfs; June 21 (2 p.m.) 891 cfs; July 8 (4 a.m.) 183 cfs; Aug. 8 (3 p.m.) 219 cfs.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5-8, Dec. 1 to Apr. 25 (no gage-height record for most of period; discharge estimated on basis of discharge measurements, weather records, and records for stations, Ship Creek near Anchorage and Susitna River near Palmer). No gage-height record Nov. 12-30, June 4-16, and Aug. 28 to Sept. 30; discharge estimated as explained above.

South Fork Campbell Creek near Anchorage--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	38	26				9	10	42		52	26
2	75	47	26			(*)	8	11	44		46	25
3	72	36	27				8	11	44		*48	24
4	70	34	26				8	11	54		82	24
5	69	33	25				8	10	70	72	70	24
6	67	34	24				8	10	83		53	23
7	66	32	23				8	11	95		45	30
8	65	30	22		9	10	8	*11	92		39	30
9	64	28	*22				8	14	110		37	26
10	62	26	24				8	15	73		34	26
11	58	26	28				9	16	83		33	40
12	*58	27	26				9	15	72		32	62
13	53	29	24				*9	14	53		31	56
14	49	29	23				9	15	44		30	42
15	46	*29					10	18	97	54	30	32
16	47	28		13			10	24	110		30	27
17	46	27					9	29	120		*31	30
18	48	27					9	30	130		30	26
19	50	31					11	26	140		28	28
20	48	35					10	24	130		28	*29
21	43	36					10	22	110		29	33
22	42	34			8	(*)	9	24	90		29	35
23	43	33	16			9	9	25	*83		30	33
24	46	31					9	24	80	43	30	29
25	50	28					*10	24	82		30	28
26	56	26					10	27	84		*31	28
27	44	25		(*)			10	34	86		28	30
28	36	24					9	34	86	*40	27	29
29	39	24			-		9	36	86	52	26	27
30	38	25			-		8	46	94	59	26	26
31	36	-			-		-	47	-	55	26	-
Total	1,664	912	618	403	239	294	269	668	2,567	1,767	1,121	928
Mean	53.7	30.4	19.9	13.0	8.54	9.48	8.97	21.5	85.6	57.0	36.2	30.9
Ac-ft	3,300	1,810	1,230	799	474	583	534	1,320	5,090	3,500	2,220	1,840

Calendar year 1949: Max 572 Min - Mean 52.6 Ac-ft 38,090
Water year 1949-50: Max 140 Min - Mean 31.4 Ac-ft 22,700

Peak discharge (base, 150 cfs).--No peak above the base. * Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 15 to Apr. 12 (no gage-height record during most of period; discharge estimated on the basis of discharge measurements, weather records, and records for Ship Creek near Anchorage). No gage-height record Oct. 1-11, 22, Nov. 5-14, Apr. 23, 28, 29, June 16-22, and June 24 to July 27; discharge estimated as explained above.

75. Ship Creek near Anchorage

Location.--Lat 61°13'35", long. 149°38'05", in SE¼ sec. 9, T. 13 N., R. 2 W., on left bank in Fort Richardson water supply intake building, 20 ft upstream from diversion dam, 3 miles upstream from North Fork Ship Creek, and 8½ miles east of Anchorage.

Drainage area.--91.2 sq mi.

Supplemental records available.--Records of specific conductance of daily samples available in district office, Quality of Water Branch, at Palmer.

Gage.--Water-stage recorder and earth filled timber dam. Datum of gage is 487.87 ft above mean sea level. Prior to May 1, 1947, staff gage at same site and datum.

Extremes.--Maximum and minimum discharges for water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947	May 31, 1947	780	1.95	Apr. 1, 1947	a24	-
1948	June 14, 1948	662	1.75	Apr. 23, 1948	b6.2	0.03
1949	June 21, 1949	1,860	3.44	Feb. 20, 1949	a20	-
1950	June 18, 1950	857	2.01	Feb. 17, 18, 1950	a24	-

a Daily.
b Result of ice jam above gage.

1946-50: Maximum discharge, 1,860 cfs June 21, 1949 (gage height, 3.44 ft); minimum, 6.2 cfs Apr. 23, 1948 (gage height, 0.03 ft), result of ice jam above gage.
Maximum dissolved solids during period April 1949 to September 1950, 94 ppm Mar. 1-10; minimum, 58 ppm May 21-31, 1949.
Maximum hardness during period April 1949 to September 1950, 69 ppm Apr. 26-30, May 1-10, 1949, Apr. 11-20, 1950; minimum, 41 ppm May 21-31, 1949.
Maximum water temperature during period May 1949 to September 1950, 55°F Aug. 14, 15, 1950; minimum, freezing point on many days in winter months.

Remarks.--Records of discharge good prior to June 21, 1949, fair thereafter except those for periods of ice effect or no gage-height record, which are poor. Occasional regulation by dam at gage. Discharge data represent net flow after small diversion for water supply of Fort Richardson. Average annual diversion are as follows: 1947, 4.6 cfs; 1948, 4.5 cfs; 1949, 4.7 cfs, and 1950, 4.8 cfs. Discharge measurement made at this site Sept. 30, 1946, 94.4 cfs.

Cooperation.--Gage inspected and records of diversion furnished by Office of Post Engineers, Fort Richardson.

Ship Creek near Anchorage--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a94	72	55	42	30	53	24	51	656	270	284	197
2	a94	72	55	42	30	53	28	*49	550	275	302	197
3	a94	83	55	40	30	53	32	42	501	266	261	200
4	a94	94	50	40	30	42	33	40	452	270	227	195
5	a100	94	50	42	30	42	33	46	384	288	207	187
6	a100	94	50	42	30	42	35	51	350	288	191	187
7	a100	94	50	42	33	42	33	51	350	288	180	195
8	a100	94	50	42	33	42	33	55	369	275	176	199
9	a110	83	50	42	33	42	33	67	400	266	187	203
10	a110	83	50	42	33	42	37	72	490	236	176	199
11	124	94	45	42	33	42	38	74	484	227	*165	199
12	140	83	45	42	33	42	38	80	426	227	158	199
13	124	72	45	42	33	42	38	82	384	227	158	227
14	109	70	45	42	33	42	35	82	345	223	148	211
15	109	65	45	40	37	42	33	82	330	215	148	203
16	109	65	50	37	42	42	35	*87	316	*211	148	207
17	94	60	50	35	42	42	37	90	316	215	135	312
18	94	55	55	35	42	42	38	99	321	211	132	567
19	94	55	55	35	42	42	38	104	311	207	158	490
20	94	55	50	35	42	42	38	102	307	203	162	426
21	94	60	50	35	42	42	38	93	298	199	156	410
22	94	60	50	35	42	42	46	102	279	195	153	364
23	94	60	50	33	42	42	53	135	261	191	166	350
24	83	60	55	33	42	42	53	155	240	183	222	567
25	83	55	50	33	42	42	53	169	227	180	197	673
26	72	55	50	33	53	42	53	240	240	191	187	589
27	72	53	45	33	64	42	53	330	266	195	180	534
28	72	50	45	33	64	38	60	484	293	180	176	496
29	72	50	42	33	-	33	64	639	284	176	170	479
30	72	50	42	33	-	35	57	644	261	195	163	457
31	72	-	42	33	-	33	-	656	-	261	187	-
Total	2,967	2,090	1,521	1,168	1,082	1,306	1,219	5,053	10,691	7,034	5,660	9,919
Mean	95.7	69.7	49.1	37.7	38.6	42.1	40.6	163	356	227	183	331
Ac-ft	5,880	4,150	3,020	2,320	2,150	2,590	2,420	10,020	21,210	13,950	11,230	19,670

Calendar year 1946: Max - Min - Mean - Ac-ft -
Water year 1946-47: Max 673 Min 24 Mean 136 Ac-ft 98,610

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.
Note.--Stage-discharge relation affected by ice Nov. 16 to Feb. 15.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	468	*132	158	77	78	37	32	49	330	321	203	200
2	452	129	148	72	60	40	30	53	335	400	195	190
3	431	132	148	74	51	38	28	55	340	405	191	182
4	431	125	148	69	57	38	28	55	345	369	191	176
5	415	116	148	67	60	38	28	57	340	364	195	168
6	379	125	141	72	55	37	26	62	345	426	207	168
7	354	129	119	69	32	37	28	62	350	405	199	*176
8	340	129	125	67	30	37	30	69	350	384	195	165
9	326	132	129	64	35	35	32	80	369	374	187	182
10	307	125	125	62	38	35	32	90	390	354	176	176
11	298	122	122	64	46	35	33	99	410	321	169	168
12	293	122	110	77	42	33	33	113	442	293	165	165
13	279	113	104	82	37	33	35	132	523	288	187	158
14	266	102	113	80	37	33	37	169	600	284	302	155
15	257	82	110	87	35	33	*38	207	633	288	384	148
16	240	96	87	85	33	35	35	257	606	288	463	278
17	227	99	72	96	32	35	32	279	616	279	457	375
18	219	96	57	104	30	32	30	279	656	279	415	375
19	211	90	74	85	30	30	33	253	*622	270	*379	360
20	195	116	96	77	32	32	35	227	567	248	350	330
21	199	155	104	72	33	a30	32	227	484	231	321	298
22	203	227	93	67	35	a28	30	227	436	215	340	280
23	203	183	87	64	44	28	28	215	379	227	374	276
24	195	183	87	57	44	30	28	219	354	227	316	280
25	191	165	74	60	42	30	32	261	359	211	290	262
26	183	165	90	62	40	33	30	345	340	240	272	240
27	180	257	90	69	*38	40	*32	415	321	248	254	228
28	173	195	87	64	38	32	33	379	298	227	236	220
29	165	176	85	62	37	30	38	345	288	215	224	216
30	132	155	87	72	-	30	42	330	293	211	236	220
31	129	-	85	82	-	32	-	330	-	211	212	-
Total	8,341	4,173	3,303	2,261	1,201	1,046	960	5,940	12,721	9,103	8,285	6,815
Mean	269	139	107	72.9	41.4	33.7	32.0	192	424	294	267	227
Ac-ft	16,540	8,280	6,550	4,480	2,380	2,070	1,900	11,780	25,230	18,060	16,430	13,520

Calendar year 1947: Max 673 Min 24 Mean 162 Ac-ft 116,900
Water year 1947-48: Max 656 Min 26 Mean 175 Ac-ft 127,200

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.
Note.--Stage-discharge relation affected by ice Nov. 14-18, Dec. 12-21, Jan. 3-12, 24, 25, Jan. 29 to Feb. 10, Feb. 14-22, Mar. 23-27, Apr. 16-25.

Ship Creek near Anchorage--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	232	129	65	45	35	30	25	32	518	502	370	272
2	228	126	60	47	33	32	25	32	508	540	355	272
3	220	*126	54	47	32	32	23	32	486	540	345	262
4	204	118	56	45	36	30	21	31	455	596	330	285
5	196	96	60	43	35	32	24	32	470	669	335	267
6	193	83	54	38	33	33	25	32	530	699	405	321
7	186	120	54	38	30	33	23	32	546	699	395	335
8	232	118	63	42	26	32	*21	32	530	663	535	312
9	236	109	71	43	26	30	23	35	552	618	491	290
10	216	148	63	45	30	30	24	43	579	601	450	276
11	208	155	56	45	32	29	28	46	557	590	445	267
12	200	126	54	43	33	26	29	46	491	552	440	254
13	190	90	63	42	32	25	32	54	440	518	415	244
14	186	69	73	43	30	24	32	71	405	480	390	267
15	179	60	71	43	32	23	32	78	410	455	360	272
16	200	50	73	43	32	23	31	80	440	455	345	244
17	208	54	76	38	25	24	32	80	445	445	335	232
18	193	48	71	35	21	23	32	106	562	440	316	224
19	186	50	69	40	21	23	34	135	596	435	308	216
20	172	60	63	40	20	24	35	*162	729	*400	294	212
21	168	54	60	38	21	24	37	193	1,340	375	312	224
22	168	48	60	38	23	24	37	232	982	360	345	212
23	162	54	52	38	24	*25	34	317	892	375	326	200
24	158	54	52	40	25	24	35	365	807	360	312	192
25	152	52	54	36	26	23	35	*380	717	345	298	222
26	145	47	52	35	29	23	35	435	634	345	285	230
27	148	45	50	36	30	24	34	491	601	345	294	346
28	148	47	47	38	*30	23	32	574	618	345	294	333
29	142	56	45	36	-	24	32	596	601	345	298	312
30	135	65	43	38	-	25	32	530	*540	355	303	292
31	129	-	43	38	-	25	-	518	-	380	*298	-
Total	5,720	2,457	1,827	1,256	802	822	894	5,822	17,981	14,827	11,024	7,887
Mean	185	81.9	58.9	40.5	28.6	26.5	29.8	188	599	478	356	263
Ac-ft	11,350	4,870	3,620	2,490	1,590	1,630	1,770	11,550	35,660	29,410	21,870	15,640

Calendar year 1948: Max 656 Min 26 Mean 159 Ac-ft 115,700
Water year 1948-49: Max 1,340 Min 20 Mean 195 Ac-ft 141,400

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 13 to Apr. 12.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	109	83	45	39	32	28	37	152	420	173	93
2	268	115	83	50	41	37	28	39	152	364	170	90
3	256	103	86	54	43	37	27	39	159	342	197	88
4	260	98	83	50	41	39	27	39	256	329	219	88
5	260	96	80	48	35	39	28	39	355	329	197	86
6	237	103	74	45	32	37	29	37	382	368	197	86
7	237	98	71	43	31	*37	29	40	506	368	183	96
8	234	86	71	45	29	35	28	*46	480	342	173	93
9	230	78	*60	43	29	32	28	52	506	355	170	90
10	219	90	76	43	28	32	29	50	401	355	163	88
11	197	96	90	43	27	31	31	48	391	342	156	98
12	194	100	83	45	29	30	29	46	342	312	156	145
13	*183	110	78	48	31	33	*29	46	333	292	156	132
14	168	100	74	45	29	32	29	47	317	268	156	118
15	155	*103	67	46	28	31	29	52	425	256	*163	112
16	139	98	65	48	26	31	29	63	654	245	146	103
17	152	93	58	52	24	31	31	80	684	234	126	103
18	148	96	60	50	24	31	31	71	772	245	123	100
19	139	110	63	48	26	29	32	63	772	230	118	109
20	139	120	65	46	28	29	32	60	726	219	118	109
21	126	130	52	45	29	31	32	60	594	212	120	*141
22	110	120	46	45	32	31	31	63	475	208	126	153
23	110	120	45	46	31	29	31	65	470	215	126	143
24	120	100	43	45	28	29	35	63	410	219	126	121
25	130	90	43	43	26	29	37	60	382	197	120	109
26	152	83	42	*41	28	29	*35	78	342	183	126	100
27	132	80	42	41	28	31	34	90	333	183	112	97
28	118	86	42	41	31	31	31	98	*360	*183	109	97
29	112	83	41	41	-	28	29	115	415	180	103	92
30	115	80	41	39	-	32	34	155	512	183	100	85
31	106	-	41	39	-	31	-	155	-	180	98	-
Total	5,426	2,974	1,948	1,403	853	996	912	1,996	13,058	8,358	4,526	3,165
Mean	175	99.1	62.8	45.3	30.5	32.1	30.4	64.4	435	270	146	106
Ac-ft	10,760	5,900	3,860	2,780	1,690	1,980	1,810	3,960	25,900	16,580	8,980	6,280

Calendar year 1949: Max 1,340 Min 20 Mean 196 Ac-ft 142,100
Water year 1949-50: Max 772 Min 24 Mean 125 Ac-ft 90,480

* Discharge measurement made on this day.
Note.--No gage-height record, Oct. 22-25; Nov. 9 to Mar. 1, except for Dec. 9-11, 28, Jan. 26 (stage-discharge relation affected by ice most of period) and May 5-15; discharge estimated on basis of discharge measurements, weather records, and records for nearby streams.

Ship Creek near Anchorage

Chemical analyses, in parts per million, April 1949 to September 1950

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
April to September 1949 [a]																		
April 26-30, 1949	33	9.6	--	21	4.0	2.8		68	16	1.2	--	1.2	89	69	13	146	6.9	
May 1-10	33.3	--	0.07	21	4.1	3.0	1.6	68	14	1.0	0.1	.4	92	69	14	145	6.9	
May 11-20	85.8	5.2	.13	15	3.4	2.9	1.3	52	9.1	.5	.2	1.8	80	51	9	112	7.1	
May 21-31	463	6.5	.08	12	2.6	1.9	.8	38	8.2	.2	.2	1.5	58	41	10	85	7.1	
June 1-10	517	6.3	.06	13	2.4	2.1	.8	39	11	.1	.2	.9	59	42	10	92	6.9	
June 11-20	508	6.2	.05	14	2.7	1.9	.8	41	13	.1	.1	.6	62	46	12	97	7.2	
June 21-30	773	6.5	.08	14	2.6	1.5	.6	40	13	.1	.1	.6	64	46	13	95	7.3	
July 1-10	613	6.0	.04	15	2.6	1.6	.6	42	15	.2	.1	.4	63	48	14	102	7.3	
July 11-20	477	6.0	.03	16	2.7	1.3	.8	43	16	.2	.1	.3	64	51	16	108	7.0	
July 21-31	357	6.9	.04	16	2.5	1.8	.5	48	17	.4	.1	.3	68	50	11	114	7.1	
Aug. 1-10	401	6.0	.04	16	2.3	1.8	.6	45	17	.4	.1	.3	68	49	12	111	7.1	
Aug. 11-20	365	6.6	.03	17	2.4	1.9	.6	47	18	.5	.1	.3	70	52	14	117	7.1	
Aug. 21-31	306	6.7	.03	17	2.6	1.8	.6	49	18	.4	.1	.3	70	53	13	120	7.2	
Sept. 1-10	289	5.7	.04	16	2.5	1.9	.6	46	17	.6	.1	.2	70	50	12	115	7.2	
Sept. 11-20	243	6.2	.03	17	2.7	1.9	.8	50	18	.5	.1	.2	76	54	13	120	7.2	
Sept. 21-30	256	7.2	.03	17	2.8	2.0	.6	51	17	.3	.1	.3	74	54	12	119	7.2	
October 1949 to September 1950																		
Oct. 1-10, 1949	248	7.1	0.03	17	2.6	2.1	0.6	51	18	0.4	0.1	0.4	76	54	12	121	7.1	--
Oct. 11-20	161	7.8	.03	18	3.0	2.2	.6	54	18	.4	.1	.5	77	57	13	126	7.3	--
Oct. 21-31	121	9.2	.02	19	3.0	2.2	.8	54	17	.5	.1	.6	84	60	16	128	7.4	--
Nov. 1-10	97.6	9.4	.03	19	3.1	2.0	.6	54	17	.7	.1	.7	86	60	16	128	7.3	--
Nov. 11-20	103	8.3	.04	19	3.1	2.3	1.3	55	17	1.2	.1	1.0	84	60	15	131	7.5	--
Nov. 21-30	97.2	8.6	.04	18	3.1	1.9	1.0	54	16	.5	.1	.8	82	58	13	126	7.6	--

a Represents 81 percent of runoff for water year October 1948 to September 1949.

Ship Creek near Anchorage--Continued

Chemical analyses, in parts per million, April 1949 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
						October 1949 to September 1950--Continued												
Dec. 1-10, 1949	76.7	9.3	0.03	19	3.5	2.1	0.8	56	17	0.8	0.1	0.8	85	62	16	130	7.5	--
Dec. 11-20	70.3	9.4	.04	19	3.4	2.0	.6	56	17	.7	.1	.7	84	61	16	129	7.5	--
Dec. 21-31	43.5	8.0	.02	20	3.3	2.1	.6	58	17	.9	.1	.8	83	63	16	134	7.5	--
Jan. 1-10, 1950	46.6	9.8	.01	20	3.2	2.2		61	15	.5	.1	1.5	83	63	13	136	7.8	--
Jan. 11-20	47.1	10	.01	20	3.8	1.0		61	15	.6	.1	1.1	86	66	16	136	7.1	--
Jan. 21-31	42.4	10	.01	20	3.8	1.0		61	15	.6	.1	1.1	87	66	16	138	7.2	--
Feb. 1-10	34.8	10	.01	20	3.7	3.0		66	15	.6	.1	1.0	87	65	11	138	7.3	--
Feb. 11-19	27.1	10	.01	21	3.8	.6		63	15	.8	.1	1.0	87	68	16	140	7.4	--
Feb. 20-28	29.0	11	.01	21	3.5	3.1		68	15	.8	.1	1.0	90	67	11	140	7.4	--
Mar. 1-10	35.7	11	.01	20	3.6	3.9		66	15	.9	.1	.9	94	65	11	141	7.8	--
Mar. 11-20	30.8	11	.01	20	3.4	4.0		68	14	1.0	.1	1.0	90	64	8	143	7.8	--
Mar. 21-31	30.1	12	.02	20	3.4	4.3		67	16	.5	.1	.9	90	64	9	145	7.8	--
Apr. 1-10	28.1	12	.03	21	3.9	2.4		68	16	.4	.1	.7	91	68	13	146	7.8	--
Apr. 11-20	30.2	10	.08	20	4.6	1.7		67	15	.9	.1	.5	93	69	14	143	7.8	--
Apr. 21-30	32.9	12	.02	20	4.2	1.4		66	14	.6	.1	.5	84	67	13	137	7.4	6
May 1-10	41.8	10	.01	18	3.5	2.3		61	12	.5	.1	1.0	81	59	9	125	7.6	8
May 11-20	57.6	11	.01	17	3.1	2.4		58	12	.6	.1	.7	80	55	8	122	7.6	8
May 21-30	91.1	9.8	.01	17	2.7	3.2		57	12	.4	.1	.6	75	54	7	117	7.8	6
June 1-10	355	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
June 11-20	542	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
June 21-30	429	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
July 1-10	357	7.6	.02	17	2.6	1.4		47	16	.4	.1	.2	67	53	15	108	7.3	5
July 11-20	264	8.1	.03	17	3.1	1.6		50	16	.4	.1	.2	72	55	14	114	7.4	5
July 21-31	195	7.5	.03	17	3.1	2.8		52	17	.4	.1	.2	73	55	13	118	7.4	5
Aug. 1-10	184	6.7	.02	18	2.5	3.0		53	16	.8	.1	.2	72	55	12	118	7.5	5
Aug. 11-20	142	7.5	.03	18	2.8	2.5	1.1	56	16	.5	.1	.3	78	56	10	125	7.4	5
Aug. 21-31	115	7.3	.01	18	3.6	2.3		56	17	.5	.1	.3	76	60	14	124	7.3	5
Sept. 1-10	89.8	8.0	.01	19	3.3	2.3	.7	57	17	.5	.1	.4	79	61	14	128	7.3	5
Sept. 11-20	113	7.1	.01	19	3.1	.9		54	16	.4	.1	.4	74	60	16	121	7.5	5
Sept. 21-30	114	8.7	.03	18	3.2	2.9		54	18	.6	.1	.4	76	58	14	124	7.6	5
Average [b]	125	9.2	0.02	19	3.3	2.4		58	16	0.6	0.1	0.7	82	61	13	130	--	--

b Averages shown include only water year October 1949 to September 1950.

Ship Creek near Anchorage--Continued

Temperature (°F) of water, May to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								--	42	43	46	46
2								--	41	47	47	--
3								--	40	46	50	48
4								--	43	50	47	48
5								--	42	50	47	46
6								--	43	50	48	46
7								--	40	47	48	46
8								--	42	48	45	--
9								--	46	50	46	45
10								--	44	46	48	46
11								--	40	45	46	43
12								--	42	45	45	45
13								--	41	45	48	45
14								--	44	--	48	46
15								--	--	47	48	45
16								--	43	48	48	45
17								--	42	50	48	44
18								--	46	48	45	--
19								--	--	48	48	--
20								--	42	48	48	44
21								--	41	45	45	42
22								--	40	45	45	42
23								--	43	48	48	42
24								--	45	46	48	44
25								44	42	48	47	44
26								42	44	46	45	43
27								40	45	45	48	42
28								40	--	45	--	42
29								38	--	46	50	42
30								41	45	46	49	41
31								39	--	46	48	--
Average								--	43	47	47	44

Temperature (°F) of water, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	35	32	32	32	34	32	36		40	52	42
2	40	36	32	32	32	--	32	36		48	52	47
3	40	34	32	32	32	34	32	36		46	48	43
4	40	34	32	32	32	34	32	38		52	49	45
5	40	35	32	32	32	34	32	36		52	51	44
6	37	35	32	32	32	34	32	36		47	53	45
7	37	36	32	32	32	34	--	--		48	51	44
8	39	35	32	32	32	34	32	40		54	51	--
9	39	32	32	32	32	32	32	40		54	46	46
10	39	32	32	32	32	34	32	38		52	--	44
11	32	32	32	32	32	34	32	38		54	--	44
12	34	--	32	32	32	34	32	37		50	52	44
13	35	--	32	--	32	34	35	40		--	53	45
14	35	--	32	32	32	34	34	38		50	55	46
15	32	32	32	32	32	34	35	40		48	55	43
16	32	32	32	32	32	33	35	41		48	48	--
17	34	33	32	32	32	33	35	42		54	53	--
18	36	32	32	32	32	32	35	36		50	50	--
19	40	35	32	--	32	32	35	38		49	51	--
20	36	33	32	32	32	32	38	38		48	49	--
21	35	35	32	32	32	32	--	44		49	52	44
22	32	36	32	32	32	32	35	37		50	48	43
23	32	35	32	32	32	35	35	38		49	50	44
24	35	34	32	32	32	34	35	38		50	49	44
25	36	33	32	32	32	32	36	38		--	--	44
26	37	32	32	32	32	32	36	38		--	45	43
27	35	32	32	32	32	32	36	45		--	45	44
28	36	32	32	32	32	32	35	43		--	47	44
29	--	32	32	32	--	32	36	39		48	46	43
30	36	32	32	32	--	32	36	47		45	44	--
31	35	--	--	--	--	33	--	--		45	42	--
Average	36	33	32	32	32	33	34	39		49	50	44

76. Eklutna Lake near Palmer

Location.--Lat 61°24'05", long. 149°09'00", 100 ft upstream from dam at outlet of Eklutna Lake, 8 miles upstream from Eklutna power diversion dam, 11 miles upstream from mouth of Eklutna Creek, and 14 miles south of Palmer.

Drainage area.--119 sq mi.

Gage.--Staff gage read twice daily. Datum of gage is 859.8 ft above mean sea level (Corps of Engineers, U. S. Army, benchmark). Prior to May 5, 1947, reference point at same site and datum.

Extremes.--Maximum and minimum gage heights for the period 1946-50 are contained in the following table:

Water year	Maximum observed		Minimum observed	
	Date	Gage height (feet)	Date	Gage height (feet)
1947a	Sept.25, 1947	9.60	May 8-20, 22-26, 1947	0.6
1948	Oct. 1, 1947	9.48	May 25, 1948	1.22
1949	Sept. 6, 1949	9.46	May 8-10, 12, 1949	.72
1950	Oct. 1, 1949	9.28	May 25, 26, 1950	.76

a Period November 1946 to September 1947.

1946-50: Maximum gage height, 9.60 ft Sept. 25, 1947; minimum, 0.6 ft May 8-20, 22-26, 1947.

Remarks.--Outflow from lake controlled by stop logs and sluice gates in dam at outlet. Stored water released during winter period for power purposes. Gates fully open during flood season each year.

Gage height, in feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		7.55	6.45	4.6	3.4	2.55	1.6	0.9	1.75	2.4	5.35	6.34
2		7.65	6.4	4.6	3.35	2.5	1.6	.8	1.9	2.45	5.15	6.61
3		7.7	6.3	4.6	3.35	2.5	1.6	.8	2.05	2.6	4.75	6.70
4		7.6	6.2	4.5	3.35	2.5	1.5	.8	2.1	2.75	4.4	6.74
5		7.6	6.25	4.45	3.35	2.45	1.45	.7	2.2	2.9	4.2	6.85
6		7.6	6.15	4.4	3.3	2.4	1.45	.7	2.2	3.1	3.95	6.90
7		7.6	6.1	4.35	3.25	2.4	1.4	.7	2.15	3.25	3.9	6.94
8		7.6	6.0	4.35	3.2	2.35	1.4	.65	2.1	3.4	3.84	6.95
9		7.55	5.9	4.35	3.1	2.3	1.35	.6	2.2	3.4	3.94	6.95
10		7.5	5.9	4.25	3.1	2.2	1.3	.6	2.25	3.5	3.97	6.96
11		7.55	5.85	4.15	3.05	2.2	1.25	.6	2.4	3.55	3.99	6.96
12		7.55	5.85	4.1	3.05	2.15	1.25	.6	2.4	3.65	4.03	6.93
13		7.45	5.75	4.1	3.05	2.1	1.15	.6	2.4	3.7	4.03	6.92
14		7.4	5.65	4.1	3.05	2.1	1.1	.6	2.4	3.8	3.97	6.96
15		7.35	5.6	4.1	3.05	2.1	1.1	.6	2.4	3.95	3.91	7.00
16		7.25	5.5	4.1	2.95	2.1	1.1	.6	2.4	4.05	3.89	7.02
17		7.15	5.5	4.1	2.9	2.05	1.1	.6	2.45	4.1	3.96	7.15
18		7.25	5.4	4.05	2.85	2.1	1.0	.6	2.5	4.25	3.98	7.68
19		7.2	5.35	4.0	2.75	2.1	1.0	.6	2.5	4.35	4.09	8.12
20		7.1	5.25	3.95	2.7	2.1	.95	.6	2.5	4.5	4.26	8.37
21		7.0	5.15	3.9	2.75	1.95	.95	.7	2.5	4.55	4.53	8.56
22		6.9	5.1	3.85	2.7	1.95	.9	.65	2.5	4.7	4.65	8.69
23		6.85	5.1	3.9	2.7	1.9	.9	.65	2.4	4.8	4.74	8.80
24		6.85	5.1	3.85	2.7	1.9	.9	.6	2.3	4.8	5.00	9.15
25		6.75	5.0	3.75	2.7	1.9	.9	.6	2.25	4.95	5.11	9.60
26		6.7	5.0	3.65	2.6	1.9	.9	.65	2.2	5.05	5.26	9.53
27		6.65	4.9	3.65	2.6	1.85	.9	.8	2.2	5.1	5.42	9.39
28		6.6	4.85	3.65	2.6	1.8	.9	1.0	2.3	5.1	5.58	9.32
29		6.55	4.8	3.6	-	1.85	.9	1.1	2.4	5.2	5.78	9.40
30		6.55	4.75	3.5	-	1.75	.9	1.35	2.4	5.3	5.86	9.50
31		-	4.65	3.5	-	1.7	-	1.55	-	5.35	6.07	-

Eklutna Lake near Palmer--Continued

Gage height, in feet, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.48	8.92	9.01	8.08	7.00	5.14	3.31	1.63	1.52	2.95	3.58	5.08
2	9.38	8.88	9.00	8.06	6.96	5.07	3.25	1.59	1.52	3.01	3.56	5.15
3	9.25	8.84	9.00	8.03	6.92	5.01	3.21	1.55	1.54	3.08	3.52	5.25
4	9.07	8.85	8.94	8.00	6.90	4.94	3.17	1.51	1.55	3.14	3.53	5.35
5	8.97	8.81	8.94	7.95	6.85	4.87	3.11	1.47	1.56	3.21	3.56	5.41
6	8.95	8.80	8.91	7.84	6.79	4.81	3.05	1.43	1.62	3.37	3.56	5.50
7	8.95	8.81	8.87	7.81	6.75	4.76	2.99	1.40	1.62	3.53	3.50	5.66
8	8.98	8.80	8.84	7.77	6.64	4.71	2.93	1.38	1.65	3.69	3.38	5.86
9	9.00	8.79	8.84	7.73	6.54	4.65	2.88	1.35	1.67	3.80	3.30	6.02
10	8.99	8.77	8.77	7.69	6.50	4.61	2.85	1.31	1.75	3.89	3.22	6.16
11	9.00	8.73	8.75	7.62	6.44	4.57	2.79	1.29	1.80	3.82	3.17	6.30
12	8.98	8.72	8.72	7.58	6.39	4.55	2.73	1.27	1.90	3.80	3.17	6.42
13	8.97	8.72	8.69	7.56	6.32	4.53	2.67	1.24	2.03	3.79	3.21	6.55
14	8.95	8.71	8.68	7.54	6.25	4.45	2.63	1.24	2.26	3.78	3.50	6.66
15	8.93	8.69	8.67	7.53	6.16	4.37	2.57	1.24	2.49	3.85	3.94	6.74
16	8.92	8.64	8.66	7.47	6.09	4.31	2.51	1.27	2.67	3.95	4.49	6.82
17	8.91	8.63	8.60	7.46	6.02	4.25	2.45	1.31	2.83	4.02	4.81	7.23
18	8.90	8.60	8.58	7.43	5.95	4.19	2.39	1.34	3.00	4.10	4.98	7.44
19	8.88	8.56	8.55	7.40	5.87	4.13	2.33	1.34	3.21	4.14	4.90	7.55
20	8.89	8.52	8.49	7.38	5.80	4.07	2.27	1.31	3.37	4.09	4.71	7.59
21	8.86	8.51	8.42	7.34	5.73	4.02	2.21	1.30	3.42	3.98	4.49	7.62
22	8.83	8.58	8.41	7.32	5.67	3.95	2.15	1.28	3.42	3.90	4.41	7.64
23	8.89	8.82	8.36	7.28	5.60	3.86	2.10	1.25	3.37	3.94	4.55	7.64
24	8.97	8.85	8.32	7.26	5.52	3.79	2.02	1.24	3.34	3.97	4.56	7.64
25	9.02	8.87	8.31	7.26	5.45	3.73	1.96	1.23	3.32	3.95	4.58	7.67
26	9.00	8.88	8.28	7.19	5.39	3.67	1.89	1.28	3.30	4.00	4.66	7.67
27	9.00	9.00	8.22	7.16	5.33	3.59	1.85	1.35	3.23	3.99	4.70	7.68
28	8.98	9.00	8.18	7.13	5.27	3.53	1.81	1.44	3.11	3.89	4.71	7.69
29	8.96	9.02	8.14	7.07	5.21	3.47	1.76	1.51	3.02	3.76	4.85	7.70
30	8.95	9.04	8.11	7.04	-	3.43	1.69	1.50	2.95	3.62	4.91	7.75
31	8.93	-	8.08	7.03	-	3.37	-	1.51	-	3.56	5.01	-

Gage height, in feet, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.80	7.97	7.03	5.55	4.25	2.98	2.08	0.95	2.02	4.14	7.56	9.11
2	7.84	7.96	6.99	5.51	4.19	2.91	2.05	.90	2.07	4.14	7.53	9.21
3	7.86	7.96	6.95	5.48	4.15	2.88	2.02	.85	2.16	4.16	7.50	9.33
4	7.86	7.96	6.89	5.47	4.09	2.89	2.00	.82	2.20	4.20	7.50	9.36
5	7.86	7.96	6.85	5.44	4.05	2.87	1.96	.79	2.24	4.36	7.52	9.32
6	7.86	7.96	6.79	5.38	3.99	2.84	1.92	.77	2.28	4.57	7.64	9.43
7	7.87	7.95	6.73	5.32	3.95	2.82	1.93	.76	2.34	4.83	7.76	9.23
8	7.90	7.94	6.69	5.25	3.89	2.77	1.91	.73	2.44	5.03	7.93	8.88
9	7.92	7.92	6.66	5.21	3.86	2.69	1.86	.72	2.50	5.38	8.00	8.55
10	7.96	7.92	6.62	5.17	3.81	2.64	1.84	.72	2.57	5.70	8.00	8.42
11	7.96	7.91	6.57	5.12	3.77	2.60	1.82	.74	2.65	6.05	8.04	8.38
12	7.96	7.90	6.52	5.09	3.73	2.57	1.80	.73	2.67	6.32	8.16	8.36
13	7.99	7.87	6.45	5.05	3.67	2.53	1.78	.74	2.71	6.56	8.20	8.38
14	7.98	7.85	6.40	5.01	3.63	2.49	1.75	.74	2.68	6.69	8.19	8.34
15	7.96	7.82	6.31	4.98	3.59	2.46	1.73	.76	2.67	6.87	8.08	8.35
16	8.04	7.79	6.26	4.95	3.55	2.44	1.69	.78	2.65	7.05	8.04	8.38
17	8.04	7.74	6.22	4.91	3.51	2.42	1.65	.82	2.70	7.22	7.86	8.40
18	8.03	7.67	6.15	4.87	3.47	2.39	1.60	.85	2.78	7.36	7.73	8.40
19	8.06	7.63	6.09	4.83	3.43	2.37	1.55	.87	2.87	7.50	7.66	8.38
20	8.08	7.59	6.05	4.79	3.39	2.34	1.50	.88	3.05	7.60	7.66	8.38
21	8.08	7.55	6.03	4.75	3.33	2.31	1.45	.95	3.32	7.57	7.66	8.43
22	8.08	7.51	5.99	4.71	3.29	2.29	1.40	1.04	3.57	7.58	7.87	8.49
23	8.06	7.46	5.93	4.65	3.25	2.27	1.33	1.14	3.85	7.58	7.95	8.55
24	8.06	7.43	5.89	4.62	3.20	2.26	1.29	1.25	3.96	7.58	7.99	8.65
25	8.06	7.37	5.85	4.59	3.15	2.24	1.25	1.34	4.04	7.55	8.06	8.78
26	8.06	7.31	5.81	4.55	3.11	2.22	1.21	1.42	4.12	7.54	8.07	9.01
27	8.04	7.25	5.77	4.51	3.07	2.21	1.15	1.54	4.15	7.54	8.10	9.32
28	8.04	7.19	5.73	4.47	3.00	2.19	1.09	1.66	4.20	7.49	8.28	9.40
29	8.00	7.15	5.69	4.41	-	2.16	1.05	1.77	4.21	7.44	8.61	9.34
30	7.98	7.09	5.65	4.37	-	2.13	.99	1.86	4.19	7.44	8.86	9.31
31	7.98	-	5.59	4.31	-	2.11	-	1.95	-	7.48	9.04	-

Eklutna Lake near Palmer--Continued

Gage height, in feet, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.28	8.87	8.81	7.75	6.17	4.61	2.87	1.29	0.90	3.68	4.15	7.60
2	9.23	8.88	8.79	7.70	6.11	4.55	2.82	1.24	.95	3.70	4.11	7.31
3	9.2	8.89	8.76	7.66	6.05	4.52	2.75	1.20	.98	3.74	4.17	7.06
4	9.17	8.90	8.76	7.64	5.99	4.47	2.70	1.15	1.01	3.78	4.31	6.81
5	9.15	8.92	8.74	7.59	5.95	4.41	2.64	1.11	1.08	3.84	4.44	6.56
6	9.1	8.92	8.71	7.53	5.92	4.37	2.61	1.06	1.18	4.02	4.53	6.56
7	9.07	8.94	8.68	7.48	5.89	4.31	2.55	1.00	1.33	4.19	4.65	6.56
8	9.07	8.94	8.66	7.41	5.83	4.25	2.50	.95	1.47	4.27	4.70	6.55
9	9.04	8.94	8.64	7.35	5.77	4.19	2.41	.94	1.56	4.43	4.77	6.62
10	9.02	8.92	8.62	7.32	5.70	4.13	2.37	.93	1.69	4.61	4.81	6.65
11	8.98	8.90	8.60	7.29	5.64	4.07	2.31	.85	1.74	4.76	4.85	6.85
12	8.94	8.88	8.59	7.24	5.59	4.01	2.25	.86	1.75	4.87	4.91	6.93
13	8.94	8.86	8.57	7.17	5.53	3.95	2.20	.86	1.78	4.88	5.03	7.02
14	8.93	8.86	8.54	7.13	5.49	3.89	2.15	.84	1.78	4.86	5.18	6.98
15	8.91	8.84	8.52	7.06	5.43	3.83	2.09	.82	1.86	4.85	5.32	6.89
16	8.89	8.87	8.48	6.99	5.37	3.77	2.01	.82	1.98	4.81	5.36	6.85
17	8.88	8.82	8.46	6.94	5.31	3.71	1.99	.82	2.37	4.77	5.36	6.81
18	8.83	8.82	8.42	6.91	5.25	3.65	1.92	.82	2.65	4.78	5.42	6.76
19	8.8	8.82	8.42	6.85	5.19	3.59	1.87	.84	2.93	4.79	6.04	6.67
20	8.76	8.66	8.39	6.81	5.11	3.55	1.84	.84	3.28	4.77	6.71	6.67
21	8.74	8.66	8.35	6.75	5.07	3.49	1.79	.82	3.48	4.68	7.30	6.66
22	8.74	8.84	8.31	6.71	5.00	3.41	1.74	.82	3.48	4.65	8.05	6.66
23	8.72	8.84	8.27	6.65	4.93	3.37	1.70	.80	3.45	4.72	8.59	6.66
24	8.72	8.90	8.22	6.59	4.87	3.31	1.65	.79	3.42	4.84	8.78	6.68
25	8.72	8.90	8.18	6.53	4.81	3.25	1.59	.76	3.34	4.82	8.66	6.65
26	8.74	8.90	8.12	6.47	4.75	3.19	1.55	.76	3.21	4.73	8.74	6.56
27	8.79	8.88	8.03	6.43	4.69	3.15	1.51	.78	3.19	4.64	8.83	6.45
28	8.82	8.86	7.97	6.39	4.63	3.09	1.46	.82	3.21	4.52	8.60	6.31
29	8.82	8.86	7.91	6.35	-	3.04	1.39	.82	3.35	4.43	8.41	6.21
30	8.84	8.84	7.85	6.29	-	2.95	1.35	.85	3.59	4.33	8.24	6.08
31	8.84	-	7.81	6.23	-	2.93	-	.87	-	4.26	7.94	-

77. Eklutna Creek near Palmer

Location.--Lat 61°24'05", long. 149°09'00", on right bank 200 ft downstream from dam at outlet of Eklutna Lake, 8 miles upstream from Eklutna power diversion dam, 11 miles upstream from mouth, and 14 miles south of Palmer.

Drainage area.--119 sq mi.

Supplemental records available.--Records of specific conductance of daily samples available in district office, Quality of Water Branch, at Palmer.

Gage.--Water-stage recorder. Datum of gage is 858.49 ft above mean sea level (Corps of Engineers benchmark). Prior to Aug. 31, 1948, staff gage at site 100 ft upstream at same datum.

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table.

Water year	Maximum			Minimum daily	
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
1947	July 31, Aug. 1, 1947	a1,680	5.8	Nov. 3, 5, 6, 1946	3
1948	Aug. 18, 1948	a1,470	5.40	Oct. 23, 1947	98
1949	Sept. 6, 1949	1,810	b5.9	May 7, 1949	50
1950	Aug. 25, 1950	1,420	b5.5	Sept. 24, 1950	74

a Maximum observed.
b At outside gage.

1946-50: Maximum discharge, 1,810 cfs Sept. 6, 1949 (gage height, 5.9 ft at outside gage); minimum daily, 3 cfs, Nov. 3, 5, 6, 1946.

Remarks.--Records of discharge good except those prior to Aug. 1, 1947, and those for periods computed from graph based on twice-daily gage readings and record of gate operation, which are fair. Flow partly regulated.

Eklutna Creek near Palmer--Continued

Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		162	158	134	b84	*90	110	60	312	495	1,650	312
2		158	158	b130	b84	92	110	72	352	510	1,540	325
3		a3	157	b120	b84	92	110	98	*380	555	1,400	333
4		242	158	123	b84	94	110	106	408	590	*1,220	336
5		a3	155	110	b84	89	109	*85	408	625	1,180	336
6		a3	158	107	b84	90	101	76	408	700	1,060	341
7		162	155	104	b88	90	98	76	408	760	1,040	341
8		177	b150	110	89	89	96	76	408	820	986	336
9		169	b150	109	90	86	92	76	437	820	1,030	336
10		158	b150	104	90	85	89	76	466	860	1,000	336
11		166	b140	107	90	84	86	65	495	882	1,030	336
12		166	b140	104	90	90	81	53	495	928	1,040	336
13		158	b130	102	90	89	80	53	495	950	1,030	212
14		158	b130	96	b88	89	81	53	525	995	995	153
15	al75	151	b130	92	82	86	80	*51	495	1,060	995	153
16		148	b130	b90	79	86	80	53	495	1,110	882	153
17		155	b130	b90	82	86	96	53	510	1,130	642	157
18		155	136	b88	94	88	96	53	525	1,180	642	160
19		153	b140	b88	92	89	94	53	525	1,220	*680	153
20		151	b140	b88	94	90	85	53	525	1,270	692	162
21		153	b140	b90	94	89	81	53	525	1,300	740	175
22		155	138	96	94	89	69	48	*525	1,370	772	198
23		158	144	96	85	89	72	43	495	1,420	788	220
24		155	150	b94	85	88	72	43	466	1,420	840	454
25		158	146	b90	80	86	72	43	452	1,500	676	896
26		157	144	b88	*76	85	62	48	437	1,520	590	959
27		158	136	b88	82	96	64	76	437	1,570	597	856
28		162	136	b86	81	95	70	96	466	1,570	540	780
29		158	136	b86	-	96	70	*153	495	1,570	489	864
30		158	136	b86	-	102	70	200	495	1,600	495	923
31		-	136	b86	-	107	-	253	-	1,650	408	-
Total	5,425	4,370	4,437	3,082	2,419	2,796	2,586	2,397	13,865	33,950	27,669	11,632
Mean	175	146	143	99.4	86.4	90.2	86.2	77.3	462	1,095	893	388
Ac-ft	10,760	8,670	8,800	6,110	4,800	5,550	5,130	4,750	27,500	67,340	54,880	23,070

Calendar year 1946: Max - Min - Mean - Ac-ft -
Water year 1946-47: Max 1,650 Min 3 Mean 314 Ac-ft 227,400

* Discharge measurement made on this day.
a No gage-height record; discharge estimated or computed on basis of records of gate operation.
b Stage-discharge relation affected by ice.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	905	143	151	130	123	133	126	117	218	672	896	200
2	820	139	150	130	120	133	123	114	218	696	887	192
3	736	134	214	130	123	131	122	110	223	724	869	168
4	639	128	134	136	126	136	125	109	227	740	874	169
5	483	125	182	136	123	136	125	110	231	768	887	171
6	372	122	126	139	126	133	123	106	244	824	887	173
7	295	122	136	134	158	131	123	110	244	874	860	177
8	269	122	133	136	179	130	125	106	249	936	812	164
9	271	122	133	130	175	126	125	114	255	986	788	154
10	274	122	133	126	175	126	123	109	269	1,020	752	156
11	276	122	133	126	157	125	118	110	276	995	728	153
12	271	122	133	122	*146	122	118	114	295	986	732	145
13	267	122	133	122	146	120	110	114	318	982	752	147
14	240	122	126	130	164	120	109	117	347	990	864	142
15	210	125	133	131	164	120	114	115	400	1,010	1,040	132
16	200	122	133	123	164	120	122	123	*510	1,040	1,280	133
17	194	122	128	100	164	123	122	157	622	1,070	1,400	133
18	194	122	128	101	164	120	118	171	688	1,080	*1,460	137
19	166	122	134	107	160	123	115	171	760	*1,110	1,420	156
20	162	131	130	104	157	123	120	166	828	1,100	1,380	136
21	160	120	130	114	157	114	118	164	852	1,050	1,260	*135
22	128	133	130	120	157	128	115	162	852	1,020	1,220	189
23	98	141	130	123	157	138	120	158	828	1,040	1,130	130
24	102	133	123	123	151	143	126	157	812	1,040	950	164
25	128	123	130	118	143	139	126	155	804	1,040	637	211
26	167	171	126	117	138	138	118	166	796	1,060	516	145
27	158	173	126	114	138	131	114	186	768	1,050	531	153
28	155	158	126	122	138	120	114	202	732	1,020	390	151
29	153	160	130	123	136	118	117	212	696	968	339	144
30	*151	157	130	123	-	125	115	210	672	910	254	*145
31	146	-	130	126	-	126	-	214	-	887	206	-
Total	8,790	3,980	4,214	3,816	4,329	3,951	3,589	4,449	15,234	29,688	27,001	4,705
Mean	284	133	136	123	149	127	120	144	508	958	871	157
Ac-ft	17,430	7,890	8,360	7,570	8,590	7,840	7,120	8,820	30,220	58,890	53,560	9,330

Calendar year 1947: Max 1,650 Min 43 Mean 322 Ac-ft 232,800
Water year 1947-48: Max 1,460 Min 98 Mean 311 Ac-ft 225,600

* Discharge measurement made on this day.

Eklutna Creek near Palmer--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	126	149	147	112	88	65	110	296	558	995	1,150
2	145	123	145	128	117	91	65	101	288	526	995	1,220
3	140	123	145	121	132	90	64	97	302	534	995	1,400
4	140	125	145	115	123	*87	64	88	314	542	995	1,480
5	140	*128	145	110	112	86	65	64	316	570	1,000	1,480
6	140	132	173	125	112	86	66	56	325	598	1,010	1,610
7	140	126	164	132	118	88	68	50	334	630	1,020	1,640
8	142	125	*137	115	126	94	68	55	343	668	1,040	*1,460
9	142	126	130	110	125	103	68	54	353	704	1,060	1,150
10	142	125	130	106	125	100	68	54	374	740	1,060	835
11	135	128	142	106	118	90	66	56	390	776	1,060	704
12	126	125	149	106	109	86	68	55	396	808	1,080	646
13	126	128	135	107	107	86	69	55	403	835	1,080	626
14	126	128	125	107	106	82	69	56	396	845	1,080	542
15	135	132	130	107	109	76	72	60	390	860	1,060	473
16	138	132	125	107	109	72	86	59	359	875	1,040	413
17	132	126	113	*106	107	68	87	57	350	895	1,040	413
18	126	130	115	126	109	64	88	61	368	915	925	413
19	126	130	113	120	115	63	97	70	390	915	785	393
20	128	130	113	107	115	63	109	104	416	915	736	334
21	128	130	113	121	112	59	110	118	459	*920	736	214
22	128	130	113	147	112	57	110	133	498	995	740	181
23	128	130	121	137	112	57	117	145	546	1,040	744	169
24	121	130	138	123	109	57	117	144	574	1,040	744	192
25	125	130	128	120	106	56	117	158	594	1,040	749	179
26	128	130	121	132	100	56	115	*175	602	1,040	736	251
27	125	156	126	140	91	60	117	200	602	1,040	718	487
28	130	153	135	126	88	65	*117	224	610	1,020	754	530
29	126	153	130	113	-	65	115	251	*614	995	895	413
30	128	149	138	115	-	*65	115	270	606	985	1,020	400
31	125	-	160	112	-	65	-	288	-	990	1,110	-
Total	4,106	3,939	4,146	3,694	3,136	2,325	2,622	3,468	12,808	25,814	29,002	21,398
Mean	132	131	134	119	112	75.0	87.4	112	427	833	936	713
Ac-ft	8,140	7,810	8,220	7,330	6,220	4,610	5,200	6,880	25,400	51,200	57,520	42,440

Calendar year 1948: Max 1,460 Min 100 Mean 298 Ac-ft 216,100
Water year 1948-49: Max 1,640 Min 50 Mean 319 Ac-ft 231,000

* Discharge measurement made on this day.
Note.--Gage heights for the periods Nov. 13-16, Nov. 19 to Mar. 20, May 5-11, computed from graph based on twice-daily gage readings and record of gate operation.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	362	120	112	153	125	125	113	125	103	845	*830	870
2	353	140	110	125	123	121	113	128	112	816	835	830
3	308	113	113	120	128	121	112	121	121	785	860	798
4	305	115	113	128	132	123	110	113	128	798	900	772
5	282	118	110	133	132	121	110	107	147	821	945	527
6	260	123	112	164	130	121	109	112	175	875	965	368
7	246	123	112	160	128	120	109	110	219	925	985	365
8	238	117	112	151	128	123	110	103	262	955	1,000	387
9	226	121	137	142	133	126	110	100	279	990	1,040	396
10	214	126	130	142	*135	125	110	92	305	1,060	1,040	400
11	*200	121	109	142	133	125	112	91	334	1,080	1,040	400
12	203	123	104	138	132	121	110	*88	346	1,100	1,060	406
13	188	118	103	130	126	121	106	84	353	1,100	1,080	406
14	181	115	*109	132	121	123	104	82	350	1,100	1,100	406
15	177	*107	153	135	121	121	101	79	365	1,090	1,130	350
16	173	107	133	132	118	118	98	76	433	1,070	1,140	331
17	224	106	121	128	125	120	110	76	516	1,060	1,140	334
18	175	140	113	128	128	118	117	80	622	1,060	595	334
19	174	200	112	128	125	118	113	90	744	1,060	118	337
20	164	118	118	128	121	118	112	88	855	1,040	125	346
21	145	130	147	128	118	*118	109	87	925	1,010	269	346
22	135	115	156	125	118	120	109	87	925	1,000	558	319
23	125	125	156	125	118	118	112	90	905	1,020	933	99
24	128	113	171	125	118	120	110	88	895	1,060	1,210	74
25	125	117	175	125	118	120	112	80	865	1,040	1,310	343
26	132	117	171	126	121	118	112	79	754	1,000	1,080	*350
27	123	115	168	128	123	120	112	82	686	975	1,080	353
28	121	113	168	128	125	120	110	83	704	940	925	350
29	121	112	164	128	-	117	120	86	*754	915	808	356
30	120	113	164	125	-	115	123	90	835	885	816	331
31	117	-	164	125	-	113	-	97	-	860	910	-
Total	6,045	3,641	4,140	4,127	3,503	3,728	3,318	2,894	15,017	30,335	27,827	12,284
Mean	195	121	134	133	125	120	111	93.4	501	979	898	409
Ac-ft	11,990	7,220	8,210	8,190	6,950	7,390	6,580	5,740	29,790	60,170	55,190	24,360

Calendar year 1949: Max 1,640 Min 50 Mean 324 Ac-ft 234,200
Water year 1949-50: Max 1,310 Min 74 Mean 320 Ac-ft 231,800

* Discharge measurement made on this day.
Note.--Gage heights computed from graph based on twice-daily gage readings and record of gate operations Dec. 21 to Mar. 23, Aug. 1 to Sept. 5, and Sept. 22-26.

Eklutna Creek near Palmer

Chemical analyses, in parts per million, April 1949 to September 1950

Date of collection	Mean discharge (cfs)	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
April to September 1949																			
Apr. 22, 25, 29, 1949	111	--	3.0	--	19	3.9	1.2	61	14	0.8	--	0.4	72	64	14	133	7.1	--	
May 2, 6, 9, 13, 16, 20, 23, 27, 30	116	48	2.8	--	19	3.5	1.8	61	13	.9	0.1	.8	72	62	12	130	7.1	--	
June 3, 6, 10, 13, 17, 20	362	44	3.5	--	20	3.5	2.5	63	16	1.1	--	.9	78	64	13	142	7.1	--	
July 1, 4, 8, 11, 15, 18, 22, 25, 29	817	51	3.3	--	20	3.0	2.8	61	16	1.0	--	.7	77	62	12	135	7.2	--	
Aug. 1, 5, 8, 12, 15, 19, 22, 26, 29	926	52	3.8	--	18	3.3	2.8	57	16	.6	--	.9	74	58	12	130	7.1	--	
Sept. 2, 5, 9, 12, 16, 19, 23, 26, 30	680	49	2.9	--	18	3.0	2.8	56	15	.9	--	.6	71	58	12	128	7.0	--	
October 1949 to September 1950																			
Oct. 3, 7, 10, 14, 17, 20, 21, 24, 28, 31, 1949	185	43	2.8	--	18	3.2	1.6	54	15	1.2	--	0.8	69	58	14	125	6.9	--	
Nov. 4, 7, 11, 14, 18, 21, 25, 28	122	40	2.8	--	18	3.1	2.3	54	16	1.0	--	.7	70	58	14	127	7.0	--	
Dec. 2, 5, 9, 12, 16, 19, 23, 26, 30	133	36	3.8	.04	19	2.6	3.3	58	15	.9	0.1	.8	74	58	11	130	7.5	--	
Jan. 3, 6, 9, 13, 16, 20, 23, 27, 30, 1950	133	33	4.1	.04	20	2.9	2.0	59	15	.8	.2	.7	75	62	13	134	7.4	--	
Feb. 3, 7, 10, 13, 17, 21, 24, 27	125	32	5.0	.03	21	3.1	2.0	62	16	.8	.1	.9	79	65	14	138	7.7	--	
Mar. 3, 6, 10, 13, 17, 20, 24, 27, 31	120	35	5.9	.02	20	3.1	3.7	63	17	.5	.1	.7	82	63	11	138	7.7	--	

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Eklutna Creek near Palmer--Continued

Chemical analyses, in parts per million, April 1949 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
October 1949 to September 1950--Continued																			
Apr. 3, 7, 10, 14, 17, 21, 24, 28, 1950	109	37	3.7	0.02	24	3.5	1.4		70	16	1.5	0.2	0.8	86	74	17	134	7.2	5
May 1, 5, 8, 12, 15, 19, 22, 26, 29	93.8	42	3.9	.02	21	3.3	1.1		59	16	1.5	.2	.8	77	66	18	128	7.4	4
June 2, 6, 9, 12, 30	349	46	3.6	.10	19	3.8	1.9		58	17	1.1	.0	.4	76	63	15	139	7.6	5
July 3, 7, 8, 10, 14, 17, 21, 24, 28, 31	976	50	3.4	.10	18	2.8	4.3		58	16	.9	.0	.5	75	56	9	128	7.6	10
Aug. 4, 11, 14, 18, 21, 25, 28	877	56	2.6	.10	16	3.2	3.5		53	15	.9	.0	.4	68	53	10	119	7.5	10
Sept. 1, 4, 8, 11, 15, 18, 22, 25	472	48	3.4	.07	20	2.8	2.1		54	20	.4	.0	.4	76	61	17	124	7.1	5

Eklutna Creek near Palmer--Continued

Temperature (°F) of water, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	--	--	--	--	--	--	--	40	--	--	--	50
2	--	--	38	--	--	--	--	--	42	--	--	--
3	45	--	--	34	32	--	35	--	--	48	--	--
4	--	42	--	--	--	--	--	--	--	--	51	50
5	--	--	38	--	--	--	--	43	--	--	--	--
6	--	--	--	34	--	--	--	--	48	--	--	--
7	44	42	--	--	32	--	35	--	--	47	--	--
8	--	--	--	--	--	--	--	40	--	55	--	50
9	--	--	35	33	--	--	--	--	--	--	--	--
10	44	--	--	--	32	--	35	--	44	47	--	--
11	--	40	--	--	--	--	--	--	--	--	61	48
12	--	--	35	--	--	--	--	42	49	--	--	--
13	--	--	--	33	32	--	--	--	--	--	--	--
14	44	40	--	--	--	--	36	--	--	53	58	--
15	--	--	--	--	--	--	--	42	--	--	--	46
16	--	--	35	33	--	--	--	--	--	--	--	--
17	43	--	--	--	32	--	36	--	--	48	--	--
18	--	39	--	--	--	--	--	--	--	--	56	46
19	--	--	36	--	--	--	--	42	--	--	--	--
20	44	--	--	33	--	--	--	--	--	--	--	--
21	44	42	--	--	--	--	40	--	--	54	57	--
22	--	--	--	--	--	--	--	42	--	--	--	46
23	--	--	35	32	--	--	--	--	--	--	--	--
24	42	--	--	--	--	35	40	--	--	51	--	--
25	--	40	--	--	--	--	--	--	--	--	54	46
26	--	--	35	--	--	--	--	44	--	--	--	--
27	--	--	--	32	--	35	--	--	--	--	--	--
28	42	37	--	--	--	--	40	--	--	52	53	--
29	--	--	--	--	--	--	--	44	--	--	--	--
30	--	--	35	32	--	--	--	--	49	--	--	--
31	42	--	--	--	--	35	--	--	--	50	--	--
Average	--	--	--	--	--	--	--	--	--	--	--	--

78 Eklutna Creek below Eklutna diversion dam near Palmer

Location.--At Anchorage Public Utilities powerhouse below Eklutna diversion dam, about 24 miles southwest of Palmer.
Remarks.--No discharge records available for this station.

Chemical analyses, in parts per million, April 1949 to September 1950

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
April to September 1949																		
Apr. 22, 25, 29, 1949..		3.5	--	21	4.4	1.2	69	15	0.5	--	0.9	80	70	14	145	7.1	--	
May 2, 6, 9, 13, 16, 20, 23, 27, 30.....		4.6	--	23	4.5	2.1	77	15	.8	0.1	.8	89	76	13	158	7.6	--	
June 3, 6, 10, 13, 17, 20		4.2	--	22	3.6	1.8	68	16	1.1	--	.8	83	70	14	146	7.5	--	
July 1, 4, 8, 11, 15, 18, 22, 25, 29.....		3.8	--	20	3.4	2.8	63	16	.9	--	.7	79	64	12	140	7.3	--	
Aug. 1, 5, 8, 12, 15, 22, 26, 29.....		4.2	--	20	3.4	2.3	62	16	.7	--	.6	78	64	13	136	7.0	--	
Aug. 19.....		--	--	--	--	--	98	--	--	--	--	--	93	--	187	7.1	--	
Sept. 2, 5, 9.....		3.8	--	19	3.3	2.3	59	16	.5	--	.6	75	61	12	131	7.1	--	
October 1949 to September 1950																		
Oct. 10, 14, 17, 22, 24, 28, 31, 1949.....		4.2	--	21	4.2	2.3	69	16	0.9	--	0.8	83	70	14	146	7.2	--	
Nov. 4, 7, 11, 14, 18, 21, 25, 28.....		3.7	--	22	4.2	1.8	71	16	.9	--	.7	84	72	14	148	7.3	--	
Dec. 2, 5, 9, 12, 16, 19, 23, 26, 30.....		5.7	0.04	22	3.9	2.3	70	16	.8	0.1	.7	86	71	14	148	7.5	--	
Jan. 7, 9, 13, 16, 20, 27, 30, 1950.....		5.3	.06	22	3.9	3.7	72	17	1.0	.1	.7	89	71	12	152	7.6	--	
Feb. 3, 6, 10, 13, 17, 20, 24, 27.....		4.9	.03	22	3.9	2.7	71	16	.9	.1	.6	86	71	13	151	7.6	--	
Mar. 3, 6, 24, 27, 31..		5.8	.03	22	4.4	1.3	65	18	1.9	.2	.8	86	73	20	150	7.8	4	
Apr. 3, 7, 10, 14, 17, 21, 24, 28.....		5.1	.04	22	4.5	4.5	76	17	1.6	.1	.8	91	73	11	153	7.7	4	
May 1, 5, 8, 12, 15, 19, 22, 26, 29.....		6.4	.03	23	5.4	2.6	81	15	1.6	.1	.9	95	80	13	160	7.7	5	
June 2, 5, 9, 12, 16, 19, 23, 26, 30.....		4.5	.04	23	4.2	.6	71	14	1.6	.1	1.0	88	75	16	150	7.7	7	
July 3, 7, 10, 14, 17, 21, 24, 28.....		3.4	.07	18	2.6	4.1	56	16	1.1	.0	.6	73	56	10	129	7.4	5	
Aug. 4, 7, 14, 18, 21, 25, 28, 31.....		3.3	.08	17	3.5	2.8	54	16	1.0	.0	.7	71	57	13	121	7.4	5	
Sept. 1, 4, 8, 11, 15, 18, 20, 22, 29.....		6.1	.05	16	2.8	7.5	59	15	1.8	.3	.5	79	51	3	130	7.7	5	

79. Matanuska River at Palmer

Location.--Lat 61°36'35", long. 149°04'15", in N½ sec. 34, T. 18 N., R. 2 E., near center of span on downstream side of bridge on Glenn Highway, and 1 mile east of Palmer.

Drainage area.--2,070 sq mi, approximately.

Supplemental records available.--Records of specific conductance and miscellaneous water temperatures available in district office, Quality of Water Branch, at Palmer.

Gage.--Wire-weight gage read twice daily; once daily readings prior to March 1950. Datum of gage is 170.92 ft above mean sea level (Alaska Road Commission benchmark). Prior to Nov. 2, 1950, wire-weight gage on bridge 20 ft upstream at same datum.

Extremes.--1949: Maximum discharge observed during period April to September, 23,600 cfs July 11 (gage height, 12.03 ft); minimum observed, 546 cfs May 5 (gage height, 5.05 ft).

1949-50: Maximum discharge observed during water year, 21,200 cfs July 25 (gage height, 11.18 ft); minimum not determined.

Remarks.--Records of discharge fair except those for periods of ice effect or no gage-height record, which are poor. Discharge measurements made at this station prior to April 1949 are as follows: Aug. 19, 1947, 6,940 cfs; July 14, 1948, 9,390 cfs; and Aug. 28, 1948, 6,380 cfs.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	624	10,900	7,640	15,300	10,400
2							-	594	10,700	7,200	13,600	10,400
3							-	612	9,360	9,040	13,400	10,000
4							-	558	9,000	11,400	13,100	11,000
5							-	546	9,000	*16,100	13,500	11,700
6							-	637	10,800	16,200	17,700	12,400
7							-	600	12,900	17,200	15,700	10,300
8							-	630	11,600	17,200	15,300	8,500
9							-	742	12,000	18,300	14,500	8,100
10							-	810	12,300	17,200	13,400	7,230
11							-	1,160	10,900	21,500	15,300	6,270
12							-	1,150	8,640	20,100	18,200	6,160
13							-	1,320	8,610	18,700	16,000	5,850
14							-	1,460	7,870	18,400	12,800	5,230
15							-	1,670	7,900	17,900	10,900	4,910
16							-	1,940	9,630	18,100	11,100	4,690
17							-	2,240	9,930	16,700	11,100	4,470
18							-	2,670	11,100	17,600	10,300	4,230
19							-	3,500	12,700	20,100	9,360	4,130
20							-	3,800	18,000	16,200	9,820	3,820
21							*686	4,800	20,700	15,600	9,780	3,640
22							742	7,420	18,300	17,600	10,800	*3,410
23							742	12,000	17,700	17,400	10,300	3,180
24							714	*9,930	12,900	14,300	9,740	3,180
25							714	7,830	11,600	13,600	9,700	3,760
26							721	9,290	9,930	15,700	9,740	4,620
27							721	11,600	9,070	14,400	8,720	5,520
28							693	12,000	8,370	*16,900	10,000	5,030
29							637	11,100	8,300	16,900	10,100	4,560
30							612	10,800	8,300	20,800	10,800	4,360
31							-	11,400	-	19,500	10,900	-
Total							-	135,433	339,010	505,480	380,960	191,050
Mean							-	4,369	11,300	16,310	12,290	6,368
Ac-ft							-	268,600	672,400	1,003,000	755,600	378,900

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.

Matanuska River at Palmer--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a3,900	1,500	880				550	890	5,400	14,400	13,300	6,520
2	a3,700	1,600	920				540	882	5,700	12,300	*12,400	6,750
3	3,540	1,500	960	580	620	500	520	*975	5,800	11,900	12,900	a6,500
4	3,040	1,500	1,000				510	984	5,820	16,200	13,500	6,380
5	a3,200	1,500	1,000				*520	1,080	*6,330	14,900	12,200	a6,100
6	3,070	1,400	*980	(*)			520	1,040	7,420	14,900	12,700	5,980
7	a2,900	1,400	970				530	984	8,370	13,600	12,300	5,190
8	a2,700	1,300	950	540	520	460	540	1,110	6,500	13,200	13,200	5,280
9	a2,500	*1,270	920				540	1,260	a6,000	12,400	a13,000	5,230
10	a2,300	1,200	890				540	1,350	5,820	14,400	a12,000	a5,600
11	a2,200	1,200	890			440	540	1,530	5,740	13,600	12,000	a5,900
12	2,170	1,100	900			440	550	a1,400	a6,000	13,200	11,800	6,140
13	a2,100	1,100	910	550	440	440	550	1,350	6,160	*13,200	11,800	5,500
14	a2,100	1,100	910			440	550	a1,400	5,980	13,700	11,400	5,070
15	a2,100	1,000	850			450	560	1,460	6,030	14,600	11,200	4,450
16	a2,000	1,000	800			460	560	1,650	8,540	14,100	11,600	3,820
17	a2,000	1,000	770			470	560	2,110	9,700	13,600	11,300	3,660
18	a2,000	1,000	780	600	410	480	570	a1,900	9,970	13,200	11,200	3,560
19	a2,100	1,000	*800			490	*580	a1,700	12,000	13,700	11,100	3,350
20	*2,170	1,100	800			*500	600	1,610	13,800	13,600	10,900	3,260
21	a2,100	1,100	780			510	620	1,440	14,900	13,100	11,300	3,040
22	a2,000	1,200	750			520	640	1,530	14,000	14,600	12,300	3,090
23	a1,900	1,200	720	650	440	*520	660	1,720	12,500	14,500	12,300	2,980
24	a1,800	1,100	690		(*)	530	680	1,420	*11,000	*16,900	a11,000	2,770
25	1,900	1,100	670	(*)		540	700	1,670	10,400	18,500	a9,500	*2,740
26	a2,100	1,000	640			540	710	*1,640	10,900	15,500	8,580	2,630
27	a2,000	960	620		480	550	720	1,940	10,300	a14,000	7,830	2,580
28	a1,900	900	590	670		550	*740	2,220	11,600	13,400	7,700	2,460
29	a1,700	860	570		-	560	770	2,300	12,200	13,200	*7,420	a2,400
30	a1,600	860	560		-	560	800	2,770	12,000	13,600	7,480	a2,400
31	1,600	-	560		-	560	-	5,140	-	13,500	7,020	-
Total	72,390	35,050	25,030	18,620	13,590	15,350	17,970	50,455	266,880	435,500	344,230	131,330
Mean	2,335	1,168	807	601	485	495	599	1,628	8,896	14,050	11,100	4,378
Ac-ft	143,600	69,520	49,650	36,930	26,960	30,450	35,640	100,100	529,300	863,800	682,800	260,500

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 18,500 Min - Mean 3,908 Ac-ft 2,829,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, records for Susitna River at Gold Creek, and Nenana River near Healy and Windy.
Note.--Stage-discharge relation affected by ice Oct. 31 to May 3 (no gage-height record during most of period; discharge estimated on basis of 13 discharge measurements, weather records, and records for Susitna River at Gold Creek).

Matanuska River at Palmer

Chemical analyses, in parts per million, May 1949 to September 1950

Date of collection	Mean discharge (cfs)	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
May to September 1949																			
May 18, 24, 1949 ...	6,300	43	6.7	--	--	--	6.9	76	30	3.0	--	1.9	--	84	--	197	7.0		
June 7, 15, 24, 29 ..	10,500	45	7.0	--	30	4.1	4.1	78	31	2.2	--	1.6	118	92	28	202	7.3		
July 5, 14, 25	16,030	47	6.7	--	30	3.8	2.1	78	26	2.0	--	1.2	110	90	26	189	7.5		
Aug. 9, 18, 22, 31 ..	11,620	46	5.6	--	29	3.4	2.5	73	28	1.8	--	.6	107	86	26	186	7.3		
Sept. 2, 6, 22, 28...	7,810	43	5.8	--	30	4.0	4.8	76	34	2.4	--	.8	119	92	29	204	7.5		
October 1949 to September 1950																			
Oct. 6, 12, 20,25,31.	2,182	35	7.2	--	38	5.9	5.1	90	48	4.2	--	1.5	154	120	46	260	7.4		
Nov. 9, 14, 25, 29 ..	1,082	32	7.8	--	42	6.1	6.4	100	51	5.8	--	1.4	170	130	48	287	7.5		
Dec. 6, 23, 30.....	753	32	6.9	--	45	6.4	6.9	107	53	7.5	--	1.5	180	139	52	302	7.6		
Jan. 6, 13, 20, 27,1950	590	32	8.5	0.02	42	5.8	7.0	100	49	7.0	--	1.4	170	129	47	282	7.3		
Mar. 27.....	550	32	8.4	--	42	5.8	--	100	--	--	--	--	176	129	47	272	--		
Apr. 20.....	600	33	7.2	--	37	5.1	--	91	--	--	--	--	158	113	39	243	--		
May 2, 3, 16, 20, 26.	1,351	43	6.6	.10	34	4.6	9.0	86	43	5.0	0.1	1.1	146	104	33	239	7.4		
June 4, 8, 13, 14 ...	6,115	--	7.9	.03	30	3.8	1.2	77	23	3.4	.1	1.2	109	90	27	192	7.8	4	
July 9, 23.....	13,450	--	13	--	--	--	5.5	86	43	4.0	--	1.3	--	110	40	190	7.3		
Sept. 25.....	2,740	41	13	--	--	--	4.7	86	45	3.0	--	.9	--	112	42	246	7.4		

80. Cottonwood Creek near Wasilla

Location.--Lat 61°34'30", long. 149°24'35", in SW¼ sec. 11, T. 17 N., R. 1 W., near center of span on downstream side of highway bridge on Wasilla-Matanuska Road, 0.8 mile downstream from Wasilla Lake, and 1.1 miles southeast of Wasilla.

Drainage area.--28.5 sq mi.

Gage.--Staff gage read once daily. Datum of gage is 309 ft above mean sea level (river-profile survey).

Extremes.--1949: Maximum daily discharge during period July to September, 55 cfs (estimated) July 5, 6; minimum observed, 33 cfs Sept. 23, 24 (gage height, 0.97 ft).
1949-50: Maximum discharge observed during water year, 40 cfs Oct. 4 (gage height, 1.05 ft); maximum gage height observed, 4.07 ft Jan. 26 (backwater from ice); minimum not determined.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion above station. There are numerous lakes above station. Discharge measurements, in cubic feet per second, made prior to July 1949 are as follows:

July 17, 1947..... 9.89	June 15, 1948..... 11.5	Nov. 8, 1948..... 21.0
Aug. 18, 1947..... 13.0	July 14, 1948..... 14.0	Mar. 28, 1949..... 16.4
Nov. 7, 1947..... 19.3	Aug. 28, 1948..... 14.8	May 12, 1949..... 28.4
Feb. 26, 1948..... 14.9	Sept.21, 1948..... 16.2	June 24, 1949..... 44.0
Apr. 26, 1948..... 14.3		

Discharge, in cubic feet per second, July to September 1949

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	a40	45	39	9	a52	a48	40	17	46	a45	37	25	a42	43	34
2	a44	a44	39	10	a51	a50	40	18	a46	a45	37	26	a42	43	35
3	a49	a43	39	11	a50	a50	39	19	a46	a44	36	27	a42	43	37
4	52	*42	39	12	a50	a49	39	20	a45	a44	35	28	a42	42	37
5	a55	a41	39	13	a50	a48	38	21	*44	a45	35	29	a42	42	37
6	a55	a42	41	14	a49	a47	38	22	a43	a46	34	30	a43	42	*38
7	a54	a44	41	15	a48	a46	37	23	a43	a45	33	31	a45	40	-
8	a53	a46	40	16	47	a46	37	24	a43	a44	33				
Total													1,453	1,384	1,123
Mean													46.9	44.6	37.4
Ac-ft													2,880	2,750	2,230

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and 2 discharge measurements.

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	30	24			19	18	17	17	a17	14	*12
2	39	30	24			21	19	18	17	a16	14	12
3	38	29	24	19	18	23	18	18	17	a17	15	12
4	40	29	25			23	18	17	17	a17	17	12
5	39	29	24			24	17	17	18	a17	16	12
6	39	29	23			24	*16	17	18	a18	16	12
7	39	29	23			23	16	17	18	a17	16	12
8	39	*29	22		16	*22	16	16	18	a17	16	12
9	39	29	21			22	a16	16	20	a18	a16	12
10	38	28	20	(*)		21	17	*16	21	a18	16	12
11	37	27	20			20	17	16	21	a17	15	12
12	37	27	21			19	18	16	21	a17	14	12
13	37	26	21		12	18	18	15	20	a16	14	12
14	36	26	20			20	19	16	20	a16	14	11
15	35	26	19			20	20	16	20	a17	14	12
16	33	26	18		(*)	20	a20	16	20	a16	13	11
17	33	26	18			20	20	15	20	a16	13	11
18	33	25	*19	20	11	21	20	15	20	a16	13	11
19	32	26	19			21	20	16	20	a16	13	11
20	32	26	19			22	*20	16	20	a16	13	11
21	32	27	18			21	19	16	20	a15	12	11
22	32	26	18			21	18	15	20	a15	12	11
23	32	26	18		13	*19	a18	*15	20	a15	12	11
24	31	*26	17			20	18	15	19	a16	12	11
25	30	25	17			18	18	15	19	a17	12	*10
26	29	25	17	(*)		17	18	15	*18	*15	12	a10
27	29	24	16		17	17	18	15	18	15	12	11
28	29	24	16			17	18	16	18	15	12	10
29	29	24	17		-	18	17	16	17	16	12	a10
30	30	24	17		-	18	17	16	17	15	12	10
31	30	-	17		-	19	-	16	-	15	12	-
Total	1,066	803	612	615	401	628	542	496	569	504	424	339
Mean	34.4	26.8	19.7	19.8	14.3	20.3	18.1	16.0	19.0	16.3	13.7	11.3
Ac-ft	2,110	1,590	1,210	1,220	795	1,250	1,080	984	1,130	1,000	841	672

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 40 Min - Mean 19.2 Ac-ft 13,880

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
Note.--Stage-discharge relation affected by ice Nov. 11-18, Nov. 24 to Mar. 28 (no gage-height record Nov. 15, 26, Dec. 21, Dec. 24 to Mar. 5, Mar. 12, 15, 19, 26; discharge estimated on basis of 8 discharge measurements and weather records).

81. Little Susitna River near Palmer

Location.--Lat 61°42'40", long. 149°13'40", in NW¼ sec. 26, T. 19 N., R. 1 E., on left bank 15 ft downstream from highway bridge on Wasilla-Fishhook Road, 1.5 miles north of road junction, 1.8 miles downstream from unnamed tributary, and 8 miles northwest of Palmer.

Drainage area.--61.9 sq mi.

Gage.--Water-stage recorder. Datum of gage is 920.6 ft above mean sea level (river-profile survey). Prior to Aug. 16, 1948, staff gage at same site and datum.

Extremes.--1948: Maximum discharge during period July to September, 2,500 cfs Aug. 16 (gage height, 5.82 ft); minimum, 181 cfs Sept. 15.
1948-49: Maximum discharge during water year, 3,070 cfs June 21 (gage height, 6.33 ft); minimum not determined.
1949-50: Maximum discharge during water year, 1,170 cfs June 17 (gage height, 4.25 ft); minimum observed, 9.4 cfs Feb. 16 (result of discharge measurement), but may have been less during period of no gage-height record.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. No diversion or regulation above station. Discharge measurements, in cubic feet per second, made prior to July 1948 are as follows:

Aug. 18, 1947	29.5	Feb. 26, 1948	28.0
Nov. 7, 1947	70.7	Apr. 26, 1948	9.31

Discharge, in cubic feet per second, July to September 1948

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	a700	a340	262	11	a550	a260	241	21	364	591	*327
2	915	342	244	12	489	a250	216	22	364	1,680	291
3	a800	342	230	13	462	a500	203	23	386	1,290	271
4	a660	323	214	14	*489	a1,100	193	24	342	850	274
5	a640	342	201	15	a490	a1,600	183	25	a320	651	262
6	a1,000	342	196	16	489	2,200	471	26	894	528	241
7	a800	a330	211	17	462	1,550	688	27	727	435	225
8	727	a320	196	18	489	1,050	522	28	489	372	230
9	a690	304	256	19	544	*775	450	29	410	338	225
10	663	271	262	20	435	615	390	30	364	319	225
								31	342	287	-
Total									17,296	20,497	8,400
Mean									558	661	280
Ac-ft									34,310	40,660	16,660

Peak discharge (base, 1,500 cfs).--Aug. 16 (time unknown) 2,500 cfs; Aug. 22 (7 p.m.) 1,900 cfs. * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for nearby stations.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	219	90				23	19	27	a950	615	701	a400
2	208	88				24	19	27	a920	651	651	a360
3	196	84				24	18	27	a880	708	609	350
4	183	76				23	16	28	a820	995	597	a400
5	176	a68	45	33	24	25	18	29	a1,000	1,240	682	a360
6	169	a62				25	20	30	1,190	1,320	1,590	a450
7	162	a92				25	18	34	1,150	1,410	1,100	a520
8	160	*90				24	16	37	1,010	1,350	1,170	a400
9	158	a82				23	18	40	1,110	1,380	894	a330
10	151	116				23	19	44	1,220	1,360	789	a300
11	147	107				22	21	50	1,110	1,370	1,100	a280
12	143	90				20	23	*54	880	a1,300	1,320	a270
13	135	66				19	25	55	859	a1,200	990	a260
14	127	50				19	25	67	880	a1,000	796	a300
15	127	45	47	32	21	18	25	87	1,030	a960	663	a340
16	137	39				18	25	96	1,110	a920	603	a290
17	135	41				18	25	93	966	a890	544	a240
18	127	38				18	26	114	1,170	a860	484	a190
19	125	39				18	27	167	1,210	a840	445	a160
20	120	44				19	28	239	1,680	a790	425	a150
21	113	41			16	19	29	311	2,810	*747	462	a170
22	113	38			17	19	29	a420	2,520	754	633	162
23	107	40			18	19	28	587	2,050	803	511	154
24	106	40			19	19	28	544	*1,470	694	430	176
25	106	39			20	18	28	615	1,170	675	410	545
26	104	36	40	28	22	18	28	845	950	675	390	445
27	99	35			23	18	27	1,010	852	615	a410	528
28	98	36			23	18	26	1,050	908	645	a420	430
29	99	41			-	18	26	a1,100	761	727	a430	364
30	96	46			-	19	26	a1,000	657	859	a430	319
31	93	-			-	19	-	a950	-	796	a420	-
Total	4,237	1,799	1,360	958	608	632	706	9,757	35,293	29,149	21,099	9,643
Mean	137	60.0	43.9	30.9	21.7	20.4	23.5	315	1,176	940	681	321
Ac-ft	8,400	3,570	2,700	1,900	1,210	1,250	1,400	19,350	70,000	57,820	41,850	19,130

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 2,810 Min - Mean 316 Ac-ft 228,600

Peak discharge (base, 1,500 cfs).--June 21 (8 a.m.) 3,070 cfs; July 6 (9 p.m.) 1,770 cfs; Aug. 6 (8:30 a.m.) 1,930 cfs; Aug. 11 (10:30 a.m.) 1,730 cfs. * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for station on Ship Creek near Anchorage.
Note.--Stage-discharge relation affected by ice Oct. 30 to Nov. 4, and about Nov. 13 to May 8 (no gage-height record Nov. 13 to Feb. 24, Mar. 12-27; discharge estimated as explained under "a").

Little Susitna River near Palmer--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280						15	23	194	450	315	123
2	265						15	25	225	368	301	118
3	247						15	25	209	410	432	109
4	230	a56					15	25	331	456	603	106
5	206					20	15	24	528	435	494	151
6	191						*16	25	641	456	472	160
7	188						16	25	567	390	420	262
8	186	*43	37	25	18	(*)	16	27	435	400	377	239
9	169						16	33	660	430	350	230
10	162			(*)			16	32	462	405	342	206
11	137						17	31	435	377	342	309
12	a130						17	30	372	327	330	247
13	a130						17	29	323	297	342	211
14	129	50					18	31	330	311	330	186
15	122		(*)			18	18	38	456	462	311	169
16	114				(*)		18	57	859	346	297	158
17	118						18	76	880	323	280	147
18	111						18	67	908	319	265	137
19	109						*19	53	817	319	256	129
20	106						20	45	887	271	247	122
21	90					16	20	43	663	262	236	116
22	77				15	16	20	46	516	256	250	113
23	a76		25	25		*16	19	45	555	294	227	106
24	a81					16	20	46	573	534	219	99
25	a89	49				15	21	52	456	386	a200	95
26	a100			(*)		15	21	68	382	287	a190	95
27	a78					16	20	114	382	259	a180	118
28	66					16	19	113	430	271	a160	137
29	a61				-	15	19	144	494	323	a150	114
30	a65				-	16	21	200	603	327	a140	109
31	a58	-			-	16	-	188	-	350	a130	-
Total	4,171	1,525	955	775	465	553	535	1,780	15,573	11,101	9,188	4,621
Mean	135	50.8	30.8	25.0	16.6	17.8	17.8	57.4	519	358	296	154
Ac-ft	8,270	3,020	1,890	1,540	922	1,100	1,060	3,530	30,890	22,020	18,220	9,170

Calendar year 1949: Max 2,810 Min - Mean 314 Ac-ft 227,100
Water year 1949-50: Max 908 Min - Mean 140 Ac-ft 101,600

Peak discharge (base, 1,500 cfs).--No peak above the base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station on Ship Creek near Anchorage.
Note.--Stage-discharge relation affected by ice Nov. 8 to Apr. 17 (no gage-height record during most of the period; discharge estimated as explained for "a").

82. Susitna River at Gold Creek

Location.--Lat 62°46'10", long. 149°41'30", near center of span on downstream side of bridge on Alaska Railroad 300 ft downstream from Gold Creek, 0.9 mile north of Gold Creek Railroad Station, and 1½ miles downstream from Indian River.

Drainage area.--6,160 sq mi, approximately.

Gage.--Wire-weight gage read twice daily; once daily readings prior to July 18, 1950. Datum of gage is 676.50 ft above mean sea level.

Extremes.--1949: Maximum daily discharge during period August to September, 35,000 cfs (estimated), Aug. 1; minimum discharge observed, 9,160 cfs Sept. 21 (gage height, 7.56 ft).
1949-50: Maximum daily discharge during water year, 34,000 cfs (estimated), June 21; minimum not determined, occurred during period of no gage-height record.
Flood in May 1919 reached a stage of 19.2 ft, result of ice jam, from information by Bureau of Reclamation.

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

Discharge, in cubic feet per second, August, September 1949

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a35,000	20,400	9	30,800	17,200	17	19,000	11,900	25	17,300	12,700
2	a34,000	18,700	10	29,900	16,000	18	18,700	a12,000	26	18,100	14,100
3	*33,100	*18,100	11	30,700	15,500	19	18,400	11,500	27	17,000	18,100
4	31,200	17,000	12	30,900	15,200	20	17,200	*10,500	28	16,100	18,100
5	28,700	21,700	13	30,000	12,700	21	17,000	9,160	29	15,200	17,000
6	29,900	24,200	14	28,600	12,300	22	17,400	9,370	30	17,300	20,000
7	31,700	24,200	15	25,800	12,500	23	20,400	9,680	31	19,200	-
8	33,500	25,400	16	20,600	12,700	24	19,000	11,500			
Total										751,700	469,410
Mean										24,250	15,650
Ac-ft										1,491,000	931,100

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

Susitna River at Gold Creek--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20,100		(*)					1,600	17,700	a20,000	27,600	10,700
2	17,000							2,000	a16,000	a19,000	27,000	9,060
3	11,900	3,300	1,700		1,100	740	780	2,700	a16,000	a19,000	24,000	8,950
4	11,100				(*)			3,500	a17,000	a18,000	24,000	8,980
5	12,100			1,000				4,200	a17,000	a20,000	22,800	8,950
6	9,510							5,200	a18,000	21,700	24,000	9,160
7	8,280							6,400	a18,000	a22,000	24,200	*9,540
8	8,380	3,000	1,700		920	700	760	7,800	*18,700	a23,000	*23,300	10,200
9	7,660							8,700	15,000	a23,000	22,700	a10,000
10	5,590							9,200	a15,000	a22,000	22,500	a11,000
11	4,950							9,650	a15,000	a21,000	22,400	a11,000
12	4,700							a9,100	a16,000	a20,000	23,500	a12,000
13	4,500	2,600	1,600	950	720	660	800	a8,600	a17,000	19,000	23,200	a11,000
14	4,400							a9,400	a18,000	20,600	21,700	a10,000
15	4,300							a11,000	18,200	a22,000	21,100	a8,500
16	4,200							a15,000	16,800	a23,000	19,800	a7,600
17	4,100							a18,000	a18,000	a24,000	19,200	a7,200
18	4,100	*2,400	1,400	1,000	600	*680	840	18,700	a20,000	23,000	19,600	a6,900
19	4,200							a15,000	a23,000	22,100	18,200	a6,800
20	4,300							a14,000	a26,000	23,100	18,000	a7,000
21	4,200							14,200	a34,000	25,300	16,800	a7,400
22	4,000							a15,000	33,900	22,800	15,800	a6,800
23	3,700	2,500	1,200		650	750	940	a16,000	28,300	20,400	17,900	a6,600
24	3,600							a15,000	a23,000	22,400	17,500	a6,500
25	3,700			1,100				12,200	a21,000	32,500	17,900	a6,400
26	4,000							a13,000	a19,000	30,300	17,500	a6,300
27	3,900				700			a15,000	a18,000	25,900	a16,000	a6,200
28	3,700	1,700	1,100			810	1,100	a16,000	a17,000	22,400	a14,000	a6,200
29	3,500				-			a17,000	17,400	23,900	a12,000	a6,100
30	3,400				-			21,900	a20,000	24,700	a11,000	a6,000
31	3,300	-			-		-	21,800	-	24,500	a11,000	-
Total	196,370	77,500	44,600	31,850	22,050	22,510	26,100	356,850	588,000	700,600	616,200	249,040
Mean	6,334	2,583	1,439	1,027	788	726	870	11,510	19,600	22,600	19,880	8,301
Ac-ft	389,500	153,700	88,460	63,170	43,740	44,650	51,770	707,800	1,166,000	1,390,000	1,222,000	494,000

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 34,000 Min - Mean 8,032 Ac-ft 5,815,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.
Note.--Stage-discharge relation affected by ice Oct. 12 to May 10 (no gage-height record during most of the period except for numerous weekly readings; discharge estimated on basis of gage-height record, four discharge measurements, weather records, and records for other stations).

83. Craigie Creek near Wasilla 1/

Location.--Lat 61°47'45", long. 149°21'10", 4 miles upstream from mouth and 15 miles north of Wasilla.

Drainage area.--2.8 sq mi, approximately.

Gage.--Staff gage and Cippoletti weir. Altitude of gage is 3,100 ft (from topographic map).

Extremes.--June to September 1913: Maximum discharge observed, 70 cfs June 15 (gage height, 1.66 ft); minimum observed, 3.6 cfs Sept. 14, 21 (gage height, 0.22 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1913	38.4	20.1	13.7	8.32

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1913	2,280	1,240	842	495

Note.--Records of daily discharge published in WSP 372.

1/ Formerly published as Craigie Creek at Gold Bullion mill.

84. Dennison Fork near Chicken 1/

Location.--Lat 64°03', long. 141°54', half a mile upstream from confluence with Mosquito Fork and 2 miles southeast of Chicken.

Drainage area.--1,540 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,300 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 6,500 cfs June 17, 1912 (gage height, 5.80 ft), from rating curve extended above 850 cfs; minimum discharge not determined, occurred during period of no gage-height record; minimum daily, 105 cfs (estimated) July 19, 20, 1912.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1912	‡2,668	‡306	-	-	-

‡ Not previously published; partly estimated on the basis of records for South Fork Fortymile River at Franklin.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1912	‡158,700	‡18,810	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

85. Kechumstuk Creek near Chicken 2/

Location.--Lat 64°01', long. 142°34', a quarter of a mile upstream from mouth and 20 miles (revised) west of Chicken.

Drainage area.--189 sq mi.

Gage.--Staff gage. Altitude of gage is 2,050 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 2,200 cfs June 16, 1912 (gage height, 6.8 ft), from rating curve extended above 350 cfs; minimum observed, 8 cfs July 18-21, 1912 (gage height, 1.10 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡46.4	30.4	18.1	-
1911	-	-	-	†49.2	-
1912	‡461	30.7	146	94.6	-

† Corrected.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡2,860	1,870	1,080	-
1911	-	-	-	†2,930	-
1912	‡27,410	1,890	8,980	5,630	-

† Corrected.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

86. Mosquito Fork near Chicken 3/

Location.--Lat 64°01', long. 142°34', 300 ft downstream from Kechumstuk Creek and 20 miles (revised) west of Chicken.

Drainage area.--824 sq mi.

Gage.--Staff gage. Altitude of gage is 2,050 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 4,030 cfs June 16, 1912 (gage height, 5.3 ft), from rating curve extended above 500 cfs; minimum observed, 34 cfs Sept. 30, 1910 (gage height, -0.30 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Dennison Fork at mouth.
2/ Formerly published as Kechumstuk Creek at mouth.
3/ Formerly published as Mosquito Fork at Kechumstuk.

Mosquito Fork near Chicken--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡190	95.0	60.2	-
1911	-	-	-	†172	-
1912	‡1,673	210	292	459	-

† Corrected.
‡ Not previously published; estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡11,700	5,840	3,580	-
1911	-	-	-	10,210	-
1912	‡99,530	12,910	17,950	27,310	-

‡ Not previously published; estimated on the basis of records for stations on nearby streams.
Note.--Records of daily discharge published in WSP 342.

87. Walker Fork at Poker Creek 1/

Location.--Lat 64°03', long. 141°02', just upstream from Poker Creek and 1 mile southeast of the community of Poker Creek.

Drainage area.--7.37 sq mi.

Supplemental records available.--July 1910, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 2,750 ft (from topographic map).

Extremes.--July to September 1912: Maximum discharge observed, 25 cfs Aug. 12 (gage height, 2.90 ft); minimum not determined.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1912	-	‡8.00	-

‡ Not previously published; partly estimated on the basis of records for Wade Creek near Jack Wade.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1912	-	‡492	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

88. Walker Fork at Boundary 2/

Location.--Lat 64°04', long. 141°08', half a mile southwest of Boundary and 1 mile upstream from Cherry Creek.

Drainage area.--15.8 sq mi.

Gage.--Staff gage. Altitude of gage is 1,950 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 79 cfs Aug. 11, 1911 (gage height, 3.08 ft); minimum observed, 1.3 cfs July 20, 25, 1911 (gage height, 2.00 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1911	‡38.1	7.8	15.3
1912	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1911	‡2,270	480	941
1912	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Walker Fork above Poker Creek.

2/ Formerly published as Walker Fork above Cherry Creek.

89. Walker Fork near Boundary 1/

Location.--Lat 64°04', long. 141°18', 1½ miles upstream from Twelvemile Creek and 5½ miles west of Boundary.

Drainage area.--70.2 sq mi.

Gage.--Staff gage. Altitude of gage is 1,650 ft (from topographic map).

Extremes.--July, August 1910: Maximum discharge observed, 242 cfs Aug. 9 (gage height, 3.80 ft), from rating curve extended above 40 cfs; minimum observed, 8.7 cfs Aug. 6 (gage height, 1.80 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.
1910	‡29.2	‡35.7

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.
1910	‡1,790	‡2,200

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

90. Wade Creek near Jack Wade 2/

Location (revised).--Lat 64°08', long. 141°28', 3 miles northeast of Jack Wade and 6½ miles upstream from mouth.

Drainage area.--23.1 sq mi.

Gage.--Staff gage. Altitude of gage is 1,750 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 125 cfs Aug. 9, 1910 (gage height, 4.08 ft), from rating curve extended above 30 cfs; minimum observed, 0.4 cfs July 10, 1912 (gage height, 1.58 ft).

Remarks.--A few diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡5.77	20.0	13.1	-
1911	‡15.2	3.9	3.6	9.3	-
1912	‡14.6	5.8	25.7	20.4	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡355	1,230	780	-
1911	‡903	240	221	553	-
1912	‡867	357	1,580	1,210	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

91. Napoleon Creek near Franklin 3/

Location.--Lat 64°06', long. 141°45', at mouth and 4 miles south of Franklin.

Drainage area.--13.3 sq mi.

Gage.--Staff gage. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--June to September 1911: Maximum discharge observed, 15.5 cfs June 6; minimum observed, 0.4 cfs Aug. 27, 28.

Remarks.--No diversion or regulation above station.

1/ Formerly published as Walker Fork above Twelvemile Creek.
2/ Formerly published as Wade Creek at claim "No. 10 above."
3/ Formerly published as Napoleon Creek at mouth.

Napoleon Creek near Franklin--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡3.03	1.36	1.49	2.59

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡180	84	92	154

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in Bull. 520.

92. South Fork Fortymile River at Franklin

Location.--Lat 64°09', long. 141°47', 150 ft upstream from Franklin Creek and 1 mile southwest of Franklin.

Drainage area.--3,180 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 12,600 cfs June 17, 1912 (gage height, 10.5 ft), from rating curve extended above 7,000 cfs; minimum observed, 134 cfs Aug. 6, 7, 1910, revised, (gage height, 2.17 ft).

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	‡889	911	487	-
1911	-	970	932	336	‡345	-
1912	2,280	5,340	635	1,380	1,140	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	‡54,690	56,020	28,980	-
1911	-	57,720	57,310	20,660	‡20,540	-
1912	140,200	317,800	39,040	84,850	67,830	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

93. Fortyfive Pup near Franklin 1/

Location.--Lat 64°12', long. 142°07', 3 miles upstream from mouth and 11 miles (revised) west of Franklin.

Drainage area.--9.1 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,700 ft (from topographic map). Prior to 1912 at site a quarter of a mile downstream at different datum.

Extremes.--1910-12: Maximum discharge observed, 118 cfs Aug. 11, 1912 (gage height, 3.90 ft), from rating curve extended above 20 cfs; minimum observed, 0.6 cfs July 30, 31, Aug. 2-7, 1910 (gage height, 1.42 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	‡1.48	4.98	‡1.53	-
1911	-	9.52	1.8	2.2	4.2	-
1912	‡23.7	35.6	6.8	19.2	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	‡91	306	‡91	-
1911	-	566	111	135	250	-
1912	‡1,460	2,120	418	1,180	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Fortyfive Pup at "claim No. 13".

94. North Fork Fortymile River above Middle Fork, near Franklin

Location.--Lat 64°28', long. 142°12', 1 mile upstream from Middle Fork and 26 miles northwest of Franklin.

Drainage area.--724 sq mi.

Supplemental records available.--August 1911, July 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,450 ft (from topographic map).

Extremes.--July to October 1910: Maximum discharge observed, 1,420 cfs Aug. 9 (gage height, 4.1 ft), from rating curve extended above 300 cfs; minimum observed, 99 cfs Aug. 7 (gage height, 1.67 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.	Oct.
1910	‡276	267	477	-

‡ Not previously published; partly estimated on the basis of records for Fortymile River at Steel Creek.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.	Oct.
1910	‡16,990	16,420	28,380	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

95. Confederate Creek near Franklin 1/

Location.--Lat 64°17', 142°19', at mouth and 19 miles northwest of Franklin.

Drainage area.--About 9 sq mi.

Gage.--Staff gage. Altitude of gage is 2,450 ft (from topographic map).

Extremes.--June to August 1912: Maximum discharge observed, 57 cfs Aug. 11 (gage height, 1.50 ft), from rating curve extended above 15 cfs; minimum observed, 0.7 cfs July 16 (gage height, 0.25 ft), discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1912	-	-	‡18.0

‡ Not previously published; partly estimated on the basis of records for Hutchinson Creek below Confederate Creek.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1912	-	-	‡1,110

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

96. Hutchinson Creek below Confederate Creek, near Franklin

Location.--Lat 64°17', long. 142°19', just downstream from mouth of Confederate Creek and 19 miles northwest of Franklin.

Drainage area.--16.6 sq mi.

Supplemental records available.--July, August 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,400 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 172 cfs Sept. 11, 1911 (gage height, 3.1 ft), from rating curve extended above 30 cfs; minimum observed, 1.2 cfs July 6, 1912 (gage height, 1.20 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Confederate Creek at mouth.

Hutchinson Creek below Confederate Creek, near Franklin--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1911	-	-	-	-	-
1912	-	45.6	16.4	37.2	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1911	-	-	-	-	-
1912	-	2,710	1,010	2,290	-

Note.--Records of daily discharge published in WSP 342.

97. Montana Creek near Franklin 1/

Location.--Lat 64°19', long. 142°21', 1 mile upstream from mouth and 21 miles northwest of Franklin.

Drainage area.--5.9 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,400 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 65 cfs June 17, 1912 (gage height, 2.25 ft), from rating curve extended above 7 cfs; minimum observed, 0.5 cfs on many days in July, August 1910 (gage height, 0.75 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	‡1.13	3.09	‡1.44
1911	-	-	-	3.20	‡10.6
1912	-	20.0	4.55	11.0	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	‡70	190	‡85
1911	-	-	-	197	‡629
1912	-	1,190	280	676	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

98. Hutchinson Creek below Montana Creek, near Franklin

Location.--Lat 64°19', long. 142°19', just downstream from Montana Creek and 20 miles northwest of Franklin.

Drainage area.--29 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 270 cfs Sept. 12, 1911 (gage height, 3.35 ft), from rating curve extended above 90 cfs; minimum observed, 3.0 cfs July 27, 30, 1912 (gage height, 1.20 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	‡10.8	‡27.9	-
1911	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for Fortymile River at Steel Creek.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	‡661	‡1,710	-
1911	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Montana Creek at claim "No. 7 above."

99. North Fork Fortymile River near Franklin 1/

Location.--Lat 64°21', long. 142°02', 3 miles downstream from Hutchinson Creek and 16 miles miles northwest of Franklin.

Drainage area.--2,010 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--1910-12: Maximum daily discharge observed, 19,500 cfs May 19, 1911; minimum daily observed, 163 cfs Aug. 10, 1911.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	‡720	617	‡660
1911	-	3,510	1,080	489	‡618
1912	‡2,860	4,740	1,060	2,150	1,010

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	‡44,300	37,940	‡39,240
1911	-	208,900	66,410	30,070	‡36,800
1912	‡175,700	282,000	65,160	132,200	60,100

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

100. King Solomon Creek at Liberty 2/

Location.--Lat 64°30', long. 141°12', at Liberty and 1 mile upstream from Liberty Fork.

Drainage area.--54.2 sq mi.

Supplemental records available.--June, July 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,700 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 396 cfs Aug. 7, 1912 (gage height, 5.20 ft), from rating curve extended above 120 cfs; minimum observed, 3 cfs Oct. 21, 1911 (gage height, 2.00 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1911	-	30.7	‡13.4	‡26.6	-
1912	-	19.1	70.3	-	-

‡ Not previously published; partly estimated on the basis of records for Liberty Fork at Liberty.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1911	-	1,890	‡822	‡1,580	-
1912	-	1,170	4,320	-	-

‡ Not previously published; partly estimated on the basis of records for Liberty Fork at Liberty.
Note.--Records of daily discharge published in WSP 342.

101. Dome Creek near Dome Creek 3/

Location.--Lat 64°23', long. 141°12', 3 miles northeast of the community of Dome Creek and 7 miles upstream from mouth.

Drainage area.--24.9 sq mi.

Supplemental records available.--June 1910, June to September 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,550 ft (from topographic map).

Extremes.--June to September 1912: Maximum discharge observed, 47 cfs Aug. 11 (gage height, 4.20 ft); minimum observed, 1.1 cfs July 5-12 (gage height, 2.70 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as North Fork Fortymile River at the Kink.
2/ Formerly published as King Solomon Creek at Liberty Cabin.
3/ Formerly published as Dome Creek at Auburn Mining Co's. camp.

Dome Creek near Dome Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1912	-	6.52	17.9	13.4

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1912	-	401	1,100	797

Note.--Records of daily discharge published in WSP 342.

102. Fortymile River at Steel Creek

Location.--Lat 64°16', long. 141°17', at the community of Steel Creek and 300 ft upstream from Steel Creek.

Drainage area.--5,890 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--1910-12: Maximum discharge, 37,000 cfs (estimated) May 19, 1911; minimum observed, 420 cfs Aug. 10, 1911, corrected; (gage height, -0.20 ft).

Remarks.--Many small diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	1,830	1,750	‡1,400
1911	-	5,680	2,300	997	‡1,260
1912	‡6,240	11,800	2,070	4,290	2,500

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	112,500	107,600	‡83,010
1911	-	338,000	141,400	61,310	‡75,050
1912	‡383,500	702,100	127,300	263,800	148,800

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

103. Steel Creek at Steel Creek 1/

Location.--Lat 64°16', long. 141°17', at the community of Steel Creek and 450 ft upstream from mouth.

Drainage area.--12.5 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 161 cfs Aug. 9, 1910 (gage height, 3.48 ft), from rating curve extended above 40 cfs; minimum observed, 0.1 cfs Aug. 5, 6, 1910 (gage height, 1.55 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	1.59	9.28	‡5.82
1911	-	4.88	4.52	2.53	‡6.62
1912	-	‡9.89	2.77	7.44	13.3

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	98	571	‡346
1911	-	290	278	156	‡394
1912	-	‡589	170	457	791

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formarly published as Steel Creek at mouth.

104. Squaw Gulch near Bonanza Bar 1/

Location.--Lat 64°09', long. 141°10', half a mile downstream from Baby Creek, 1½ miles upstream from mouth, and 7 miles south of Bonanza Bar.

Drainage area.--24.4 sq mi.

Gage.--Staff gage. Altitude of gage is 1,450 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 175 cfs Sept. 18, 1912 (gage height, 3.00 ft), from rating curve extended above 50 cfs; minimum observed, 0.3 cfs Aug. 8, 9, 1911 (gage height, 1.50 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡9.32	16.1	‡23.1	-
1911	‡36.9	1.73	2.02	-	-
1912	‡25.6	21.6	40.9	33.4	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	‡573	990	‡1,370	-
1911	‡2,190	106	124	-	-
1912	‡1,520	1,330	2,510	1,990	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

105. Canyon Creek near Bonanza Bar 2/

Location.--Lat 64°10', long. 141°08', 600 ft downstream from Squaw Gulch and 6 miles south of Bonanza Bar.

Drainage area.--56.5 sq mi, 1912; 58.4 sq mi, 1910; 59.5 sq mi, 1911.

Gage.--Staff gage. Altitude of gage is 1,300 ft (from topographic map). July 2 to Sept. 19, 1910, at site 1 mile downstream at different datum. June 5 to Sept. 8, 1911, at site 2 miles downstream at different datum.

Extremes.--1910-12: Maximum discharge observed, 348 cfs Aug. 9, 1910 (gage height, 4.00 ft, site and datum then in use), from rating curve extended above 31 cfs; minimum observed, 3.9 cfs July 23, 1911 (gage height, 2.00 ft, site and datum then in use).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1910	-	‡21.9	57.5	‡58.2
1911	-	-	8.43	-
1912	-	-	‡89.5	‡64.5

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1910	-	‡1,350	3,540	‡3,470
1911	-	-	518	-
1912	-	-	‡5,510	‡3,840

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Squaw Gulch at claim "No. 1 above."
2/ Formerly published as Canyon Creek below Squaw Gulch.

106. Yukon River at Eagle

Location.--Lat 64°47', long. 141°10', on left bank at mouth of Castalia Creek, 1 mile southeast of Eagle, and 10 miles downstream from International Boundary.

Drainage area.--113,500 sq mi, approximately.

Gage.--Staff gage read once daily. Altitude of gage is 750 ft (from topographic map). January 1911 to December 1913 staff gage at site 1½ miles downstream at different datum.

Extremes.--1950: Maximum discharge observed during period June to September, 213,000 cfs June 22 (gage height, 10.16 ft); minimum observed, 76,400 cfs Sept. 28 (gage height, 0.54 ft).
1911-13, 1950: Maximum discharge observed, 254,000 cfs May 22, 1911 (gage height, 11.90 ft, site and datum then in use); minimum not determined.

Remarks.--Records for water year 1950 fair except those for period of no gage-height record, which are poor. Numerous diversions for mining purposes above station, 1911-13; no appreciable diversion and no regulation in 1950.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	*13,000	*11,000	11,000	*11,000	156,000	184,000	178,000	139,000	106,000	-
1912	60,000	*32,000	*19,000	*11,000	*10,000	*10,000	12,000	125,000	*163,000	147,000	127,000	73,600	*66,100
1913	51,000	*30,000	*18,000	*11,000	*9,500	*9,500	*11,000	117,000	199,000	164,000	133,000	90,000	*70,620
1914	55,000	*30,000	*18,000	-	-	-	-	-	-	-	-	-	-

* Revised.
† Corrected.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	*799.3	*610.9	676.4	*654.5	9,592	10,970	10,970	8,545	6,313	-
1912	3,689	*1,904	*1,168	*676.4	*575.2	*614.9	714.0	7,686	9,709	9,055	7,812	4,378	*47,980
1913	3,136	*1,785	*1,107	*676.4	*527.6	*584.1	*654.5	7,194	11,840	10,080	8,178	5,355	*51,120
1914	3,382	*1,785	*1,107	-	-	-	-	-	-	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	342,345	a254,000	May 22, 1911	-	-	-	*77,200	*55,890,000
1912	342,345	a240,000	July 30, 1912	-	*66,100	*47,980,000	*65,100	*47,250,000
1913	345	-	-	-	*70,620	*51,120,000	*71,000	*51,360,000
1914	345	-	-	-	-	-	-	-

* Revised.
a Maximum observed.

Discharge, in cubic feet per second, June to September 1950

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	a120,000	140,000	122,000	91,900	16	a180,000	128,000	110,000	86,000
2	a120,000	139,000	131,000	92,100	17	a180,000	126,000	111,000	83,800
3	a120,000	138,000	132,000	91,700	18	a190,000	125,000	114,000	82,200
4	a130,000	138,000	129,000	91,000	19	a190,000	125,000	108,000	81,000
5	a140,000	133,000	125,000	90,000	20	a190,000	127,000	106,000	80,000
6	a140,000	136,000	124,000	88,900	21	a200,000	123,000	107,000	79,200
7	a150,000	136,000	123,000	88,500	22	*212,000	125,000	107,000	78,800
8	a150,000	133,000	121,000	88,500	23	212,000	126,000	104,000	77,900
9	a150,000	136,000	117,000	87,800	24	202,000	125,000	104,000	77,000
10	a160,000	136,000	115,000	88,700	25	194,000	*122,000	106,000	76,700
11	a160,000	133,000	107,000	88,700	26	181,000	124,000	104,000	76,700
12	a160,000	132,000	107,000	88,300	27	172,000	128,000	106,000	*77,700
13	a170,000	131,000	111,000	88,100	28	161,000	123,000	102,000	76,400
14	a180,000	129,000	111,000	87,200	29	151,000	119,000	99,400	77,900
15	a180,000	128,000	109,000	86,400	30	143,000	121,000	92,500	81,800
					31	-	122,000	91,200	-
Total						4,988,000	4,007,000	3,456,100	2,530,900
Mean						166,300	129,300	111,500	84,360
Ac-ft						‡9,894	‡7,948	‡6,855	‡5,020

* 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 Dawson, Yukon Territory.

107. Mission Creek near Eagle 1/

Location.--Lat 64°48', long. 141°27', half a mile upstream from Colorado Creek and 7½ miles west of Eagle.

Drainage area.--84.8 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--June to August 1910: Maximum discharge observed, 251 cfs July 5 (gage height, 3.62 ft); minimum observed, 35 cfs July 30 (gage height, 2.58 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1910	-	66.5	-

Monthly runoff, in acre-feet

Year	June	July	Aug.
1910	-	4,090	-

Note.--Records of daily discharge published in WSP 342.

108. Wolf Creek near Eagle 2/

Location.--Lat 64°46', long. 141°20', 4 miles upstream from mouth and 4½ miles southwest of Eagle.

Drainage area.--19.5 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--June to September 1911: Maximum discharge observed, 45 cfs July 26 (gage height, 3.35 ft); minimum observed, 2.0 cfs July 17-20 (gage height, 2.00 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	-	7.68	-	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	-	472	-	-

Note.--Records of daily discharge published in WSP 342.

109. American Creek near Gravel Gulch 3/

Location.--Lat 64°40', long. 141°22', half a mile downstream from Nugget Gulch, 1½ miles upstream from Discovery Fork, and 3 miles northwest of Gravel Gulch.

Drainage area.--24.1 sq mi.

Gage.--Staff gage. Altitude of gage is 1,600 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 145 cfs July 5, 1910 (gage height, 3.92 ft); minimum observed, 1.3 cfs July 10, 1912 (gage height, 2.35 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	14.9	15.9	‡17.2	-
1911	-	12.4	‡10.6	-	-
1912	-	12.0	33.2	18.5	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	916	978	‡1,030	-
1911	-	762	‡650	-	-
1912	-	738	2,040	1,100	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Mission Creek above Colorado Creek.
2/ Formerly published as Wolf Creek above Swanson's dam.
3/ Formerly published as American Creek at claim "No. 8 above."

110. Discovery Fork American Creek near Gravel Gulch 1/

Location.--Lat 64°40', long. 141°19', a quarter of a mile downstream from Star Gulch, half a mile upstream from American Creek, and 2 miles north of Gravel Gulch.

Drainage area.--14.8 sq mi.

Gage.--Staff gage. Altitude of gage is 1,500 ft (from topographic map). Prior to 1912 at different datums.

Extremes.--1910-12: Maximum discharge observed, 73 cfs July 12, 1910 (gage height, 3.00 ft, datum then in use), from rating curve extended above 30 cfs; minimum observed, 0.8 cfs July 10, 28-31, 1910 (gage height, 1.83 ft, datum then in use).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	4.80	6.08	‡10.5	-
1911	‡12.8	4.93	5.89	5.98	‡4.06
1912	5.7	3.6	6.8	-	-

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	295	374	‡624	-
1911	‡764	303	362	356	‡249
1912	339	221	418	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

111. American Creek at Eagle 2/

Location.--Lat 64°47', long. 141°14', three-quarters of a mile upstream from mouth and 1 mile west of Eagle.

Drainage area.--67.3 sq mi.

Gage.--Staff gage. Altitude of gage is 700 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 779 cfs June 17, 1910 (gage height, 3.80 ft), from rating curve extended above 150 cfs; minimum observed, 11 cfs Aug. 5, 1910 (gage height, 1.80 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	29.2	48.7	60.7	-
1911	-	-	29.6	-	-	-
1912	-	-	-	-	-	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	1,800	2,990	3,610	-
1911	-	-	1,820	-	-	-
1912	-	-	-	-	-	-

Note.--Records of daily discharge published in WSP 342.

112. Seventymile River above Flume Creek, near Crooked Creek

Location.--Lat 65°00', long. 142°27', 300 ft upstream from Flume Creek and 23½ miles west of the community of Crooked Creek.

Drainage area.--129 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--1910, 1912: Maximum discharge observed, 2,280 cfs Aug. 7, 1910 (gage height, 4.65 ft), from rating curve extended above 400 cfs; minimum observed, 60 cfs July 9, 1910 (gage height, 1.35 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Discovery Fork of American Creek below Star Gulch.
2/ Formerly published as American Creek at United States Pumping Plant.

Seventymile River above Flume Creek, near Crooked Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	-	170	293	202	-
1912	-	-	-	-	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	-	10,450	18,020	12,020	-
1912	-	-	-	-	-

Note.--Records of daily discharge published in WSP 342.

113. Flume Creek near Crooked Creek 1/

Location.--Lat 64°59', long. 142°27', a quarter of a mile upstream from mouth and 23½ miles west of the community of Crooked Creek.

Drainage area.--36.7 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 735 cfs Aug. 7, 1912 (gage height, 4.35 ft); minimum observed, 9.4 cfs Aug. 8, 1911 (gage height, 1.35 ft), result of discharge measurement.

Remarks.--One diversion above station in 1910 for mining purposes below station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the high water period in the water year 1910, superseding figures published in WSP 342, are given herewith.

Aug. 8	275
9	250
10	110

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	27.9	*47.0	‡38.8
1911	-	-	-	-	-
1912	-	-	-	96.4	-

* Revised.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	1,720	*2,890	‡2,310
1911	-	-	-	-	-
1912	-	-	-	5,930	-

* Revised.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

114. Alder Creek near Crooked Creek 2/

Location.--Lat 64°58', long. 142°24', 1½ miles upstream from mouth and 22 miles west of Crooked Creek.

Drainage area.--11.8 sq mi.

Gage.--Staff gage. Altitude of gage is 2,100 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 162 cfs Aug. 7, 1912 (gage height, 4.00 ft), from rating curve extended above 60 cfs; minimum observed, 2.5 cfs May 10, 1912 (gage height, 2.00 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Flume Creek one-fourth mile above mouth.
2/ Formerly published as Alder Creek at claim "No. 7 above."

Alder Creek near Crooked Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	10.8	15.4	16.4	-
1911	‡14.2	20.4	9.61	7.88	6.87	-
1912	‡8.55	16.0	16.5	24.9	9.64	-

‡ Not previously published; partly estimated on the basis of weather records and records for Seventymile River near Crooked Creek.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	664	947	976	-
1911	‡871	1,210	591	485	409	-
1912	‡526	952	1,010	1,530	574	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

115. Barney Creek near Crooked Creek 1/

Location.--Lat 65°00', long. 141°59', 2 miles upstream from mouth and 10 miles northwest of Crooked Creek.

Supplemental records available.--August 1911, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,350 ft (from topographic map).

Extremes.--June to September 1910: Maximum discharge observed, 13.4 cfs Aug. 9 (gage height, 2.40 ft), from rating curve extended above 3.0 cfs; minimum observed, 0.2 cfs (revised) Aug. 5, 6 (gage height, 1.60 ft).

Remarks.--No diversion or regulation above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1910, superseding figures published in WSP 342, are given herewith:

Day	Discharge (cfs)	Day	Discharge (cfs)	Day	Discharge (cfs)
Aug. 1.....	0.7	Aug. 11.....	3.2	Sept. 3.....	4.7
2.....	.6	12.....	1.9	4.....	4.2
3.....	.4	13.....	1.9	5.....	3.5
4.....	.3	19.....	1.9	6.....	2.6
5.....	.2	28.....	1.0	7.....	2.1
6.....	.2	29.....	1.0	8.....	1.8
10.....	6.6	Sept. 2.....	2.2	9.....	1.7
				10.....	3.2

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1910	-	0.74	*1.74	-

* Revised.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1910	-	46	*107	-

* Revised.
Note.--Records of daily discharge published in WSP 342.

116. Sonickson Creek near Crooked Creek 2/

Location.--Lat 64°55', long. 141°53', 1 mile upstream from mouth and 6½ miles west of Crooked Creek.

Drainage area.--12.6 sq mi.

Gage.--Staff gage. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 310 cfs June 17, 1910 (gage height, 3.90 ft), from rating curve extended above 70 cfs; minimum observed, 2.5 cfs July 8-10, 1910 (gage height, 1.45 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Barney Creek above ditch intake.
2/ Formerly published as Sonickson Creek above ditch intake.

Sonickson Creek near Crooked Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	5.86	17.0	‡22.8
1911	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	360	1,050	‡1,360
1911	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

117. Washington Creek near Crooked Creek 1/

Location.--Lat 64°56', long. 141°51', a quarter of a mile upstream from mouth and 5½ miles west of Crooked Creek.

Drainage area.--15.6 sq mi.

Supplemental records available.--August 1911, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,050 ft (from topographic map).

Extremes.--May to September 1912: Maximum discharge observed, 100 cfs July 21 (gage height, 2.50 ft), from rating curve extended above 20 cfs; minimum observed, 0.8 cfs June 20, July 1, 9 (gage height, 0.75 ft).

Remarks.--Since Sept. 3, 1912, one diversion above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1912	-	9.0	12.7	17.7	3.1

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1912	-	536	781	1,090	184

Note.--Records of daily discharge published in WSP 342.

118. Seventymile River near Crooked Creek 2/

Location.--Lat 64°55', long. 141°51', a quarter of a mile downstream from Washington Creek and 5½ miles west of the community of Crooked Creek.

Drainage area.--465 sq mi.

Gage.--Staff gage. Altitude of gage is 1,050 ft (from topographic map).

Extremes.--1910-12: Maximum discharge, 13,000 cfs, estimated (revised) Aug. 7, 1912 (gage height, about 10.0 ft); minimum observed, 110 cfs Aug. 7, 8, 1911 (gage height, 2.20 ft).
Maximum stage known prior to 1910 reported to be 2 ft higher than that of Aug. 7, 1912.

Remarks.--Several diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	402	756	626	-
1911	-	-	344	306	‡213	-
1912	‡427	603	573	1,180	329	-

‡ Not previously published; partly estimated on the basis of weather records and records for Discovery Fork near Eagle.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1910	-	-	24,720	46,480	37,250	-
1911	-	-	21,150	18,820	‡12,650	-
1912	‡26,280	35,880	35,230	72,560	19,560	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Washington Creek above dam.
2/ Formerly published as Seventymile River at the falls.

119. Crooked Creek at Crooked Creek 1/

Location.--Lat 64°56', long. 141°40', a quarter of a mile downstream from Eldorado Creek, a quarter of a mile south of the community of Crooked Creek, and 2 miles upstream from mouth.

Drainage area.--17.2 sq mi.

Gage.--Staff gage. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 208 cfs Aug. 7, 1912 (gage height, 5.80 ft), from rating curve extended above 20 cfs; minimum observed, 1.0 cfs Aug. 5-7, 1910, July 20, 1911.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	2.51	14.4	‡17.2
1911	-	-	3.52	6.80	‡6.82
1912	-	12.1	16.0	28.3	‡8.98

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	154	885	‡1,030
1911	-	-	216	418	‡406
1912	-	720	984	1,740	‡534

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

120. Fox Creek near Crooked Creek 2/

Location.--Lat 64°56', long. 141°35', just downstream from Lucky Gulch, 2½ miles east of the community of Crooked Creek, and 3 miles upstream from mouth.

Drainage area.--8.3 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 23 cfs July 21, 1912 (gage height, 2.30 ft), from rating curve extended above 2.5 cfs; minimum observed, 0.8 cfs July 8, 9, 1912 (gage height, 1.10 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1911	-	-	3.26	4.07	-
1912	-	3.45	5.85	9.37	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1911	-	-	200	250	-
1912	-	205	360	576	-

Note.--Records of daily discharge published in WSP 342.

121. Mastodon Fork Eagle Creek near Miller House 3/

Location.--Lat 65°27', long. 145°24', 300 ft upstream from storage reservoir, 1 mile upstream from confluence with Miller Fork, and 9 miles southwest of Miller House.

Drainage area.--4.1 sq mi, approximately.

Supplemental records available.--July, September 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,750 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge not determined, occurred during period of no gage-height record; minimum observed, 0.1 cfs Sept. 4 (gage height, 0.21 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Crooked Creek below Eldorado Creek.
2/ Formerly published as Fox Creek at Rolf's claim.
3/ Formerly published as Mastodon Fork of Eagle Creek above storage dam.

Mastodon Fork Eagle Creek near Miller House--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	‡19.7	6.18	5.53	-

‡ Not previously published; partly estimated on the basis of records for Mammoth Creek near Miller House.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	‡1,170	380	340	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

122. Birch Creek above Twelvemile Creek, near Miller House

Location.--Lat 65°23', long. 145°43', 1 mile upstream from Twelvemile Creek and 18½ miles southwest of Miller House.

Drainage area.--88 sq mi, approximately.

Supplemental records available.--July, August 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,850 ft (from topographic map).

Extremes.--June to September 1911: Maximum discharge observed, 550 cfs July 1 (gage height, 5.5 ft), from rating curve extended above 230 cfs; minimum observed, 10 cfs Aug. 6 (gage height, 2.8 ft).

Remarks.--Several diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡338	89.9	30.6	‡33.1

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡20,130	5,530	1,880	‡1,970

‡ Not previously published; partly estimated on the basis of records for nearby stations.
Note.--Records of daily discharge published in WSP 342.

123. Birch Creek below Twelvemile Creek, near Miller House

Location.--Lat 65°22', long. 145°45', 1 mile downstream from Twelvemile Creek and 20 miles southwest of Miller House.

Drainage area.--141 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map). June 12 to Oct. 1, 1911, and June 1-25, 1912, a short distance downstream at different datums.

Extremes.--1911-12: Maximum discharge observed, 1,410 cfs June 23, 1912 (gage height, 6.5 ft), from rating curve extended above 700 cfs; minimum daily, 19 cfs Aug. 5, 6, 1911.

Remarks.--Several diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1911	‡560	133	49.7	49.4	-
1912	469	52.2	109	159	-

‡ Not previously published; partly estimated on the basis of records for Birch Creek near Circle.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1911	‡33,350	8,180	3,060	2,940	-
1912	27,910	3,210	6,700	9,460	-

‡ Not previously published; partly estimated on the basis of records for Birch Creek near Circle.
Note.--Records of daily discharge published in WSP 342.

124. Fryingpan Creek near Miller House 1/

Location.--Lat 65°19', long. 145°33', just downstream from main forks of Fryingpan Creek, 2 miles upstream from mouth, and 19 miles southwest of Miller House.

Drainage area.--15.9 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--June to August 1910: Maximum discharge observed, 17 cfs June 10 (gage height, 3.46 ft), from rating curve extended above 6 cfs; minimum observed, 2.0 cfs Aug. 15 (gage height, 1.38 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1910	‡7.83	5.50	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1910	‡466	338	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

125. Great Unknown Creek near Miller House 2/

Location.--Lat 65°16', long. 145°25', at mouth and 20 miles southwest of Miller House.

Drainage area.--41.2 sq mi.

Gage.--Staff gage. Altitude of gage is 1,550 ft (from topographic map).

Extremes.--June to September 1912: Maximum discharge observed, 323 cfs June 19 (gage height, 4.20 ft), may have been greater about June 23 during period of no gage-height record; minimum observed, 9.0 cfs July 11 (gage height, 2.68 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1912	‡117	‡13.8	25.5	‡33.6

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1912	‡6,950	‡849	1,570	‡2,000

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

126. Birch Creek below Great Unknown Creek, near Miller House

Location.--Lat 65°16', long. 145°25', 100 ft downstream from Great Unknown Creek and 20 miles southwest of Miller House.

Drainage area.--376 sq mi.

Gage.--Staff gage. Altitude of gage is 1,550 ft (from topographic map).

Extremes.--June to October 1912: Maximum discharge observed, 2,520 cfs June 24 (gage height, 7.6 ft), from rating curve extended above 400 cfs; minimum not determined, occurred during period of no gage-height record.

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1912	‡948	131	236	327	‡151

‡ Not previously published; partly estimated on the basis of weather records and records for station near Circle Springs.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1912	‡56,430	8,050	14,510	19,460	‡9,290

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Fryingpan Creek below forks.
2/ Formerly published as Great Unknown Creek at mouth.

127. Lawson Creek near Chena Hot Springs 1/

Location.--Lat 65°08', long. 145°29', 300 ft upstream from confluence with Munson Creek and 18 miles northeast of Chena Hot Springs.

Drainage area.--21.6 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--July to September 1912: Maximum discharge observed, 35 cfs July 10 (gage height, 3.37 ft); minimum observed, 13 cfs on many days.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1912	15.6	16.7	*16.2

* Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1912	959	1,030	*965

* Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

128. Clums Fork near Chena Hot Springs 2/

Location.--Lat 65°08', long. 145°29', just downstream from confluence of Munson and Lawson Creeks and 18 miles northeast of Chena Hot Springs.

Drainage area.--46.4 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--July to September 1912: Maximum discharge observed, 66 cfs Sept. 20 (gage height, 3.77 ft); minimum observed, 23 cfs Aug. 6, 21 (gage height, 3.20 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1912	27.5	29.8	*33.1

* Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1912	1,690	1,830	*1,970

* Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

129. Birch Creek below Clums Fork, near Miller House

Location.--Lat 65°16', long. 145°08', 75 ft upstream from McLean Creek (revised), 3 miles downstream from Clums Fork, and 19 miles south of Miller House.

Drainage area.--600 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,400 ft (from topographic map). June 8 to Sept. 30, 1910, at datum 0.9 ft lower.

Extremes.--1910-11: Maximum daily discharge observed, 3,500 cfs (estimated) June 1, 1911; minimum daily observed, 50 cfs Aug. 6-8, 1911.

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1910	*946	479	445	739
1911	*1,527	389	295	*244

* Not previously published; partly estimated on the basis of records for station near Circle.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1910	*56,280	29,450	27,360	43,970
1911	*90,850	23,920	18,140	*14,510

* Not previously published; partly estimated on the basis of records for station near Circle.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Lawson Creek at mouth.
2/ Formerly published as Clums Fork below Munson Creek.

130. Birch Creek near Circle Springs 1/

Location.--Lat 65°19', long. 144°34', at Buckley Bar Creek, 1½ miles upstream from Sheep Creek, and 11 miles south of Circle Springs.

Drainage area.--873 sq mi.

Gage.--Staff gage. Altitude of gage is 1,150 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 8,100 cfs June 24, 1912 (gage height, 9.5 ft); minimum observed, 82 cfs Aug. 8, 1911 (gage height, 2.64 ft).

Remarks.--Numerous diversions for mining purposes above station. No regulation.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1911	-	2,150	486	398	307
1912	‡1,470	2,670	284	561	‡1,075

‡ Not previously published; partly estimated on the basis of weather records and records for station near Circle.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1911	-	127,900	29,880	24,470	18,270
1912	‡90,380	158,900	17,460	34,490	‡63,950

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

131. Buckley Bar Creek near Circle Springs 2/

Location.--Lat 64°19', long. 144°34', one-eighth of a mile upstream from mouth and 11 miles south of Circle Springs.

Drainage area.--10.6 sq mi.

Gage.--Staff gage. Altitude of gage is 1,150 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 43 cfs Sept. 22, 1912 (gage height, 2.68 ft); minimum observed, 0.3 cfs Aug. 1-14, 1911.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡6.77	1.55	†0.75	‡1.02
1912	†11.9	0.99	5.68	‡11.8

† Corrected.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡403	95	†46	‡60
1912	†708	61	349	‡705

† Corrected.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

132. Porcupine Creek above ditch intake, near Miller House

Location.--Lat 65°34', long. 145°27', 100 ft upstream from Porcupine ditch intake and 7½ miles west of Miller House.

Drainage area.--17.8 sq mi.

Supplemental records available.--July 1908, August 1909, July 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--July, August 1910: Maximum discharge observed, 62 cfs July 30 (gage height, 1.48 ft), from rating curve extended above 10 cfs; minimum observed, 2.9 cfs July 16 (gage height, 0.32 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Birch Creek above Sheep Creek.
2/ Formerly published as Buckley Bar Creek at mouth.

Porcupine Creek above ditch intake, near Miller House--Continued

Monthly mean discharge, in cubic feet per second

Year							July	Aug.					
1910							‡12.5	‡5.99					

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year							July	Aug.					
1910							‡766	‡368					

‡ Not previously published; partly estimated on the basis of records for nearby stations.
Note.--Records of daily discharge published in WSP 342.

133. Porcupine ditch at intake, near Miller House

Location.--Lat 65°34', long. 145°27', at intake of Porcupine ditch and 7½ miles west of Miller House.

Gage.--Staff gage and wooden flume. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--June to September 1912: Maximum discharge observed, 18.8 cfs June 21, 27, 28 (gage height, 1.80 ft); no flow June 16, 23-26.

Remarks.--Porcupine ditch diverted from right bank of Porcupine Creek about 8 miles above confluence with Mammoth Creek for mining purposes in the Mammoth Creek drainage basin.

Monthly mean discharge, in cubic feet per second

Year						June	July	Aug.	Sept.				
1912						‡10.3	2.47	7.13	-				

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year						June	July	Aug.	Sept.				
1912						‡612	152	438	-				

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

134. Porcupine Creek below ditch intake, near Miller House

Location.--Lat 65°34', long. 145°27', 200 ft downstream from Porcupine ditch intake and 7½ miles west of Miller House.

Drainage area.--17.8 sq mi.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--June to August 1912: Maximum discharge observed, 295 cfs June 24 (gage height, 4.75 ft), from rating curve extended above 80 cfs; minimum, no flow on many days.

Remarks.--Porcupine ditch diverted 200 ft above station for mining purposes in Mammoth Creek basin.

Monthly mean discharge, in cubic feet per second

Year						June	July	Aug.					
1912						‡52.5	0	2.19					

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year						June	July	Aug.					
1912						‡3,120	0	135					

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

135. Bonanza Creek above ditch intake, near Miller House

Location.--Lat 65°31', long. 145°24', just upstream from Bonanza ditch intake, 4 miles upstream from mouth, and 6 miles west of Miller House.

Drainage area.--7.9 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map). July 4 to Aug. 5, 1908, at different datum.

Extremes.--1908-10: Maximum discharge, not determined; minimum daily, 5.0 cfs (estimated) July 15-17, 1910.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	‡13.6	-	-
1909	‡59.1	18.4	15.3	‡9.91
1910	24.5	13.5	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	‡835	-	-
1909	‡3,520	1,130	941	‡590
1910	1,460	830	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

136. Bonanza ditch at intake, near Miller House

Location.--Lat 65°31', long. 145°24', at Bonanza ditch intake and 6 miles west of Miller House.

Supplemental records available.--August 1909, discharge measurement only.

Gage.--Staff gage and wooden flume. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--1910-12: Maximum discharge observed, 37 cfs July 5, 1911 (gage height, 1.30 ft); no flow during winter and for several days in 1910.

Remarks.--Bonanza ditch diverted from Bonanza Creek 4 miles upstream from mouth for mining purposes in Mammoth Creek basin.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	17.9	11.6	-	-
1911	-	‡24.7	10.8	1.88	-
1912	-	‡13.7	3.17	7.91	‡10.0

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	1,070	713	-	-
1911	-	‡1,470	664	116	-
1912	-	‡817	195	486	‡598

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 342.

137. Bonanza ditch below Porcupine ditch, near Miller House 1/

Location.--Lat 65°32', long. 145°23', just downstream from Porcupine ditch, half a mile downstream from intake, and 5½ miles west of Miller House.

Supplemental records available.--July, August 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--June to September 1912: Maximum discharge observed, 40 cfs June 22 (gage height, 3.34 ft); minimum observed, 4.5 cfs July 21-24 (gage height, 2.20 ft).

Remarks.--Bonanza ditch diverted from Bonanza Creek 4 miles upstream from mouth. Flow includes that of Porcupine ditch (see elsewhere in this report); water is used for mining purposes in the Mammoth Creek basin.

1/ Formerly published as Bonanza ditch below junction with Porcupine branch.

Bonanza ditch below Porcupine ditch, near Miller House--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1912	‡24.6	5.61	12.5	‡21.0

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1912	‡1,460	345	769	‡1,250

‡ Not previously published; partly estimated.
Note.--Record of daily discharge published in WSP 342.

138. Bonanza Creek below ditch intake, near Miller House

Location.--Lat 65°31', long. 145°24', just downstream from Bonanza ditch intake, 4 miles upstream from mouth, and 6 miles west of Miller House.

Drainage area.--7.9 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,200 ft (from topographic map). Prior to 1912 at different datum.

Extremes.--1911-12: Maximum discharge observed, 90 cfs June 23, 1912 (gage height, 5.70 ft); minimum observed, 0.3 cfs on many days in both years.

Remarks.--Bonanza ditch diverted just above station for mining purposes in the Mammoth Creek basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡5.48	2.03	0.30	-
1912	‡16.8	0.31	0.41	‡2.62

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡326	125	18	-
1912	‡999	19	25	‡156

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

139. Porcupine Creek below Bonanza Creek, near Miller House

Location.--Lat 65°33', long. 145°16', 300 ft downstream from Bonanza Creek, 2½ miles west of Miller House, and 3 miles upstream from confluence with Mammoth Creek

Drainage area.--39.9 sq mi.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--1908-12: Maximum discharge observed, 335 cfs June 12, 1909; maximum gage height, 3.4 ft June 23, 1912; minimum observed, 0.7 cfs July 16, 1912 (gage height, 0.78 ft).

Remarks.--No diversion above station during 1908. Flow affected by interbasin diversion through Porcupine and Bonanza ditches (see elsewhere in this report), 1909-12.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	‡34.7	-	-
1909	-	34.6	19.4	-
1910	52.9	20.1	11.3	-
1911	‡81.4	36.5	2.38	-
1912	‡76.7	1.09	4.69	‡24.0

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	‡2,130	-	-
1909	-	2,130	1,190	-
1910	3,150	1,240	695	-
1911	‡3,660	2,240	146	-
1912	‡4,560	67	288	‡1,430

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

140. Independence Creek near Miller House 1/

Location.--Lat 65°29', long. 145°13', 1½ miles upstream from confluence with Mastodon Creek and 4½ miles south of Miller House.

Drainage area.--8.6 sq mi, approximately.

Supplemental records available.--June, July 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,000 ft (from topographic map).

Extremes.--June to September 1911: Maximum discharge observed, 170 cfs July 4 (gage height, 3.54 ft), from rating curve extended above 50 cfs; minimum observed, 1.3 cfs Aug. 4-9, Sept. 9 (gage height, 1.17 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡42.5	20.3	2.10	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡2,530	1,250	129	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

141. Mammoth Creek ditch near Miller House

Location.--Lat 65°31', long. 145°12', at intake, 1½ miles southwest of Miller House.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--May to July 1910: Maximum discharge observed, 39 cfs June 12, 13 (gage-height, 1.90 ft); no flow most of July.

Remarks.--Mammoth Creek ditch diverted water from Mammoth Creek just upstream from Miller Creek for mining purposes below Miller House. Ditch carried about 20 cfs June 19 to Aug. 17, 1909.

Monthly mean discharge, in cubic feet per second

Year	May	June	July
1910	-	26.2	3.0

Monthly runoff, in acre-feet

Year	May	June	July
1910	-	1,560	184

Note.--Records of daily discharge published in WSP 342.

142. Miller Creek near Miller House 2/

Location.--Lat 65°31', long. 145°13', at mouth, 1½ miles southwest of Miller House.

Drainage area.--10.5 sq mi.

Supplemental records available.--July, September 1908, June, August 1909, July 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,800 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 87 cfs June 23, 1912 (gage height, 3.30 ft); minimum observed, 0.9 cfs on many days during 1911 (gage height, 1.45 ft).

Remarks.--Flow affected by overflow and seepage from Bonanza ditch during mining season.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡20.3	7.13	1.60	-
1912	‡32.2	‡2.48	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡1,210	438	98	-
1912	‡1,920	‡153	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Independence Creek at claim "No. 9 above."
2/ Formerly published as Miller Creek at mouth.

143. Mammoth Creek at Miller House

Location.--Lat 65°32', long. 145°11', at Miller House, half a mile upstream from confluence with Porcupine Creek.

Drainage area.--37.1 sq mi.

Gage.--Staff gage. Altitude of gage is 1,600 ft (from topographic map).

Extremes.--1908-10: Maximum discharge observed, 604 cfs June 4, 1909, from rating curve extended above 260 cfs; maximum gage height observed, 4.55 ft June 9, 1909; minimum discharge observed, 6.0 cfs Aug. 19, 22-31, 1909.

Remarks.--Mammoth Creek ditch diverted above station for mining purposes below station (see p.173). Flow probably affected by overflow or seepage into Miller Creek from Bonanza ditch, during most of mining season 1909-12.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1908	-	-	-	-	-	-
1909	‡100	221	42.3	17.9	-	-
1910	-	34.1	28.9	-	-	-

‡ Not previously published; partly estimated on the basis of weather records.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1908	-	-	-	-	-	-
1909	‡6,160	13,150	2,600	1,100	-	-
1910	-	2,030	1,780	-	-	-

‡ Not previously published; partly estimated on the basis of weather records.
Note.--Records of daily discharge published in WSP 342.

144. Crooked Creek at Central

Location.--Lat 65°34', long. 144°48', at Central, 1 mile upstream from Graveyard Creek.

Drainage area.--161 sq mi.

Supplemental records available.--June, July, September 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map).

Extremes.--1909-12: Maximum discharge observed, 1,160 cfs (revised) June 24, 1912 (gage height, 3.20 ft), from rating curve extended above 350 cfs; minimum observed, 4.5 cfs Aug. 5-15, 1911 (gage height, -0.05 ft).

Remarks.--Numerous diversions for mining purposes above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1909, 1912, superseding figures published in WSP 342, are given herewith:

Day (water year)	Discharge (cfs)	Day (water year)	Discharge (cfs)	Day (water year)	Discharge (cfs)
1908-9		1908-9		1908-9	
July 1	128	July 29	128	Aug. 26	36
2	100	30	106	27	40
3	82	31	128	28	32
4	110	Aug. 1	128	29	24
5	110	2	106	30	20
6	110	3	110	31	17
7	122	4	146	Sept. 1	15
8	166	5	110	2	12
9	240	6	88	3	10
10	196	7	71	4	8.5
11	160	8	82	5	6.5
12	138	9	133	6	5.0
13	845	10	166		
14	500	11	155	1911-12	
15	572	12	128	May 23	328
16	296	13	115	30	328
17	175	14	106	June 1	620
18	133	15	88	2	740
19	110	16	71	3	560
20	82	17	63	16	680
21	74	18	58	17	350
22	54	19	48	19	425
23	48	20	63	23	880
24	48	21	77	24	1,160
25	36	22	82	25	1,090
26	34	23	58	26	740
27	26	24	46	27	425
28	34	25	36		

Crooked Creek at Central--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1909	-	‡273	*164	*80.7	-
1910	-	173	103	-	-
1911	-	251	129	11.2	-
1912	‡123	*343	16.6	47.0	116

* Revised.
‡ Not previously published; partly estimated on the basis of weather records and records for Birch Creek near Twelvemile House.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1909	-	‡16,270	*10,100	*4,960	-
1910	-	10,290	6,330	-	-
1911	-	14,940	7,930	689	-
1912	‡7,550	*20,390	1,020	2,890	6,900

* Revised.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

145. Deadwood Creek near Central 1/

Location.--Lat 65°29', long. 144°52', 500 ft upstream from Switch Creek, 6 miles southwest of Central, and 9 miles upstream from mouth.

Drainage area.--21.3 sq mi.

Supplemental records available.--July 1908, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,400 ft (from topographic map).

Extremes.--1909-12: Maximum discharge observed, 105 cfs June 17, 1909; minimum observed, 1.2 cfs on many days during 1911 (gage height, 0.40 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	‡71.3	16.8	12.5	‡5.50
1910	32.8	14.2	5.84	‡8.45
1911	40.4	11.1	1.92	1.27
1912	25.2	4.37	7.61	13.6

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	‡4,240	1,030	769	‡327
1910	1,950	873	359	‡503
1911	2,400	683	118	76
1912	1,500	269	468	809

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

146. Portage Creek near Circle Springs 2/

Location.--Lat 65°27', long. 144°37', 2½ miles southeast of Circle Springs and 4 miles upstream from Medicine Lake.

Drainage area.--10.9 sq mi.

Gage.--Staff gage. Altitude of gage is 1,250 ft (from topographic map).

Extremes.--May to September 1912: Maximum discharge observed, 55 cfs June 23 (gage height, 2.92 ft); minimum observed, 0.3 cfs Aug. 2, 3, 6 (gage height, 1.58 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1912	-	14.7	0.76	5.14	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1912	-	875	47	316	-

Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Deadwood Creek above Switch Creek.
2/ Formerly published as Portage Creek 4 miles above Medicine Lake.

147. Birch Creek near Circle 1/

Location.--Lat 65°43', long. 144°20', at road crossing 12 miles southwest of Circle.

Drainage area.--2,150 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map). Prior to 1912 at different datums.

Extremes.--1908-12: Maximum discharge observed, 14,800 cfs May 19, 1911 (gage height, 9.7 ft, datum then in use); minimum not determined.

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.	Oct.
1908	-	-	1,050	1,030	‡2,040	-
1909	-	3,500	2,320	1,780	804	-
1910	-	2,550	1,430	932	1,570	-
1911	-	3,860	1,020	601	473	‡311
1912	‡2,050	4,650	611	1,110	1,710	‡690

‡ Not previously published; partly estimated on the basis of weather records.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.	Oct.
1908	-	-	64,560	63,330	‡121,200	-
1909	-	208,300	142,700	109,400	47,840	-
1910	-	151,700	87,930	57,310	93,420	-
1911	-	229,700	62,720	36,950	28,150	‡19,100
1912	‡125,900	276,700	37,570	68,250	101,800	‡42,450

‡ Not previously published; partly estimated on the basis of weather records.
Note.--Records of daily discharge published in WSP 342.

148. Bachelor Creek near Miller House 2/

Location.--Lat 65°27', long. 146°04', 4 miles upstream from mouth and 26 miles west of Miller House.

Drainage area.--11.4 sq mi.

Gage.--Staff gage. Altitude of gage is 2,100 ft (from topographic map).

Extremes.--1909-10: Maximum discharge observed, 53 cfs June 8, 1909 (gage height, 1.82 ft), result of discharge measurement; minimum not determined.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	15.9	8.9	‡7.4
1910	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for Birch Creek near Twelvemile House.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	978	547	‡440
1910	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

149. Nome Creek near Chatanika 3/

Location.--Lat 65°21', long. 146°42', 4 miles upstream from Moose Creek and 28 miles northeast of Chatanika.

Drainage area.--20 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,150 ft (from topographic map).

Extremes.--June to September 1912: Maximum discharge observed, 142 cfs June 25 (gage height, 3.30 ft), result of discharge measurement; minimum observed, 14 cfs July 6-11 (gage height, 2.20 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Birch Creek at Fourteenmile House.
2/ Formerly published as Bachelor Creek below Costa Fork.
3/ Formerly published as Nome Creek 4 miles above Moose Creek.

Nome Creek near Chatanika--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1912	-	36.1	23.8	‡23.1

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1912	-	2,220	1,460	‡1,370

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

150. Nome Creek above Ophir Creek, near Chatanika

Location.--Lat 65°22', long. 147°04', 1 mile upstream from Ophir Creek and 21 miles northeast of Chatanika.

Drainage area.--76 sq mi, approximately.

Supplemental records available.--August 1908, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,650 ft (from topographic map). Prior to 1912, at datum 0.48 ft lower.

Extremes.--1911-12: Maximum discharge observed, 764 cfs June 23, 1912 (gage height, 4.9 ft); minimum daily, 14 cfs (estimated) Aug. 6-8, 1911.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	-	‡45.8	85.1	‡44.5
1912	-	71.6	55.1	‡80.4

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	-	‡2,810	5,230	‡2,650
1912	-	4,400	3,390	‡4,780

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

151. Quail Creek near Rampart 1/

Location.--Lat 65°21', long. 149°52', 3 miles upstream from Nugget Creek, 3½ miles upstream from mouth, and 14 miles southeast of Rampart.

Drainage area.--8.5 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,400 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 188 cfs June 24, Aug. 9 (gage height, 2.40 ft), from rating curve extended above 30 cfs; minimum observed, 1.6 cfs Sept. 6 (gage height, 0.58 ft), result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	‡73.3	19.0	28.1	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	‡4,360	1,170	1,730	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Quail Creek at claim "No. 7 above."

152. Quail Creek at mouth, near Rampart 1/

Location.--Lat 65°21', long. 149°45', just upstream from mouth, half a mile downstream from Nugget Creek, and 16 miles southeast of Rampart.

Drainage area.--20.2 sq mi.

Gage.--Staff gage. Altitude of gage is 1,750 ft (from topographic map).

Extremes.--1909-10: Maximum discharge observed, 394 cfs Aug. 9, 1909 (gage height, 3.00 ft), from rating curve extended above 80 cfs; minimum observed, 4.8 cfs July 18, 19, 1910 (gage height, 0.92 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	‡116	38.3	71.5	‡6.64
1910	‡74.9	25.9	57.3	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	‡6,900	2,350	4,400	‡395
1910	‡4,460	1,590	3,520	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

153. Troublesome Creek near Rampart 2/

Location.--Lat 65°21', long. 149°45', just downstream from Quail Creek and 16 miles southeast of Rampart.

Drainage area.--43.2 sq mi.

Gage.--Staff gage. Altitude of gage is 1,750 ft (from topographic map).

Extremes.--1908-10, 1912: Maximum discharge observed, 708 cfs June 3, 1910 (gage height, 4.06 ft), from rating curve extended above 120 cfs; minimum observed, 4.0 cfs Sept. 25, 1908.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	-	-	‡7.45	‡19.0
1909	-	‡249	73	126	‡10.9
1910	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	-	-	‡458	‡1,130
1909	-	‡14,800	4,490	7,750	‡651
1910	-	-	-	-	-
1912	-	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

154. Hoosier Creek near Rampart 3/

Location.--Lat 65°26', long. 150°04', 1½ miles upstream from mouth and 5½ miles southeast of Rampart.

Drainage area.--25.7 sq mi.

Gage.--Staff gage. Altitude of gage is 600 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 729 cfs May 17, Aug. 9, 1909 (gage height, 2.40 ft); minimum observed, 2.2 cfs July 22, 1909 (gage height, 0.50 ft).

Remarks.--Several diversions for mining purposes above station.

1/ Formerly published as Quail Creek at claim "No. 9 below."
2/ Formerly published as Troublesome Creek below Quail Creek.
3/ Formerly published as Hoosier Creek at claim "No. 11 above."

Hoosier Creek near Rampart--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	-	-	-	‡10.4
1909	‡167	77	26	114	-

‡ Not previously published; partly estimated on the basis of records for Hutlinana Creek near Eureka.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	-	-	-	‡618
1909	‡10,240	4,580	1,600	7,010	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharges published in WSP 342.

155. Minook Creek near Rampart 1/

Location.--Lat 65°28', long. 150°07', just upstream from Little Minook Creek, three-quarters of a mile downstream from Little Minook Junior Creek, and 3 miles southeast of Rampart.

Drainage area.--130 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 450 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 4,200 cfs May 25, 1909 (gage height, 5.2 ft); minimum observed, 30 cfs Aug. 15, 16, 1908 (gage height, 1.50 ft).

Remarks.--Several diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	196	56.0	33.4	‡59.9
1909	‡840	‡743	-	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	11,660	3,440	2,050	‡3,560
1909	‡51,620	‡44,230	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

156. Little Minook Creek near Rampart 2/

Location.--Lat 65°28', long. 150°02', 2½ miles upstream from mouth and 5 miles southeast of Rampart.

Drainage area.--5.9 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 167 cfs May 17, 1909 (gage height, 2.38 ft), result of discharge measurement; minimum observed, 0.6 cfs on several days in 1908 and 1909.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	-	4.07	0.81	‡2.03
1909	‡34.1	15.9	5.76	17.0	‡.65

‡ Not previously published; partly estimated on the basis of weather records and records for Hutlinana Creek near Eureka.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	-	250	50	‡121
1909	‡2,100	946	354	1,050	‡39

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Minook Creek above Little Minook Creek.
2/ Formerly published as Little Minook Creek at claim "No. 9 above."

157. Hunter Creek near Rampart 1/

Location.--Lat 65°29', long. 150°02', 2½ miles upstream from mouth and 4 miles southeast of Rampart.

Drainage area.--33.4 sq mi.

Gage.--Staff gage. Altitude of gage is 500 ft (from topographic map).

Extremes.--August, September 1908: Maximum discharge observed, 28 cfs Sept. 4 (gage height, 1.10 ft); minimum observed, 3.7 cfs Aug. 23 (gage height, 0.45 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year								Aug.	Sept.				
1908								‡4.73	‡11.5				

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year								Aug.	Sept.				
1908								‡291	‡682				

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

158. Tanana River at Northway Junction

Location.--Lat 63°00', long. 141°48', on downstream side of bridge on highway from Northway Junction to Northway, half a mile southwest of Northway Junction, and 4 miles upstream from Nabesna River.

Drainage area.--3,280 sq mi, approximately.

Gage.--Wire-weight gage read twice daily; once daily readings prior to May 13, 1950. Altitude of gage is 1,700 ft (from topographic map).

Extremes.--1949: Maximum discharge observed during period July to September, 7,460 cfs Aug. 1, 2; minimum daily, 2,000 cfs Sept. 30.
1949-50: Maximum discharge observed during water year, 8,090 cfs Aug. 6 (gage height, 10.97 ft); minimum not determined.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Flow affected by glacier melt at source. Discharge measurements made at this site during water year 1948 are as follows: July 22, 1948, 5,180 cfs; Sept. 15, 1948, 2,020 cfs.

Discharge, in cubic feet per second, July to September 1949

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	a7,200	7,460	4,790	9	a6,100	*6,130	5,180	17	5,710	5,710	2,450	25	6,560	4,670	a2,100
2	a7,000	7,460	4,790	10	a6,100	6,130	4,550	18	5,710	5,440	2,360	26	6,710	4,430	a2,100
3	a6,900	7,310	4,670	11	*6,270	5,850	a4,000	19	5,990	5,440	2,360	27	6,710	4,430	a2,200
4	a6,800	7,010	4,430	12	6,410	5,850	a3,400	20	6,130	5,440	2,360	28	6,710	4,190	a2,100
5	a6,800	6,560	4,550	13	6,560	5,850	a3,000	21	6,410	5,310	2,270	29	6,860	4,190	a2,100
6	a6,600	a6,500	4,920	14	6,410	5,990	a2,700	22	6,410	5,180	2,190	30	7,160	4,430	a2,000
7	a6,400	a6,500	5,310	15	5,990	5,990	2,720	23	6,560	5,050	2,190	31	7,160	4,670	
8	a6,200	6,270	5,570	16	5,710	5,850	2,540	24	a6,700	4,920	a2,200				
Total													200,940	176,210	98,100
Mean													6,482	5,684	3,270
Ac-ft													398,600	349,500	194,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.

1/ Formerly published as Hunter Creek at claim "No. 17 above."

Tanana River at Northway Junction--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,000							1,000	3,310	4,430	7,460	3,520
2	1,900							1,000	3,520	4,670	7,460	3,310
3	1,900							1,200	3,740	4,430	7,460	3,310
4	*1,800							1,300	3,630	5,180	7,770	3,310
5	1,800							1,400	3,740	6,130	7,930	3,110
6								2,000	3,740	6,560	8,090	3,010
7								2,500	3,960	6,860	7,930	3,010
8	1,600	870					680	3,100	4,190	7,010	7,770	*2,810
9								3,700	4,190	7,160	7,160	2,720
10								4,200	4,190	7,310	6,710	2,720
11								5,000	4,430	7,160	6,410	3,010
12								5,200	4,310	7,010	6,410	3,210
13	1,300							*5,440	4,070	7,010	6,410	3,310
14								5,570	4,070	6,710	6,560	3,210
15								5,440	3,520	6,710	6,560	2,910
16			750	730	710	680		5,310	3,410	6,860	6,410	2,630
17								5,180	3,740	6,860	6,130	2,450
18	1,000							5,050	4,550	6,860	5,990	2,360
19								4,920	5,710	6,860	6,130	2,360
20							700	4,790	6,270	6,860	6,270	2,270
21					(*)			4,550	6,710	7,010	6,130	2,190
22								4,310	6,560	7,010	6,130	2,190
23		800						4,190	6,270	6,860	6,130	2,110
24								4,070	5,570	6,860	6,410	2,030
25	940							3,850	5,180	7,460	6,560	1,950
26								3,630	4,920	7,160	6,410	1,950
27								3,520	4,310	*7,160	5,570	1,950
28							720	3,310	4,070	7,160	5,050	1,870
29								3,310	4,070	7,160	4,550	1,800
30					-			3,210	4,190	7,160	3,850	1,800
31		-			-		-	3,310	-	7,460	3,630	-
Total	39,240	25,050	23,250	22,630	19,880	21,080	20,800	114,560	134,140	207,100	199,440	78,390
Mean	1,266	835	750	730	710	680	693	3,695	4,471	6,681	6,434	2,613
Ac-ft	77,830	49,690	46,120	44,890	39,430	41,810	41,260	227,200	266,100	410,800	395,600	155,500

Calendar year 1949: Max - Min - Mean - Ac-ft -
Water year 1949-50: Max 8,090 Min - Mean 2,481 Ac-ft 1,796,000

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-3, Oct. 5 to Feb. 20, Feb. 22 to May 12 (stage-discharge relation affected by ice from early in November to Apr. 29); discharge estimated on basis of three discharge measurements, weather records, and records for other stations.

159. Tanana River near Tok Junction

Location.--Lat 63°19'00", long. 142°38'30", near right bank on downstream side of bridge on Alaska Highway, 1.4 miles west of Tetlin Junction, 11 miles east of Tok Junction, and 11 miles upstream from Tok River.

Drainage area.--6,800 sq mi, approximately.

Gage.--Wire-weight gage read once daily. Datum of gage is 1,604.67 ft above mean sea level, adjustment of 1950.

Extremes.--1950: Maximum discharge observed during period May to September, 32,000 cfs July 26 (gage height, 7.86 ft); minimum daily, 2,200 cfs May 1.

Remarks.--Records fair except those for periods of no gage-height record or shifting control, which are poor. Discharge measurements, in cubic feet per second, made prior to May 1950 are as follows:

July 22, 1948..... 17,200
Sept.14, 1948..... 6,310
July 12, 1949..... 20,500
Dec. 7, 1949..... 2,050
Feb. 16, 1950..... 1,480

Discharge, in cubic feet per second, May to September 1950

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	2,200	10,100	21,400	30,300	12,200	16	11,800	14,100	28,100	25,100	6,220
2	2,400	11,500	21,400	28,600	11,800	17	11,800	15,600	27,600	23,600	5,920
3	2,700	11,500	18,900	26,100	11,800	18	11,100	20,100	26,100	23,200	5,920
4	3,000	11,800	22,000	26,100	11,800	19	11,100	24,100	26,600	24,100	5,630
5	3,400	11,800	27,100	26,100	10,400	20	11,100	28,100	27,100	24,100	5,340
6	4,200	11,800	26,100	28,100	9,380	21	10,800	29,200	27,600	22,800	4,780
7	5,200	13,300	26,600	27,600	9,040	22	9,380	30,300	26,600	22,800	4,510
8	6,200	14,500	28,600	25,100	*8,080	23	9,380	25,100	26,100	23,600	4,780
9	7,000	14,800	28,600	24,100	7,760	24	9,720	22,300	27,000	24,600	4,700
10	8,100	14,100	25,600	23,600	8,400	25	9,040	21,800	30,300	25,100	4,100
11	9,400	15,600	25,100	23,600	8,720	26	8,720	21,000	31,400	24,600	4,100
12	*11,500	15,200	25,600	24,100	10,100	27	8,720	19,300	30,300	21,000	4,100
13	11,800	14,800	26,100	24,600	9,720	28	8,720	17,600	*29,800	18,900	3,900
14	12,200	15,600	26,600	25,600	8,080	29	9,040	18,000	29,800	16,000	3,700
15	12,200	14,800	27,100	26,100	6,520	30	9,380	20,100	29,200	14,500	3,700
						31	9,040	-	29,800	12,900	-
Total							260,340	527,900	830,200	736,600	215,200
Mean							8,398	17,600	26,780	23,760	7,173
Ac-ft							516,400	1,047,000	1,647,000	1,461,000	426,800

* Discharge measurement made on this day.
Note.--No gage-height record May 1-11, July 4, 24, Sept. 24-30; discharge estimated on basis of weather records and records for station at Big Delta. Shifting control method used August 27 to September 23.

160. Tanana River at Big Delta

Location.--Lat 64°09'20", long. 145°51'00", on line between sec. 6 and 7, T. 9 S., R. 10 E., near left bank on downstream side of bridge on Richardson Highway, 0.5 mile northwest of Big Delta, half a mile upstream from Delta River, 8 miles downstream from Goodpaster River, and about 75 miles southeast of Fairbanks.

Drainage area.--13,500 sq mi, approximately.

Supplemental records available.--Records of specific conductance of daily samples available in district office, Quality of Water Branch, at Palmer.

Gage.--Wire-weight gage read once daily. Datum of gage is 962.95 ft above mean sea level.

Extremes.--1948-49: Maximum discharge observed during water year, 62,800 cfs July 29 (gage height, 23.57 ft); minimum daily, 4,000 cfs Nov. 29 to Dec. 8; minimum gage height observed, 10.98 ft Dec. 22.

1949-50: Maximum discharge observed during water year, 49,300 cfs Aug. 2 (gage height, 21.98 ft); minimum daily, 4,300 cfs Feb. 9-12; minimum gage height observed, 10.87 ft Nov. 29.

Maximum dissolved solids during period May 1949 to September 1950, 182 ppm Feb. 20-28; minimum, 107 ppm May 21-31, 1950.

Maximum hardness during period May 1949 to September 1950, 143 ppm Oct. 21-31, Dec. 21-31, Feb. 20-28; minimum, 87 ppm May 21-31, June 1-10, 1949.

Maximum water temperature during period May 1949 to September 1950, 64°F July 10, 1950; minimum, freezing point on many days during winter months.

Remarks.--Records of discharge fair except those for periods of ice effect, no gage-height record or shifting control, which are poor. Discharge measurements made prior to September 1948 are as follows: July 30, 1947, 47,500 cfs; June 2, 1948, 33,400 cfs; and July 26, 1948, 35,300 cfs.

Discharge, in cubic feet per second, September 1948

Day	Discharge	Day	Discharge	Day	Discharge
Sept. 15	*15,500	Sept. 22	12,400	Sept. 27	12,500
18	17,700	23	12,500	28	11,500
19	15,100	24	12,300	29	11,700
20	13,500	25	12,200	30	10,600
21	12,500	26	11,300		

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,000	5,000	4,000	4,200	4,800	4,700	5,100	5,720	28,600	31,200	61,200	27,800
2	9,790	5,000	4,000	4,300	4,600	4,700	5,080	5,740	29,400	30,100	60,300	27,600
3	10,400	4,900	4,000	4,400	4,500	4,800	5,140	5,600	31,500	29,200	58,200	29,200
4	10,400	4,700	4,000	4,500	4,400	4,900	5,180	5,650	31,500	27,600	54,900	32,100
5	10,300	4,600	4,000	4,600	4,500	5,000	5,060	5,920	30,100	25,500	46,700	32,600
6	9,970	4,500	4,000	4,700	4,400	5,100	5,060	6,010	28,900	27,700	45,200	35,200
7	9,840	4,400	4,000	4,600	4,300	5,200	5,100	6,100	27,400	*28,000	43,600	35,700
8	9,320	4,400	4,000	4,500	4,300	5,300	5,080	6,230	26,600	28,200	41,400	35,500
9	9,690	4,600	4,100	4,500	4,300	5,400	5,180	6,480	28,900	30,000	49,100	34,000
10	9,370	4,800	4,100	4,600	4,300	5,190	5,220	6,740	28,000	35,600	47,300	32,000
11	9,140	5,600	4,100	4,800	4,400	5,190	5,110	6,880	27,100	34,800	45,200	31,000
12	9,220	5,900	4,100	4,900	4,500	5,380	5,340	7,240	28,900	38,900	45,500	27,900
13	9,020	5,800	4,100	4,700	4,500	5,140	5,270	8,140	25,100	44,900	*44,100	24,900
14	9,000	5,500	4,200	4,600	4,500	5,190	5,270	10,900	24,300	46,200	42,800	23,000
15	8,370	5,200	4,200	4,500	4,500	5,080	5,510	13,700	23,200	49,900	41,000	22,300
16	9,140	5,000	4,300	4,400	4,400	5,110	5,560	14,600	22,900	52,200	38,900	21,100
17	8,660	4,800	4,300	4,400	4,400	5,080	5,340	*16,700	25,000	48,400	35,900	20,200
18	8,640	4,700	4,400	4,300	4,300	5,100	5,270	19,100	24,600	47,700	34,000	20,700
19	8,440	4,600	4,500	4,400	4,200	5,140	5,340	20,900	23,900	52,400	33,400	19,000
20	7,960	4,500	4,600	4,500	4,200	*5,160	5,380	20,800	23,600	51,600	32,800	17,000
21	6,980	4,400	4,700	4,600	4,300	5,140	5,420	22,900	27,400	53,400	30,600	16,700
22	6,300	4,300	4,500	4,500	4,300	5,180	5,340	25,100	27,700	52,800	30,000	16,200
23	5,700	4,200	4,400	4,500	4,400	5,080	5,380	26,600	30,700	51,500	30,400	15,700
24	5,300	4,200	4,200	4,500	4,500	5,270	5,470	28,000	30,400	54,900	32,300	15,100
25	4,900	4,200	4,200	4,500	4,500	5,240	5,560	29,400	35,400	55,500	32,800	15,000
26	4,800	4,100	4,200	4,500	4,500	5,220	5,530	29,800	33,700	56,700	33,100	16,500
27	4,900	4,100	4,100	4,500	4,600	5,060	5,530	30,600	31,700	55,200	31,400	18,000
28	*5,000	4,100	4,100	4,500	4,600	4,740	5,440	34,800	30,400	53,700	30,000	17,600
29	4,900	4,000	4,100	4,600	-	4,940	5,470	35,100	29,600	62,400	30,800	17,100
30	4,800	4,000	4,100	4,600	-	5,110	5,420	33,200	28,500	62,200	29,800	16,100
31	4,900	-	4,100	4,600	-	5,180	-	29,800	-	61,900	28,600	-
Total	245,150	140,100	129,700	140,300	12',000	158,020	159,150	524,450	845,000	1,380,300	1,242,300	712,800
Mean	7,908	4,670	4,184	4,526	4,429	5,097	5,305	16,920	28,170	44,530	40,070	23,760
Ac-ft	486,200	277,900	257,300	278,300	246,000	313,400	315,700	1,040,000	1,676,000	2,738,000	2,464,000	1,414,000

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 62,400 Min 4,000 Mean 15,890 Ac-ft 11,510,000

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Oct. 22 to Mar. 9 (no gage-height record Dec. 2, 4-16; discharge estimated on basis of weather records and 1 discharge measurement). Shifting control method used May 11-27, July 14 to Sept. 29.

Tanana River at Big Delta--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15,600	6,700	4,500	4,500	4,600	5,400	5,340	6,300	22,300	34,400	42,900	25,200
2	15,300	6,540	4,600	4,500	4,600	5,500	5,300	6,940	23,600	33,800	48,300	25,000
3	*14,500	6,760	4,700	4,500	4,500	5,500	5,190	7,410	24,000	33,200	47,500	24,200
4	14,700	6,780	4,800	4,500	4,500	5,500	5,140	7,390	24,500	32,600	46,900	23,600
5	14,300	6,760	4,800	4,600	4,500	5,300	5,270	7,240	23,300	32,200	45,300	23,600
6	14,400	6,720	4,800	4,600	4,400	5,200	5,270	7,340	21,900	37,500	46,900	22,400
7	13,400	6,820	4,800	4,500	4,400	5,000	5,340	8,110	23,300	43,400	44,500	20,700
8	12,300	6,640	4,600	4,600	4,400	4,900	5,350	9,140	24,200	44,800	41,700	20,600
9	11,500	6,480	4,600	4,600	4,300	4,800	5,340	12,500	24,700	45,300	42,100	20,200
10	11,200	6,580	4,500	4,500	4,300	4,700	5,420	15,600	24,500	44,200	40,800	18,900
11	11,000	6,340	4,500	4,500	4,300	4,700	5,530	*18,000	25,400	42,400	40,700	20,000
12	10,500	5,960	4,500	4,500	4,300	4,700	5,270	20,800	25,100	41,600	40,500	20,400
13	9,950	5,720	4,600	4,600	4,400	4,800	5,190	21,400	23,500	39,100	*39,200	20,600
14	9,580	5,710	4,600	4,500	4,500	4,800	5,290	22,300	23,200	39,500	38,800	20,000
15	9,090	5,580	4,500	4,500	4,500	4,700	5,270	23,700	23,400	39,800	37,700	19,300
16	8,350	5,350	4,500	4,500	4,600	4,700	5,210	23,700	24,800	40,200	37,800	19,200
17	8,090	5,300	4,500	4,700	4,700	4,700	5,180	24,200	28,400	42,000	38,700	18,900
18	7,740	5,500	4,600	4,700	4,800	4,700	5,140	23,000	32,800	40,600	37,700	18,600
19	7,430	5,650	4,600	4,800	4,900	4,700	5,140	22,800	38,000	39,800	40,700	18,800
20	7,670	5,440	4,700	4,700	*5,100	4,800	5,060	22,300	38,900	39,800	39,600	18,200
21	7,100	5,140	4,700	4,700	5,100	5,000	4,870	23,600	46,100	38,600	39,900	17,900
22	6,800	5,020	4,600	4,600	5,200	5,020	4,820	24,100	46,600	38,400	39,200	17,500
23	7,240	5,030	4,600	4,600	5,300	5,080	4,740	24,400	46,600	39,000	40,500	17,500
24	7,430	4,980	4,600	4,700	5,400	5,190	4,870	23,100	45,000	38,600	40,900	16,700
25	7,520	4,870	4,500	4,800	5,400	5,300	5,180	24,100	44,200	42,400	40,700	14,800
26	7,200	4,740	4,500	4,800	5,400	5,240	5,300	24,700	40,900	41,300	38,600	14,300
27	7,780	4,570	4,600	4,700	5,300	5,290	5,350	24,500	33,800	39,800	33,600	14,100
28	7,340	4,710	4,600	4,700	5,300	5,350	5,470	24,400	33,200	39,600	32,800	14,000
29	6,980	4,560	4,500	4,600	-	5,220	5,620	22,600	32,600	38,800	32,400	14,000
30	6,780	4,400	4,500	4,500	-	5,190	5,760	21,000	34,400	41,000	28,000	13,900
31	6,660	-	4,500	4,500	-	5,270	-	20,500	-	41,500	25,800	-
Total	305,430	171,370	142,500	142,600	133,000	156,250	157,220	567,170	923,200	1,225,200	1,230,700	573,100
Mean	9,853	5,712	4,597	4,600	4,750	5,040	5,241	18,300	30,770	39,520	39,700	19,100
Ac-ft	605,800	339,900	282,600	282,800	263,800	309,900	311,800	1,125,000	1,831,000	2,430,000	2,441,000	1,137,000

Calendar year 1949: Max 62,400 Min 4,200 Mean 16,180 Ac-ft 11,710,000
Water year 1949-50: Max 48,300 Min 4,300 Mean 15,690 Ac-ft 11,360,000

* Discharge measurements made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1 to Mar. 21. Shifting control method used June 17-21.

Tanana River at Big Delta

Chemical analyses, in parts per million, May 1949 to September 1950

Date of collection	Mean discharge (cfs) [a]	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
May to September 1949																		
May 17-20, 1949	19,380	8.8	--	31	5.9	1.1		102	18	0.5	--	1.1	117	102	18	204	6.7	--
May 21-31	29,570	7.6	0.23	26	5.3	3.7	1.8	83	18	1.5	0.3	1.8	126	87	19	182	6.8	--
June 1-10	29,090	8.0	.28	26	5.5	4.4	1.8	85	19	1.5	.3	1.0	124	87	18	183	6.6	--
June 11-20	24,860	9.0	.23	28	6.7	5.1	1.9	94	23	2.2	.3	1.0	136	97	20	206	6.6	--
June 21-30	30,550	8.8	.24	29	6.8	4.2	1.9	96	25	2.4	.3	.9	134	100	22	213	7.4	--
July 1-10	29,310	9.1	.32	28	6.7	4.6	1.8	95	23	2.6	.3	.8	136	97	20	209	7.3	--
July 11-20	46,700	8.5	.08	38	6.6	3.8	2.2	118	29	2.5	.2	.7	153	122	25	252	7.6	--
July 21-31	56,380	9.6	.07	38	6.1	3.8	1.6	124	28	1.5	.2	.5	155	120	18	255	7.4	--
Aug. 1-10	50,890	9.7	.12	37	6.2	4.0	1.6	118	29	2.1	.2	.6	155	118	21	251	7.5	--
Aug. 11-20	39,360	9.6	.15	33	6.6	4.3	1.4	109	27	2.1	.2	.6	145	110	20	233	7.5	--
Aug. 21-31	30,890	10	.11	34	7.0	4.7	1.6	114	28	2.0	.2	.5	151	114	20	242	7.3	--
Sept. 1-10	32,170	9.1	.05	36	7.0	4.2	1.4	118	29	1.8	.2	.3	151	119	22	251	7.5	--
Sept. 11-21	22,710	10	.10	35	7.3	5.2	1.6	119	27	2.3	.2	.4	152	117	20	248	7.5	--
Sept. 21-30	16,400	10	.06	37	8.7	5.3	1.9	129	29	2.3	.2	.5	164	128	22	266	7.5	--
October 1949 to September 1950																		
Oct. 1-10, 1949	13,720	11	0.08	38	8.6	5.0	2.1	131	31	2.4	0.2	0.5	167	130	23	273	7.6	--
Oct. 11-20	8,940	13	.04	41	9.4	4.8	1.6	140	29	2.2	.1	.6	175	141	26	284	7.6	--
Oct. 21-31	7,166	13	.03	42	9.4	4.8	1.8	143	29	2.0	.1	.5	178	143	26	288	7.4	--
Nov. 1-10	6,680	14	.03	39	9.0	4.5	2.1	134	30	1.7	.1	1.0	171	134	24	278	7.6	--
Nov. 11-20	5,655	14	.02	39	9.2	4.1	2.6	135	30	2.1	.1	.9	170	135	25	279	7.6	--
Nov. 21-30	4,802	12	.03	38	8.9	3.9	2.6	126	33	1.7	.2	.9	166	131	28	272	7.6	--

a Discharge shown for period May 17 to Sept. 30, represents 79 percent of runoff for water year October 1948 to September 1949.

Tanana River at Big Delta--Continued

Chemical analyses, in parts per million, May 1949 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
October 1949 to September 1950--Continued																		
Dec. 1-10, 1949	4,670	13	0.03	38	9.0	4.2	2.1	134	32	1.8	0.2	0.8	172	132	22	278	7.5	--
Dec. 11-20	4,560	13	.03	40	9.4	4.1	2.2	133	33	1.9	.2	1.0	170	138	29	280	7.6	--
Dec. 21-31	4,564	13	.03	42	9.3	3.9	2.2	141	32	1.8	.2	1.0	173	143	28	289	7.7	--
Jan. 1-10, 1950	4,540	15	.01	41	8.8	6.1		144	29	1.5	.2	1.1	175	138	20	285	7.4	--
Jan. 11-20	4,600	14	.02	40	9.2	5.8		142	29	1.8	.1	1.0	171	138	21	278	7.4	--
Jan. 21-31	4,655	15	.01	40	8.8	6.5		142	29	1.7	.1	1.1	171	136	20	279	7.5	--
Feb. 1-10	4,450	15	.02	41	8.7	6.5		146	28	1.7	.1	1.0	173	138	18	287	7.6	--
Feb. 11-19	4,556	16	.01	42	8.7	7.0		151	28	1.3	.1	.9	175	141	17	291	7.7	--
Feb. 20-28	5,278	17	.02	42	9.4	4.8		148	28	2.0	.1	.5	182	143	22	289	8.0	--
Mar. 1-10	5,180	17	.02	41	9.2	4.7		145	28	1.6	.1	.4	177	140	21	286	8.0	--
Mar. 11-20	4,730	16	.02	40	9.1	6.0		145	27	2.0	.1	.5	172	137	18	289	8.0	--
Mar. 21-31	5,195	17	.02	41	9.6	4.7		146	27	2.1	.1	.6	175	142	22	291	7.9	--
Apr. 1-10	5,296	16	.06	41	9.7	4.2		146	27	2.1	.1	.5	173	142	23	291	7.9	--
Apr. 11-20	5,228	16	.02	40	9.5	3.6		149	26	1.5	.1	.5	178	139	17	289	7.8	6
Apr. 21-30	5,198	15	.01	41	8.5	4.2		146	25	1.2	.1	.6	168	137	18	288	7.8	7
May 1-10	8,797	13	.01	36	8.0	5.6		132	23	1.5	.1	.5	153	123	15	261	7.9	6
May 11-20	22,220	11	.02	31	5.7	3.1		108	17	1.5	.0	.6	123	101	12	210	7.9	43
May 21-31	23,360	9.6	.02	29	5.2	2.8		99	10	1.2	.0	.6	107	94	13	193	7.9	45
June 1-10	23,630	10	.02	26	5.8	2.3		91	19	1.2	.1	.7	110	89	14	190	8.0	30
June 11-20	28,350	9.8	.03	36	6.4	1.1		114	21	1.6	.1	.9	144	116	23	233	7.7	20
June 21-30	40,340	9.1	.04	36	7.1	4.4		120	26	1.8	.1	.4	146	119	21	244	7.7	10
July 1-10	38,140	9.2	.04	37	6.8	5.8		125	26	1.9	.1	.4	149	120	18	255	7.7	5
July 11-20	40,480	10	.03	37	7.1	4.9		124	26	2.1	.1	.4	151	122	20	254	7.7	10
July 21-31	39,910	11	.04	35	6.5	5.4		116	26	2.1	.2	.3	140	114	19	236	7.8	10
Aug. 1-10	44,690	9.6	.04	35	6.4	4.3		112	27	1.8	.1	.4	141	114	22	235	7.7	20
Aug. 11-20	39,140	9.7	.08	33	6.9	5.2		112	26	2.0	.1	.2	140	111	19	230	7.6	20
Aug. 21-31	35,670	11	.01	37	6.5	5.2	2.6	120	25	1.5	.1	.5	149	119	21	242	7.4	5
Sept. 1-10	22,440	11	.02	34	7.1	5.6	2.5	119	22	2.0	.1	.4	145	114	17	236	7.4	5
Sept. 11-20	19,400	11	.02	34	8.0	5.7		120	27	1.9	.1	1.0	156	118	19	256	7.5	5
Sept. 21-30	15,470	11	.02	36	8.0	6.2		126	28	2.1	.1	.6	162	123	19	265	7.5	5
Average [b]	15,690	13	0.03	39	8.1	5.2		131	27	1.8	0.1	0.7	160	131	23	264	--	--

b Averages shown include only water year October 1949 to September 1950.

Tanana River at Big Delta--Continued

Temperature (°F) of water, May to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								--	54	48	54	54
2								--	54	46	56	54
3								--	55	48	58	54
4								--	55	50	58	52
5								--	52	52	58	52
6								--	50	48	56	52
7								--	53	50	56	50
8								--	53	52	54	50
9								--	52	54	52	50
10								--	52	58	50	48
11								--	52	54	50	48
12								--	--	56	48	46
13								--	52	56	48	46
14								--	50	56	48	46
15								--	52	58	50	46
16								--	52	54	50	44
17								37	52	54	54	44
18								37	52	56	52	44
19								37	53	56	52	42
20								37	53	54	54	--
21								37	52	58	54	42
22								37	53	56	54	42
23								38	47	56	56	42
24								38	48	56	54	42
25								38	46	54	56	42
26								38	48	56	56	44
27								40	48	58	54	43
28								44	44	--	56	44
29								48	43	56	54	42
30								50	46	56	56	42
31								53	--	54	56	--
Average								--	51	54	54	46

Temperature (°F) of water, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	32	32	32	32	32	36	40	48	60	52	50
2	42	34	32	32	32	32	34	40	46	62	52	52
3	42	32	32	32	32	32	32	40	48	62	52	52
4	40	32	--	32	32	32	32	40	48	62	52	52
5	40	32	32	32	32	32	32	40	48	60	52	52
6	40	34	32	32	32	32	34	40	50	62	54	--
7	38	32	32	32	32	32	34	40	50	62	57	52
8	34	32	32	32	32	32	34	40	48	62	54	50
9	34	32	32	32	32	32	34	40	48	62	56	52
10	34	32	32	32	32	32	34	40	48	64	54	--
11	34	32	32	32	32	32	34	42	48	62	56	52
12	34	34	32	32	32	32	36	44	50	60	56	52
13	34	32	32	32	--	32	36	44	52	58	58	52
14	34	32	32	32	32	32	34	44	54	56	56	50
15	34	32	32	32	32	34	36	44	54	58	56	50
16	34	32	32	32	32	34	36	42	56	56	54	48
17	34	32	32	32	32	32	36	42	56	56	56	52
18	34	--	32	32	32	34	38	42	56	56	56	54
19	32	32	32	32	32	34	38	44	58	56	56	54
20	34	32	32	32	32	34	38	44	60	54	58	52
21	34	32	32	32	32	34	38	44	60	54	56	54
22	34	32	32	32	32	34	38	44	60	54	56	52
23	33	32	32	32	32	34	38	45	62	54	58	50
24	34	32	32	32	32	34	38	45	58	52	58	50
25	36	32	32	32	32	34	38	45	58	56	58	50
26	36	32	32	32	32	36	38	46	58	--	58	48
27	36	32	32	32	32	34	38	46	60	56	56	50
28	34	32	32	32	32	34	38	46	60	54	54	48
29	32	32	32	32	--	34	39	46	62	54	52	47
30	32	32	32	32	--	34	38	46	60	54	50	48
31	--	--	32	32	--	34	--	48	--	54	52	--
Average	36	32	32	32	32	33	36	43	54	58	55	51

161. Banner Creek at Richardson 1/

Location.--Lat 64°17'25", long. 146°21'00", in SW¼ sec. 22, T. 7 S., R. 7 E., at road crossing a quarter of a mile upstream from mouth and half a mile northwest of Richardson.

Drainage area.--21.5 sq mi.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map). Prior to 1910, at different datum.

Extremes.--1909-10: Maximum discharge observed, 29 cfs July 30, 1909 (gage height, 1.80 ft, datum then in use), from rating curve extended above 12 cfs; minimum observed, 2.0 cfs July 16, 1910 (gage height, 0.84 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	‡8.66	-	‡6.28
1910	-	5.63	7.63	11.4

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	‡533	-	‡374
1910	-	346	469	678

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

162. Junction Creek near Richardson 2/

Location.--Lat 64°21'50", long. 146°36'40", just upstream from Moose Lake outlet, 1 mile upstream from confluence with Mosquito Creek, and 9½ miles northwest of Richardson.

Drainage area.--23.6 sq mi.

Gage.--Staff gage. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--1909-10, 1912: Maximum discharge observed, 300 cfs June 24, 25, 1912 (gage height, about 11 ft), from rating curve extended above 15 cfs; minimum observed, 3 cfs July 21, 1910 (gage height, 1.00 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	‡10.2	19.6	‡8.48
1910	‡21.6	6.30	6.75	‡10.9
1912	78.4	9.32	4.29	5.25

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	‡627	1,210	‡505
1910	‡1,290	387	415	‡649
1912	4,670	573	264	312

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Banner Creek at mouth.
2/ Formerly published as Junction Creek above Moose Lake outlet.

163. Salcha River near Salchaket 1/

Location.--Lat 64°28'15", long. 146°55'45", in sec. 22, T. 5 S., R. 4 E., near right bank on downstream side of bridge on Richardson Highway, half a mile east of Aurora Lodge, 2 miles upstream from mouth, and 6 miles southeast of Salchaket.

Drainage area.--2,170 sq mi, approximately.

Supplemental records available.--June 1911, discharge measurements only.

Gage.--Wire-weight gage read once or twice daily. Datum of gage is 631.85 ft above mean sea level. July 1909 to August 1910, staff gage at site 1¼ miles downstream at different datum.

Extremes.--1948-49: Maximum discharge observed during water year, 25,700 cfs May 28 (gage height, 13.96 ft), from rating curve extended above 11,000 cfs; minimum not determined.
1949-50: Maximum discharge observed during water year, 13,500 cfs May 15 (gage height, 11.11 ft); maximum gage height observed, 15.10 ft May 10 (ice jam); minimum discharge not determined.
1909-10, 1948-50: Maximum discharge observed, 25,700 cfs May 28, 1949 (gage height, 13.96 ft), from rating curve extended above 11,000 cfs; maximum gage height observed, 15.10 ft May 10, 1950 (ice jam); minimum discharge observed, 64.5 cfs, result of discharge measurement Apr. 17, 1910, but may have been less during periods of no gage-height record.

Remarks.--Records for water years 1948-50 fair except those for periods of ice effect, no gage-height record, or backwater from logs and log boom, which are poor. No diversion or regulation above station. Discharge measurements made at this site in 1947 and 1948 are as follows: July 30, 1947, 1,980 cfs; June 3, 1948, 16,000 cfs; July 26, 1948, 3,150 cfs and Sept. 17, 1948, 2,820 cfs.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1909	-	-	‡3,630	3,690	1,460
1910	‡3,500	3,560	2,000	‡2,620	-

‡ Not previously published; partly estimated on the basis of one discharge measurement, weather records, and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1909	-	-	‡223,100	226,900	86,880
1910	‡215,000	211,800	123,000	‡161,300	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2,000	700						a430	7,260	7,580	9,530	2,200
2	a1,900	700						a470	6,570	4,560	8,850	2,150
3	1,880	680						a510	7,110	4,340	a7,900	2,060
4	a1,900	660						a560	7,020	6,480	a7,200	1,820
5	a1,900							a610	11,000	a6,300	a6,700	1,920
6	a1,800							a680	12,500	5,220	a5,900	1,890
7	a1,700				260			a780	11,200	4,280	a5,200	1,880
8	a1,700					260		a820	8,550	3,940	a4,600	1,850
9	a1,600							a1,100	8,160	4,150	a5,100	1,790
10	a1,600	580					290	a1,400	6,990	*4,410	a5,600	1,790
11	1,520							a1,700	6,240	3,900	a6,100	1,790
12	1,510							a2,200	5,200	3,700	a7,000	1,730
13	1,510							a2,800	6,020	4,840	*6,570	1,750
14	1,500							a3,600	7,200	7,970	a6,200	1,510
15	1,480							a4,500	15,000	8,820	5,880	1,550
16	1,330		340	290				a5,700	16,300	7,520	5,080	1,620
17	1,330							*7,490	7,870	6,810	4,630	1,560
18	1,200							9,230	7,460	6,540	4,240	1,480
19	1,100							11,900	7,650	5,740	3,920	1,530
20	980							14,600	8,480	7,620	3,580	1,440
21	860							17,500	9,840	11,000	3,350	1,480
22	760				250			21,300	9,130	11,300	3,180	1,500
23	720	410				270		20,100	7,110	9,810	3,060	1,460
24	710							20,600	5,880	9,360	3,010	1,430
25	700						330	10,700	6,660	9,940	2,890	1,420
26	730							8,380	7,580	10,000	2,760	1,400
27	760							13,400	9,470	9,500	2,610	1,390
28	780							23,900	8,260	10,900	2,490	1,390
29	770				-			12,700	5,940	10,000	2,340	1,380
30	740				-			7,840	5,080	10,300	2,340	1,330
31	700	-			-		-	a6,900	-	10,400	2,270	-
Total	39,670	15,270	10,540	8,990	7,150	8,220	9,100	234,400	248,730	227,230	150,080	49,490
Mean	1,280	509	340	290	255	265	303	7,561	8,291	7,330	4,841	1,650
Ac-ft	76,680	30,290	20,910	17,830	14,180	16,300	18,050	464,900	493,300	450,700	297,700	98,160

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 23,900 Min - Mean 2,764 Ac-ft 2,001,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for other stations.
Note.--Stage-discharge relation affected by ice Oct. 18 to about Apr. 30 (no gage-height record for almost entire period; discharge estimated as explained for "a").

1/ Published as Salcha River at mouth, 1909-10.

Salcha River near Salchaket--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,330							660	4,520	2,270	1,160	1,410
2	1,300							800	4,090	2,080	1,170	1,360
3	*1,250							1,200	3,520	1,940	1,230	1,400
4	1,310		(*)					1,500	3,600	1,580	1,340	1,370
5	1,250							2,000	3,860	1,550	1,530	1,300
6	1,270							2,700	4,170	1,540	1,690	*1,300
7	1,210	560	300		280	(*)		3,500	3,700	1,290	1,760	1,300
8	1,180					220		5,000	3,150	1,300	1,630	1,280
9	1,100							7,000	2,960	1,280	1,800	1,260
10	1,100						250	*8,800	3,000	1,220	1,800	1,250
11	980				(*)			10,400	3,010	1,210	1,800	1,230
12	880							12,200	2,610	1,190	1,730	1,200
13	880							11,900	2,540	1,220	1,700	1,200
14	880							10,600	2,190	1,160	1,630	1,190
15	880			250				12,600	2,120	1,190	1,720	1,180
16								11,300	2,150	1,240	1,620	1,230
17								10,400	2,250	1,310	1,800	1,240
18								10,400	2,140	1,610	1,780	1,260
19								9,230	2,120	1,650	1,610	1,250
20								8,320	2,110	1,390	1,560	1,200
21					230			7,260	2,300	1,340	1,670	1,180
22						230		8,060	2,330	1,230	1,630	1,180
23	750	450	270				290	8,000	2,360	1,270	1,530	1,180
24								6,990	1,980	1,250	1,490	1,180
25								6,870	1,690	*1,280	1,510	1,170
26								6,160	2,060	1,290	1,500	1,150
27								4,840	2,560	1,220	1,480	1,110
28							400	5,050	2,610	1,160	1,440	1,010
29					-			4,930	2,230	1,190	1,460	1,020
30					-			4,670	1,820	1,210	1,470	1,040
31					-		-	3,760	-	1,140	1,420	-
Total	28,800	15,150	8,820	7,750	7,190	6,980	8,450	207,100	81,750	42,800	48,860	36,630
Mean	929	505	285	250	257	225	282	6,681	2,725	1,381	1,576	1,221
Ac-ft	57,120	30,050	17,490	15,370	14,260	13,840	16,760	410,800	162,100	84,890	96,910	72,650

Calendar year 1949: Max 23,900 Min - Mean 2,729 Ac-ft 1,976,000
Water year 1949-50: Max 12,600 Min - Mean 1,371 Ac-ft 992,200

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Oct. 10 to May 10 (no gage-height record for almost entire period; discharge estimated on basis of discharge measurements, weather records, and records for other stations in Tanana River basin). Backwater from log boom and logs Aug. 6 to Sept. 30; discharge estimated on basis of 2 discharge measurements, weather records, and records for Chena Slough at Fairbanks.

164. Chena River near Chena Hot Springs 1/

Location.--Lat 65°02', long. 145°25', half a mile upstream from Shamrock Creek and 19 miles east of Chena Hot Springs.

Drainage area.--157 sq mi.

Gage.--Staff gage. Altitude of gage is 1,500 ft (from topographic map).

Extremes.--July to October 1912: Maximum discharge observed, 772 cfs Aug. 7 (gage height, 6.25 ft), from rating curve extended above 260 cfs; minimum observed, 135 cfs July 12, 13 (gage height, 5.00 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year							July	Aug.	Sept.	Oct.			
1912							190	291	219	‡139			

‡ Not previously published; partly estimated on the basis of weather records.

Monthly runoff, in acre-feet

Year							July	Aug.	Sept.	Oct.			
1912							11,680	17,890	13,030	‡8,550			

‡ Not previously published; partly estimated on the basis of weather records.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Chena River above Shamrock Creek.

165. North Fork Chena River near Chena Hot Springs 1/

Location.--Lat 65°04'10", long. 146°05'00", 150 ft upstream from Monument Creek and 1.4 miles northwest of Chena Hot Springs.

Drainage area.--93.8 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--June to August 1912: Maximum discharge observed, 119 cfs June 28 (gage height, 2.83 ft); minimum observed, 30 cfs July 24 (gage height, 2.29 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1912	-	41.9	‡51.4

‡ Not previously published; partly estimated on the basis of records for Chatanika River near Chena Hot Springs.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1912	-	2,580	‡3,160

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

166. Monument Creek at Chena Hot Springs

Location.--Lat 65°03'15", long. 146°03'15", at Chena Hot Springs and 1½ miles upstream from mouth.

Drainage area.--30.1 sq mi.

Gage.--Staff gage. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--June to August 1912: Maximum discharge observed, 74 cfs July 28 (gage height, 2.75 ft); minimum observed, 20 cfs July 7, 9, 10, 12, 13 (gage height, 2.17 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1912	-	28.0	‡31.4

‡ Not previously published; partly estimated on the basis of records for Chatanika River near Chena Hot Springs.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1912	-	1,720	‡1,930

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

167. North Fork Chena River below Monument Creek, near Chena Hot Springs

Location.--Lat 65°04'05", long. 146°05'05", 500 ft downstream from Monument Creek and 1.3 miles northwest of Chena Hot Springs.

Drainage area.--129 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map).

Extremes.--June to August 1912: Maximum discharge observed, 162 cfs June 28 (gage height, 4.08 ft), result of discharge measurement; minimum observed, 50 cfs July 8, 11 (gage height, 3.48 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.
1912	-	75.9	‡83.1

‡ Not previously published; partly estimated on the basis of records for Chatanika River near Chena Hot Springs.

Monthly runoff, in acre-feet

Year	June	July	Aug.
1912	-	4,670	‡5,110

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge previously published in WSP 342.

1/ Formerly published as North Fork of Chena River above Monument Creek.

168. Chena River near Fairbanks 1/

Location.--Lat 64°50'55", long. 147°22'15", in NW¼ sec. 9, T. 1 S., R. 2 E., 3 miles upstream from Little Chena River and 10½ miles east of Fairbanks.

Drainage area.--1,440 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 450 ft (from topographic map). Prior to 1912, at datum 0.67 ft higher.

Extremes.--1910-12: Maximum discharge observed, 9,050 cfs June 25, 1912; maximum gage height, 11.60 ft June 12, 1910 (present datum); minimum discharge observed, 450 cfs Aug. 9-11, 1911 (gage height, 1.22 ft, present datum).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1910	2,290	834	1,600	2,100	‡787
1911	-	1,140	1,850	1,090	‡773
1912	-	1,230	-	-	-

‡ Not previously published; partly estimated on the basis of weather records.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1910	136,300	51,280	98,380	125,000	‡48,360
1911	-	70,100	113,800	64,860	‡47,550
1912	-	75,630	-	-	-

‡ Not previously published; partly estimated on the basis of weather records.
Note.--Records of daily discharge published in WSP 342.

169. Little Chena River above Sorrels Creek, near Chatanika

Location.--Lat 65°05', long. 146°49', half a mile downstream from Bonanza Creek, 2 miles upstream from Sorrels Creek, and 20 miles east of Chatanika.

Drainage area.--79 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map). Prior to 1910, at different site and datum.

Extremes.--1907-8, 1910: Maximum discharge observed, 405 cfs May 20, 1908 (gage height, 2.20 ft, site and datum then in use); minimum observed, 20 cfs July 17, 1910 (gage height, 1.65 ft), result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	-	85.4	-
1908	-	142	43.2	‡41.3	-
1910	-	-	37.0	74.5	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	-	5,250	-
1908	-	8,450	2,660	‡2,540	-
1910	-	-	2,280	4,580	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily and monthly discharge published in WSP 342 and Bull. 480.

170. Sorrels Creek near Chatanika 2/

Location.--Lat 65°06'55", long. 146°52'30", half a mile upstream from Elliott Creek and 17½ miles east of Chatanika.

Drainage area.--21 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 950 ft (from topographic map).

Extremes.--1907-8, 1910: Maximum discharge observed, 131 cfs May 20, 1908 (gage height, 2.30 ft), from rating curve extended above 60 cfs; minimum observed, 3.6 cfs July 17, 18, Aug. 13-15, 1910 (gage height, 1.26 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Chena River above Little Chena River.
2/ Formerly published as Sorrels Creek above Elliott Creek.

Sorrels Creek near Chatanika--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	-	17.3	-
1908	-	‡33.0	‡15.6	‡12.5	-
1910	-	-	7.52	12.2	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	-	1,060	-
1908	-	‡1,970	‡958	‡772	-
1910	-	-	463	750	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

171. Elliott Creek near Chatanika 1/

Location.--Lat 65°06'55", long. 146°54'00", half a mile upstream from mouth and 17 miles east of Chatanika.

Drainage area.--13.8 sq mi.

Gage.--Staff gage. Altitude of gage is 950 ft (from topographic map). Prior to 1910 at different datums.

Extremes.--1907-8, 1910: Maximum discharge observed, 111 cfs May 20, 1908 (gage height, 3.30 ft, datum then in use), from rating curve extended above 40 cfs; minimum observed, 2.3 cfs July 18, Aug. 12-15, 1910.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	-	10.9	-
1908	-	‡16.7	‡5.50	‡4.34	-
1910	-	-	3.50	5.60	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	-	670	-
1908	-	‡994	‡338	‡267	-
1910	-	-	215	344	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

172. Fish Creek below Solo Creek, near Chatanika

Location.--Lat 65°01', long. 147°12', 100 ft downstream from Solo Creek and 11 miles southeast of Chatanika.

Drainage area.--21.5 sq mi.

Gage.--Staff gage. Altitude of gage is 1,100 ft (from topographic map). Prior to 1911 at different datum.

Extremes.--1910-12: Maximum discharge observed, 120 cfs Aug. 15, 1911 (gage height, 5.4 ft), from rating curve extended above 30 cfs; minimum observed, 3.9 cfs Aug. 6, 7, 1911 (gage height, 1.08 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Elliott Creek near mouth.

Fish Creek below Solo Creek, near Chatanika--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1910	-	8.47	12.3	20.5
1911	-	14.5	21.9	‡17.3
1912	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for Chatanika River near Chatanika.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1910	-	521	756	1,220
1911	-	892	1,350	‡1,030
1912	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

173. Fish Creek above Fairbanks Creek, near Chatanika

Location.--Lat 65°02', long. 147°07', a quarter of a mile upstream from Fairbanks Creek, a quarter of a mile downstream from All Gold Creek, and 11 miles southeast of Chatanika.

Drainage area.--39 sq mi, approximately.

Supplemental records available.--June 1909, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 850 ft (from topographic map).

Extremes.--1907-8: Maximum discharge observed, 227 cfs May 22, 1908 (gage height, 3.60 ft); minimum observed, 12 cfs Aug. 13, 1908 (gage height, 0.70 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	-	36.9	-
1908	-	‡50.7	‡18.4	‡14.8	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	-	2,270	-
1908	-	‡3,010	‡1,130	‡909	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

174. Miller Creek near Chatanika 1/

Location.--Lat 65°03'35", long. 146°58'00", 150 ft upstream from mouth and 15½ miles east of Chatanika.

Drainage area.--16.7 sq mi.

Supplemental records available.--July, August 1907, August 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 750 ft (from topographic map). Prior to 1910, at different datum.

Extremes.--1908,1910: Maximum discharge observed, 122 cfs May 16, 1908 (gage height, 2.45 ft, datum then in use), from rating curve extended above 30 cfs; minimum observed, 2.0 cfs Aug. 13, 14, 1910 (gage height, 2.29 ft).
Minimum discharge observed in 1911, 1.5 cfs Aug 6, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.
1908	‡79.1	*16.3	*5.85	‡5.05
1910	-	-	3.33	4.56

* Only monthly figures revised; revised daily figures, June 21 to July 28, published in WSP 228 not available.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.
1908	‡4,860	*967	*360	‡311
1910	-	-	205	280

* Only monthly figures revised; see footnote to preceding table.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 228 and 342.

1/ Formerly published as Miller Creek at mouth.

175. Fish Creek at mouth, near Chatanika

Location.--Lat 65°03'25", long. 146°57'55", at mouth, a quarter of a mile downstream from Miller Creek, and 15½ miles east of Chatanika.

Drainage area.--90.2 sq mi.

Supplemental records available.--August 1911, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 740 ft (from topographic map). Prior to 1910 at different datum.

Extremes.--1908, 1910: Maximum discharge observed, 682 cfs May 4, 1908 (gage height, 4.35 ft, datum then in use); minimum observed, 12 cfs Aug. 13, 14, 1910 (gage height, 0.37 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.
1908	404	*113	*38.4	‡26.3
1910	-	-	19.9	29.4

* Only monthly figures revised; revised daily figures, June 21 to July 28, published in WSP 228 not available.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.
1908	24,840	*6,700	*2,360	‡1,620
1910	-	-	1,220	1,810

* Only monthly figures revised; see footnote to preceding table.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 228 and 342.

176. Little Chena River near Chatanika 1/

Location.--Lat 65°03'20", long. 146°58'00", 250 ft downstream from Fish Creek and 15½ miles east of Chatanika.

Drainage area.--228 sq mi.

Supplemental records available.--August 1911, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 740 ft (from topographic map). Prior to 1910, at different datum.

Extremes.--1908, 1910: Maximum discharge observed, 1,670 cfs May 16, 1908 (gage height, 4.85 ft, datum then in use); minimum observed, 36 cfs Aug. 14, 1910 (gage height, 0.74 ft), result of discharge measurement.
Minimum discharge observed in 1911, 32 cfs Aug. 6, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.
1908	832	*256	*91.6	‡80.6
1910	-	-	67.3	109

* Only monthly figures revised; revised daily figures, June 21 to July 19, published in WSP 228 not available.
‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.
1908	51,160	*15,250	*5,640	‡4,960
1910	-	-	4,140	6,700

* Only monthly figures revised; see footnote to preceding table.
‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 228 and 342.

1/ Formerly published as Little Chena River below Fish Creek.

177. Chena Slough near Fairbanks

Location.--Lat 64°49'15", long. 147°26'20", in SW¼ sec. 18, T. 1 S., R. 2 E., near left bank on downstream side of pier of bridge on side road leading off of Badger Road, 2¾ miles upstream from mouth, and 8½ miles east of Fairbanks.

Drainage area.--About 20 sq mi.

Gage.--Staff gage read once daily. Altitude of gage is 450 ft (from topographic map).

Extremes.--1948: Maximum daily discharge during period May to September, 580 cfs; maximum gage height observed, 7.36 ft May 21 (backwater from Chena River); minimum discharge not determined.

1948-49: Maximum discharge observed during water year, 740 cfs May 15 (gage height, 4.86 ft), from rating curve extended above 300 cfs by logarithmic plotting; minimum not determined.

1949-50: Maximum discharge observed during water year, 216 cfs July 17 (gage height, 3.50 ft); minimum not determined.

Remarks.--Records fair except those for periods of ice effect, no gage-height record, or backwater from Chena River, which are poor. Records include large amount of seepage from Tanana River through and under the dike on Richardson Highway.

Discharge, in cubic feet per second, May to September 1948

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	a110	335	252	212	156	16	530	212	224	167	*173
2	a130	279	204	204	184	17	560	228	212	158	180
3	a150	279	220	194	190	18	580	232	232	248	187
4	a180	*302	212	194	137	19	580	228	220	297	167
5	208	261	236	190	144	20	570	228	240	266	170
6	a210	252	236	194	190	21	530	248	228	257	167
7	216	*228	198	190	150	22	450	240	248	261	161
8	a240	252	232	204	164	23	410	220	244	257	167
9	a260	228	236	274	164	24	390	220	*274	248	167
10	292	236	236	330	164	25	390	236	224	184	170
11	a330	220	240	288	164	26	400	198	261	184	170
12	361	228	240	208	167	27	410	252	216	187	170
13	399	216	220	240	a160	28	410	212	220	198	167
14	422	212	216	261	164	29	400	212	216	201	170
15	487	170	212	201	a170	30	380	252	220	184	170
						31	360	-	216	170	-
Total							11,345	7,116	7,085	6,851	5,024
Mean							366	237	229	221	167
Ac-ft							22,500	14,110	14,050	13,590	9,960

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Chena River at Fairbanks.
Note.--Backwater from Chena River May 16-31.

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170							80	201	173	265	151
2	170							96	199	171	260	148
3	170							110	201	171	254	148
4	170							130	199	171	243	148
5	170							160	203	178	238	148
6	170							180	203	191	238	144
7	170							213	206	189	238	144
8	167	74					55	238	203	*180	233	146
9	167							238	203	189	230	144
10	170							213	206	191	233	144
11	167							243	208	194	233	144
12	153							265	218	194	*226	142
13	139							271	228	196	226	138
14	120							322	223	201	226	138
15	116		60	58	56	55		514	213	203	226	136
16	120							*285	208	208	220	131
17	118							262	201	187	218	134
18	116							260	201	201	216	129
19	114							249	201	203	206	131
20	112						57	236	208	218	199	123
21	109							c230	208	226	194	120
22	105							c220	208	228	189	120
23	101	62						c220	201	236	184	120
24	96							c210	201	238	180	110
25	94							230	203	238	175	110
26	96							208	203	243	171	110
27	98							201	201	243	168	110
28	95						67	203	203	254	162	110
29	*91				-			201	201	249	159	*106
30	88				-			201	175	260	157	110
31	85	-			-		-	201	-	265	155	-
Total	4,027	2,040	1,860	1,798	1,568	1,705	1,730	6,890	6,137	6,489	6,522	3,937
Mean	130	68.0	60	58	56	55	57.7	222	205	209	210	131
Ac-ft	7,990	4,050	3,690	3,570	3,110	3,380	3,430	13,670	12,170	12,870	12,940	7,810

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 514 Min - Mean 122 Ac-ft 88,680

* Discharge measurement made on this day. c Backwater from Chena River.
Note.--Stage-discharge relation affected by ice Oct. 19 to May 6 (no gage-height record for almost entire period; discharge estimated on basis of 2 discharge measurements, weather records, and records for other stations).

Chena Slough near Fairbanks--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a110	68	59					99	106	140	171	120
2	a110	68	*59					99	104	140	168	110
3	a110	67						108	102	138	155	110
4	a110				57			119	101	134	159	110
5	a110							119	99	134	164	108
6	115							140	99	131	168	106
7	114							144	101	131	171	106
8	112							151	102	131	173	106
9	110				*56			*159	104	140	168	102
10	104						58	162	106	138	166	104
11	97							162	108	138	168	104
12	94							162	110	140	155	106
13	86							166	119	142	155	106
14	84							175	123	144	157	108
15	83							180	125	153	157	108
16	82		58	a56		56		182	127	206	151	106
17	81	63						180	129	216	146	99
18	80							168	131	199	144	99
19	80				55			159	134	203	140	99
20	79							155	134	206	138	99
21	78						65	151	136	201	140	99
22	77						73	144	138	162	138	99
23	76						84	148	138	173	136	99
24	75						94	146	134	*155	134	99
25	74						97	140	129	159	131	99
26	73						127	134	134	168	131	101
27	72						138	129	136	175	129	101
28	71						112	123	138	162	125	102
29	70				-		99	112	134	166	121	101
30	70				-		99	110	140	164	120	99
31	69	-			-		-	108	-	164	120	-
Total	2,756	1,904	1,800	1,736	1,557	1,736	2,148	4,434	3,621	4,953	4,599	3,115
Mean	88.9	63.5	58.1	56	55.6	56	71.6	143	121	160	148	104
Ac-ft	5,470	3,780	3,570	3,440	3,090	3,440	4,260	8,790	7,180	9,820	9,120	6,180

Calendar year 1949: Max 514 Min - Mean 118 Ac-ft 85,770
Water year 1949-50: Max 216 Min - Mean 94.1 Ac-ft 68,140

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records of other stations.
Note.--Stage-discharge relation affected by ice Oct. 11 to about Apr. 22 (no gage-height record for almost entire period; discharge estimated on basis of 2 discharge measurements, weather records, and records for other stations).

178. Chena River at Fairbanks

Location.--Lat 64°50'40", long. 147°43'10", in NE¼ sec. 10, T. 1 S., R. 1 W., near right bank on upstream side of bridge on Cushman Street in Fairbanks, 0.4 mile downstream from Noyes Slough, 10 miles upstream from mouth, and 12 miles downstream from Chena Slough.

Drainage area.--1,980 sq mi, approximately (includes that of Noyes Slough).

Gage.--Wire-weight gage read once or twice daily. Datum of gage is 423.68 ft above mean sea level. Prior to May 3, 1948, staff gage at same site and datum.

Extremes.--Maximum and minimum discharges for the water years 1947-50 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1947a	Aug. 22, 1947	b4,050	3.66	Aug. 3, 1947	c1,290	1.47
1948	May 21, 1948	24,200	14.17	-	-	-
1949	May 23, 1949	13,500	9.03	Mar. 19, 1949	d371	-
1950	May 13, 1950	9,770	7.08	-	-	-

a Period July to September.
b Maximum observed.
c Minimum observed.
d Minimum measured.

1947-50: Maximum discharge, 24,200 cfs May 21, 1948 (gage height, 14.17 ft, from graph based on gage readings); minimum measured, 371 cfs Mar. 19, 1949.
Flood in August 1930 reached a stage of about 14.2 ft, from information by local residents.
Flood of May 11-14, 1937, reached a stage of 14.9 ft, ice jam, from floodmarks.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Records include flow in Noyes Slough, which is a small percentage of the total flow, and seepage from Tanana River.

Chena River at Fairbanks--Continued

Discharge, in cubic feet per second, August, September 1947

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	1,380	2,200	9	1,440	2,500	17	2,030	2,320	25	2,420	2,140
2	1,310	2,220	10	1,380	2,380	18	2,490	2,320	26	2,640	2,140
3	1,290	2,080	11	1,320	2,320	19	2,530	2,340	27	2,700	2,100
4	1,300	2,260	12	1,360	2,320	20	2,440	2,570	28	2,700	2,080
5	1,330	2,380	13	1,440	2,260	21	3,180	2,380	29	2,340	2,020
6	1,400	2,380	14	1,650	2,320	22	3,990	2,320	30	2,200	2,200
7	1,430	2,500	15	1,850	2,380	23	3,820	2,380	31	2,320	-
8	1,420	2,640	16	1,920	2,320	24	3,440	2,440			
Total										64,460	69,210
Mean										2,079	2,307
Ac-ft										127,900	137,300

Note.--Daily discharge for July 31, 1,420 cfs; discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,260							450	11,800	6,740	3,350	3,990
2	2,320							450	11,000	5,380	3,300	3,820
3	2,320							470	11,000	4,500	3,180	3,680
4	2,140							490	10,100	4,230	3,090	3,600
5	2,080							510	7,950	4,040	2,930	3,530
6	2,080							540	*7,510	3,750	3,160	3,550
7	2,020							650	6,460	3,600	3,020	3,440
8	1,940							850	6,970	3,040	3,250	3,300
9	1,740							1,200	8,350	3,000	3,720	3,180
10	1,630							1,700	7,270	2,930	4,110	3,030
11	1,520							2,400	5,840	2,880	4,500	2,860
12	1,400							3,200	4,980	2,740	4,350	2,750
13	1,400							4,400	4,470	2,660	4,000	2,670
14	1,300							a6,300	4,140	2,540	3,900	2,670
15	1,300							a9,000	3,980	2,370	3,720	2,780
16	-							13,500	3,870	2,320	3,780	*2,710
17	-							15,400	3,620	2,270	3,120	2,620
18	-							18,100	3,410	2,320	3,550	2,570
19	-							20,900	3,230	2,450	3,550	2,540
20	-							23,000	3,300	5,180	3,490	2,520
21	-							24,100	3,460	7,480	3,680	2,470
22	-							22,500	3,520	6,560	3,970	2,400
23	-							17,900	3,440	5,580	6,890	2,310
24	-							15,400	3,440	*4,820	7,390	2,260
25	-							15,900	3,320	4,350	7,290	2,200
26	-							18,200	3,020	3,840	7,050	2,250
27	-							17,500	2,930	3,780	6,580	2,180
28	-							16,600	3,750	3,870	5,790	2,080
29	-							*16,900	4,420	3,810	4,830	2,010
30	-							16,000	5,260	3,650	4,380	1,980
31	-							*13,100	-	3,630	4,200	-
Total	-							317,610	165,810	120,310	144,920	83,950
Mean	-							10,250	5,527	3,881	4,675	2,798
Ac-ft	-							630,000	328,900	238,600	287,400	166,500

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
Note.--Stage-discharge relation affected by ice Oct. 12 to May 13 (no gage-height record for almost entire period).

Chena River at Fairbanks--Continued

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,960	870						620	5,000	8,200	6,740	2,270
2	1,920	880						680	4,700	7,000	6,340	2,200
3	1,870	830						740	5,000	6,200	5,490	2,150
4	1,920	800						810	5,200	7,000	4,880	2,100
5	1,860	770						930	8,000	7,700	4,530	2,020
6	1,780	770						1,100	8,400	7,200	4,180	1,950
7	1,730				360	360		1,300	7,200	6,800	3,800	1,930
8	1,670							1,500	6,200	*6,000	3,440	1,900
9	1,630							2,000	6,200	5,600	4,020	1,840
10	1,580						390	2,500	5,700	6,600	4,410	1,800
11	1,560	690						3,100	5,200	5,600	4,990	1,800
12	1,540							3,800	4,300	5,000	*4,230	1,800
13	1,520							5,520	5,000	5,000	4,260	1,700
14	1,490							7,710	5,400	5,800	4,100	1,600
15	1,450							7,850	8,000	6,050	3,900	1,700
			440	390								
16	1,450							*9,950	8,200	6,740	3,420	1,700
17	1,440							10,400	6,400	6,000	4,040	1,600
18	1,420							9,980	6,200	5,070	3,840	1,600
19	1,230					(*)		11,100	6,400	5,070	3,630	1,600
20	1,080							11,900	7,600	4,930	3,480	1,600
21	1,040							12,600	7,400	5,140	3,300	1,500
22	912				350			13,200	7,100	6,980	3,200	1,500
23	838	520				370		13,300	6,740	6,500	3,090	1,500
24	820							12,800	7,390	6,000	2,860	1,400
25	810						440	11,900	8,370	5,680	2,860	1,400
26	870							8,370	9,000	7,000	2,790	1,400
27	940							8,070	8,730	6,800	2,640	*1,400
28	1,000							8,210	7,510	5,680	2,500	1,400
29	*920				-			6,740	8,020	5,410	2,490	1,370
30	870				-			5,820	7,080	5,360	2,390	1,300
31	820	-			-		-	5,140	-	6,000	2,330	-
Total	41,940	18,930	13,640	12,090	9,950	11,320	12,200	199,640	201,640	190,110	118,170	51,030
Mean	1,353	631	440	390	355	365	407	6,440	6,721	6,133	3,812	1,701
Ac-ft	83,190	37,550	27,050	23,980	19,740	22,450	24,200	396,000	399,900	377,100	234,400	101,200

Calendar year 1948: Max - Min - Mean - Ac-ft -
Water year 1948-49: Max 13,300 Min - Mean 2,413 Ac-ft 1,747,000

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Oct. 24 to about May 10 (no gage-height record for almost entire period), discharge estimated as follows. No gage-height record May 11, 12, June 1-22, 26, July 1-7, 9-14, 17, 23, 24, 31, Aug. 7, 14, 21, 22, 28, Sept. 4, 8, 10-26, 28 and 30; discharge estimated on basis of discharge measurements, weather records, and records for other stations.

Chena River at Fairbanks--Continued

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,300	840	(*)					1,400	a2,500	1,280	a1,100	a1,200
2	a1,300	800						1,720	2,560	a1,500	a1,100	1,220
3	1,300	790						1,920	a2,400	a1,400	a1,200	1,200
4	1,290	750						2,330	a2,200	a1,300	a1,300	1,180
5	1,290	730	480					2,640	2,290	1,240	1,430	1,160
6	a1,300	730						*2,700	a2,400	a1,200	a1,600	*1,140
7	1,250	740						2,960	a2,200	a1,200	a1,700	1,120
8	1,190	720			*340	290		3,200	2,080	1,230	1,690	1,110
9	a1,200	700						5,380	2,000	a1,200	1,740	1,110
10	1,160	700					340	6,110	1,910	a1,200	1,630	1,060
11	1,060	680						7,660	a1,900	a1,190	a1,600	1,060
12	921	670						9,270	1,790	a1,100	1,510	1,060
13	931	650						9,680	1,700	a1,200	a1,400	1,070
14	940	640						8,840	1,620	a1,100	1,460	1,040
15	940	640	390					*9,090	1,570	a1,100	1,570	1,050
				330								
16	940	630						9,130	a1,500	a1,200	1,580	1,020
17	950	620						7,580	1,480	a1,300	1,540	1,050
18	904	660						6,930	a1,500	1,500	1,460	1,090
19	921	680						6,370	1,430	1,650	1,280	1,070
20	946	670						5,850	1,380	a1,400	1,400	1,020
21	912	640					380	4,860	1,480	a1,300	1,350	996
22	888	630			280	320	390	4,380	a1,600	a1,200	1,270	a1,000
23	a890	620					400	5,040	a1,700	a1,300	1,250	a1,000
24	888	620					440	4,680	1,710	*1,320	1,250	a1,000
25	822	620	370				480	4,140	a1,600	a1,300	1,250	a990
26	782	610					530	3,960	a1,400	a1,300	1,250	a970
27	800	600					610	3,720	1,560	a1,200	1,270	964
28	790	580					700	2,960	1,680	a1,100	1,260	964
29	780	580			-		850	3,180	1,660	a1,200	1,240	a980
30	790	570			-		1,100	a3,000	1,550	a1,200	1,240	1,100
31	800	-			-		-	2,810	-	a1,100	1,230	-
Total	31,175	20,110	12,770	10,230	8,740	9,470	12,680	153,490	54,350	39,010	43,150	31,994
Mean	1,006	670	412	330	312	305	423	4,951	1,812	1,258	1,392	1,066
Ac-ft	61,830	39,890	25,330	20,290	17,340	18,780	25,150	304,400	107,800	77,380	85,590	63,460

Calendar year 1949: Max 13,300 Min - Mean 2,384 Ac-ft 1,726,000
Water year 1949-50: Max 9,680 Min - Mean 1,170 Ac-ft 847,200

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, and records for other stations.
Note.--Stage-discharge relation affected by ice Oct. 14-17 and Oct. 27 to May 1 (no gage-height record for almost entire period; discharge estimated as explained for "a").

179. Nenana River near Windy

Location.--Lat 63°27'20", long. 148°48'10", 100 ft upstream from bridge on Denali Highway, three-quarters of a mile upstream from Jack River, 1 mile southeast of Windy railroad station, and 2 miles downstream from Schist Creek.

Drainage area.--710 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 2,100 ft (from topographic map). Prior to July 27, 1950, staff gage at same site and datum.

Extremes.--1950: Maximum discharge observed during period June to September, 4,560 cfs June 16 (gage height, 5.78 ft); minimum, 802 cfs Sept. 5, 6 (gage height, 2.42 ft).

Remarks.--Records good.

Discharge, in cubic feet per second, June to September 1950

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	1,620	2,040	892	16	4,560	1,700	1,550	1,050
2	-	1,880	1,880	844	17	3,660	2,570	1,510	969
3	-	2,020	1,700	864	18	3,500	2,430	1,540	948
4	-	2,110	1,960	850	19	3,560	2,080	1,380	913
5	-	1,920	2,780	826	20	3,160	2,100	1,370	941
6	-	1,870	2,670	820	21	3,740	1,920	1,340	990
7	-	1,750	2,930	885	22	3,040	1,720	1,390	920
8	-	1,960	2,480	962	23	2,820	1,690	1,450	927
9	-	1,900	2,170	899	24	2,550	1,960	1,480	920
10	-	1,850	2,010	983	25	2,320	3,020	1,470	885
11	-	1,670	2,000	1,070	26	1,970	2,340	1,240	871
12	-	1,570	1,970	1,390	27	1,700	1,880	1,120	864
13	-	1,550	1,950	1,440	28	1,590	*1,710	990	864
14	-	1,290	1,980	1,370	29	1,680	1,750	948	871
15	-	1,530	1,670	1,170	30	1,870	1,720	941	838
					31	-	1,860	989	-
Total						-	58,940	52,878	29,036
Mean						-	1,901	1,706	968
Ac-ft						-	116,900	104,900	57,590

* Discharge measurement made on this day.

180. Nenana River at Healy

Location.--At Suntrana spur railroad bridge, 0.5 mile downstream from Healy River.
Supplemental records available.--Records of specific conductance of daily samples available in district office at Palmer.
Remarks.--No discharge records available for this station.

Chemical analyses, in parts per million, June to December 1949

Date of collection	Mean discharge (cfs)	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
June 21, 1949			--	--	--	--	--		57	26	--	--	--	--	62	15	150	--	
June 22-30			6.0	0.07	30	14	3.3	1.8	100	52	1.9	0.2	0.7	166	132	50	270	7.4	
July 1-8			6.2	.06	24	6.7	3.0	1.4	69	33	1.5	.2	.5	110	87	31	187	7.4	
July 9, 10			9.4	--	--	--	7.9		199	82	2.2	--	.9	--	235	72	456	7.8	
July 11-20			4.9	.11	25	5.4	2.2	2.4	69	30	1.0	.2	.4	107	85	28	183	7.4	
July 22-29, 31			5.1	.12	24	5.2	2.3	1.3	64	35	1.6	.2	.3	109	81	29	181	7.2	
July 30			10	--	--	--	8.6		185	118	1.5	--	.3	286	258	--	485	8.3	
Aug. 1-10			5.4	.19	25	5.9	2.7	1.1	67	36	2.4	.2	.4	113	86	32	192	7.3	
Aug. 11-20			5.5	.10	26	6.8	2.8	1.1	69	40	2.2	.3	.5	120	93	36	192	7.3	
Aug. 21-26, 29-31			5.6	.12	27	6.1	2.9	1.8	70	38	1.9	.2	.3	123	92	35	204	7.1	
Sept. 1-10			5.6	.19	28	5.7	2.6	1.8	74	37	1.9	.1	.3	123	93	33	205	7.1	
Sept. 11-18			6.1	.03	31	8.2	3.2	1.4	31	48	2.1	.2	.4	142	111	45	238	7.1	
Sept. 19-30			7.6	.06	30	6.9	3.8		77	40	3.9	.3	.5	136	103	40	225	7.3	
Oct. 1-9			8.2	.02	32	7.7	5.2		85	44	4.4	.3	.4	151	112	42	246	7.6	
Oct. 20-22			9.9	--	37	9.0	5.8		104	50	3.0	--	.6	166	129	44	274	--	
Nov. 3, 7, 9, 17, 18			11	--	39	9.2	4.5		110	47	3.8	--	.6	169	135	45	281	--	
Nov. 8			9.8	--	--	--	8.2		160	92	10	--	.8	--	224	93	432	--	
Nov. 21-26, 29			9.7	.02	44	12	4.9		130	55	3.4	.2	.8	200	159	53	--	7.8	
Dec. 1-3, 5, 7, 8, 10, 11, 13-15, 18, 20, 22			10	.02	44	12	5.5		131	56	3.0	.2	.7	200	159	52	330	7.9	

Nenana River at Healy--Continued

Temperature (°F) of water, June to October 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36								--	40	48	47
2	35								--	45	49	47
3	34								--	51	49	46
4	33								--	45	47	46
5	32								--	43	49	45
6	--								--	50	45	44
7	32								--	50	48	44
8	32								--	50	49	45
9	--								--	50	51	43
10	--								--	51	49	43
11	--								--	45	49	43
12	--								--	49	48	43
13	--								--	42	48	43
14	--								--	48	46	42
15	--								--	46	46	42
16	--								--	45	47	42
17	--								--	52	49	42
18	--								--	51	48	41
19	--								--	45	48	41
20	--								--	47	49	41
21	--								42	--	48	41
22	--								41	51	47	41
23	--								43	48	50	41
24	--								43	45	48	41
25	--								42	49	47	41
26	--								42	--	45	41
27	--								41	45	--	41
28	--								41	50	--	40
29	--								40	45	45	38
30	--								45	48	45	37
31	--								--	43	46	--
Average	--								--	47	48	42

181. Smith Creek near Chena Hot Springs 1/

Location.--Lat 65°16'50", long. 146°19'50", 100 ft upstream from Pool Creek, 1¼ miles upstream from mouth, and 17½ miles northwest of Chena Hot Springs.

Drainage area.--17.0 sq mi.

Supplemental records available.--July 1907, July, August, September 1908, July, August 1910, July 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,540 ft (from topographic map).

Extremes.--June to September 1911: Maximum discharge observed, 50 cfs Aug. 15 (gage height, 4.05 ft), from rating curve extended above 20 cfs; minimum observed, 1.4 cfs Aug. 3 (gage height, 2.60 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡13.6	8.47	7.94	‡5.04

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡810	521	488	‡300

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

182. Pool Creek near Chena Hot Springs 2/

Location.--Lat 65°16'50", long. 146°19'45", 150 ft upstream from mouth and 17½ miles northwest of Chena Hot Springs.

Drainage area.--14 sq mi, approximately.

Supplemental records available.--July 1907, July 1908, June, August 1909, July, August 1910, July 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,540 ft (from topographic map). Prior to July 15, 1911, at site 100 ft downstream at different datum.

Extremes.--June to September 1911: Maximum discharge observed, 77 cfs Aug. 15 (gage height, 4.00 ft), from rating curve extended above 6 cfs; minimum observed, 1.5 cfs July 27 to Aug. 9.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1911	‡26.7	13.2	10.5	‡6.63

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1911	‡1,590	812	646	‡394

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

183. McManus Creek near Chena Hot Springs 3/

Location.--Lat 65°17', long. 146°22', a quarter of a mile upstream from confluence with Faith Creek, three-quarters of a mile downstream from Smith Creek, and 19 miles northwest of Chena Hot Springs.

Drainage area.--80 sq mi, approximately.

Supplemental records available.--July 1908, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,450 ft, revised (from topographic map). Prior to Sept. 5, 1907, staff gage and weir in same vicinity at different datum. May 25, 1910, to Sept. 24, 1911, staff gages at different datums.

Extremes.--1907, 1910-12: Maximum discharge observed, 760 cfs June 10, 1910 (gage height, 4.62 ft, datum then in use); minimum observed, 11 cfs Aug. 4, 1911, result of discharge measurement.

Remarks.--No diversion or regulation above station.

1/ Formerly published as Smith Creek above Pool Creek.
2/ Formerly published as Pool Creek at mouth.
3/ Formerly published as McManus Creek at mouth.

McManus Creek near Chena Hot Springs--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	21.4	66.4	-
1910	-	155	29.0	75.0	‡119
1911	-	208	49.3	55.2	‡34.3
1912	-	187	34.8	45.3	87.8

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	1,320	4,080	-
1910	-	9,220	1,780	4,610	‡7,070
1911	-	12,380	3,030	3,390	‡2,040
1912	-	11,130	2,140	2,790	5,220

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

184. Charity Creek near Chena Hot Springs 1/

Location.--Lat 65°24'45", long. 146°14'45", just upstream from Homestake Creek and 25 miles north of Chena Hot Springs.

Drainage area.--6.9 sq mi, approximately.

Supplemental records available.--June, July, August 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,100 ft (from topographic map). May to September 1910, at different datum.

Extremes.--1910, 1912: Maximum discharge observed, 77 cfs May 31, June 3, 1910 (gage height, 3.75 ft, datum then in use); minimum daily, 3.0 cfs (estimated) Aug. 15, 1910.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	-	‡4.59	‡7.31	‡8.47
1912	-	‡19.0	5.02	4.28	‡6.43

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	-	‡282	‡449	‡504
1912	-	‡1,130	309	263	‡383

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

185. Homestake Creek near Chena Hot Springs 2/

Location.--Lat 65°24'45", long. 146°14'30", 1,000 ft upstream from mouth and 25 miles north of Chena Hot Springs.

Drainage area.--5.6 sq mi, approximately.

Supplemental records available.--June, August 1909, June, July, August 1911, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,130 ft (from topographic map).

Extremes.--1910, 1912: Maximum discharge observed, 58 cfs June 23, 1912 (gage height, 3.50 ft); minimum observed, 0.7 cfs July 11, 1910 (gage height, 2.41 ft), result of discharge measurement.

Remarks.--No diversion or regulation above station.

1/ Formerly published as Charity Creek above Homestake Creek.
2/ Formerly published as Homestake Creek at mouth.

Homestake Creek near Chena Hot Springs--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1910	-	18.2	-	-	-
1912	-	‡16.6	2.28	2.99	‡4.71

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1910	-	1,080	-	-	-
1912	-	‡988	140	184	‡280

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

186. Faith Creek near Chena Hot Springs 1/

Location.--Lat 65°17'25", long. 146°22'45", at mouth just upstream from confluence with McManus Creek and 19 miles northwest of Chena Hot Springs.

Drainage area.--51 sq mi, approximately.

Supplemental records available.--July 1908, June, August 1909, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,450 ft, revised (from topographic map). June 20 to Sept. 4, 1907, staff gage and weir at site a short distance upstream at different datum.

Extremes.--1907, 1911-12: Maximum discharge observed, 780 cfs June 2, 1912, from rating curve extended above 320 cfs; maximum gage height observed, 4.60 ft Aug. 15, 1911, June 2, 1912; minimum discharge observed, 14 cfs Aug. 5-9, 1911 (gage height, 2.30 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	29.2	47.5	-
1911	-	‡282	48.7	78.2	‡36.5
1912	-	205	55.5	55.3	65.4

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	1,790	2,900	-
1911	-	‡16,760	2,990	4,810	‡2,170
1912	-	12,200	3,410	3,400	3,890

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

187. Chatanika River near Chena Hot Springs 2/

Location.--Lat 65°17'20", long. 146°23'15", 2,000 ft downstream from confluence of Faith and McManus Creeks and 19 miles northwest of Chena Hot Springs.

Drainage area.--132 sq mi.

Supplemental records available.--June, August 1909, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,450 ft (from topographic map). Prior to 1912 at different datums.

Extremes.--1907-8, 1910-12: Maximum discharge observed, 2,190 cfs Sept. 12, 1907 (gage height, 6.31 ft, present datum); minimum observed, 24 cfs Aug. 4-8, 1911 (gage height, 2.67 ft, present datum).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Faith Creek at mouth
2/ Formerly published as Chatanika River below Faith Creek.

Chatanika River near Chena Hot Springs--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	‡61.1	125	350
1908	-	-	‡142	137	208
1910	-	377	86.1	197	‡215
1911	-	441	101	146	‡86.8
1912	-	427	86.4	109	170

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	‡3,760	7,690	20,830
1908	-	-	‡8,730	8,450	12,390
1910	-	22,430	5,290	12,110	‡12,770
1911	-	26,240	6,210	8,980	‡5,160
1912	-	25,410	5,310	6,700	10,120

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

188. Kokomo Creek near Chatanika 1/

Location.--Lat 65°11', long. 147°16', just upstream from Alder Creek, half a mile downstream from Rusty Gold Creek, and 7½ miles northeast of Chatanika.

Drainage area.--33 sq mi, approximately.

Supplemental records available.--August 1909, August 1910, discharge measurements only.

Gage.--Reference point in overhanging tree. Altitude of gage is 750 ft (from topographic map).

Extremes.--July, August 1907: Maximum discharge observed, 233 cfs Aug. 1, from rating curve extended above 25 cfs; minimum observed, 10 cfs July 23, 30, 31.
Minimum discharge observed in 1910, 3.8 cfs Aug. 3, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.
1907	‡14.7	‡38.8

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.
1907	‡902	‡2,390

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

189. Chatanika ditch near Chatanika 2/

Location.--Lat 65°07', long. 147°29', 1 mile upstream from outlet and 1 mile north of Chatanika.

Supplemental records available.--June, July, August 1911, June, July, August 1912, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 700 ft (from topographic map).

Extremes.--June to September 1910: Maximum discharge observed, 33 cfs June 26, 29; no flow July 4.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1910	-	26	25	‡24

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1910	-	1,600	1,540	‡1,460

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Kokomo Creek above Alder Creek.
2/ Formerly published as Chatanika ditch near outlet.

190. Chatanika River near Chatanika 1/

Location.--Lat 65°08', long. 147°30', 1 mile downstream from Poker Creek and 1½ miles north of Chatanika.

Drainage area.--456 sq mi.

Gage.--Staff gage. Altitude of gage is 650 ft (from topographic map). Prior to 1912, at datum 1.25 ft higher.

Extremes.--1907-12: Maximum discharge observed, 3,480 cfs May 9, 1911 (gage height, 7.30 ft, present datum); minimum observed, 1.9 cfs Apr. 18, 1910, result of discharge measurement.

Remarks.--Chatanika ditch (see preceding station) diverted water above station for mining purposes along Cleary Creek starting July 5, 1909.

Monthly mean discharge, in cubic feet per second

Year	Apr.	May	June	July	Aug.	Sept.	Oct.
1907	-	-	-	211	425	867	-
1908	-	‡2,610	915	331	284	456	‡204
1909	-	‡1,517	407	410	499	151	-
1910	-	-	678	170	456	530	‡202
1911	-	‡2,577	798	252	352	242	147
1912	-	-	‡1,441	234	221	318	‡180

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	Apr.	May	June	July	Aug.	Sept.	Oct.
1907	-	-	-	12,970	26,130	51,590	-
1908	-	‡160,500	54,450	20,350	17,460	27,130	‡12,540
1909	-	‡93,280	24,220	25,210	30,680	8,990	-
1910	-	-	40,340	10,450	28,040	31,540	‡12,430
1911	-	‡158,500	47,480	15,490	21,640	14,400	9,040
1912	-	-	‡85,720	14,390	13,590	18,920	‡11,090

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

191. Goldstream Creek near Fox 2/

Location.--Lat 64°58', long. 147°35', 1 mile downstream from confluence of Pedro and Gilmore Creeks, and 1½ miles northeast of Fox.

Drainage area.--28.6 sq mi.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map).

Extremes.--June to October 1907: Maximum discharge observed, 41 cfs Sept. 16 (gage height, 1.80 ft), from rating curve extended above 25 cfs; minimum observed, 2.2 cfs July 31 (gage height, 0.70 ft).

Remarks.--Numerous diversions for mining purposes above station. One diversion of 1 to 1.5 cfs above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	13.0	20.0	23.9	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	799	1,230	1,420	-

Note.--Records of daily discharge published in WSP 342.

192. Washington Creek above Aggie Creek, near Martin

Location.--Lat 65°06'50", long. 148°17'40", 500 ft upstream from Aggie Creek and 15 miles north of Martin.

Drainage area.--117 sq mi.

Gage.--Staff gage. Altitude of gage is 550 ft (from topographic map).

Extremes.--May to September 1908: Maximum discharge observed, 557 cfs June 15 (gage height, 4.50 ft); minimum observed, 18 cfs July 23 (gage height, 2.10 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Chatanika River below Poker Creek.
2/ Formerly published as Goldstream Creek at claim "No. 6 below."

Washington Creek above Aggie Creek, near Martin--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	159	33.2	24.6	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	9,480	2,040	1,520	-

Note.--Records of daily discharge published in WSP 342.

193. Aggie Creek near Martin 1/

Location.--Lat 65°06'55", long. 148°17'50", 1,000 ft upstream from mouth and 15 miles north of Martin.

Drainage area.--35.8 sq mi.

Gage.--Staff gage. Altitude of gage is 550 ft (from topographic map).

Extremes.--May to September 1908: Maximum discharge observed, 136 cfs May 24 (gage height, 3.29 ft), result of discharge measurement; minimum observed, 4.5 cfs July 31 (gage height, 0.85 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second.

Year	May	June	July	Aug.	Sept.
1908	-	22.5	7.58	6.26	-

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	1,340	468	385	-

Note.--Records of daily discharge published in WSP 342.

194. Washington Creek near Martin 2/

Location.--Lat 65°06'45", long. 148°17'55", 500 ft downstream from Aggie Creek and 15 miles north of Martin.

Drainage area.--153 sq mi (corrected).

Gage.--Staff gage. Altitude of gage is 550 ft (from topographic map).

Extremes.--May to September 1908: Maximum daily discharge, 1,400 cfs (estimated) May 15; minimum discharge observed, 24 cfs July 23 (gage height, 1.75 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	‡790	182	41.3	30.8	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	‡48,580	10,830	2,560	1,900	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

195. New York Creek near Eureka 3/

Location.--Lat 65°12', long. 150°24', 200 ft upstream from Thanksgiving ditch intake, 1 mile upstream from California Creek, and 5½ miles northwest of Eureka.

Drainage area.--4.7 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 100 cfs Aug. 9, 1909 (gage height, 1.20 ft); minimum observed, 0.7 cfs July 22, 1909 (gage height, 0.04 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as Aggie Creek at mouth.
2/ Formerly published as Washington Creek below Aggie Creek.
3/ Formerly published as New York Creek at ditch intake.

New York Creek near Eureka--Continued

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	‡3.95	‡0.84	‡1.16	‡5.11
1909	-	2.78	1.44	9.96	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	‡235	‡52	‡71	‡304
1909	-	165	89	612	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

196. California Creek near Eureka 1/

Location.--Lat 65°12', long. 150°25', 100 ft upstream from intake of California branch of Thanksgiving ditch, 1 mile upstream from mouth, and 6½ miles northwest of Eureka.

Drainage area.--6.7 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map). Prior to 1909, at different datum.

Extremes.--1908-9: Maximum discharge observed, 8.7 cfs Sept. 18, 19, 1908 (gage height, 1.30 ft, datum then in use), from rating curve extended above 3.0 cfs; minimum observed, 2.4 cfs Aug. 8-17, 20-31, 1908.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	-	‡2.46	‡5.23
1909	‡4.81	3.61	3.59	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	-	‡152	‡311
1909	‡286	222	221	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

197. Pioneer Creek near Eureka 2/

Location.--Lat 65°13', long. 150°07', 200 ft upstream from What Cheer Bar ditch intake, 4 miles upstream from mouth, and 4 miles northwest of Eureka.

Drainage area.--8.1 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 86 cfs May 26, 1909 (gage height, 2.35 ft), discharge measurement; minimum observed, 2.4 cfs July 22, 1909 (gage height, 0.35 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	‡6.55	-	2.84	‡4.46
1909	-	6.75	3.76	‡16.6	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	‡390	-	175	‡265
1909	-	402	231	‡1,020	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as California Creek at ditch intake.
2/ Formerly published as Pioneer Creek at What Cheer Bar ditch intake.

198. Hutlinana Creek near Eureka 1/

Location.--Lat 65°13', long. 149°59', just upstream from Cairo Creek and 7½ miles east of Eureka.

Drainage area.--42.7 sq mi. At site prior to Aug. 22, 1908, 44.2 sq mi.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map). Prior to Aug. 22, 1908, at site just downstream from Cairo Creek at different datum.

Extremes.--1908-9: Maximum discharge observed, 315 cfs Aug. 9, 1909 (gage height, 3.5 ft); minimum observed, 0.4 cfs Apr. 20, 1909 (gage height, 0.32 ft), result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year				Apr.	May	June	July	Aug.	Sept.	Oct.			
1908				-	-	‡80.4	22.0	11.2	19.1	‡11.6			
1909				-	91.2	52.1	30.0	‡64.5	-	-			

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year				Apr.	May	June	July	Aug.	Sept.	Oct.			
1908				-	-	‡4,790	1,350	689	1,140	‡711			
1909				-	5,610	3,100	1,840	‡3,970	-	-			

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

199. Sullivan Creek at Tofty 2/

Location.--Lat 65°06', long. 150°54', just upstream from intake of Tofty ditch, half a mile north of Tofty, 1 mile downstream from Quartz Creek, and 6 miles upstream from mouth.

Drainage area.--15.6 sq mi.

Gage.--Staff gage. Altitude of gage is 650 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 158 cfs Aug. 9, 1909 (gage height, 2.10 ft), from rating curve extended above 40 cfs; minimum observed, 1.9 cfs Aug. 2, 1909 (gage height, 0.09 ft).

Remarks.--Midnight Sun ditch diverted water above station at times during 1909 for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year					May	June	July	Aug.	Sept.				
1908					-	-	-	‡7.34	-				
1909					-	8.59	5.72	25.9	‡2.67				

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year					May	June	July	Aug.	Sept.				
1908					-	-	-	‡451	-				
1909					-	511	352	1,590	‡159				

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 342.

1/ Formerly published as Hutlinana Creek near Cairo Creek.
2/ Formerly published as Sullivan Creek above Tofty ditch intake.

199-A. Yukon River at Anvik

Location.--At village of Anvik.
Records Available.--Chemical analyses: August 1915 to April 1916 and June to August 1916.
Extremes, 1915-16.--Dissolved solids: Maximum 185 ppm Feb. 24 to March 1, 1916; minimum, 92 ppm June 14-20, 1916.
Hardness: Maximum, 151 ppm Feb. 24 to March 1 and April 6 to 19, 1916; minimum, 67 ppm June 14-20, 1916.
Remarks.--No records of discharge available for this station.

Chemical analyses, in parts per million, August 1915 to August 1916

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Aug. 23-29, 1915.....		15	0.02	36	6.0	10		140	17	1.5			151	114	0			
Aug. 30-Sept. 5.....		13	.01	31	5.8	6.5		116	16	1.1			136	101	6			
Sept. 6-12.....		11	.02	28	5.6	6.1		104	14	1.4			120	93	8			
Sept. 13-19.....		7.7	--	26	5.4	5.8		97	14	1.5			114	87	8			
Sept. 20-26.....		8.6	.03	23	5.0	6.7		85	12	2.2			113	78	8			
Sept. 27-Oct. 3.....		13	.09	23	5.0	5.5		83	13	1.6			113	78	10			
Oct. 21-27.....		11	.08	25	5.6	7.4		94	14	2.7			122	85	8			
Oct. 28-Nov. 3.....		14	--	34	7.1	7.0		123	16	2.4			149	114	13			
Nov. 4-10.....		13	.12	33	7.4	4.2		126	16	1.4			149	113	10			
Nov. 11-17.....		15	.16	37	8.0	7.1		137	16	1.2			158	125	13			
Nov. 18-24.....		12	.19	36	7.6	6.1		137	16	1.1			151	121	9			
Nov. 25-Dec. 1.....		14	.19	37	8.2	7.7		139	18	1.6			160	126	12			
Dec. 2-8.....		13	.15	37	7.9	6.1		137	16	1.1			156	125	13			
Dec. 9-15.....		13	.19	38	7.8	6.5		142	16	1.2			158	127	10			
Dec. 16-22.....		13	.07	39	8.0	7.6		149	16	1.5			163	130	8			
Dec. 23-29.....		16	.08	39	8.2	7.2		146	16	1.2			165	131	11			
Dec. 30-Jan. 5, 1916..		14	.04	39	8.5	6.8		146	17	1.4			166	132	13			
Jan. 6-12.....		8.4	--	40	8.5	8.2		146	18	2.7			165	135	15			
Jan. 13-19.....		11	--	40	8.5	6.0		148	16	1.2			162	135	13			
Jan. 20-26.....		14	.01	40	8.5	6.6		153	17	1.4			169	135	9			
Jan. 27-Feb. 2.....		8.4	.04	41	8.8	6.6		152	16	1.8			165	138	14			
Feb. 3-9.....		13	.05	41	8.5	7.6		156	17	2.0			172	137	9			
Feb. 10-16.....		15	.02	42	8.8	7.0		154	17	1.6			171	141	15			
Feb. 17-23.....		16	--	43	9.2	6.7		161	16	1.6			180	145	13			
Feb. 24-Mar. 1.....		20	.02	46	8.8	8.0		176	15	1.4			185	151	7			
Mar. 2-8.....		16	.02	43	8.7	6.9		167	15	1.6			176	143	6			
Mar. 9-15.....		13	.01	42	8.6	7.5		159	15	1.6			168	140	10			
Mar. 16-22.....		16	.01	44	9.0	6.9		167	16	1.4			178	147	10			
Mar. 23-29.....		14	--	43	8.9	6.5		168	16	1.4			175	144	6			
Mar. 30-Apr. 5.....		16	--	44	9.1	8.0		171	16	1.7			182	147	7			

Yukon River at Anvik--Continued

Chemical analyses, in parts per million, August 1915 to August 1916--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Apr. 6-12, 1916		12	--	45	9.4	7.6		172	16	2.2			181	151	10			
Apr. 13-19		15	0.02	45	9.4	8.0		173	16	1.5			184	151	9			
June 14-20		6.2	.25	21	3.6	4.4		72	8.3	.8			92	67	8			
June 21-27		6.1	.02	24	4.0	7.6		84	9.6	5.8			106	76	8			
June 28-July 4		7.3	.04	28	4.6	5.4		94	12	1.4			115	89	12			
July 5-11		7.7	.05	28	4.6	5.4		98	13	1.4			112	89	8			
July 12-18		8.7	.10	34	4.7	4.9		115	13	1.1			132	104	10			
July 19-25		7.7	.08	33	5.3	4.5		112	14	1.4			133	104	12			
July 26-Aug. 1		9.1	.15	38	5.5	5.7		131	16	2.0			147	117	10			
Aug. 3-9		9.9	.08	38	5.4	5.3		129	16	1.6			150	117	11			
Aug. 10-16		7.8	.01	33	6.0	5.6		109	19	1.4			134	107	16			
Average		12	0.07	36	7.2	6.6		133	15	1.7			151	119	10			

200. Pargon River near Boston 1/

Location.--Lat 65°12'10", long. 163°42'35", just downstream from Pargon ditch intake, 1 mile upstream from Dillon and Decarey Creeks, and 17 miles northwest of Boston.
Drainage area.--20 sq mi, approximately.
Gage.--Staff gage. Altitude of gage ia 730 ft (from topographic map).
Extremes.--July to September 1909: Maximum discharge observed, 89 cfs July 6 (gage height, 1.10 ft), from rating curve extended above 5 cfs; minimum observed, 0.7 cfs July 30, 31, Aug. 25-29 (gage height, 0.20 ft).
Remarks.--Pargon ditch (see following station) diverted water above station to Ophir Creek drainage for mining purposes.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	22.5	6.54	‡1.14

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	1,380	402	‡68

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

201. Pargon ditch at intake, near Boston

Location.--Lat 65°12'10", long. 163°42'35", at intake, 17 miles northwest of Boston.
Gage.--Staff gage. Altitude of gage is 730 ft (from topographic map).
Extremes.--July to September 1909: Maximum discharge observed, 24.1 cfs July 19 (gage height, 1.54 ft); no flow July 1-7.
Remarks.--Pargon ditch diverted water from Pargon River, about 1 mile upstream from Dillon and Decarey Creeks, for mining purposes in Ophir Creek basin.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	11.7	17.5	‡14.0

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	719	1,080	‡833

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

202. Pargon ditch below Helen Creek, near Boston

Location.--Lat 65°07'40", long. 163°39'15", at Pargon ditch flume crossing Helen Creek, 40 ft upstream from Helen Creek lateral, and 12 miles northwest of Boston.
Gage.--Staff gage and wooden flume. Altitude of gage is 700 ft (from topographic map).
Extremes.--1906-9: Maximum discharge observed, 37.1 cfs July 23, Aug. 6, 1906 (gage height, 1.73 ft); no flow at times.
Remarks.--Pargon ditch diverted water from Pargon River (see Pargon ditch at intake) and Helen Creek to Ophir Creek basin for mining purposes. Records include flow of Helen Creek lateral.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	-	24.9	-
1907	-	-	27.4	18.7
1908	-	16.2	31.8	-
1909	-	28.1	26.1	‡21.1

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	-	1,530	-
1907	-	-	1,680	1,110
1908	-	996	1,960	-
1909	-	1,730	1,600	‡1,260

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Pargon River at intake.

203. Casadepaga River near Casadepaga 1/

Location.--Lat 64°46'45", long. 164°26'55", just downstream from Moonlight Creek, half a mile upstream from Curtis Creek, 3 miles southwest of Casadepaga, and 18 miles upstream from mouth.

Drainage area.--47 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 400 ft (from topographic map).

Extremes.--July to September 1908: Maximum discharge observed, 1,080 cfs July 30 (gage height, 2.8 ft), from rating curve extended above 250 cfs; minimum observed, 20 cfs July 25-29 (gage height, 0.5 ft).

Remarks.--Several small diversions for mining purposes above station. One small diversion above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1908	92.1	78.7	‡51.2

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1908	5,660	4,840	‡3,050

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

204. Canyon ditch near intake, near Council

Location.--Lat 65°03', long. 163°40', 1 mile downstream from ditch intake, 1¼ miles downstream from Flat Creek, and 11 miles north of Council.

Gage.--Staff gage. Altitude of gage is 400 ft (from topographic map).

Extremes.--1906-9: Maximum discharge observed, 63.8 cfs Sept. 4-8, 1906 (gage height, 2.69 ft); no flow except during summer seasons.

Remarks.--Canyon ditch diverted entire flow of Ophir Creek for mining purposes. Pargon ditch imported water from Pargon River drainage to Ophir Creek drainage above Canyon ditch intake. One small diversion above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	56.3	56.0	63.1
1907	-	-	-	-
1908	-	26.3	56.1	-
1909	-	43.1	41.0	‡33.2

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	3,460	3,440	3,750
1907	-	-	-	-
1908	-	1,620	3,450	-
1909	-	2,650	2,520	‡1,980

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

205. Solomon River at East Fork 2/

Location.--Lat 64°41', long. 164°18', three-quarters of a mile downstream from East Fork Solomon River, three-quarters of a mile south of the community of East Fork, and 11 miles upstream from mouth.

Drainage area.--66 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 150 ft (from topographic map). Prior to 1909, at different site at different datum.

Extremes.--1908-9: Maximum discharge observed, 692 cfs July 31, 1908 (gage height, 1.55 ft, at site and datum then in use), from rating curve extended above 310 cfs; minimum observed, 30 cfs July 27, 1908 (gage height, 0.20 ft, at site and datum then in use).

Remarks.--East Fork ditch diverted water from East Fork Solomon River above station for mining purposes below station. Flow in East Fork ditch, estimated from several discharge measurements, is as follows: July 1908, 6.5 cfs; August 1908, 10 cfs; September 1909, 4.5 cfs.

1/ Formerly published as Casadepaga River below Moonlight Creek.
2/ Formerly published as Solomon River below East Fork.

Solomon River at East Fork--Continued

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1908	‡85.4	‡207	-
1909	-	-	‡41.4

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1908	‡5,250	‡12,700	-
1909	-	-	‡2,460

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

206. Campion ditch at Black Point, near Nome

Location.--Lat 64°51', long. 165°16', 1½ miles downstream from intake at Buffalo Creek and 25 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 610 ft (from topographic map).

Extremes.--1906-9: Maximum discharge observed, 27.5 cfs Aug. 11, 1906 (gage height, 1.36 ft); no flow for long periods each year.

Remarks.--Campion ditch diverted water from Buffalo Creek at a point half a mile upstream from mouth for mining purposes on Dorothy Creek, another tritubary to Nome River.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	12.3	14.4	15.8
1907	-	-	12.9	12.5
1908	-	5.67	9.43	-
1909	-	-	6.08	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	756	885	940
1907	-	-	793	744
1908	-	349	580	-
1909	-	-	374	-

Note.--Records of daily discharge published in WSP 314.

207. Nome River above Miocene ditch intake, near Nome

Location.--Lat 64°51'55", long. 165°15'40", just upstream from intake to Miocene ditch, a quarter of a mile downstream from confluence of Buffalo and Deep Canyon Creeks, 2 miles upstream from David Creek, and 26 miles north of Nome.

Drainage area.--15 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 575 ft (from topographic map).

Extremes.--1906-8: Maximum discharge observed, 460 cfs June 15, 1907 (gage height, 2.14 ft), from rating curve extended above 150 cfs; minimum observed, 4.4 cfs July 25-29, 1908 (gage height, 0.0 ft).

Remarks.--Campion ditch (see preceding station) diverted water above station for use in placer mining below station. David Creek ditch (see p. 216) diverted water from David Creek into Nome River above station. Jett Creek ditch (see p. 225) and Grand Central ditch (see p. 225) imported water from Kruzgemepa River basin into Nome River basin above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	59.5	49.3	66.7
1907	-	72.1	45.1	74.4
1908	-	15.2	53.6	‡28.8

‡ Not previously published; partly estimated on basis of records for other Nome River stations.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	3,660	3,030	3,970
1907	-	4,430	2,770	4,430
1908	-	935	3,300	‡1,720

‡ Not previously published; partly estimated on basis of records for other Nome River stations.
Note.--Records of daily discharge published in WSP 314.

208. Miocene ditch at Black Point, near Nome

Location.--Lat 64°51', long. 165°16', 1 mile downstream from intake and 25 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 550 ft (from topographic map).

Extremes.--1906-10: Maximum discharge observed, 51.5 cfs Aug. 21-23, 25, 26, 30, 31, Sept. 1, 3-5, 1910 (gage height, 1.40 ft); no flow at times.

Remarks.--Miocene ditch diverted water from Nome River about a quarter of a mile downstream from Buffalo Creek for mining purposes along Dexter Creek in Nome River basin and Glacier and Anvil Creeks in Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1906	-	27.4	29.2	35.9	-
1907	-	‡27.5	34.4	38.7	-
1908	-	10.7	37.3	-	-
1909	-	29.0	15.9	-	-
1910	-	-	45.1	25.2	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1906	-	1,680	1,800	2,140	-
1907	-	‡1,690	2,120	2,300	-
1908	-	658	2,290	-	-
1909	-	1,780	978	-	-
1910	-	-	2,770	1,500	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

209. Miocene ditch above Hobson Creek, near Nome

Location.--Lat 64°45'40", long. 165°16'30", just upstream from Hobson Creek crossing of Miocene ditch and 18 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 510 ft (from topographic map).

Extremes.--1907-10: Maximum discharge observed, 43.3 cfs Sept. 1, 2, 1910 (gage height, 1.92 ft); no flow at times.

Remarks.--Miocene ditch diverted water from Nome River about a quarter of a mile downstream from Buffalo Creek for mining purposes along Dexter Creek in Nome River basin and Glacier and Anvil Creeks in Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	‡23.0	27.4	31.8	-
1908	-	5.37	29.0	‡22.4	-
1909	-	21.0	9.84	‡1.14	-
1910	-	-	36.7	29.6	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	‡1,410	1,680	1,890	-
1908	-	330	1,780	‡1,330	-
1909	-	1,290	605	‡68	-
1910	-	-	2,260	1,760	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

210. Miocene ditch below Hobson Creek, near Nome

Location.--Lat 64°45'40", long. 165°16'30", just downstream from Hobson Creek crossing of Miocene ditch and 18 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 510 ft (from topographic map).

Extremes.--1907-10: Maximum discharge observed, 59.9 cfs Aug. 30, Sept. 5, 1910 (gage height, 2.78 ft); no flow at times.

Remarks.--Miocene ditch diverted water from Nome River and Hobson Creek for mining purposes along Dexter Creek in Nome River basin and Glacier and Anvil Creeks in Snake River basin.

Miocene ditch below Hobson Creek, near Nome--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	43.8	45.3	47.9	-
1908	-	12.8	39.5	-	-
1909	-	35.2	17.4	‡7.58	-
1910	-	28.6	55.0	45.4	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	2,690	2,790	2,850	-
1908	-	787	2,430	-	-
1909	-	2,160	1,070	‡451	-
1910	-	1,760	3,380	2,700	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

211. Nome River below Miocene ditch intake, near Nome

Location.--Lat 64°51'55", long. 165°15'40", just downstream from Miocene ditch intake, a quarter of a mile downstream from the confluence of Buffalo and Deep Canyon Creeks, 2 miles upstream from David Creek, and 26 miles north of Nome.

Drainage area.--15 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 550 ft, revised (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 271 cfs June 16 (gage height, 1.80 ft); minimum observed, 1.9 cfs Sept. 4 (gage height, 0.15 ft).

Remarks.--Campion ditch (see p. 214) and Miocene ditch at Black Point (see p. 215) diverted water above station for use in placer mining below station. David Creek ditch (see below) diverted water from David Creek into Nome River above station. Jett Creek ditch (see p. 225) and Grand Central ditch (see p. 225) imported water from Kruzgamepa River basin into Nome River basin above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	12.8	2.52	‡1.92

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	787	155	‡114

‡ Not previously published; partly estimated on the basis of records for nearby stations.
Note.--Records of daily discharge published in WSP 314.

212. David Creek ditch near Nome 1/

Location.--Lat 64°51'20", long. 165°15'20", at crossing of Seward Peninsular Railroad, three-quarters of a mile downstream from intake, and 25 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 600 ft (from topographic map). Prior to 1907, at site three-quarters of a mile upstream at different datum.

Extremes.--1906-9: Maximum discharge observed, 16.5 cfs Sept. 19, 1907 (gage height, 0.99 ft); no flow at times.

Remarks.--David Creek ditch diverted water from David Creek about three-quarters of a mile upstream from mouth and delivered it to an unnamed tributary of Nome River above Miocene ditch intake to supplement the inflow to the Miocene ditch. During periods of low runoff it diverted the entire flow of David Creek.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	-	‡5.90	-
1907	-	-	11.8	9.04
1908	-	2.79	8.24	‡7.55
1909	-	8.02	4.44	‡2.49

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	-	‡363	-
1907	-	-	726	538
1908	-	171	506	‡449
1909	-	493	273	‡148

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as David Creek ditch opposite Black Point.

213. Seward ditch at intake, near Nome

Location.--Lat 64°49'20", long. 165°13'45", at intake a quarter of a mile downstream from Dorothy Creek and 23 miles north of Nome.

Supplemental records available.--August 1906, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 420 ft, revised (from topographic map).

Extremes.--1907-10: Maximum discharge observed, 34.0 cfs Aug. 6,7, 11-15, 19-30, Sept. 1-3, 1908, July 23, 1910: maximum gage height observed, 1.38 ft July 23, 1910; no flow for long periods each year.

Remarks.--Seward ditch diverted water from Nome River a quarter of a mile downstream from Dorothy Creek, for mining purposes along Anvil Creek in Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	26.1	25.7	-
1908	-	13.6	31.1	‡20.8	-
1909	-	17.4	16.5	‡27.3	-
1910	-	-	22.5	11.7	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	1,600	1,530	-
1908	-	836	1,910	‡1,240	-
1909	-	1,070	1,010	‡1,030	-
1910	-	-	1,380	696	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

214. Seward ditch below Hobson branch, near Nome

Location.--Lat 64°44'40", long. 165°17'00", immediately downstream from Hobson branch and 17 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 370 ft (from topographic map).

Extremes.--1909-10: Maximum discharge observed, 42.0 cfs July 10, 1909; no flow during winter periods.

Remarks.--Seward ditch diverted water from Nome River just below Dorothy Creek for mining purposes along Anvil Creek in Snake River basin. Hobson branch, a lateral, brought the unappropriated flow from Hobson Creek to Seward ditch.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1909	-	19.2	15.2	‡19.0	-
1910	-	-	28.0	16.9	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1909	-	1,180	935	‡1,130	-
1910	-	-	1,720	1,010	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

215. Pioneer ditch at intake, near Nome

Location.--Lat 64°47'30", long. 165°12'50", just downstream from intake and 21 miles north of Nome.

Gage.--Staff gage. Altitude of gage is 330 ft (from topographic map).

Remarks.--Pioneer ditch diverted water from Nome River, just downstream from Christian Creek, for mining purposes along Anvil Creek in Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	-	-	-
1908	-	11.1	28.2	-	-
1909	-	20.9	14.1	‡11.4	-
1910	-	-	15.3	9.42	-

‡ Not previously published; partly estimated.

Pioneer ditch at intake, near Nome--Continued

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	-	-	-
1908	-	683	1,730	-	-
1909	-	1,290	867	‡676	-
1910	-	-	941	561	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

216. Nome River near Nome 1/

Location.--Lat 64°47'30", long. 165°12'40", just downstream from Christian Creek and Pioneer ditch intake, 21 miles north of Nome.

Drainage area.--37 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 320 ft (from topographic map).

Extremes.--1907-10: Maximum discharge observed, 910 cfs Sept. 7, 1910 (gage height, 3.4 ft), from rating curve extended above 280 cfs; minimum observed, 1 cfs, many days in 1908 and 1909.

Remarks.--Miocene ditch (see p. 215), Seward ditch (see p. 217), and Pioneer ditch (see p. 217) diverted water above station for mining purposes along Anvil Creek in Snake River basin. Water is imported from Kruzgamepa River basin above station by Grand Central ditch (see p. 225) and Jett Creek ditch (see p. 225).

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	-	-	-
1908	-	9.74	42.5	‡3.29	-
1909	‡317	37.0	1.00	‡1.83	-
1910	366	274	103	259	-

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.	Oct.
1907	-	-	-	-	-
1908	-	599	2,610	‡196	-
1909	‡18,840	2,280	61	‡109	-
1910	21,780	16,850	6,330	15,410	-

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

217. Hobson Creek near Nome 2/

Location.--Lat 64°45'40", long. 165°16'30", at crossing at Miocene ditch and 18 miles north of Nome.

Drainage area.--2.6 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 510 ft (from topographic map).

Extremes.--1907-9: Maximum daily discharge, 60 cfs June 11, 1909; minimum discharge observed, 0.1 cfs May 11-14, 1909 (gage height, 0.00 ft).

Remarks.--Records given herein represent the natural flow of Hobson Creek at this point and were obtained by adding to the flow passing the station the difference in flow between Miocene ditch above Hobson Creek (see p. 215) and Miocene ditch below Hobson Creek (see p. 215).

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1907	-	-	22.6	17.1	19.1
1908	-	-	7.54	11.0	‡9.12
1909	-	28.5	14.8	7.55	6.43

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1907	-	-	1,390	1,050	1,140
1908	-	-	464	676	‡542
1909	-	1,700	910	465	383

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Nome River below Pioneer ditch intake.
2/ Formerly published as Hobson Creek at Miocene ditch intake.

218. Snake River near Nome 1/

Location.--Lat 64°35'55", long. 165°27'40", just upstream from Glacier Creek and 7 miles northwest of Nome.

Drainage area.--69 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 40 ft.

Extremes.--June to September 1907: Maximum discharge observed, 540 cfs June 25, Sept. 11, (gage height, 1.90 ft); minimum observed, 77 cfs Aug. 12, 15 (gage height, 0.90 ft). Discharge of 46 cfs was observed July 12, 1908 (discharge measurement).

Remarks.--One small diversion into Miocene ditch above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1907	-	177	108	‡191

‡ Not previously published; partly estimated on the basis of records for Penny River near Nome.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1907	-	10,880	6,640	‡11,340

‡ Not previously published; partly estimated on the basis of records for Penny River near Nome.
Note.--Records of daily discharge published in WSP 314.

219. Sutton ditch at intake, near Oregon

Location.--Lat 64°35'40", long. 165°39'20", at intake, 5 miles south of Oregon.

Supplemental records available.--August 1906, discharge measurement only.

Gage.--Staff gage in wooden flume. Altitude of gage is 100 ft, revised (from topographic map).

Extremes.--July to September 1907: Maximum discharge observed, 47 cfs Aug. 25 (gage height, 1.5 ft); no flow Aug. 1-5, Sept. 15, 16.

Remarks.--Sutton ditch diverted water from Penny River half a mile upstream from Willow Creek for mining purposes near mouth of Penny River.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	23.9	23.8	31.8

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	1,470	1,460	1,890

Note.--Records of daily discharge published in WSP 314.

220. Penny River near Oregon 2/

Location.--Lat 64°35'40", long. 165°39'20", just downstream from Sutton ditch diversion dam, half a mile upstream from Willow Creek, and 5 miles south of Oregon.

Drainage area.--19 sq mi, approximately.

Supplemental records available.--August 1906, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 100 ft, revised (from topographic map).

Extremes.--July to September 1907: Maximum discharge observed, 152 cfs July 7 (gage height, 2.2 ft), from rating curve extended above 45 cfs; minimum observed, 4 cfs Aug. 15 (gage height, 0.6 ft).

Remarks.--Sutton ditch diverted water just upstream from station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	54.8	35.3	†39.3

† Corrected.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	3,370	2,170	2,340

Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Snake River above Glacier Creek.
2/ Formerly published as Penny River at intake.

221. Sinuk River near Nome 1/

Location.--Lat 64°53', long. 165°22', about 2 miles upstream from Windy Creek and 28 miles north of Nome.

Drainage area.--8.2 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 700 ft (from topographic map). Prior to Aug. 8, 1907, at site 1½ miles upstream at different datum.

Extremes.--July to September 1907: Maximum daily discharge, 160 cfs (estimated) Sept. 10; minimum discharge observed, 7 cfs Sept. 22 (gage height, 1.21 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	52.3	45.0	‡44.7

‡ Not previously published; partly estimated on the basis of records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	3,220	2,770	‡2,660

‡ Not previously published; partly estimated on the basis of records for nearby streams.
Note.--Records of daily discharge published in WSP 314.

222. Windy Creek near Nome 2/

Location.--Lat 64°54'50", long. 165°26'20", about 2 miles upstream from mouth and 29 miles north of Nome.

Drainage area.--12 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 650 ft (from topographic map).

Extremes.--July to September 1907: Maximum daily discharge, 200 cfs (estimated) Sept. 10; minimum discharge observed, 15 cfs (estimated) Sept. 22.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	91.5	59.2	‡56.6

‡ Not previously published; partly estimated on the basis of weather records and records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	5,630	3,640	‡3,370

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

223. North Star Creek near Nome 3/

Location.--Lat 64°54', long. 165°25', about 1 mile upstream from mouth and 28 miles north of Nome.

Drainage area.--2.3 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 900 ft (from topographic map).

Extremes.--July to September 1907: Maximum daily discharge, 40 cfs (estimated) Sept. 10; minimum discharge observed, 2.0 cfs Sept. 22 (gage height, 0.75 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	14.8	8.28	‡7.36

‡ Not previously published; partly estimated on the basis of weather records and records for nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	910	509	‡438

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Upper Sinuk River at elevation 700 feet.
2/ Formerly published as Windy Creek at elevation 650 feet.
3/ Formerly published as North Star Creek at elevation 900 feet.

224. West Fork Grand Central River at pipe intake, near Iron Creek

Location.--Lat 64°58'05", long. 165°17'40", just upstream from lateral intake of Wild Goose pipe line, 2 miles upstream from confluence with North Fork, and 21 miles west of the community of Iron Creek.

Drainage area.--2.8 sq mi, approximately.

Supplemental records available.--September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,010 ft (from topographic map).

Extremes.--1906-7, 1909: Maximum daily discharge, 200 cfs (estimated) July 8, 1906; minimum observed, 1.6 cfs Sept. 21, 1909, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	‡38.5	13.9	‡19.8
1907	-	‡28.4	17.6	‡18.2
1909	-	-	-	-

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	‡2,370	855	‡1,180
1907	-	‡1,740	1,080	‡1,090
1909	-	-	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

225. West Fork Grand Central River at ditch intake, near Iron Creek

Location.--Lat 64°58'25", long. 165°15'20", at proposed ditch intake, just upstream from Crater Lake Outlet, three-quarters of a mile upstream from confluence with North Fork, and 19 miles west of the community of Iron Creek.

Drainage area.--5.4 sq mi, approximately.

Supplemental records available.--September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 850 ft (from topographic map).

Extremes.--1906-7: Maximum daily discharge, 600 cfs (estimated) July 8, 1906; minimum observed, 19 cfs Sept. 15-17, 1906 (gage height, 0.92 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1906	‡85.3	32.5	‡46.2
1907	‡63.4	50.2	‡45.9

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1906	‡5,240	2,000	‡2,750
1907	‡3,900	3,090	‡2,730

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

226. Crater Lake Outlet near Iron Creek

Location.--Lat 64°58'15", long. 165°15'30", a quarter of a mile downstream from Crater Lake, a quarter of a mile upstream from mouth, and 19 miles west of the community of Iron Creek.

Drainage area.--1.8 sq mi, approximately.

Supplemental records available.--August and September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 925 ft (from topographic map).

Extremes.--1906-9: Maximum daily discharge, 200 cfs (estimated) July 8, 1906; minimum daily, 1.6 cfs Sept. 21, 1909.

Remarks.--No diversion or regulation above station.

Crater Lake Outlet near Iron Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1906	‡31.5	11.8	‡15.5
1907	‡26.8	22.1	‡16.6
1908	12.2	17.2	3.7
1909	13.5	6.29	‡1.99

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1906	‡1,940	726	‡925
1907	‡1,650	1,360	‡990
1908	750	1,060	220
1909	830	387	‡118

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

227. West Fork Grand Central River near Iron Creek 1/

Location.--Lat 64°58'10", long. 165°14'05", just upstream from confluence with North Fork and 18 miles west of the community of Iron Creek.

Drainage area.--7.7 sq mi, approximately.

Supplemental records available.--September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 690 ft (from topographic map).

Extremes.--1907-9: Maximum discharge observed, 406 cfs Sept. 10, 1907 (gage height, 2.70 ft), from rating curve extended above 110 cfs; minimum observed, 14.5 cfs Sept. 21, 1909 (gage height, 0.85 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	‡92.5	81.0	‡86.3
1908	39.2	69.8	30.2
1909	68.0	30.0	‡16.7

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	‡5,690	4,980	‡5,130
1908	2,410	4,290	1,800
1909	4,180	1,840	‡995

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

228. North Fork Grand Central River at pipe intake, near Iron Creek

Location.--Lat 64°59'10", long. 165°14'50", at proposed pipe intake, 1¼ miles upstream from mouth, and 19 miles west of the community of Iron Creek.

Drainage area.--2.3 sq mi, approximately.

Supplemental records available.--September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 950 ft. Prior to 1909, at site half a mile upstream at different datum.

Extremes.--1906-7, 1909: Maximum daily discharge, 171 cfs (estimated) Sept. 10, 1907; minimum observed, 10 cfs Sept. 20, 1909 (gage height, 0.06).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1906	-	27.4	-
1907	‡39.2	43.5	‡40.3
1909	31.2	17.4	‡11.4

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1906	-	1,680	-
1907	‡2,410	2,670	‡2,400
1909	1,920	1,070	‡676

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as West Fork of Grand Central River at the forks.

229. North Fork Grand Central River near ditch intake, near Iron Creek

Location.--Lat 64°58'30", long. 165°14'15", at proposed ditch intake, half a mile upstream from mouth, and 18 miles west of the community of Iron Creek.

Drainage area.--5.5 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 750 ft (from topographic map).

Extremes.--July to September 1906: Maximum discharge observed, 120 cfs Sept. 22 (gage height, 1.5 ft); minimum daily, 23 cfs (estimated) July 1-3.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year							July	Aug.	Sept.				
1906							-	36.7	-				

Monthly runoff, in acre-feet

Year							July	Aug.	Sept.				
1906							-	2,260	-				

Note.--Records of daily discharge published in WSP 314.

230. North Fork Grand Central River near Iron Creek 1/

Location.--Lat 64°58'10", long. 165°14'00", just upstream from the confluence of West and North Forks and 18 miles west of the community of Iron Creek.

Drainage area.--6.9 sq mi, approximately.

Supplemental records available.--July to September 1908, July and August 1909, September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 690 ft (from topographic map).

Extremes.--July to September 1907: Maximum discharge observed, 364 cfs Sept. 10 (gage height, 2.25 ft), from rating curve extended above 70 cfs; minimum observed, 21 cfs Sept. 22 (gage height, 1.10 ft).
Minimum discharge observed in 1909, 15 cfs Aug. 8, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year							July	Aug.	Sept.				
1907							48.8	61.0	‡64.5				

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year							July	Aug.	Sept.				
1907							3,000	3,750	‡3,840				

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

231. Grand Central River below the forks, near Iron Creek

Location.--Lat 64°58'00", long. 165°13'50", just downstream from confluence of North and West Forks and 18 miles west of the community of Iron Creek.

Drainage area.--14.6 sq mi, approximately.

Supplemental records available.--July to September 1907, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 650 ft (from topographic map).

Extremes.--1906, 1908-10: Maximum daily discharge, 1,160 cfs (estimated) July 8, 1906; minimum observed, 28 cfs Sept. 21, 1909 (gage height, 0.41 ft).

Remarks.--No diversion or regulation above station.

1/ Formerly published as North Fork Grand Central River at the forks.

Grand Central River below the forks, near Iron Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	185	85.2	121
1908	-	62.7	123	52.6
1909	-	101	53.0	‡30.7
1910	-	334	161	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	11,380	5,240	7,200
1908	-	3,860	7,560	3,130
1909	-	6,210	3,260	‡1,830
1910	-	20,540	9,900	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

232. Gold Run near Iron Creek 1/

Location.--Lat 64°57'10", long. 165°09'35", one mile upstream from mouth and 16 miles west of the community of Iron Creek.

Drainage area.--10.5 sq mi.

Supplemental records available.-- July, August and September 1908, 1909, September 1910, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 800 ft (from topographic map).

Extremes.--1906-7: Maximum daily discharge, 120 cfs (estimated) Sept. 11, 1907; minimum observed, 12 cfs Sept. 10, 1906.
Minimum discharge observed in 1909, 5.4 cfs Sept. 21, result of discharge measurement.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1906	-	27.6	-
1907	‡54.5	41.4	‡26.7

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1906	-	1,700	-
1907	‡3,350	2,550	‡1,590

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

233. Thompson Creek near Iron Creek 2/

Location.--Lat 64°57', long. 165°11', half a mile upstream from mouth and 17 miles west of the community of Iron Creek.

Drainage area.--2.5 sq mi, approximately.

Supplemental records available.--September 1910, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 600 ft (from topographic map).

Extremes.--1906-9: Maximum daily discharge, 200 cfs July 8, 1906; minimum observed, 2.3 cfs Sept. 21, 1909 (gage height, 0.53 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1906	‡32.7	16.6	‡21.3
1907	‡47.4	23.9	‡18.5
1908	15.2	18.7	4.90
1909	20.4	8.45	‡2.86

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

1/ Formerly published as Gold Run near mouth of canyon.
2/ Formerly published as Thompson Creek near ditch intake.

Thompson Creek near Iron Creek--Continued

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1906	‡2,010	1,020	‡1,270
1907	‡2,910	1,470	‡1,100
1908	935	1,150	292
1909	1,250	520	‡170

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

234. Grand Central ditch near Iron Creek

Location.--Lat 64°53'30", long. 165°12'30", just downstream from Nugget Creek intake and 18 miles southwest of the community of Iron Creek.

Supplemental records available.--July 1908, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 790 ft (from topographic map).

Extremes.--1907, 1909: Maximum discharge observed, 13.4 cfs Sept. 10, 13-18, 1907 (gage height, 1.70 ft); no flow at times.

Remarks.--Grand Central ditch diverted water from Nugget Creek, a tributary to Grand Central River, and carried water into the Nome River basin for mining purposes along Anvil Creek in the Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	-	6.2	9.0
1909	3.1	2.3	-

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	-	381	536
1909	191	141	-

Note.--Records of daily discharge published in WSP 314.

235. Grand Central River near Iron Creek 1/

Location.--Lat 64°54'15", long. 165°07'35", just downstream from Nugget Creek, 1½ miles upstream from Salmon Lake, and 16 miles southwest of the community of Iron Creek.

Drainage area.--44 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 460 ft (from topographic map).

Extremes.--June to September 1906: Maximum daily discharge, 1,500 cfs (estimated) July 8; minimum observed, 90 cfs Sept. 16, 17 (gage height, 0.30 ft).

Remarks.--Grand Central ditch (see above) diverted from Nugget Creek, a tributary above station, and carried water into the Nome River basin, for mining purposes along Anvil Creek in the Snake River basin.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1906	-	311	183	243

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1906	-	19,120	11,250	14,460

Note.--Records of daily discharge published in WSP 314.

236. Jett Creek ditch near Iron Creek

Location.--Lat 64°52'50", long. 165°10'40", just downstream from junction of laterals from Jett Creek and Copper Creek and 17 miles southwest of the community of Iron Creek.
Supplemental records available.--August and September 1906, July 1908, discharge measurements only.
Gage.--Staff gage. Altitude of gage is 790 ft (from topographic map).
Extremes.--1907, 1909: Maximum discharge observed, 8.2 cfs Aug. 18, 19, Sept. 12-14, 1907, Aug. 10, 1909; maximum gage height observed, 1.60 ft Aug. 18, 19, Sept. 12-14, 1907; no flow for long periods.
Maximum discharge observed in 1906, 9.22 cfs Sept. 2 (discharge measurement).
Remarks.--Jett Creek ditch carried water from Jett Creek and Copper Creek in Kruzgamepa River basin to Nome River basin for mining purposes along Anvil Creek in Snake River basin.

1/ Formerly published as Grand Central River below Nugget Creek.

Jett Creek ditch near Iron Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	-	6.1	-
1909	‡3.1	2.2	-

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	-	375	-
1909	‡184	135	-

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

237. Kruzgamepa River near Iron Creek 1/

Location.--Lat 64°55'00", long. 164°57'20", just downstream from Salmon Lake and 10 miles southwest of the community of Iron Creek.

Drainage area.--84 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 440 ft (from topographic map). October 1908 to December 1909 at datum 1.00 ft lower.

Extremes.--1906-10: Maximum discharge observed, 4,300 cfs Sept. 8, 1910, from rating curve extended above 2,400 cfs; maximum gage height observed, 5.45 ft May 28, 1906; minimum discharge observed, 51 cfs Dec. 10, 17, 1909 (gage height, 1.65 ft, present datum).

Remarks.--Jett Creek ditch (see p. 225) and Grand Central ditch (see p. 225) diverted water from Kruzgamepa River above station to Nome River basin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	-	-	-	80	60	50	50	888	1,110	†571	†259	†456	-
1907	210	110	90	70	60	50	40	507	†1,970	†548	†335	†477	†372
1908	150	90	70	60	50	50	40	413	732	†186	†288	†154	†190
1909	†79.9	68.1	65.0	60	50	40	40	348	†873	†343	†144	†107	†185
1910	70.0	60.6	50.0	50	45	40	40	188	758	1,020	493	977	317
1911	192	†94.5	†58.5	-	-	-	-	-	-	-	-	-	-

† Corrected; supersedes figure published in WSP 314 which is adjusted to include upstream diversion.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	-	-	-	4,920	3,330	3,070	2,980	54,600	66,000	†35,100	†15,900	†27,100	-
1907	12,900	6,540	5,530	4,300	3,330	3,070	2,380	31,200	†17,000	†33,700	†20,600	†28,400	†269,000
1908	9,220	5,360	4,300	3,690	2,880	3,070	2,380	25,400	43,600	†11,400	†17,700	†9,180	†138,000
1909	†4,910	4,050	4,000	3,690	2,780	2,460	2,380	21,400	52,000	†21,100	†8,850	†6,360	†134,000
1910	4,300	3,610	3,070	3,070	2,500	2,460	2,380	11,600	45,100	62,700	30,300	58,100	229,000
1911	11,800	†5,620	†3,600	-	-	-	-	-	-	-	-	-	-

† Corrected; supersedes figure published in WSP 314 which is adjusted to include upstream diversion.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Maximum observed		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1906	314	-	-	-	-	-	-	-	†329	†53.15	†238,000
1907	314	-	-	-	†372	†4.43	†60.10	†269,000	†364	†58.74	†263,000
1908	314	-	-	-	†190	†2.26	†30.85	†138,000	†182	†29.52	†132,000
1909	314	1,100	May 25-28, 1909	-	†185	†2.20	†29.90	†134,000	†182	†29.46	†132,000
1910	314	4,300	Sept. 8, 1910	-	317	3.77	51.23	229,000	†331	†53.47	†239,000
1911	314	-	-	-	-	-	-	-	-	-	-

† Corrected.

238. Kruzgamepa River at Iron Creek 2/

Location.--Lat 64°58'00", long. 164°39'30", half a mile upstream from Iron Creek and half a mile southwest of the community of Iron Creek.

Drainage area.--153 sq mi.

Gage.--Staff gage. Altitude of gage is 250 ft (from topographic map).

Extremes.--June to September 1908: Maximum discharge observed, 808 cfs July 31, Aug. 5 (gage height, 2.12 ft); minimum observed, 165 cfs July 29 (gage height, 0.80 ft).

Remarks.--Jett Creek ditch (see p. 225) and Grand Central ditch (see p. 225) diverted water from Kruzgamepa River above station for mining purposes in Nome River basin.

1/ Formerly published as Kruzgamepa River at outlet of Salmon Lake.
2/ Formerly published as Kruzgamepa River above Iron Creek.

Kruzgamepa River at Iron Creek--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	291	481	289

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	17,890	29,580	17,200

Note.--Records of daily discharge published in WSP 314.

239. Iron Creek near Iron Creek 1/

Location.--Lat 64°57'45", long. 164°39'00", just upstream from diversion tunnel, 1 mile upstream from mouth, and 1 mile southwest of the community of Iron Creek.

Drainage area.--50 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 280 ft (from topographic map). June 16 to July 19, 1909, staff gage at site 1 mile downstream at different datum.

Extremes.--1908-9: Maximum discharge observed, 1,160 cfs June 16, 1909 (gage height, 3.30 ft, site and datum then in use), result of discharge measurement; minimum observed, 16 cfs Sept. 6, 1909 (gage height, 0.35 ft).

Remarks.--No diversion or regulation. Records for June, July 1909 at site 1 mile downstream include flow in diversion tunnel.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	37.6	77.4	40.0
1909	-	63.6	27.6	‡18.9

‡ Not previously published; partly estimated on the basis of records for nearby stations.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	2,310	4,760	2,380
1909	-	3,910	1,700	‡1,130

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

240. Pass Creek near Pilgrim Springs 2/

Location.--Lat 65°02', long. 165°06', 5 miles upstream from mouth and 6½ miles southwest of Pilgrim Springs.

Drainage area.--3.7 sq mi, approximately.

Supplemental records available.--July 1907, July and August 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--July to September 1909: Maximum discharge observed, 41 cfs Aug. 9 (gage height, 1.50 ft); minimum observed, 7.7 cfs Sept. 19 (gage height, 0.86 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	-	23.6	‡11.2

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	-	1,450	‡666

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge 1908, 1910 published in WSP 314 have been found in error on the basis of restudy of the original data and comparison with records at nearby stations and should not be used.

1/ Formerly published as Iron Creek above tunnel.
2/ Formerly published as Pass Creek below dam site.

241. Smith Creek near Marys Igloo 1/

Location.--Lat 65°04', long. 165°08', 3 miles downstream from Swift Creek and 6 miles south of Marys Igloo.

Drainage area.--6.8 sq mi, approximately (at measuring section 3 miles upstream and just downstream from Swift Creek).

Supplemental records available.--July 1907, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 100 ft (from topographic map). Prior to Aug. 1, 1908, at same site at different datum.

Extremes.--1908-9: Maximum discharge observed, 231 cfs Aug. 9, 1909 (gage height, 1.85 ft), from rating curve extended above 50 cfs; minimum observed, 9.4 cfs Sept. 18, 1909 (gage height, 0.24 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1908	-	-	-
1909	-	50.0	‡17.3

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1908	-	-	-
1909	-	3,070	‡1,030

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

242. Kougarok River near Taylor 2/

Location.--Lat 65°44'10", long. 164°56'45", 150 ft downstream from Homestake ditch diversion dam and 3 miles west of Taylor.

Drainage area.--44 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 670 ft (from topographic map).

Extremes.--1907-9 (combined flow): Maximum discharge observed, 351 cfs Sept. 10, 1907; minimum observed, 1.2 cfs Sept. 10, 1908.

Remarks.--Homestake ditch (see following station) diverted water above station for mining purposes below station. Records, except "Extremes", do not include the flow in Homestake ditch.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1907	-	-	13.9	‡44.2
1908	-	2.27	0.61	-
1909	-	9.21	9.35	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1907	-	-	855	‡2,630
1908	-	140	37	-
1909	-	566	575	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

243. Homestake ditch at intake, near Taylor

Location.--Lat 65°44'10", long. 164°56'45", 150 ft downstream from intake and 3 miles west of Taylor.

Gage.--Staff gage. Altitude of gage is 670 ft (from topographic map).

Extremes.--1907-9: Maximum discharge observed, 22 cfs Aug. 10, 1909 (gage height, 0.81 ft); no flow at times.

Remarks.--Homestake ditch diverted water from Kougarok River 3 miles above Macklin Creek for mining purposes near Homestake Creek, 7½ miles downstream.

1/ Formerly published as Smith Creek below Swift Creek.
2/ Formerly published as Kougarok River at intake.

Homestake ditch at intake, near Taylor--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1907	-	-	8.88	‡12.2
1908	-	3.45	4.90	-
1909	-	.26	2.84	‡1.02

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1907	-	-	546	‡728
1908	-	212	301	-
1909	-	16	175	‡61

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

244. North Star ditch near Taylor 1/

Location.--Lat 65°41'25", long. 164°43'20", just upstream from siphon crossing Taylor Creek and 4½ miles southeast of Taylor.

Gage.--Staff gage. Altitude of gage is 620 ft (from topographic map).

Extremes.--August, September 1907: Maximum discharge observed, 12.0 cfs Sept. 11, 15 (gage height, 1.30 ft); no flow at times.

Remarks.--North Star ditch diverted from Taylor Creek 12 miles above mouth, for mining purposes along Kougarok River in the vicinity of Arctic Creek.

Monthly mean discharge, in cubic feet per second

Year	Aug.	Sept.
1907	‡2.17	‡5.40

‡ Not previously published; partly estimated.

Monthly runoff, in acre-feet

Year	Aug.	Sept.
1907	‡134	‡322

‡ Not previously published; partly estimated.
Note.--Records of daily discharge published in WSP 314.

245. Taylor Creek near Taylor 2/

Location.--Lat 65°41'25", long. 164°39'40", 300 feet upstream from Cascade ditch intake and 6 miles southeast of Taylor.

Drainage area.--73.4 sq mi.

Gage.--Staff gage. Altitude of gage is 580 ft (from topographic map).

Extremes.--July to September 1907 (combined flow): Maximum discharge observed, 430 cfs Sept. 10 (gage height, 2.40 ft); minimum observed, 2.5 cfs Aug. 13 (gage height, 0.31 ft).

Remarks.--Records include flow of North Star ditch (see preceding station) that diverted water above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1907	-	52.2	‡77.9

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1907	-	3,210	‡4,630

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as North Star ditch above siphon.
2/ Formerly published as Taylor Creek at Cascade Intake.

246. Henry Creek near Taylor 1/

Location.--Lat 65°39'10", long. 164°48'20", just upstream from mouth and 5 miles south of Taylor.

Drainage area.--51 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 410 ft (from topographic map).

Extremes.--1908-10: Maximum discharge observed, 449 cfs Sept. 6, 1910 (gage height, 1.95 ft); minimum observed, 1.7 cfs Aug. 26-28, Sept. 12, 13, 1909 (gage height, 0.04 ft).

Remarks.--Diversion in Henry Creek ditch above station for mining purposes below station included in records for 1910.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	11.9	8.36	-
1909	-	12.5	5.65	‡2.62
1910	-	‡86.6	24.9	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	732	514	-
1909	-	769	347	‡156
1910	-	‡5,320	1,530	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

247. Kougarok River below Henry Creek, near Taylor

Location.--Lat 65°39'00", long. 164°48'25", just downstream from Henry Creek and 5½ miles south of Taylor.

Drainage area.--225 sq mi.

Gage.--Staff gage. Altitude of gage is 410 ft (from topographic map).

Extremes.--July to September 1909: Maximum discharge observed, 130 cfs July 2 (gage height, 1.12 ft); minimum observed, 6 cfs Aug. 26 (gage height, 0.47 ft).

Remarks.--Numerous diversions for mining purposes above station. North Star ditch diverted water from Taylor Creek, a tributary, for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	40.3	21.8	‡26.9

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	2,480	1,340	‡1,600

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

248. Kougarok River above Coarse Gold Creek, near Taylor

Location.--Lat 65°35'40", long. 164°45'50", 200 ft upstream from Coarse Gold Creek and 9½ miles south of Taylor.

Drainage area.--254 sq mi.

Gage.--Staff gage. Altitude of gage is 340 ft (from topographic map). Prior to 1908 at site 1½ miles upstream at different datum.

Extremes.--1907-9: Maximum discharge observed, 1,240 cfs Sept. 10, 1907 (gage height, 3.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 460 cfs; minimum daily, 9 cfs (estimated) July 26-31, 1909.

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1907	-	-	141	‡278
1908	-	31.2	32.1	-
1909	-	62.9	-	-

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

1/ Formerly published as Henry Creek at mouth.

Kougarok River above Coarse Gold Creek, near Taylor--Continued

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1907	-	-	8,670	‡16,570
1908	-	1,920	1,970	-
1909	-	3,870	-	-

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

249. Coarse Gold Creek near Taylor 1/

Location.--Lat 65°35'35", long. 164°45'30", just upstream from mouth and 9½ miles south of Taylor.

Drainage area.--34 sq mi, approximately.

Supplemental records available.--July to September 1907, June, July 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 340 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 76 cfs June 20 (gage height, 1.34 ft), result of discharge measurement; minimum observed, 0.8 cfs on many days in 1909 (gage height, 0.30 ft).
Maximum discharge observed in 1907, 156 cfs Sept. 15, result of discharge measurement.

Remarks.--Galvin ditch diverted above station for mining purposes below station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	-	3.4	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	-	209	-

Note.--Records of daily discharge published in WSP 314.

250. North Fork Kougarok River near Taylor 2/

Location.--Lat 65°36', long. 164°41', a short distance from Eureka Creek and 10 miles southeast of Taylor.

Drainage area.--66 sq mi, approximately.

Supplemental records available.--July to September 1907, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 370 ft (from topographic map). Prior to July 22, 1909, at site downstream, immediately above mouth of Eureka Creek, at different datum.

Extremes.--1908-9: Maximum discharge observed, 140 cfs (revised) June 20, 1909 (gage height, 1.60 ft, site and datum then in use); minimum observed, 7.6 cfs July 29, 1908 (gage height, 0.65 ft, site and datum then in use).

Remarks.--Diversions for mining purposes above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for high water period in the water year 1909, superseding figures published in WSP 314 are given herewith:

June 20..... 140
June 21..... 130

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	15.0	8.7	-
1909	-	11.1	13.4	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	922	535	-
1909	-	683	824	-

Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Coarse Gold Creek near mouth.
2/ Formerly published as North Fork above Eureka Creek.

251. Kuzitrin River near Bunker Hill 1/

Location.--Lat 65°13'30", long. 164°48'20", 5½ miles west of Bunker Hill and about 25 miles upstream from mouth.

Drainage area.--1,750 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 30 ft (from topographic map). June to September 1908, at datum 2.7 ft higher and May to September 1909, at datum 3.7 ft higher.

Extremes.--1908-10: Maximum discharge observed, 10,500 cfs June 3, 4, 1910; maximum gage height, 17.45 ft May 28, 1910, backwater from ice jam; minimum discharge observed, 235 cfs Aug. 1-3, 1909 (gage height, 3.75 ft, datum then in use).

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year	May	June	July	Aug.	Sept.
1908	-	3,550	416	600	‡408
1909	-	4,260	671	363	310
1910	-	6,020	2,740	1,890	2,750

‡ Not previously published; partly estimated on the basis of records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	May	June	July	Aug.	Sept.
1908	-	211,200	25,580	36,890	‡24,300
1909	-	253,500	41,260	22,320	18,450
1910	-	358,200	168,500	116,200	163,600

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

252. Goodhope River near Cottonwood 2/

Location.--Lat 65°48'30", long. 163°51'10", 50 ft downstream from Esperanza Creek and 9½ miles west of Cottonwood.

Drainage area.--194 sq mi.

Gage.--Staff gage. Altitude of gage is 180 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 91 cfs June 24, 28 (gage height, 1.20 ft); minimum observed, 10 cfs Sept. 13 (gage height, 0.15 ft).

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	39.0	19.7	‡13.1

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	2,400	1,210	‡780

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

253. Inmachuk River at Utica 3/

Location.--Lat 65°54', long. 163°02', 400 ft upstream from Fairhaven pipe line crossing, half a mile upstream from Arizona Creek, half a mile downstream from Logan Gulch, and half a mile southwest of Utica.

Drainage area.--145 sq mi.

Gage.--Staff gage. Altitude of gage is 200 ft (from topographic map). Prior to Aug. 11, 1909, at site 400 ft downstream at different datum.

Extremes.--June to September 1909: Maximum discharge observed, 93 cfs June 26, 27; minimum observed, 13 cfs July 28.

Remarks.--Fairhaven ditch (see p. 233) diverted from Kugruk River at outlet of Imuruk Lake and delivered water to Inmachuk River basin below station; some water from Fairhaven ditch entered Inmachuk River above station as seepage into Pinnell River or wastage into Logan Gulch, both of which are upstream tributaries.

1/ Formerly published as Kuzitrin River at Lanes Landing.
2/ Formerly published as Goodhope River below Esperanza Creek.
3/ Formerly published as Inmachuk River below Logan Gulch.

Inmachuk River at Utica--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	43.9	24.2	‡20.9

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	2,700	1,490	‡1,240

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

254. Fairhaven ditch at intake, near Utica

Location.--Lat 65°33'20", long. 163°04'20", 100 ft downstream from intake and diversion dam on Kugruk River and 24 miles south of Utica.

Gage.--Staff gage. Altitude of gage is 1,010 ft (from topographic map).

Extremes.--July to September 1909: Maximum discharge observed, 61.8 cfs Sept. 15 (gage height, 1.42 ft); no flow July 26.

Remarks.--Fairhaven ditch diverted water from Kugruk River at outlet of Imuruk Lake and delivered water to Inmachuk River basin for mining purposes. Some water returned to Kugruk River at times through spillway between this station and station at Camp 2 (see following station).

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	-	49.8	-

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	-	3,060	-

Note.--Records of daily discharge published in WSP 314.

255. Fairhaven ditch at Camp 2, near Utica

Location.--Lat 65°34'00", long. 162°57'50", 4½ miles downstream from intake and 23½ miles south of Utica.

Supplemental records available.--July 1908, discharge measurement only.

Gage.--Staff gage. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--July, August 1909: Maximum discharge observed, 46.7 cfs Aug. 6-8, 12; no flow on several days.

Remarks.--Fairhaven ditch diverted water from Kugruk River at outlet of Imuruk Lake and delivered water to Inmachuk River basin for mining purposes.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.
1909	-	37.5

Monthly runoff, in acre-feet

Year	July	Aug.
1909	-	2,310

Note.--Records of daily discharge published in WSP 342.

256. Fairhaven ditch at Snow Gulch, near Utica

Location.--Lat 65°51', long. 163°02', just downstream from Snow Gulch, 3 miles south of Utica, and 4 miles upstream from outlet and penstock.

Supplemental records available.--July and August 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 700 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 45.7 cfs Sept. 14 (gage height, 1.65 ft); no flow on a few days.

Remarks.--Fairhaven ditch diverted water from Kugruk River at outlet of Imuruk Lake and delivered water to Inmachuk River basin for mining purposes.

Fairhaven ditch at Snow Gulch, near Utica--Continued

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	26.0	34.4	-

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	1,600	2,120	-

Note.--Records of daily discharge published in WSP 314.

257. Kugruk River near Utica 1/

Location.--Lat 65°33'20", long. 163°04'20", 50 ft downstream from Fairhaven ditch diversion dam, 0.2 mile downstream from Imuruk Lake, and 24 miles south of Utica.

Drainage area.--102 sq mi.

Gage.--Staff gage. Altitude of gage is 1,010 ft (from topographic map).

Extremes.--July to September 1909: Maximum discharge observed, 65.4 cfs July 14 (gage height, 1.71 ft) result of discharge measurement; minimum observed, 1.0 cfs on many days (gage height, 0.42 ft).

Remarks.--Flow regulated by Imuruk Lake. Fairhaven ditch diverted above station at Imuruk Lake outlet for mining purposes in Inmachuk River basin.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	-	2.21	-

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	-	136	-

Note.--Records of daily discharge published in WSP 314.

258. Kugruk River near Candle 2/

Location.--Lat 65°51', long. 162°27', half a mile upstream from Reindeer Creek and 15 miles southwest of Candle.

Drainage area.--556 sq mi, includes that of Imuruk Lake.

Gage.--Staff gage. Altitude of gage is 75 ft (from topographic map).

Extremes.--June to September 1909: Maximum discharge observed, 182 cfs June 28 (gage height, 1.21 ft), result of discharge measurement; minimum daily, 16 cfs (estimated) Sept. 30.

Remarks.--Flow regulated by Imuruk Lake. Fairhaven ditch (see p. 233) diverted above station at Imuruk Lake outlet for mining purposes in Inmachuk River basin. Some return flow from seepage or water wasted from Fairhaven ditch enters river above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1909	-	82.1	54.3	31.9

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1909	-	5,050	3,340	1,900

Note.--Records of daily discharge published in WSP 314.

259. Quartz Creek near Candle 3/

Location.--Lat 65°32', long. 161°21', 1½ miles downstream from the forks, 2 miles upstream from Deer Creek, and 28 miles southeast of Candle.

Drainage area.--56 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 650 ft (from topographic map).

Extremes.--July to September 1909: Maximum discharge observed, 242 cfs Aug. 10 (gage height, 2.90 ft); minimum daily, 5.0 cfs (estimated) Sept. 28-30.

Remarks.--No diversion or regulation above station.

1/ Formerly published as Kugruk River below Fairhaven ditch intake.
2/ Formerly published as Kugruk River above Reindeer Creek.
3/ Formerly published as Quartz Creek below the forks.

Quartz Creek near Candle--Continued

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1909	58.1	30.9	10.5

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1909	3,570	1,900	625

Note.--Records of daily discharge published in WSP 314.

260. Glacier Creek near Candle 1/

Location.--Lat 65°31'15", long. 162°08'10", 100 ft upstream from Candle ditch intake and 22 miles south of Candle.

Drainage area.--10 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 400 ft (from topographic map).

Extremes.--1908-9: Maximum discharge observed, 108 cfs June 16, 1909, result of float measurement; minimum daily, 1.3 cfs (estimated) Sept. 25-30, 1909.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	June	July	Aug.	Sept.
1908	-	4.67	2.15	‡3.07
1909	35.3	3.01	2.13	1.43

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	June	July	Aug.	Sept.
1908	-	287	132	‡182
1909	2,100	185	131	85

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

261. Hunter Creek near Candle 2/

Location.--Lat 65°42', long. 161°21', 1¾ miles upstream from Spruce Creek and 22 miles southeast of Candle.

Drainage area.--32 sq mi, approximately. At site 1908, 37 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 580 ft (from topographic map). Prior to 1909, at site 1¾ miles downstream, just upstream from Spruce Creek, at different datum.

Extremes.--1908-9: Maximum discharge observed, 26.6 cfs Sept. 18, 1908 (gage height, 1.02 ft, site and datum then in use); minimum daily, 1.6 cfs (estimated) Sept. 28-30, 1909.

Remarks.--No diversion or regulation above station.

Monthly mean discharge, in cubic feet per second

Year	July	Aug.	Sept.
1908	-	8.1	‡9.78
1909	8.16	5.48	2.73

‡ Not previously published; partly estimated on the basis of weather records and records for stations on nearby streams.

Monthly runoff, in acre-feet

Year	July	Aug.	Sept.
1908	-	498	‡582
1909	502	337	162

‡ Not previously published; see footnote to preceding table.
Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Glacier Creek above intake of Candle ditch.
2/ Formerly published as Hunter Creek near ditch intake.

262. Kiwalik River at Candle 1/

Location.--Lat 65°55', long. 161°55', at Candle, 900 ft downstream from Candle Creek.

Drainage area.--800 sq mi, approximately.

Supplemental records available.--July to September 1908, discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2 ft.

Extremes.--June to September 1909: Maximum discharge observed, 409 cfs Aug. 12 (gage height, 2.40 ft); minimum observed, 14 cfs Sept. 30 (gage height, 0.87 ft).

Remarks.--Numerous diversions for mining purposes above station.

Monthly mean discharge, in cubic feet per second

Year						June	July	Aug.	Sept.				
1909						-	140	96.4	41.4				

Monthly runoff, in acre-feet

Year						June	July	Aug.	Sept.				
1909						-	8,610	5,930	2,460				

Note.--Records of daily discharge published in WSP 314.

1/ Formerly published as Kiwalik River below Candle Creek.

Measurements of streamflow in Alaska made at points other than gaging stations are given in the following table:

Miscellaneous discharge measurements in Alaska, September 1946 to September 1950

Mainland streams in southeastern Alaska

Date	Stream	Tributary to-	Locality	Discharge (cfs)
1948				
Aug. 27	Anan Creek.....	Bradfield Canal...	Near mouth on south shore of Bradfield Canal near Wrangell.....	215
26	Tyee Creek.....	....do.....	Near mouth at head of Bradfield Canal near Wrangell.	168
26	Harding River....	....do.....	Near mouth at north shore of Bradfield Canal near Wrangell.	444
1947				
Aug. 22	Ruth Creek.....	Thomas Bay.....	At mouth at Thomas Bay near Petersburg...	56.0
1948				
July 7	....do.....	....do.....	....do.....	156
1949				
Mar. 18	....do.....	....do.....	....do.....	15.4
1950				
Mar. 7	....do.....	....do.....	....do.....	5.81
July 14	....do.....	....do.....	....do.....	142
Sept.15	....do.....	....do.....	....do.....	46.9
Feb. 10	Gold Creek.....	Gastineau Channel.	In canyon above Alaska Juneau Mine near Juneau.	4.95
Aug. 3	Montana Creek....	Mendenhall River..	At highway bridge, 10 miles north of Juneau.	114
2	Mendenhall River.	Gastineau Channel.	At Glacier Highway bridge near Juneau....	2,810
Apr. 3	Lake Creek.....	Auke Lake.....	At mouth at Auke Lake.....	.82
3	Wadleigh Creek...	Auke Bay.....	At Auke Bay, 14 miles by highway north of Juneau.	1.12
1948				
Oct. 16	Peterson Creek...	Favorite Channel..	At falls, ½ mile above highway bridge and 18 miles northwest of Juneau.	39.2
16	....do.....	....do.....	....do.....	35.4
Dec. 4	....do.....	....do.....	....do.....	16.1
Feb. 5	....do.....	....do.....	....do.....	6.08
Apr. 3	....do.....	....do.....	....do.....	4.84
Sept.28	....do.....	....do.....	....do.....	15.7
1949				
Feb. 3	....do.....	....do.....	....do.....	6.43
Apr. 12	....do.....	....do.....	....do.....	126
May 2	....do.....	....do.....	....do.....	38.4
19	....do.....	....do.....	At highway bridge, 18 miles northwest of Juneau.	161
July 14	....do.....	....do.....	....do.....	93.0
Sept.19	....do.....	....do.....	....do.....	15.3
Nov. 16	....do.....	....do.....	....do.....	39.4
1950				
Jan. 13	....do.....	....do.....	....do.....	2.30
Apr. 3	....do.....	....do.....	....do.....	3.95
Aug. 3	....do.....	....do.....	....do.....	33.4
9	....do.....	....do.....	....do.....	5.68
Sept.27	....do.....	....do.....	....do.....	19.4
1949				
Apr. 6	Davies Creek.....	Cowee Creek.....	At mouth near south end of Berners Bay...	24.4
6	Cowee Creek.....	Berners Bay.....	Below mouth of Davies Creek at south end of Berners Bay.	99.7
5	Sawmill Creek....	....do.....	At mouth north of Echo Cove in Berners Bay.	13.2
6	Sherman Creek....	Lynn Canal.....	Near mouth, 10 miles northwest of Berners Bay and 47 miles northwest of Juneau.	13.8
1948				
May 12	Skagway River....	Taiya Inlet.....	Near mouth at Skagway.....	419
Sept. 9	....do.....	....do.....	....do.....	2,270
11	....do.....	....do.....	....do.....	909
Oct. 26	....do.....	....do.....	....do.....	179
1949				
Mar. 11	....do.....	....do.....	....do.....	24.5
Apr. 7	....do.....	....do.....	....do.....	36.5
July 29	....do.....	....do.....	....do.....	1,370

Streams on Revillagigedo Island

1950				
June 13	East Fork Perseverance Creek.	Perseverance Creek	½ mile below Perseverance Creek gaging station.	34.8
1947				
July 5	Perseverance Creek.	Ward Creek.....	At mouth, at Lake Connel near Wacker.....	46.4
1948				
Mar. 13	....do.....	....do.....	....do.....	9.85
Aug. 14	....do.....	....do.....	....do.....	7.55
Sept.16	....do.....	....do.....	....do.....	8.92
1949				
Nov. 1	Beaver Falls Creek.	George Inlet.....	Above powerhouse intake at George Inlet..	90.6
May 31	....do.....	....do.....	....do.....	113
1946				
Sept. 4	Grace Creek.....	East Behm Canal...	Near mouth, at site of former gaging station.	77.6
1947				
July 1	....do.....	....do.....	....do.....	560
Aug. 16	....do.....	....do.....	....do.....	122
1949				
June 27	....do.....	....do.....	....do.....	823
1946				
Sept. 3	Orchard Creek....	Shrimp Bay.....	Near mouth, just below Orchard Lake, at site of former gaging station.	95.9

Miscellaneous discharge measurements in Alaska, September 1946 to September 1950--Continued

Date	Stream	Tributary to--	Locality	Discharge (cfs)
Streams on Prince of Wales Island				
1947 Aug. 1	Klawak River.....	Klawak Inlet.....	Near mouth at Klawak.....	40.2
Streams on Wrangell Island				
1948 Aug. 28	Thoms Creek.....	Zimovia Strait...	At Zimovia Strait near Wrangell.....	23.8
Streams on Mitkof Island				
1947 June 18	Crystal Creek....	Blind River.....	At mouth, 16 miles south of Petersburg..	27.2
1948 Aug. 6	....do.....	....do.....	....do.....	2.4
Streams on Baranof Island				
1948 July 1	Indian River.....	Sitka Sound.....	Above pumping station near Sitka.....	63.1
Sept.30	....do.....	....do.....	Below powerhouse intake near Sitka.....	43.0
30	Indian River powerhouse intake.	....do.....	At Sheldon Jackson School at Sitka.....	33.4
1950 Jan. 26	Indian River.....	....do.....	Above pumping station near Sitka.....	9.62
Mar. 28	....do.....	....do.....	....do.....	19.7
Streams on Admiralty Island				
1948 July 15	Thayer Lake Outlet.	Chatham Strait...	Near mouth, 10 miles north of Angoon....	115
15	Hasselborg Lake Outlet.	Mitchell Bay.....	Lat 57°40', long. 134°15', at site of gage established in June 1951.	120
Streams west of longitude 141°				
1948 July 21	Chistochina River	Copper River.....	At Glenn Highway bridge, about 2 miles above mouth and about 3 miles northeast of Chistochina.	2,390
June 10	Gulkana River....	....do.....	At Richardson Highway bridge at Gulkana.	1,700
July 20	....do.....	....do.....	....do.....	554
Sept. 1	....do.....	....do.....	....do.....	856
Oct. 27	....do.....	....do.....	....do.....	523
1949 May 14	....do.....	....do.....	....do.....	1,930
June 24	....do.....	....do.....	....do.....	7,220
Oct. 5	....do.....	....do.....	....do.....	1,220
1948 Sept. 4	Tolsona Creek....	Tazlina River....	At Glenn Highway bridge 14 miles west of Glennallen.	11.3
4	Moose Creek.....	....do.....	At Glenn Highway bridge at Glennallen...	4.87
1950 Aug. 11	Tebay River.....	Chitina River....	Tebay Lake Outlet about 21 miles southeast of Chitina.	159
11	Creek below Tebay Outlet.	Tebay River.....	600 ft below Tebay Lake and about 21 miles southeast of Chitina.	162
1948 Sept. 2	Tsina River.....	Tiekel River.....	About 9½ miles upstream from mouth and 25 miles northeast of Valdez.	715
1949 June 22	....do.....	....do.....	....do.....	1,930
July 29	....do.....	....do.....	....do.....	1,710
Sept. 9	....do.....	....do.....	....do.....	2,080
Nov. 9	....do.....	....do.....	....do.....	95.4
1950 Sept. 1	Allison Creek....	Prince William Sound.	150 ft above mouth, and about 4 miles southwest of Valdez.	54.9
1948 July 9	Mineral Creek....	....do.....	At highway bridge, about 2 miles above mouth and about 4 miles west of Valdez.	1,010
Sept. 3	....do.....	....do.....	....do.....	551
1949 June 21	....do.....	....do.....	....do.....	899
July 29	....do.....	....do.....	....do.....	725
Sept.10	....do.....	....do.....	....do.....	548
Nov. 8	....do.....	....do.....	....do.....	137
1950 Apr. 3	....do.....	....do.....	....do.....	11.8
May 18	....do.....	....do.....	....do.....	154
Sept. 1	....do.....	....do.....	....do.....	854
Apr. 4	Lowe River.....	....do.....	At Richardson Highway bridge, 15 miles east of Valdez.	41.2
May 17	....do.....	....do.....	....do.....	545
July 21	....do.....	....do.....	....do.....	2,950
Sept. 2	....do.....	....do.....	....do.....	2,130
1947 Aug. 25	Lost Creek.....	Salmon Creek.....	At Lost Lake Outlet.....	61.1
1948 Aug. 10	....do.....	....do.....	....do.....	37.7

Miscellaneous discharge measurements in Alaska, September 1946 to September 1950--Continued

Streams west of longitude 141°--Continued

Date	Stream	Tributary to-	Locality	Discharge (cfs)
1949				
July 13	Anchor River.....	Cook Inlet.....	At Sterling Highway bridge at Anchor Point.	243
1948				
Aug. 10	Falls Creek.....	Trail River.....	At highway bridge about 4 miles south of Moose Pass.	60.3
1947				
Aug. 24	Quartz Creek.....	Kenai River.....	At highway bridge about ½ mile above Kenai Lake and about 4 miles east of Cooper Landing.	342
Nov. 3	....do.....	....do.....	....do.....	203
1948				
Apr. 20	....do.....	....do.....	....do.....	118
June 22	....do.....	....do.....	....do.....	730
Aug. 14	....do.....	....do.....	....do.....	533
Oct. 9	....do.....	....do.....	....do.....	526
1949				
Mar. 10	....do.....	....do.....	....do.....	49.0
Apr. 13	....do.....	....do.....	....do.....	48.9
Aug. 19	....do.....	....do.....	....do.....	293
Oct. 22	....do.....	....do.....	....do.....	194
Dec. 17	....do.....	....do.....	....do.....	112
1950				
Mar. 16	....do.....	....do.....	....do.....	54.2
1948				
Aug. 15	Canyon Creek.....	....do.....	At bridge on Anchorage-Seward Highway, about 16 miles southwest of Portage.	434
1949				
Oct. 2	Beluga River.....	....do.....	Near lower Beluga Lake, about 60 miles west of Anchorage.	5,830
1947				
Aug. 11	North Fork Campbell Creek.	Campbell Creek...	About 2 miles upstream from confluence with South Fork Campbell Creek and about 5½ miles southeast of Anchorage Post Office.	19.3
Oct. 31	....do.....	....do.....	....do.....	19.3
1948				
Feb. 13	....do.....	....do.....	....do.....	7.94
Apr. 13	....do.....	....do.....	....do.....	8.29
24	....do.....	....do.....	....do.....	6.30
June 17	....do.....	....do.....	....do.....	43.3
July 28	....do.....	....do.....	....do.....	25.3
Aug. 20	....do.....	....do.....	....do.....	32.8
Sept.10	....do.....	....do.....	....do.....	25.5
Nov. 3	....do.....	....do.....	....do.....	15.4
Dec. 1	....do.....	....do.....	....do.....	6.35
1949				
Mar. 24	....do.....	....do.....	....do.....	4.17
Apr. 26	....do.....	....do.....	....do.....	7.87
May 25	....do.....	....do.....	....do.....	15.2
June 17	....do.....	....do.....	....do.....	34.8
July 18	....do.....	....do.....	....do.....	51.5
Oct. 12	....do.....	....do.....	....do.....	20.2
1948				
July 28	Russian Jack Springs.	Chester Creek....	At Anchorage Prison Farm, about 3½ miles east of Anchorage.	5.14
Sept.10	....do.....	....do.....	....do.....	5.08
Dec. 1	....do.....	....do.....	....do.....	4.42
1947				
July 27	Chester Creek....	Cook Inlet.....	At Anchorage, ¾ mile upstream from mouth.	17.0
Aug. 11	....do.....	....do.....	At Anchorage, 2 miles upstream from mouth	17.4
Oct. 31	....do.....	....do.....	....do.....	23.6
1948				
Feb. 13	....do.....	....do.....	....do.....	18.8
Apr. 1	....do.....	....do.....	....do.....	18.8
5	....do.....	....do.....	....do.....	18.8
13	....do.....	....do.....	....do.....	46.2
24	....do.....	....do.....	....do.....	25.0
June 17	....do.....	....do.....	....do.....	18.2
July 28	....do.....	....do.....	....do.....	20.5
Aug. 20	....do.....	....do.....	....do.....	25.8
Sept.10	....do.....	....do.....	....do.....	23.5
Nov. 3	....do.....	....do.....	....do.....	28.0
1949				
Feb. 28	....do.....	....do.....	....do.....	9.90
Mar. 25	....do.....	....do.....	....do.....	12.7
Apr. 25	....do.....	....do.....	....do.....	58.9
May 27	....do.....	....do.....	....do.....	44.2
June 30	....do.....	....do.....	....do.....	66.6
July 20	....do.....	....do.....	....do.....	40.3
Oct. 13	....do.....	....do.....	....do.....	36.8

Miscellaneous discharge measurements in Alaska, September 1946 to September 1950--Continued

Streams west of longitude 141°--Continued

Date	Stream	Tributary to-	Locality	Discharge (cfs)
1949				
Mar. 23	Ship Creek.....	Cook Inlet	At water supply intake for Anchorage.....	34.3
25	....do.....	....do.....	....do.....	37.7
Apr. 8	....do.....	....do.....	....do.....	31.6
June 29	Eagle River.....	....do.....	At Glenn Highway bridge, about 13 miles northeast of Anchorage.	1,020
July 21	....do.....	....do.....	....do.....	1,290
Sept.20	....do.....	....do.....	....do.....	510
Oct. 25	....do.....	....do.....	....do.....	241
1950				
Aug. 26	....do.....	....do.....	....do.....	1,880
1948				
July 16	Knik River.....	....do.....	At Glenn Highway bridge, about 7 miles south of Palmer.	7,220
Aug. 1	....do.....	....do.....	....do.....	77,500
6	....do.....	....do.....	....do.....	148,000
21	....do.....	....do.....	....do.....	20,500
1949				
Apr. 22	....do.....	....do.....	....do.....	392
July 22	....do.....	....do.....	....do.....	5,750
Aug. 16	....do.....	....do.....	....do.....	33,000
18	....do.....	....do.....	....do.....	68,600
20	....do.....	....do.....	....do.....	124,000
22	....do.....	....do.....	....do.....	184,000
24	....do.....	....do.....	....do.....	107,000
26	....do.....	....do.....	....do.....	26,100
30	....do.....	....do.....	....do.....	26,100
1950				
July 29	....do.....	....do.....	....do.....	60,400
30	....do.....	....do.....	....do.....	76,600
Aug. 1	....do.....	....do.....	....do.....	152,000
2	....do.....	....do.....	....do.....	186,000
3	....do.....	....do.....	....do.....	176,000
5	....do.....	....do.....	....do.....	97,300
12	....do.....	....do.....	....do.....	23,000
15	....do.....	....do.....	....do.....	29,500
31	....do.....	....do.....	....do.....	15,600
Sept.26	....do.....	....do.....	....do.....	6,380
1948				
July 13	Chickaloon River	Matanuska River.	At Glenn Highway bridge, about 15 miles east of Sutton.	2,150
Sept. 5	....do.....	....do.....	....do.....	778
Oct. 1	....do.....	....do.....	....do.....	398
Nov. 9	....do.....	....do.....	....do.....	184
1949				
May 15	....do.....	....do.....	....do.....	218
Aug. 8	....do.....	....do.....	....do.....	2,090
Oct. 5	....do.....	....do.....	....do.....	480
1948				
July 13	Kings River.....	....do.....	At Glenn Highway bridge, about 5 miles northeast of Sutton.	789
Sept. 5	....do.....	....do.....	....do.....	461
Oct. 1	....do.....	....do.....	....do.....	233
Nov. 9	....do.....	....do.....	....do.....	101
1949				
Apr. 19	....do.....	....do.....	....do.....	40.6
May 15	....do.....	....do.....	....do.....	118
Aug. 19	....do.....	....do.....	....do.....	637
Oct. 5	....do.....	....do.....	....do.....	219
July 6	Granite Creek...	....do.....	At Glenn Highway bridge, about 1½ miles east of Sutton.	925
1947				
Aug. 18	Moose Creek.....	....do.....	At Glenn Highway bridge, about 6 miles northeast of Palmer and about 5½ miles southwest of Sutton.	164
1948				
July 14	....do.....	....do.....	....do.....	215
Sept. 5	....do.....	....do.....	....do.....	130
1949				
Apr. 19	....do.....	....do.....	....do.....	14.1
July 6	....do.....	....do.....	....do.....	71.3
Oct. 6	....do.....	....do.....	....do.....	121
1947				
July 17	Wasilla Creek...	....do.....	About 3 miles northwest of Matanuska and about 4 miles east of Wasilla.	7
Aug. 18	....do.....	....do.....	....do.....	12.7
Nov. 7	....do.....	....do.....	....do.....	9
1948				
Apr. 26	....do.....	....do.....	....do.....	10.5
July 14	....do.....	....do.....	....do.....	18.6
14	....do.....	....do.....	¼ mile northeast of Finger Lake and about 4 miles west of Palmer.	15.6
Aug. 28	....do.....	....do.....	About 3 miles northeast of Matanuska and about 4 miles east of Wasilla.	46.9
1949				
May 19	....do.....	....do.....	....do.....	168
July 21	....do.....	....do.....	....do.....	61.0
Aug. 4	....do.....	....do.....	....do.....	75.7

Miscellaneous discharge measurements in Alaska, September 1946 to September 1950--Continued

Streams west of longitude 141°--Continued

Date	Stream	Tributary to-	Locality	Discharge (cfs)
1949				
Sept.30	Wasilla Creek...	Cook Inlet.....	About 3 miles northeast of Matanuska and about 4 miles east of Wasilla.	71.4
1948				
Aug. 5	Susitna River...	....do.....	At Curry.....	18,000
Sept.22	....do.....	....do.....	....do.....	9,790
1949				
Aug. 5	Talkeetna River.	Susitna River...	At Alaska Railroad bridge, 1 mile north of Talkeetna.	10,300
Sept.21	....do.....	....do.....	....do.....	3,860
1948				
July 15,	Willow Creek....	....do.....	At Alaska Railroad bridge, 1 mile north of Willow.	763
July 21	Tok River.....	Tanana River....	At Alaska Highway bridge, 4 miles east of Tok Junction.	798
Sept.14	....do.....	....do.....	....do.....	400
1949				
July 12	....do.....	....do.....	....do.....	3,220
Aug. 10	....do.....	....do.....	....do.....	1,990
Oct. 4	....do.....	....do.....	....do.....	545
Dec. 5	....do.....	....do.....	....do.....	0
1950				
May 13	....do.....	....do.....	....do.....	374
July 28	....do.....	....do.....	....do.....	644
Sept. 7	....do.....	....do.....	....do.....	369
1948				
July 23	Jarvis Creek....	Delta River.....	At Richardson Highway bridge, 1 mile south of junction of Richardson and Alaska Highways and 10 miles south of Big Delta.	561
Sept.18	....do.....	....do.....	....do.....	113
1949				
July 7	....do.....	....do.....	....do.....	748
1948				
June 3	Shaw Creek.....	Tanana River....	At Richardson Highway bridge, 11 miles northwest of Big Delta.	910
1950				
Aug. 8	Salcha River....	....do.....	About 40 miles above mouth, ½ mile above Caribou Creek, and about 36 miles north of Big Delta.	1,070
1948				
June 3	....do.....	....do.....	....do.....	16,000
July 26	....do.....	....do.....	....do.....	3,150
Sept.17	....do.....	....do.....	....do.....	2,820
1950				
Aug. 8	Chena River.....	....do.....	4.0 miles downstream from North Fork and about 40 miles east of Fairbanks.	793
May 20	....do.....	....do.....	1¼ miles above South Fork and about 32 miles east of Fairbanks.	2,840
20	South Fork Chena River.	Chena River.....	At mouth, about 31 miles east of Fairbanks.	747
1948				
Aug. 3	Nenana River....	Tanana River....	At Alaska Railroad bridge at Healy, just below Healy River.	7,360
Sept.24	....do.....	....do.....	....do.....	3,240
1949				
June 21	....do.....	....do.....	....do.....	16,900
Nov. 29	....do.....	....do.....	....do.....	1,170
1950				
Feb. 1	....do.....	....do.....	....do.....	601
Mar. 15	....do.....	....do.....	....do.....	484
1948				
June 5	Chatanika River.	Tolovana River..	At Elliot Highway bridge, 16 miles north of Fairbanks.	1,960
1949				
July 9	....do.....	....do.....	....do.....	689
1948				
June 5	Globe Creek.....	Tatalina River..	¼ mile downstream from Elliot Highway bridge, 33 miles north of Fairbanks.	56.6
5	Tatalina River..	Tolovana River..	At Elliot Highway bridge, 80 miles north of Fairbanks.	183
1949				
July 9	....do.....	....do.....	....do.....	74.2

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA

Chemical analyses, in parts per million, water years October 1947 to September 1950

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
YUKON RIVER AT EAGLE (at gaging station)																		
June 22, 1950	212,000	6.3	0.08	26	6.6	3.4	90	23	0.4	0.2	0.6	115	92	18	189	7.3	10
Sept. 27	77,700	6.6	.03	30	8.5	3.2	103	30	.5		.4	130	110	25	217	7.6	5
YUKON RIVER AT CIRCLE																		
July 19, 1949		6.6		30	7.3	1.2	102	22	0.2		0.7	118	105	22	206	7.1	
PORCUPINE RIVER NEAR FORT YUKON																		
July 22, 1949		3.6		26	4.8	3.0	90	15	0.2		1.9	99	84	11	171	7.1	
CHRISTIAN RIVER NEAR FORT YUKON																		
July 23, 1949		7.9		18	5.4	4.8	88	4.1	0.5		0.4	84	67	0	144	7.0	
CHANDALAR RIVER NEAR FORT YUKON																		
July 31, 1949		4.9		43	7.0	1.6	127	31	0.5		3.5	154	136	32	264	7.0	
BIRCH CREEK NEAR CIRCLE																		
July 19, 1949		6.1		20	4.7	2.3	51	29	1.2		1.1	90	70	28	152	6.6	
HODZANA RIVER AT BEAVER																		
August 4, 1948		7.0	0.37	24	7.4	55	238	10	2.0		3.1	226	90	0	372		
DALL RIVER NEAR STEVENS																		
Sept. 9, 1949		6.4				7.4	116	11	0.5		1.1		92	0	203	7.8	
TANANA RIVER AT NORTHWAY JUNCTION (at gaging station)																		
May 13, 1950	5,440	7.6	0.13	30	4.2	1.9	100	11	1.0		1.7	136	92	10	185	--	--
July 27	7,160	9.6	.02	42	5.7	4.3	136	22	1.8		1.0	153	128	17	269	7.3	5
Sept. 8	2,810	11	.01	43	6.5	9.2	141	33	1.9	0.1	1.4	176	134	18	284	7.8	10

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
TANANA RIVER NEAR TOK JUNCTION (at gaging station)																		
July 12, 1949	a 20,500	11	--	38	5.9	9.2		139	20	2.8		.6	156	120	6	256	7.2	--
May 13, 1950	11,800	9.6	0.15	30	5.2	2.5		103	13	2.0		1.2	137	96	12	198	7.9	--
July 27	30,300	13	.02	30	4.2	7.0		109	12	3.5		.7	124	92	3	218	7.4	5
Sept. 8	8,080	11	.01	35	6.6	10		127	26	2.9	0.1	1.1	155	114	10	250	7.6	5
LITTLE TOK RIVER NEAR TOK JUNCTION																		
July 22, 1949		7.8		44	9.5	3.0		128	46	1.0		1.3	176	149	44	296	6.9	
CLEARWATER CREEK NEAR TOK JUNCTION																		
July 21, 1949		6.8		36	5.3	2.3		76	51	0.5		1.1	140	112	50	234	6.8	
TOK RIVER NEAR TOK JUNCTION																		
July 12, 1949	3,220	7.5	--	--	--	--		125	45	0.2		0.1	--	--	--	264	7.8	--
May 13, 1950	392	7.9	0.08	36	8.6	1.8		104	40	1.0		.9	159	125	40	244	8.0	--
July 27	646	11	.05	44	11	8.5		144	51	1.1		1.2	199	155	37	--	7.3	5
Sept. 7	368	11	.01	52	12	4.4		153	60	.2	0.1	.4	216	179	54	352	8.0	5
TOK RIVER AT BRIDGE ON GLENN HIGHWAY NEAR TOK JUNCTION																		
July 21, 1949		7.4		48	11	1.4		137	51	1.0		1.1	188	165	52	315	7.2	
YERRICK CREEK NEAR TOK JUNCTION																		
July 21, 1949		4.3				2.8		35	15	0.5		0.9		39	10	95	6.6	
ROBERTSON RIVER NEAR TOK JUNCTION																		
July 21, 1949		4.6				2.8		142	60	1.5		0.1		175	58	327	7.4	
BEAR CREEK NEAR TOK JUNCTION																		
July 21, 1949		4.6				2.5		33	4.2	0.2		0.6		27	0	64	6.5	

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
BERRY CREEK NEAR TOK JUNCTION																		
July 21, 1949		7.5				2.8	26	3.5	0.2		0.7		20	0	51	6.1	
JOHNSON RIVER NEAR BIG DELTA																		
July 21, 1949		5.0				0.9	121	60	0.8		0.7		161	62	307	7.6	
LITTLE GERSTLE RIVER NEAR BIG DELTA																		
July 21, 1949		4.9		29	7.1	1.2	82	34	0.8		0.7	118	102	34	203	7.0	
GERSTLE RIVER NEAR BIG DELTA																		
July 21, 1949		4.1		41	8.5	2.5	115	45	1.0		0.9	160	138	44	272	7.1	
SAWMILL CREEK NEAR BIG DELTA																		
July 21, 1949		4.4				1.6	15	1.8	0.2		0.6		12	0	33	6.2	
TANANA RIVER AT BIG DELTA (at gaging station)																		
Oct. 3, 1948		14		39	8.8	12	138	40	3.0	0.0	0.8	186	134	20	266		
DELTA RIVER AT RAPIDS																		
Aug. 13, 1949		5.8		21	6.9	3.2	73	25	1.5		0.3	100	81	21	169	7.0	
JARVIS CREEK NEAR BIG DELTA																		
July 7, 1949	a 748	3.5		22	7.0	0.7	69	27	0.5		0.7	95	84	28	170	6.7	
July 17		4.3		32	9.4	2.1	107	32	1.2		0.4	134	118	31	232	7.0	
SALCHA RIVER AT SALCHAKET																		
Aug. 8, 1950		8.8	0.04	19	6.1	0.4	59	21	1.1	0.2	1.3	87	72	24	141	7.3	12

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
SALCHA RIVER NEAR SALCHAKET (at gaging station)																		
Oct. 3, 1948	1,880	10	--	19	5.7	1.8	66	18	1.0	0.0	1.5	90	71	17	141	--	--	
July 10, 1949	4,410	7.7	--	--	--	2.8	45	13	.2	--	1.4	--	46	9	103	7.2	--	
July 21	11,000	7.5	--	--	--	1.4	38	10	.0	--	1.8	--	40	9	89	6.4	--	
May 10, 1950	8,800	4.9	0.12	7.6	2.7	.8	28	7.0	.2	--	1.4	60	30	7	65.5	--	--	
July 25	1,280	9.8	.03	18	4.6	4.4	62	20	.5	.1	1.0	89	64	13	149	7.7	5	
Sept. 6	1,300	8.2	.03	17	5.2	5.8	62	23	.4	.1	.9	91	64	13	146	7.5	5	
CHENA RIVER NEAR FAIRBANKS																		
May 20, 1950	a2,840	5.9	0.09	14	3.5	0.8	44	12	0.8		1.7	77	49	13	103	7.8		
Aug. 8	a793	5.9	.04	26	6.0	1.6	79	25	.5	0.2	1.2	105	90	25	169	7.3	10	
CHENA SLOUGH NEAR FAIRBANKS (at gaging station)																		
May 16, 1949	285	--	--	--	--	--	96	13	1.0		--	--	--	--	168	--	--	
July 10	191	18	--	40	8.5	3.2	152	15	1.0		0.5	161	135	10	266	6.8	--	
May 9, 1950	159	15	0.07	32	7.1	4.3	126	13	.8		.7	149	109	6	222	7.8	--	
July 24	155	21	.01	42	9.0	6.1	168	14	1.8		.5	177	142	4	287	7.4	5	
Sept. 5	108	21	.02	43	6.6	6.1	156	17	1.2	0.1	.2	172	134	7	296	7.8	5	
CHENA RIVER AT FAIRBANKS (at gaging station)																		
Oct. 2, 1948	1,920	11	0.36	25	5.9	3.0	92	15	1.0	0.0	1.5	108	87	12	169	--	--	
July 10, 1949	6,600	8.8	--	--	--	2.5	64	13	.2	--	1.4	--	62	10	135	6.4	--	
July 21	5,140	8.4	--	18	4.5	1.4	60	13	2.2	--	1.5	79	64	14	136	6.4	--	
May 21, 1950	4,860	6.9	.12	15	3.2	1.6	50	11	.5	--	1.3	79	51	10	107	7.8	--	
July 29	1,200	12	.03	27	6.0	1.8	96	15	.2	--	1.7	111	92	13	196	7.3	5	
Sept. 6	1,140	9.8	.04	26	6.0	5.8	94	22	.4	.1	1.6	118	90	12	197	7.4	5	
NOYES SLOUGH NEAR FAIRBANKS																		
July 14, 1950		11	0.18	27	6.3	2.4	93	19	0.5		2.2	114	93	17	189	7.5	15	
CHATANIKA RIVER NEAR FOX																		
July 9, 1949	a689	7.1				2.1	42	17	0.2		1.4		49	14	108	6.6		

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 160°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
CHATANIKA RIVER NEAR CHATANIKA																		
July 18, 1949		7.0				2.1	40	15	0.2		0.9		45	12	100	6.4	
TATALINA RIVER NEAR LIVENGOOD																		
July 9, 1949	a 74.2	6.7				5.0	27	8.4	0.2		1.2		34	12	73	6.2	
KUSKOKWIM RIVER AT McGRATH																		
Aug. 22, 1950		7.6	0.08	34	9.4	6.4	122	34	1.0	0.2	0.1	157	124	24	264	7.3	5
SUSITNA RIVER AT GOLD CREEK (at gaging station)																		
June 22, 1949		4.9	--	11	2.0	7.6	50	8.4	1.4	--	0.5	60	36	0	100	6.8	--
Aug. 3		7.8	--	15	2.4	5.5	50	11	4.5	--	.4	71	48	6	115	7.2	--
July 31, Aug. 1-10, 1950		6.6	0.40	20	2.6	7.1	70	12	4.2	0.1	.1	92	61	3	142	7.7	30
Aug. 11-18		5.2	.19	24	2.3	8.7	80	15	4.8	.1	.1	102	69	4	170	7.5	20
LITTLE SUSITNA RIVER NEAR PALMER (at gaging station)																		
Oct. 19, 1948	125	7.7	--	11	2.4	4.3	42	6.0	4.5	0.0	1.4	58	38	3	84	--	--
Apr. 18, 1949	26	--	--	--	--	--	48	7.1	19	--	--	--	--	--	143	--	--
May 19	167	6.4	--	--	--	6.0	38	3.1	6.5	--	4.0	--	33	2	95	6.2	--
Oct. 3	247	5.2	--	--	--	3.9	34	3.2	4.5	--	.8	--	30	0	75	7.1	--
June 15, 1950	456	4.5	0.02	8.9	2.8	.6	33	3.8	2.4	.0	.8	40	34	7	63.3	7.4	4
Aug. 3	432	4.5	.04	9.4	--	--	34	1.9	1.4	--	.5	--	--	--	69.6	7.4	5
Sept. 1	123	4.5	.05	8.5	1.5	4.8	36	5.6	1.5	--	.4	45	27	0	72.0	--	5
COTTONWOOD CREEK NEAR WASILLA (at gaging station)																		
Oct. 19, 1948		9.2		28	4.0	5.1	110	6.0	1.0		0.3	108	86	0	172		
May 19, 1949		9.0		23	3.4	3.9	90	5.4	.5		.6	90	72	0	151	7.7	

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
KNIK RIVER NEAR PALMER																		
Oct. 5, 1948	--	2.8		18	3.2	5.3		58	20	0.8	--	0.0	79	58	10	120	--	
June 24, 1949	--	3.8		28	4.1	.9		74	25	1.0	--	1.1	100	87	26	181	6.7	
July 25	--	4.0		27	3.3	3.2		74	24	1.5	--	.6	100	81	20	172	7.2	
Aug. 4-15	7,326	3.3		24	2.7	3.4		68	19	1.4	0.1	.6	88	71	16	156	7.5	
Aug. 16-25	100,100	2.3		13	1.4	2.5		43	7.4	.6	.1	.2	49	38	4	87	7.5	
Aug. 26-31, Sept. 1, 2, 6	26,530	3.0		13	1.5	3.2		42	8.3	1.2	.1	.4	51	38	4	90	7.0	
CHICKALOON RIVER AT CHICKALOON																		
Oct. 4, 1948		9.7		36	5.4	6.0		94	36	7.0		0.9	147	112	35	235		
May 15, 1949	a 218	7.3		33	4.9	10		95	30	10		1.8	144	102	24	248	7.0	
KINGS RIVER NEAR PALMER																		
Apr. 19, 1949	a 40.6							71	28	7.0						192		
May 15	a 118	7.3		25	3.1	4.6		68	18	6.5		2.4	100	75	20	170	6.6	
GRANITE CREEK NEAR PALMER																		
July 6, 1949	a 925	4.2				3.7		29	12	0.6		0.6		30	6	74	7.4	
MOOSE CREEK NEAR PALMER																		
Oct. 4, 1948		9.6		13	2.5	4.8		50	8	2.0	0.0	1.1	66	43	2	88		
Apr. 19, 1949	a 14.1							65	11	7.0						139		
MATANUSKA RIVER AT PALMER (at gaging station)																		
Oct. 5, 1948		7.3		35	5.2	5.3		86	42	4.0	0.0	1.0	142	109	38	229		
GOAT CREEK NEAR PALMER																		
June 24, 1949		5.2		29	5.9	2.3		77	36	0.1		2.0	118	97	34	205	6.9	

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
EKLUTNA CREEK NEAR PALMER (at gaging station)																		
Oct. 18, 1948		3.0		18	2.6	5.8		55	20	1.0		0.6	78	56	10	117		
Oct. 19		6.4		--	--	--		110	35	.5		1.1	--	--	--	214		
June 24, 1949		4.9		23	5.2	2.5		77	18	1.4		1.2	94	79	16	161	6.8	
LITTLE PETERS CREEK NEAR ANCHORAGE																		
June 24, 1949		7.7		15	2.3	1.2		41	14	0.1		1.7	62	47	14	101	6.8	
PETERS CREEK NEAR ANCHORAGE																		
Oct. 19, 1948		6.2		27	5.2	3.2		83	25	1.0		0.8	109	89	21	188		
Apr. 28, 1949		--		--	--	--		99	30	2.0		--	--	--	--	214		
June 24		7.2		21	4.5	1.8		63	21	.4		1.1	88	71	20	150	6.7	
EAGLE RIVER NEAR ANCHORAGE																		
Oct. 19, 1948		3.9		27	4.4	3.2		82	20	2.0		1.6	102	86	18	174		
Apr. 28, 1949		--		--	--	--		99	24	3.0		--	--	--	--	198		
June 24		4.2		20	3.4	2.3		58	19	.5		1.2	79	64	16	133	6.7	
SHIP CREEK NEAR ANCHORAGE (at gaging station)																		
June 24, 1949		6.3		14	2.6	2.3		41	15	0.2		1.4	62	46	12	100	6.5	
CHESTER CREEK AT ANCHORAGE																		
Apr. 22, 1949								30	5.5	0.5						63		
June 24		9.9		12	2.1	5.1		48	7.9	1.0		0.6	62	38	0	91	6.4	
NORTH CAMPBELL CREEK NEAR ANCHORAGE																		
Oct. 19, 1948		7.8						50	10	0.0		1.2				107		
Aug. 3, 1949		6.0		15	2.3	2.5		45	14	.2		.5	63	47	10	105	6.6	

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
SOUTH FORK CAMPBELL CREEK NEAR ANCHORAGE (at gaging station)																		
Oct. 19, 1948	--	9.4	0.01	10	2.0	3.4		36	7	1.0	0.4	1.2	52	33	4	70		
Apr. 26, 1949	a 7.94	--				--		48	13	1.5		--		--	--	101		
Aug. 3	76	6.0				2.1		28	7.8	.2		.3		27	4	62	7.3	
RESURRECTION CREEK AT HOPE (at gaging station)																		
July 7, 1950	820	6.0	0.05	12	1.6	0.9		37	5.4	1.5		0.6	46	37	6	76.1	7.5	5
Aug. 19	226	6.9	.02	13	1.9	2.6		48	3.3	2.2		.1	54	40	9	89.9		5
PTARMIGAN CREEK AT LAWING (at gaging station)																		
July 10, 1950	285	4.7	0.05	18	1.7	1.4		45	15	0.8		1.6	65	52	15	113	7.3	10
Aug. 22	248	4.3	.06	13	2.1	2.5		37	14	.6		1.1	56	41	11	92.6		5
TRAIL RIVER NEAR LAWING (at gaging station)																		
Oct. 24, 1949	318	3.0				1.6		29	7.9	0.8		0.7		30		70	6.8	
July 10, 1950	2,180	3.9	0.15	11	1.3	2.4		33	8.2	1.2		1.0	45	33	6	73.4	7.4	10
GRANT CREEK NEAR MOOSE PASS																		
July 5, 1950	a 497	4.9	0.04	11	1.7	1.2		30	9.5	1.0		1.4	46	34	10	70.8	7.1	5
LOST CREEK NEAR COOPER LANDING																		
July 8, 1950		5.9	0.03	13	2.0	1.2		40	7.0	1.4	0.1	1.1	51	41	8	79.4	7.1	4
Aug. 23		5.3	.02	12	1.1	3.1		38	7.8	1.0		.7	50	34	3	75.2		5
COOPER CREEK NEAR COOPER LANDING (at gaging station)																		
July 9, 1950	201	4.3	0.01	11	1.4	0.9		34	3.8	1.5		1.5	41	33	5	69.9	7.7	12
Aug. 24	142	4.5	.01	11	.9	3.0		32	7.6	1.4	0.1	1.6	46	31	5	72.9	7.4	5
RUSSIAN RIVER NEAR COOPER LANDING (at gaging station)																		
July 8, 1950	181	4.0	0.02	13	1.3	1.6		39	5.1	2.0		1.5	48	38	6	82.0	7.3	5
Aug. 21	90	5.6	.02	14	1.2	4.9		45	9.3	1.5	0.1	2.0	61	40	3	93.8	7.4	5

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
KASILOF RIVER NEAR KASILOF (at gaging station)																		
July 12, 1949	2,960	5.2	--	--	--	3.7		21	5.0	1.0		0.6	--	16	0	45	6.0	--
July 6, 1950	2,700	5.2	0.20	5.3	1.6	3.4		24	5.8	1.0		.2	34	20	0	50.5	7.5	14
Aug. 20	6,170	6.0	.10	5.7	1.1	3.8		22	6.4	1.2		.6	36	19	6	49.2	6.3	5
LOST CREEK NEAR SEWARD (at gaging station)																		
July 5, 1950	121	3.0	0.01	6.7	0.5	2.9		19	7.1	1.0	0.2	0.2	31	19	3	48.3	7.5	10
ALLISON CREEK NEAR VALDEZ																		
Sept. 2, 1950	a 54.9	2.6	0.13	6.1	0.8	0.6		18	4.3	0.1	0.0	0.4	24	18	4	38.3	7.0	5
MINERAL CREEK NEAR VALDEZ																		
June 21, 1949	a 899	3.4		18	2.5	3.4		58	13	1.2		0.4	70	56	8	122	7.0	
Sept. 2, 1950	a 854	4.4	0.01	28	3.3	2.2		69	28	1.5	0.0	.4	102	83	27	179	7.3	5
LOWE RIVER NEAR VALDEZ																		
Sept. 2, 1950	a 2,130	1.7	0.04	8.0	0.7	1.4		23	6.3	0.1	0.0	0.3	30	23	4	51.3	7.1	5
SOLOMON GULCH NEAR VALDEZ (at gaging station)																		
June 22, 1949	a 479	2.2				3.0		11	4.2	2.0		0.2		10	1	35	6.9	--
July 21, 1950	250	2.7	0.09			.9		12	6.0	.5		.3		15	5	30.8	7.0	3
Sept. 1	166	2.5	.09	4.2	0.6	2.3		13	5.6	.6	0.1	.3	23	13	2	31.2	7.1	5
POWER CREEK NEAR CORDOVA (at gaging station)																		
July 27, 1949	a 425	2.8				2.8		18	3.6	1.5		0.3		14	0	36	7.1	
July 19, 1950	318	3.2	0.14			1.9		16	4.1	1.0		.5		15	2	36.8	7.3	4
SLANA RIVER NEAR SLANA																		
July 22, 1949		6.9	.	45	8.4	2.1		125	45	1.0		0.8	171	147	44	286	7.4	

a Discharge at time of sampling.

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
GAKONA RIVER AT GAKONA (at gaging station)																		
Oct. 4, 1948	--	12	--	36	7.3	7.6	124	20	9.0	0.4	0.9	154	120	18	247	--	--	
June 23, 1949	a 3,670	7.0	--	27	3.7	3.7	88	15	2.0	--	.3	102	82	10	171	7.6	--	
July 22	--	7.4	--	33	4.6	5.1	106	21	2.2	--	.7	126	102	14	211	7.2	--	
July 29, 1950	2,380	8.8	0.01	31	4.0	5.3	98	21	2.0	.1	.2	121	94	14	207	7.8	5	
Aug. 13	3,240	5.7	.01	33	3.8	.7	94	17	2.9	.1	.4	110	98	21	199	7.9	6	
GULKANA RIVER AT GULKANA																		
Oct. 4, 1948		11		19	5.2	4.6	78	3.0	8.0		0.8	90	69	5	144	--		
May 14, 1949	a 1,930	6.7				6.2	63	3.5	7.0		1.6		53	2	128	6.3		
July 16		8.8				2.8	51	1.9	3.0		1.0		43	1	95	6.6		
LITTLE NELCHINA RIVER NEAR EUREKA																		
July 23, 1949		9.0		29	3.7	8.5	78	39	0.2		1.1	129	88	24	210	6.8		
MENDELTNA RIVER AT MENDELTNA																		
July 23, 1949		5.9		22	3.6	1.8	82	5.9	0.0		1.2	81	70	3	148	6.8		
TAZLINA RIVER NEAR GLENNALLEN (at gaging station)																		
Oct. 4, 1948	--	3.4	--	19	3.1	4.1	60	15	3.0		0.5	78	60	11	119	--	--	
May 14, 1949	a 1,030	5.2	--	22	5.6	2.5	78	11	5.0		1.5	91	78	14	159	7.6	--	
July 22, 1950	12,500	4.4	0.08	18	--	--	60	9.5	1.8		.6	--	--	--	132	7.4	5	
Aug. 13	15,100	5.0	.07	19	2.0	5.1	63	10	3.0		.5	76	56	4	134	7.5	5	
KLUTINA RIVER AT COPPER CENTER (at gaging station)																		
Oct. 4, 1948	--	5.2		16	2.9	3.7	54	10	3.0		2.0	69	52	8	102	--		
June 23, 1949	a 3,570	4.5		14	2.2	.7	44	8.7	.2		.3	52	44	8	90	6.4		
July 22, 1950	4,620	4.4	0.13	16	2.4	2.4	49	11	2.0		.7	63	50	10	99.6	7.5	7	
COPPER RIVER AT COPPER CENTER																		
Oct. 4, 1948		12		29	5.7	18	96	20	24	0.0	1.7	158	96	18	243			
TONSINA RIVER AT TONSINA (at gaging station)																		
Aug. 10, 1950	2,130	4.6	0.03	12	2.1	0.8	38	5.9	1.8	0.1	0.4	46	39	7	68.4	7.4	8	

a Discharge at time of sampling.

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MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	*Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
TEBAY LAKE OUTLET NEAR CHITINA																		
Aug. 11, 1950	a 159	4.6				3.0		28	8.9	0.5		0.8		27		63.5	6.9	4
FALL CREEK AT TEBAY LAKE NEAR CHITINA																		
Aug. 11, 1950	a 162	1.6				3.7		15	3.6	0.5		0.3		9		25.6	7.0	10
SKAGWAY RIVER AT SKAGWAY																		
July 29, 1949	a 1,370	1.5				2.1		19	2.1	0.5		0.5		14	0	35	6.1	
PETERSON CREEK NEAR JUNEAU																		
Oct. 10, 1948	--	2.8	0.01	2.5	1.0	2.1		14	2.0	0.2		0.9	18	10	0	24	--	
May 2, 1949	a 38.4	1.6	--	--	--	1.8		8	1.2	1.8		.2	--	6	0	20	5.4	
July 14	a 92.3	1.8	--	--	--	.7		7	.7	.8		.6	--	6	0	19	5.5	
Sept. 27, 1950	--	3.0	.01	2.2	1.0	1.7		8	2.5	2.2		1.1	18	10	3	28.8	6.2	55
AUKE CREEK NEAR AUKE BAY (at gaging station)																		
Oct. 10, 1948	--	2.1	0.01	4.0	1.3	0.2		16	2.0	0.0		1.0	18	16	2	25	--	
May 2, 1949	26	1.1	--	--	--	1.4		12	1.9	1.4		.2	--	11	1	28	5.9	
July 14	a 35.3	1.3	--	--	--	1.2		11	1.6	1.0		.7	--	10	1	25	5.9	
Sept. 27, 1950	--	2.3	.01	3.3	.6	1.6		10	1.6	2.0		1.9	18	11	2	33.9	6.2	55
MENDENHALL RIVER NEAR JUNEAU																		
Oct. 10, 1948		3.3		7.5	2.0	7.1		22	18	4.0		0.2	53	26	8	55	--	
May 2, 1949		2.3		--	--	3.0		32	9.1	1.0		.4	--	31	5	76	7.2	
July 14		1.2		--	--	2.5		13	3.0	2.0		.3	--	11	0	35	6.0	
Sept. 27, 1950		2.9	0.61	5.8	1.5	1.0		16	6.2	4.5		.6	31	21	8	54.5	6.8	25
LEMON CREEK NEAR JUNEAU																		
Oct. 10, 1948		4.0		8.5	1.1	1.8		26	7.0	0.3		0.0	36	26	4	54	--	
May 2, 1949		4.0		--	--	3.4		30	7.5	1.1		1.6	--	28	4	71	6.3	
July 14		1.8		--	--	3.2		15	4.0	2.2		.5	--	13	0	39	5.9	
Sept. 27, 1950		3.1	0.07	6.7	.9	2.5		22	5.9	1.0		.2	31	20	2	48.4	7.2	7

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
GOLD CREEK AT JUNEAU (at gaging station)																		
Oct. 7, 1948		3.4	0.01	18	2.5	3.4		44	24	1.0		0.8	75	56	20	126	7.7	
May 2, 1949		2.7	--	22	5.9	3.0		50	40	1.9	0.1	.7	101	80	38	175	6.7	
July 13	325	2.6	--	--	--	2.3		25	17	.5		.4	--	34	14	79	6.5	
Sept. 25, 1950		3.0	.02	15	3.4	.6		39	17	.8		.5	60	51	19	114	6.7	28
SHEEP CREEK NEAR JUNEAU (at gaging station)																		
Oct. 7, 1948		4.0		15	2.0	1.2		46	8.0	0.8		1.4	55	46	8	85	--	
Apr. 15, 1949	a10.6	4.2		12	1.3	1.8		34	8.2	2.0		.1	46	36	8	82	7.0	
July 15		3.5		--	--	1.8		31	6.6	.8		.7	--	30	4	66	6.4	
DOROTHY CREEK NEAR JUNEAU (at gaging station)																		
Apr. 14, 1949	a26.8	1.0		1.2	0.9	2.1		8	3.1	1.0		0.1	13	6	0	21	6.8	
July 7	a209	1.0				1.8		8	1.9	.5		.3		5	0	16	6.1	
CASCADE CREEK NEAR PETERSBURG (at gaging station)																		
May 25, 1949	a394	2.3				3.4		14	1.6	2.1		0.6		9	0	37	6.9	
Aug. 13	a565	1.6				1.6		11	1.2	.5		.3		7	0	20	5.9	
WINSTANLEY CREEK NEAR KETCHIKAN (at gaging station)																		
Apr. 21, 1949	a239	1.2		1.0	0.7	2.3		8	1.6	1.8		0.1	13	6	0	21	6.9	
Aug. 17	a193	1.6		--	--	1.4		7	1.4	.5		.6	--	5	0	15	5.9	
Sept. 20, 1950	94	2.1	0.01	2.5	.7	1.8		9	3.8	1.1		.2	17	9	2	22.9	6.5	25
SAWMILL CREEK NEAR SITKA (at gaging station)																		
Aug. 10, 1949	972	1.6				3.0		15	2.9	1.5		0.3		11	0	32	6.0	
HARRIS RIVER NEAR HOLLIS																		
Apr. 25, 1949	--	0.5	--	2.6	0.8	2.3		12	2.1	2.2		0.1	16	10	0	33	6.3	
Aug. 23	a66.1	3.1				2.8		21	3.8	1.8		.5		18	1	46	6.3	
Sept. 22	a3,680	1.5				--		8	--	1.2		--		7	0	22	5.9	

a Discharge at time of sampling.

MISCELLANEOUS ANALYSES OF STREAMS IN ALASKA--Continued

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
MAYBESO CREEK NEAR HOLLIS																		
Apr. 26, 1949		0.6		2.8	0.6	2.3	12	2.6	1.5		0.1	16	10	0	28	6.5	
Sept. 23	a 356	2.4					16		2.0				14	1	36	6.3	
PERSEVERANCE CREEK NEAR WACKER (at gaging station)																		
Oct. 11, 1948		1.7	0.01	1.2	0.8	2.3	10	2.0	1.2		0.2	14	6	0	11	--	
May 27, 1949		.8				2.8	6	.8	2.2		.2		3	0	17	5.4	
Aug. 20	a 8.63	1.3				2.1	5	1.3	1.2		.4		3	0	15	5.5	
WARD CREEK NEAR WACKER (at gaging station)																		
Oct. 11, 1948		1.6	0.01	1.2	0.5	2.8	10	2.0	0.5		0.9	14	5	0	15	--	
May 27, 1949		.7				1.8	6	1.0	1.4		.2		4	0	17	5.4	
Aug. 20		1.3				1.8	7	1.5	.5		.4		4	0	15	5.8	
MAHONEY CREEK NEAR KETCHIKAN (at gaging station)																		
Apr. 20, 1949	190	0.7		0.4	0.7	2.5	5	3.0	1.8		0.1	12	4	0	18	5.9	
Aug. 21	57	1.2				1.4	4	1.6	.8		.1		3	0	13	5.7	
FISH CREEK NEAR KETCHIKAN (at gaging station)																		
May 29, 1949	527	1.3				1.2	10	1.2	0.9		0.2		8	0	24	5.7	
Aug. 18	396	1.0				2.1	10	2.1	1.0		.3		7	0	24	5.7	
ELLA CREEK NEAR KETCHIKAN (at gaging station)																		
Apr. 22, 1949	509	1.0		0.8	0.8	2.5	8	1.8	1.8		0.1	13	6	0	21	6.2	
Aug. 17	268	1.5				2.5	8	3.5	.8		.6		6	0	19	6.6	
Sept. 19, 1950	103	3.5				2.5	10	1.5	1.0		.4		6	0	22.7	7.1	3
MANZANITA CREEK NEAR KETCHIKAN (at gaging station)																		
Apr. 22, 1949	684	1.0		0.6	0.6	2.3	7	1.3	1.5		0.1	11	4	0	17	6.4	
Aug. 16	a 648	1.0		--	--	2.1	8	1.6	.8		.4	--	5	0	16	5.7	
Sept. 20, 1950	--	5.5	0.01	2.0	.8	4.1	8	9.1	.8		.2	26	8	2	48	7.2	6

a Discharge at time of sampling.

Chemical analyses, in parts per million, water years October 1947 to September 1950--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue on evaporation at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
FALLS CREEK NEAR KETCHIKAN (at gaging station)																		
Apr. 20, 1949	708	1.2		2.6	0.8	1.6	11	3.1	1.0		0.1	16	10	1	29	6.5	
Aug. 19	375	1.0				1.2	10	2.5	.8		.2		9	1	23	5.8	
PURPLE LAKE OUTLET NEAR METLAKATLA (at gaging station)																		
Oct. 12, 1948	--	1.3	0.00	1.0	0.3	3.2	8	2.0	1.5		0.2	13	4	0	15	--	
Apr. 23, 1949	259	.5		.6	.9	2.1	5	1.6	2.8		.1	11	5	1	19	5.8	
Aug. 15	135	1.0		--	--	2.8	4	1.1	2.8		.5	--	3	0	20	5.4	
GRACE CREEK NEAR KETCHIKAN																		
May 29, 1949		1.1				1.4	6	1.1	0.6		0.2		4	0	12	6.7	
Aug. 16		1.3				1.4	7	1.2	.2		.3		4	0	13	5.9	

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