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Pt. 2

1971

Water Resources Data for Washington

Part 2. Water Quality Records

U. S. GEOLOGICAL SURVEY
WASHINGTON
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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Washington
and with other agencies

CALENDAR FOR WATER YEAR 1971

OCTOBER 1970

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
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NOVEMBER 1970

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DECEMBER 1970

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JANUARY 1971

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31						

FEBRUARY 1971

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28						

MARCH 1971

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28	29	30	31			

APRIL 1971

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MAY 1971

S	M	T	W	T	F	S
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30	31					

JUNE 1971

S	M	T	W	T	F	S
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JULY 1971

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

AUGUST 1971

S	M	T	W	T	F	S
1	2	3	4	5	6	7
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22	23	24	25	26	27	28
29	30	31				

SEPTEMBER 1971

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

1971

Water Resources Data for Washington

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Washington
and with other agencies

Prepared in cooperation with

Washington State Department of Ecology
Washington State Department of Fisheries
City of Tacoma, Department of Public Utilities
Corps of Engineers, U.S. Army
Forest Service, U.S. Department of Agriculture
U.S. Air Force

Water resources records, 1971 for Washington are in the following reports of the U.S Geological Survey:

1. Water Resources Data for Washington
   Part 1. Surface Water Records

2. Water Resources Data for Washington
   Part 2. Water Quality Records

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
Room 300, 1305 Tacoma Avenue South
Tacoma, Washington 98402

1972

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(Letters after station name designate type of data: (c) chemical; (t) water temperature; (s) sediment)

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WATER RESOURCES DATA FOR WASHINGTON, 1971

Part 2. Water Quality Records

INTRODUCTION

Water resources data for the 1971 water year for Washington include records of data for the chemical and physical characteristics of surface water. Data on the quality of surface water (chemical, temperature, and sediment) were collected from designated sampling sites at predetermined intervals such as once daily, weekly, monthly or less frequently. Records are given for sampling stations of which are continuous record stations and are partial-record stations. A few pertinent stations (not included above) in bordering States are also included. The records were collected by the Water Resources Division of the U.S. Geological Survey under the direction of L. B. Laird, district chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Washington.

The Geological Survey has published records of chemical quality, water temperatures, and sediment since 1941 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Beginning with the 1964 water year, water-quality records have been released by the Geological Survey in annual reports on a State-boundary basis. These reports are for limited distribution and are designed primarily for rapid release of data shortly after the end of the water year. These records will be published later in Geological Survey water-supply papers.

COOPERATION

This report was prepared by the U.S. Geological Survey under cooperative agreement with the following organizations:

Washington State Department of Ecology, J. A. Biggs, director.

Washington State Department of Fisheries, T. C. Tollefson, director.

City of Tacoma, Department of Public Utilities, C. A. Erdahl, director.

Additional data were furnished by the Washington State Department of Ecology.

DEFINITION OF TERMS

Terms related to water-quality and hydrologic data, as used in this report are defined as follows:

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

Bed material is the shifting portion of fragmented alluvial material of which the streambed is composed.

Biochemical oxygen demand (BOD) is the amount of oxygen required by bacteria while stablizing decomposable organic matter under aerobic conditions.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons, and represents a runoff of approximately 0.0372 inches from 1 square mile.

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

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

Cubic foot per second (cfs,CFS) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

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

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Drainage area of a stream at a specified location is that area, measured in horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point.

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

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

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

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

Milligrams per liter (mg/l,MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1, page 5. Concentration of suspended sediment also is expressed in mg/l, and is based on the weight of sediment per liter of water-sediment mixture. Sediment concentrations may be converted to parts per million by using the factors in table 2, p. 5.

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

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling) (Guy, 1969).

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

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

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis (Guy, 1969).

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*...	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1}...	.05544	Iron (Fe^{+3})*.....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2})*.....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*...	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2}).....	.04990	Manganese (Mn^{+2})*.	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2})*....	.03406
Chloride (Cl^{-1})....	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})*...	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2})*.....	.03394	Phosphate (PO_4^{-3}).	.03159
Copper (Cu^{+2})*.....	.03148	Potassium (K^{+1})...	.02557
Cyanide (CN^{-1}).....	.03844	Sodium (Na^{+1}).....	.04350
Fluoride (F^{-1}).....	.05264	Strontium (Sr^{+2})*.	.02283
Hydrogen (H^{+1}).....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})...	.05880	Zinc (Zn^{+2})*.....	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in milligrams per liter to parts per million*
(All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65.

Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting chiefly of minute plants (as diatoms and blue-green algae) and of minute animals (as protozoan, entomostracans, and various larvae).

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

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

Suspended-sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times mg/l times 0.0027.

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

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

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

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

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in

micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

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

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

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

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

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

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

water passing a given location during the water year after thorough mixing in the reservoir.

SPECIAL NETWORKS AND PROGRAMS

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

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

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, the data for these stations were published in the annual water-supply paper series, "Quality of Surface Water for Irrigation, Western States."

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

DOWNSTREAM ORDER AND STATION NUMBER

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

As an added means of identification, each water-quality station, gaging station, and partial-record station has been assigned a station number. These are in the same dowstream order used in this report. In assigning station numbers, no distinction is made between partial-record and continuous-record stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 12149000 which appears just to left of the station name includes the 2-digit part number "12" plus the 6-digit downstream order number "149000." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 12 (Pacific slope basins in Washington and upper Columbia River basin), Part 13 (Snake River basin), and Part 14 (Pacific slope basins in Oregon and lower Columbia River basin). All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

COLLECTION AND EXAMINATION OF DATA

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads. Discharge records for

streams in Washington have been released in the report, "Water Resources Data for Washington, 1971, Part 1. Surface Water Records."

The data in this report include a description of the sampling station and tabulations of the samples analyzed. The description of the sampling station gives the location, drainage area, periods of record for the various water-quality data, extremes of the pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Water-quality information is presented for chemical quality, biological, microbiological, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. The biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per millions and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperature in degrees Celsius to degrees Fahrenheit, see Table 3, page 11.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor

elements in micrograms per liter instead of milligrams per liter. (See "Definition of Terms," p. 5.)

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

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

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

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge depending on the source of material and the turbulence and the mixing of the stream. Some must be sampled at several verticals across the channel to determine accurately the solute load.

The daily chemical quality data in this report generally represent equal-volume composites for 2- to 30-day periods;

the composite periods are selected on the basis of specific conductance of the daily samples and fluctuation of water discharge.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken at about the same time each day when sample is collected. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly averages.

Sediment

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

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

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

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

WATER-SUPPLY PAPERS

The annual series of water-supply papers that give information on quality of surface waters in Washington are shown in the following table.

Table 4.--Water-supply paper numbers and parts, water years 1947-70

Year	Parts 9-14	Year	Parts 9-14	Year	Parts 12-16
1947	1102	1956	1453	1964	A1959
1948	1133	1957	1523	1965	1966
1949	1163	1958	1574	1966	1996
1950	1189	1959	1645	1967	B2016
1951	1200	1960	1745	1968	B2100
1952	1253	1961	1885	1969	B2150
1953	1293	1962	1945	1970	B2160
1954	1353	1963	1951	----	----
1955	1403	----	----	----	----

A Parts 12-15. B In press.

SELECTED REFERENCES

American Public Health Association, and others 1965, Standard methods for the examination of water and wastewater, 12th ed.: Am. Public Health Assoc., New York, 769 p.

Brown, Eugene, Skougstad, M. W., and Fishman, M. J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. A1, 160 p.

Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurement of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hembree, C. H., 1955, Computations of total sediment discharge, Niobrara River near Cody, Nebraska: U.S. Geol. Survey Water-Supply Paper 1357, 187 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

Guy, H. P., 1970, Fluvial sediment concepts: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C1, 55 p.

_____, 1969, Laboratory theory and methods for sediment analysis: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C1, 57 p.

Guy, H. P., and Norman, V. W., 1970, Field methods for measurement of fluvial sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C2, 59 p.

Hem, J. D., 1970, Study and interpretation of the chemical characteristics of natural water, 2d ed.: U.S. Geol. Survey Water-Supply Paper 1473, 363 p.

Laird, L. B., 1964, Chemical quality of surface waters of the Snake River basin: U.S. Geol. Survey Prof. Paper 417D, 47 p.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

Porterfield, George, 1972, Computations of fluvial-sediment discharge: U.S. Geol. Survey Techniques of Water Resources Inv., book 3, chap. C3, 179 p.

Ritter, J. R., and Helley, E. J., 1969, Optical method for determining particle sizes of coarse sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C3.

U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

_____ 1941, Methods of analyzing sediment samples: Rept. 4.

_____ 1953, Accuracy of sediment size analyses made by the bottom-withdrawal-tube method: Rept. 10.

_____ 1957, The development and calibration of visual accumulation tube: Rept. 11.

_____ 1957, Some fundamentals of particle size analysis: Rept. 12.

_____ 1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

_____ 1961, The single stage sampler for suspended sediment: Rept. 13.

_____ 1963, Determinations of fluvial sediment discharge: Rept. 14.

WATER QUALITY RECORDS

NASELLE RIVER BASIN

12010000 NASELLE RIVER NEAR NASELLE, WASH.

LOCATION.--Lat 46°22'27", long 123°44'32", in SW¼SW¼ sec.1, T.10 N., R.9 W., Pacific County, temperature recorder at gaging station on right bank 0.1 mile upstream from county highway bridge, 2.2 miles upstream from Salmon Creek, 3.4 miles east of Naselle and at mile 17.4.

DRAINAGE AREA.--54.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1970.
Water temperatures: August 1963 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 21.5°C Aug. 10; minimum, 3.0°C Mar. 2.

Period of record:
Water temperatures: Maximum, 23.0°C July 30, 1965, Aug. 15, 17, 1967; minimum, 2.0°C Dec. 31, 1968, Jan. 27-31, 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12010000 NASELLE RIVER NEAR NASELLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.0	12.0	9.5	10.0	9.5	13.5	11.5	17.0	15.0	15.0	14.0
2	8.5	6.5	14.5	10.5	10.0	9.5	14.5	10.5	18.0	15.0	14.0	13.0
3	8.5	6.0	14.5	12.0	11.0	9.5	15.5	11.5	17.0	15.5	14.0	13.5
4	8.5	6.0	13.0	10.5	14.0	10.0	14.5	12.0	16.5	16.0	14.5	13.0
5	9.0	7.0	10.5	9.5	13.5	10.5	12.0	11.5	17.0	15.5	15.0	14.5
6	9.0	8.0	13.0	8.5	13.0	11.5	14.0	10.5	18.0	15.0	14.5	13.5
7	8.0	6.5	15.0	10.5	12.0	10.5	15.0	10.5	18.5	14.5	14.5	13.0
8	8.0	7.0	13.5	11.5	13.0	10.5	15.0	13.0	19.5	15.5	14.0	13.0
9	7.0	6.0	13.5	10.5	11.5	10.5	14.0	13.0	20.5	17.0	15.0	13.5
10	6.5	5.5	14.5	10.0	12.0	11.0	13.0	11.5	21.5	18.5	14.5	13.5
11	8.0	6.0	16.5	11.5	12.0	11.0	13.5	11.5	20.5	18.5	14.5	13.5
12	8.5	5.5	15.0	13.0	11.5	11.0	15.0	10.5	19.5	17.0	15.0	13.0
13	9.0	7.0	13.0	10.0	11.5	10.5	16.5	13.0	18.5	17.0	14.5	13.0
14	9.0	7.0	11.5	9.0	11.0	10.5	17.0	13.0	17.0	16.0	14.0	11.5
15	8.0	6.5	11.0	9.5	11.0	10.0	18.0	14.0	18.5	15.5	14.0	11.5
16	8.0	6.0	9.5	8.5	11.5	9.5	18.0	13.5	18.0	15.5	14.5	12.0
17	8.0	6.0	9.5	8.0	11.5	9.5	18.5	14.5	18.5	15.5	14.0	12.0
18	8.5	7.0	9.5	9.0	13.0	10.5	19.0	15.0	19.0	15.5	14.0	11.5
19	9.0	6.5	10.0	9.0	12.0	11.0	19.0	15.5	18.0	16.0	13.5	11.5
20	9.0	8.0	10.0	8.5	13.5	11.5	20.0	16.0	19.0	17.0	14.5	13.0
21	8.5	6.5	11.5	9.0	16.5	11.5	19.5	16.0	18.5	16.5	14.0	12.0
22	8.5	7.0	11.0	9.5	15.5	14.5	18.5	15.5	16.5	15.5	13.5	11.5
23	8.5	7.0	13.0	9.5	15.0	13.0	15.5	14.5	17.0	14.5	13.0	12.0
24	8.0	7.0	11.5	11.0	14.0	10.5	17.0	14.0	18.0	15.0	14.0	13.0
25	11.0	7.0	11.5	10.5	11.0	10.0	19.0	15.0	18.5	15.5	14.0	13.0
26	12.0	9.5	12.0	11.0	12.0	9.5	19.5	16.0	18.0	14.5	13.5	12.0
27	11.0	9.5	13.5	10.5	11.5	10.5	18.5	16.5	18.0	15.0	13.0	11.5
28	10.0	9.0	12.0	11.0	10.5	10.0	18.0	15.5	18.5	15.5	13.0	11.0
29	9.5	9.0	11.0	10.5	13.0	10.0	19.0	16.0	18.0	16.5	11.0	10.5
30	10.0	9.0	10.5	9.5	14.0	10.5	18.5	16.0	16.5	15.5	10.5	8.5
31	---	---	10.0	9.5	---	---	16.0	15.5	16.0	15.0	---	---
MONTH	12.0	5.5	16.5	8.0	16.5	9.5	20.0	10.5	21.5	14.5	15.0	8.5

12011000 NORTH NEMAH RIVER NEAR SOUTH BEND, WASH.

LOCATION.--Lat 46°29'30", long 123°50'00", in SE¼ sec.30, T.12 N., R.9 W., Pacific County, temperature recorder at discontinued gaging station on right bank 700 ft downstream from Finn Creek, 5 miles upstream from mouth, and 12 miles south of South Bend.

DRAINAGE AREA.--18.0 sq mi.

PERIOD OF RECORD.--Water temperature: August 1970 to September 1971 (discontinued).

EXTREMES.--August 1970-September 1971:
Water temperature: Maximum, 20.0°C Aug. 10, 1971; minimum, 3.0°C Jan. 13, 15.

TEMPERATURE (°C) OF WATER, AUGUST TO SEPTEMBER 1970

	AUGUST		SEPTEMBER			AUGUST		SEPTEMBER			AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN
1	---	---	15.0	14.0	11	---	---	15.5	12.0	21	18.0	14.0	13.5	---
2	---	---	15.5	14.0	12	---	---	14.5	11.0	22	18.0	14.5	13.0	12.0
3	---	---	15.0	13.5	13	---	---	13.5	10.0	23	16.5	15.0	13.0	11.0
4	---	---	16.0	13.0	14	---	---	13.0	11.0	24	15.5	14.5	12.0	9.5
5	---	---	14.0	13.5	15	---	---	13.5	10.0	25	15.5	14.0	13.0	9.0
6	---	---	14.0	13.0	16	---	---	13.5	11.0	26	16.5	12.0	14.0	10.5
7	---	---	14.5	12.0	17	16.5	---	13.0	---	27	16.0	14.5	14.5	10.5
8	---	---	15.0	12.0	18	17.0	12.0	---	---	28	15.0	14.0	14.0	10.5
9	---	---	14.5	10.5	19	17.0	14.0	---	---	29	16.5	13.5	13.0	11.5
10	---	---	14.5	10.5	20	16.5	14.5	---	---	30	17.0	13.5	13.5	10.0
										31	16.0	15.0	---	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12011000 NORTH NEMAH RIVER NEAR SOUTH BEND, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	6.5	14.0	9.5	9.5	9.0	14.0	11.5	15.5	13.5	14.0	13.0
2	10.0	7.0	15.0	10.5	10.0	9.0	15.0	10.0	17.0	14.0	14.0	12.0
3	10.5	6.5	13.5	11.0	10.5	9.0	15.5	11.5	15.5	14.0	14.5	13.0
4	11.0	6.5	11.0	10.5	14.0	9.5	14.5	12.0	15.0	14.0	14.5	11.5
5	11.0	8.0	10.5	9.5	13.0	9.5	13.0	11.0	16.5	14.0	14.5	13.0
6	10.0	8.5	14.0	8.5	11.5	10.5	14.5	10.5	16.5	15.0	14.0	11.5
7	10.0	7.0	15.5	10.5	12.0	10.0	14.5	10.0	18.5	14.0	14.5	11.5
8	8.5	7.0	14.0	11.5	12.0	10.0	13.5	11.5	19.0	14.5	13.5	11.5
9	8.0	6.5	14.5	10.5	11.5	10.0	13.0	11.5	19.5	15.5	14.5	12.0
10	8.0	6.5	15.5	10.0	12.0	10.0	11.5	11.0	20.0	16.5	13.5	12.0
11	9.0	6.5	16.5	11.0	13.0	11.0	13.5	10.5	19.5	16.0	15.0	13.0
12	10.0	6.0	14.5	11.5	12.0	10.5	15.0	10.0	18.0	16.0	14.5	11.5
13	11.5	8.0	11.5	10.5	11.5	10.5	15.5	11.5	16.0	15.5	14.5	12.0
14	9.5	8.5	13.5	9.0	11.0	10.0	16.5	12.0	16.5	15.0	14.0	11.0
15	10.0	8.0	11.5	9.5	12.0	10.0	16.5	13.0	18.0	14.0	14.0	11.0
16	9.0	7.0	9.5	8.5	13.0	10.0	16.5	10.0	18.5	15.0	14.5	12.0
17	10.0	6.5	11.0	8.5	11.5	9.0	18.0	13.5	18.5	14.5	14.5	11.5
18	10.0	8.0	10.5	9.0	12.0	10.5	18.0	14.0	18.5	14.5	14.5	11.0
19	10.5	6.5	10.5	9.0	11.5	10.5	17.0	14.0	18.0	15.0	14.0	11.0
20	10.0	8.5	10.5	8.5	12.0	10.5	18.5	14.5	18.0	16.0	14.5	12.0
21	10.0	7.0	13.0	8.5	16.5	10.5	16.0	14.5	17.0	15.5	14.0	11.0
22	9.5	8.0	11.0	9.0	15.0	13.0	15.0	13.5	16.0	14.0	14.0	11.0
23	9.5	8.0	13.5	8.5	14.0	11.5	13.5	13.0	16.5	13.5	13.0	11.5
24	9.5	8.0	11.5	10.0	12.0	10.0	16.0	12.0	17.0	13.5	13.5	12.0
25	13.0	7.0	11.5	10.0	12.0	9.5	18.0	13.5	18.0	14.5	13.0	11.5
26	14.0	9.0	11.0	10.0	13.0	9.0	18.5	14.5	16.5	13.5	12.0	11.5
27	12.0	10.0	11.0	9.5	11.5	10.5	16.5	15.0	16.0	13.5	13.0	11.0
28	10.0	9.0	---	9.0	11.0	10.0	16.0	14.0	17.0	14.0	11.5	10.5
29	10.5	9.0	---	---	13.5	10.0	15.5	14.5	16.5	15.5	11.0	10.5
30	11.0	9.5	10.5	---	14.0	10.0	15.0	14.5	15.5	14.0	10.5	9.0
31	---	---	10.0	9.0	---	---	14.5	14.0	14.5	13.5	---	---
MONTH	14.0	6.0	16.5	8.5	16.5	9.0	18.5	10.0	20.0	13.5	15.0	9.0

12011500 WILLAPA RIVER AT LEBAM, WASH.

LOCATION.--Lat 46°33'50", long 123°33'49", in SW¼SW¼ sec.33, T.13 N., R.7 W., Pacific County, temperature recorder at gaging station on left bank 0.1 mile downstream from bridge on State Highway 6, 0.5 mile west of Lebam, 1.0 mile upstream from Walker Creek, and at mile 33.9.

DRAINAGE AREA.--41.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1961.
Water temperatures: March 1952 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 20.5°C Aug. 10, 11; minimum, 1.5°C Mar. 1.

Period of record:
Water temperatures: Maximum, 22.0°C July 19-20, 1956; minimum, freezing point Jan. 28-30, 1957, Jan. 21-23, 1962.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12011500 WILLAPA RIVER AT LEBAM, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	6.0	13.0	10.0	10.5	10.5	14.0	13.5	17.0	16.5	15.0	14.5
2	8.5	6.5	14.5	11.0	10.5	10.5	14.0	11.5	18.0	17.0	14.5	13.5
3	8.5	5.5	14.5	11.5	11.0	10.5	15.0	14.0	17.0	16.5	14.0	14.0
4	9.5	6.0	14.0	11.0	13.5	11.0	15.0	14.0	17.0	17.0	14.5	13.5
5	10.0	7.0	11.0	10.0	13.5	11.5	14.0	13.5	17.0	17.0	14.5	14.5
6	9.0	8.0	13.0	9.5	13.0	12.0	13.5	13.0	18.0	17.0	14.5	13.0
7	8.5	6.0	14.5	11.0	12.0	12.0	14.5	13.0	18.0	16.5	13.5	12.0
8	8.0	7.0	14.5	11.5	12.0	11.5	15.0	14.5	18.5	17.0	13.5	13.0
9	7.0	6.5	12.0	10.0	12.0	11.5	15.0	14.5	20.0	18.5	14.0	13.0
10	8.0	6.0	13.5	10.0	12.0	12.0	14.5	14.0	20.5	19.5	14.0	13.5
11	7.0	6.0	15.5	12.0	12.0	12.0	14.0	13.5	20.5	19.5	14.0	13.5
12	8.5	5.5	15.5	13.5	12.0	11.5	15.5	14.0	20.0	19.0	14.0	13.5
13	9.5	7.0	13.5	11.0	11.5	11.5	15.5	14.5	19.0	18.5	13.5	13.5
14	9.0	7.0	11.5	9.5	11.5	11.0	16.0	15.0	18.5	17.0	13.5	12.0
15	8.5	6.5	11.5	10.0	11.5	11.0	16.0	15.5	17.0	16.5	13.0	12.0
16	8.0	6.0	10.0	9.0	11.5	11.0	16.0	15.5	18.0	17.0	13.0	12.0
17	8.0	6.5	10.0	8.5	12.0	11.5	17.0	15.5	17.0	16.5	13.0	12.0
18	8.0	7.0	10.5	9.0	13.0	12.0	18.5	16.5	17.0	16.5	12.0	11.5
19	9.5	6.0	10.5	9.5	14.0	13.0	19.5	18.0	18.0	17.0	11.5	11.0
20	9.0	8.0	10.0	9.0	14.0	14.0	19.5	18.5	18.5	18.0	13.0	11.5
21	9.0	6.0	12.0	9.0	17.0	14.0	19.0	18.0	18.5	18.0	13.0	11.5
22	9.0	7.0	12.0	10.0	17.0	16.5	18.5	16.5	18.0	16.5	12.0	11.5
23	9.0	7.0	13.0	10.0	16.5	15.5	16.5	15.5	16.5	15.5	13.0	12.0
24	9.0	7.0	13.0	11.5	15.5	13.0	16.0	15.0	16.5	16.0	13.5	12.0
25	11.5	7.0	12.0	11.0	13.5	11.5	18.0	16.0	17.0	16.5	13.5	13.0
26	13.0	9.0	11.5	11.0	13.0	11.5	19.0	17.0	16.5	15.5	13.5	13.0
27	13.0	10.5	13.0	10.5	13.0	11.5	19.0	18.0	16.0	15.5	13.0	12.0
28	10.5	9.5	13.0	11.0	12.0	11.5	18.5	18.0	16.5	15.5	12.0	11.5
29	10.0	9.0	13.0	11.5	13.5	11.5	19.0	18.0	17.0	16.5	11.5	11.0
30	10.5	9.5	11.5	10.0	14.0	12.0	18.5	18.0	16.5	15.5	11.0	10.0
31	---	---	10.5	10.5	---	---	18.0	17.0	15.5	15.0	---	---
MONTH	13.0	5.5	15.5	8.5	17.0	10.5	19.5	11.5	20.5	15.0	15.0	10.0

12013500 WILLAPA RIVER NEAR WILLAPA, WASH.

LOCATION.--Lat 46°39'00", long 123°39'10", in NW corner sec.2, T.13 N., R.8 W., Pacific County, at Bullard Road bridge, 0.5 mile downstream from gaging station and Mill Creek, 1.8 miles southeast of Willapa, and at mile 17.7.

DRAINAGE AREA.--130 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1971.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	1200	532	.08	.000	.00	.61	.000	.000
DEC.								
21...	1135	1340	.25	.000	.02	.86	.000	.020
JAN.								
04...	1215	929	.10	.000	.01	.75	.020	.060
18...	1145	2700	.12	.000	.01	.59	.030	.040
FEB.								
01...	1145	880	.04	.000	.02	.63	.020	.14
16...	1130	1300	.05	.000	.02	.47	.030	.040
MAR.								
01...	1135	750	.37	.000	.18	.70	.000	.020
15...	1145	1630	.16	.010	.04	.66	.030	.13
APR.								
05...	1130	760	.14	.000	.11	1.0	--	.18
19...	1210	585	.19	.000	.04	.45	.040	.090
MAY								
03...	1340	250	.45	.000	.08	.23	.040	.12
JUNE								
01...	1115	180	.01	.000	.00	.25	.010	.020
14...	1115	202	.02	.000	.00	.22	.000	.010
JULY								
06...	1240	123	.07	.000	.03	.20	.020	.030
19...	1145	72	.25	.020	.16	.32	.030	.050
AUG.								
02...	1205	52	.09	.010	.06	.28	.010	.030
16...	1320	34	.10	.000	.07	.20	.010	.010
SEP.								
06...	1215	166	.20	.000	.09	.43	.000	.020
21...	1130	51	.22	.000	.08	.30	.010	.020

12013500 WILLAPA RIVER NEAR WILLAPA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
23...	52	7.1	5.9	24	4	12.2	150
DEC.							
21...	57	6.9	5.9	16	5	12.0	400
JAN.							
04...	55	6.9	4.4	6	4	12.8	600
18...	48	6.8	8.3	32	15	11.4	150
FEB.							
01...	52	6.9	8.4	28	4	11.5	300
16...	47	6.9	7.0	34	4	11.7	240
MAR.							
01...	54	6.7	4.3	19	3	13.1	200
15...	43	6.8	6.0	23	5	12.1	180
APR.							
05...	50	7.1	9.4	24	2	11.4	320
19...	55	6.9	9.0	19	3	12.1	400
MAY							
03...	61	7.1	16.0	21	3	10.6	150
JUNE							
01...	61	7.3	11.5	32	2	10.7	600
14...	62	7.0	12.0	28	2	10.7	--
JULY							
06...	58	7.0	14.3	50	2	10.8	250
19...	86	7.1	21.5	32	1	8.2	400
AUG.							
02...	86	7.2	18.8	33	1	9.0	400
16...	70	7.3	20.6	32	3	8.9	<100
SEP.							
06...	85	7.0	15.1	38	2	10.1	1000
21...	73	7.1	14.1	38	2	9.5	300

12017000 NORTH RIVER NEAR RAYMOND, WASH.

LOCATION.--Lat 46°48'27", long 123°50'58", in SE¼SW¼ sec.6, T.15 N., R.9 W., Grays Harbor County, temperature recorder at gaging station on left bank, 1.2 miles upstream from Salmon Creek, 10 miles northwest of Raymond, and at mile 6.9.

DRAINAGE AREA.--219 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1963 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 21.5°C Aug. 11; minimum, 3.0°C Jan. 14-15.

Period of record:
Water temperatures: Maximum, 23.5°C Aug. 15, 18, 19, 1967; minimum, 1.0°C Jan. 28-31, 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12017000 NORTH RIVER NEAR RAYMOND, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	6.0	10.5	9.5	12.0	12.0	13.5	13.0	18.5	18.0	16.0	14.5
2	6.0	6.0	11.5	10.5	12.0	11.5	14.0	13.0	19.5	18.0	14.5	14.0
3	6.5	6.0	12.0	11.5	11.5	11.0	15.0	14.0	19.0	18.5	14.0	14.0
4	6.5	6.5	12.0	11.5	12.0	11.0	15.0	14.5	18.5	18.0	14.5	14.0
5	7.0	6.5	11.5	11.0	13.0	12.0	14.5	14.0	19.0	18.0	15.0	14.5
6	8.0	7.0	11.0	10.5	13.0	13.0	14.0	14.0	19.0	18.5	15.0	14.5
7	8.0	7.0	12.0	11.0	13.0	13.0	14.5	14.0	19.5	18.0	15.0	14.0
8	8.0	7.0	13.5	11.5	13.0	13.0	15.0	14.5	20.0	18.5	14.5	14.0
9	7.0	6.5	13.0	12.0	13.0	13.0	15.0	14.5	20.5	19.0	14.5	14.0
10	6.5	6.0	13.5	12.0	13.0	13.0	14.5	14.0	21.0	20.0	14.5	14.0
11	6.0	5.5	14.0	13.0	13.0	13.0	14.0	14.0	21.5	20.0	14.5	14.0
12	6.0	5.5	14.0	14.0	13.0	13.0	14.5	14.0	21.0	20.0	14.0	14.0
13	7.0	6.0	14.0	13.5	13.0	13.0	15.5	14.5	20.0	19.5	14.5	14.0
14	8.0	7.0	13.5	12.0	13.0	12.0	16.5	15.5	19.5	19.0	14.0	14.0
15	8.5	8.0	13.0	12.0	13.0	12.0	17.0	16.0	19.5	19.0	14.0	13.5
16	8.5	8.0	12.0	10.5	13.0	11.5	18.0	16.5	20.0	19.0	14.0	13.0
17	8.0	7.0	10.5	10.0	13.0	11.5	18.5	17.0	20.0	19.0	14.0	13.0
18	7.0	7.0	10.5	10.0	13.0	12.0	19.5	18.5	20.0	19.0	14.0	13.0
19	8.0	7.0	10.5	10.0	13.0	13.0	20.0	19.0	19.5	19.0	14.0	13.0
20	8.0	8.0	11.0	10.0	13.5	13.0	20.5	19.5	19.5	19.0	14.5	13.5
21	8.0	8.0	11.5	10.5	15.0	13.5	20.5	19.5	19.0	18.5	14.0	13.5
22	8.0	8.0	11.5	11.0	15.0	15.0	20.5	19.5	18.5	18.0	14.0	13.0
23	8.0	8.0	12.0	11.0	15.5	15.0	19.5	18.0	19.0	17.0	14.0	13.5
24	8.0	8.0	13.0	12.0	15.0	14.0	18.5	17.0	18.5	17.0	13.5	13.5
25	8.5	8.0	13.0	12.0	14.0	13.0	19.0	17.0	18.5	17.0	13.5	13.5
26	9.5	8.5	13.0	12.0	13.5	13.0	20.0	18.5	18.5	17.0	13.5	13.5
27	9.5	9.5	13.0	12.0	13.0	13.0	19.5	19.0	18.5	17.0	13.5	12.0
28	9.5	9.5	13.0	13.0	13.0	13.0	19.5	18.5	18.5	17.0	12.0	11.5
29	9.5	9.5	13.0	12.0	13.0	12.0	19.5	19.0	18.5	18.0	11.5	10.5
30	9.5	9.5	12.0	11.5	13.0	12.0	19.0	19.0	18.0	17.0	10.5	10.5
31	---	---	12.0	12.0	---	---	19.0	18.5	17.0	16.0	---	---
MONTH	9.5	5.5	14.0	9.5	15.5	11.0	20.5	13.0	21.5	16.0	16.0	10.5

12020500 ELK CREEK NEAR DOTY, WASH.

LOCATION.--Lat 46°37'42", long 123°19'50", in SE¼NE¼ sec.8, T.13 N., R.5 W., Lewis County, temperature recorder at gaging station on right bank 0.5 mile upstream from Nine Creek, 1.0 mile upstream from Deer Creek, 2.6 miles west of Doty, and at mile 2.5.

DRAINAGE AREA.--46.7 sq mi.

PERIOD OF RECORD.--Water temperature: August 1970 to November 1971 (discontinued).

EXTREMES.--August 1970-November 1971:
Water temperatures: Maximum 23.5°C July 20, 26; minimum, 1.0°C Jan. 14, 15.

REMARKS.--Recorder stopped Nov. 8-10 and June 16-23; range in temperature 8.0°C to 9.5°C and 10.5°C to 19.0°C, respectively.

TEMPERATURE (°C) OF WATER, AUGUST TO SEPTEMBER 1970

	AUGUST		SEPTEMBER			AUGUST		SEPTEMBER			AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN
1	---	---	16.0	15.0	11	---	---	15.5	13.0	21	19.5	15.5	14.5	13.0
2	---	---	15.5	14.5	12	---	---	14.5	11.5	22	19.0	15.5	14.0	13.0
3	---	---	16.0	14.5	13	---	---	13.5	9.5	23	18.5	16.0	13.0	11.0
4	---	---	16.0	14.5	14	---	---	13.0	10.5	24	18.5	16.5	12.0	10.0
5	---	---	15.0	14.0	15	---	---	13.5	10.0	25	16.5	15.5	12.0	9.0
6	---	---	15.5	14.5	16	---	---	14.5	11.5	26	18.5	14.5	13.5	10.0
7	---	---	14.5	14.0	17	17.0	14.5	14.5	13.5	27	17.0	15.0	14.0	10.5
8	---	---	15.0	13.5	18	18.5	14.5	14.5	13.0	28	16.0	15.0	14.0	10.5
9	---	---	15.5	11.5	19	18.5	15.0	14.0	13.0	29	17.0	14.5	13.5	11.5
10	---	---	15.5	12.0	20	18.0	15.5	14.0	12.0	30	18.0	14.5	13.5	10.5
										31	17.0	15.5	----	----

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	10.5	8.5	6.5	4.5	3.5	5.0	4.0	8.0	7.0	3.5	1.5
2	14.5	11.5	8.0	6.0	3.5	3.0	4.0	3.5	7.0	6.0	3.5	3.0
3	14.0	11.5	8.0	6.0	3.5	2.0	4.0	3.5	6.0	5.5	4.0	3.0
4	13.5	13.0	8.0	6.5	4.0	3.0	3.5	3.0	5.5	5.0	4.0	3.0
5	13.5	11.5	8.0	8.0	5.0	4.0	3.0	2.0	5.5	4.5	4.5	3.0
6	12.0	10.0	9.0	8.0	6.0	5.0	3.0	2.0	4.5	4.0	4.0	3.5
7	11.0	9.0	9.5	8.5	7.0	6.0	4.0	3.0	4.0	3.0	5.0	4.0
8	11.5	10.5	---	9.0	6.5	5.5	5.0	4.0	4.0	3.0	5.0	4.0
9	13.5	11.0	---	---	6.0	5.5	5.5	5.0	5.0	4.0	5.0	4.5
10	12.0	11.5	---	---	6.0	5.5	5.5	4.5	6.5	5.0	5.0	4.5
11	12.0	11.5	9.5	8.5	6.0	5.5	4.5	3.0	6.0	5.0	5.0	4.5
12	11.5	10.0	9.5	9.0	5.5	5.0	3.0	3.0	6.0	5.0	6.0	5.0
13	10.5	9.0	9.0	8.0	5.0	4.5	3.0	2.0	6.0	4.5	6.5	5.5
14	11.0	9.0	8.0	6.5	5.5	5.0	2.0	1.0	6.0	4.5	7.0	6.0
15	10.5	8.0	8.5	7.0	5.5	5.0	3.5	1.0	6.0	4.0	7.0	6.5
16	10.0	7.0	9.5	8.5	5.5	5.5	5.5	3.5	6.5	4.5	8.5	7.0
17	10.0	9.0	9.0	8.5	5.5	5.5	6.0	5.5	6.5	5.0	8.5	8.0
18	11.5	10.0	9.0	8.5	5.5	4.5	6.5	6.0	6.0	5.0	8.0	6.5
19	11.0	10.0	9.0	8.5	4.5	4.0	6.5	6.0	6.0	5.5	7.0	6.5
20	10.5	10.0	8.5	6.5	4.5	4.0	6.0	5.0	5.5	5.0	7.0	6.5
21	10.0	9.0	6.5	4.5	4.5	4.0	5.0	5.0	5.5	5.0	7.0	6.5
22	9.5	9.0	4.5	3.5	4.0	3.5	5.5	5.0	6.0	5.5	7.0	5.5
23	9.0	9.0	6.0	3.5	4.5	4.0	6.0	5.0	6.5	5.5	8.5	6.5
24	9.0	8.5	7.0	6.0	4.5	4.0	6.0	6.0	6.5	5.5	8.0	6.5
25	9.0	8.5	6.5	6.0	4.5	4.5	6.5	6.0	5.5	4.5	6.5	5.5
26	8.5	7.0	6.0	5.5	4.5	4.0	6.5	6.5	4.5	3.0	6.0	5.5
27	7.0	6.0	6.0	5.5	4.5	4.0	7.0	6.5	3.5	2.0	6.0	5.0
28	6.5	5.5	5.5	5.0	4.5	4.5	6.5	6.5	3.5	1.5	6.5	5.5
29	6.5	5.0	5.0	4.5	4.5	4.0	6.5	6.0	---	---	8.0	6.5
30	6.5	5.0	4.5	4.5	6.0	4.5	7.0	6.5	---	---	7.0	6.0
31	8.0	6.0	---	---	6.0	5.0	8.0	7.0	---	---	6.5	5.5
MONTH	14.5	5.0	9.5	3.5	7.0	2.0	8.0	1.0	8.0	1.5	8.5	1.5

12020500 ELK CREEK NEAR DOTY, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

TEMPERATURE (°C) OF WATER, OCTOBER TO NOVEMBER 1972

	OCTOBER		NOVEMBER		DAY	OCTOBER		DAY	OCTOBER		DAY	OCTOBER	
DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
1	10.5	9.0	6.0	5.0	9	13.5	11.0	17	9.0	6.0	25	8.5	7.0
2	11.5	9.5	6.0	5.5	10	14.0	12.0	18	8.5	7.0	26	8.5	7.0
3	12.0	10.0	8.0	6.0	11	13.5	13.0	19	9.5	8.5	27	7.0	6.0
4	14.0	11.0	8.0	7.0	12	13.0	11.0	20	9.0	8.0	28	6.0	4.0
5	14.5	12.0	7.0	5.0	13	13.0	11.5	21	8.5	7.0	29	4.5	3.5
6	14.0	13.0	5.0	4.5	14	11.5	10.5	22	8.5	8.0	30	4.5	4.0
7	14.0	12.0	6.0	5.0	15	10.5	9.5	23	8.5	8.0	31	5.0	4.5
8	14.0	11.5	---	---	16	10.0	7.0	24	8.5	6.5			

12026400 SKOOKUMCHUCK RIVER NEAR BUCODA, WASH.

LOCATION.--Lat 46°46'20", long 122°55'23", in SW¼NW¼ sec.22, T.15 N., R.2 W., Thurston County, at gaging station on left bank, 100 ft downstream from State Highway 507 bridge, 3.3 miles southwest of Bucoda, and at mile 6.4.

DRAINAGE AREA.--112 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1968 to September 1971.
Sediment records.--July 1968 to September 1971.

EXTREMES.--1970-71:
Sediment concentrations: Maximum daily, 247 mg/l Dec. 6; minimum, 1 mg/l Oct. 13-16, Apr. 19, Aug. 23-24.
Sediment loads: Maximum daily, 1,400 tons, Jan. 26; minimum, 0.08 tons Oct. 14.

Period of record:
Sediment concentrations: Maximum daily, 376 mg/l Jan. 14, 1970; minimum, 1 mg/l on many days in 1970 and 1971.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	----	----	----	4.0	6.5	4.0	7.0	11.0	12.0	----	----	----
2	----	----	4.5	4.0	6.0	----	8.5	14.5	----	16.5	----	----
3	13.5	----	4.5	4.0	5.0	4.0	8.0	14.5	----	----	19.0	----
4	----	----	4.5	3.0	5.0	5.0	9.0	11.0	13.5	----	----	12.0
5	----	----	7.0	3.0	5.5	4.5	10.0	11.0	----	----	----	----
6	13.5	----	7.0	0.0	4.5	4.5	8.5	11.0	----	16.0	----	----
7	----	----	7.0	4.0	4.5	6.0	8.5	14.5	----	----	21.0	11.5
8	----	----	5.5	5.0	6.5	5.5	8.5	11.5	13.0	----	----	----
9	----	10.5	5.5	5.5	4.5	5.5	6.0	12.0	----	----	----	----
10	10.0	8.5	6.0	4.5	7.0	5.5	7.0	14.0	----	15.0	21.0	----
11	----	----	7.0	4.0	6.5	6.0	7.0	15.5	13.5	----	20.0	12.0
12	----	----	4.5	3.5	6.5	6.0	9.0	14.0	----	----	----	----
13	----	----	5.5	3.5	7.0	6.0	9.5	11.5	----	----	18.0	----
14	9.0	----	5.5	3.5	6.5	6.0	8.0	13.0	----	20.0	17.0	11.0
15	----	----	5.5	4.5	6.0	4.5	5.5	11.5	13.5	----	17.0	----
16	----	----	5.5	4.5	6.5	4.0	5.5	11.0	----	----	----	----
17	----	----	5.0	5.5	7.0	3.5	8.5	11.5	----	21.5	----	----
18	----	----	4.5	6.0	6.0	3.5	9.5	----	15.0	----	19.0	13.0
19	----	----	4.0	6.0	5.5	4.5	8.5	----	----	----	----	----
20	----	----	5.0	5.0	4.5	5.0	5.5	----	----	23.5	----	----
21	9.5	----	5.0	5.0	4.5	5.5	8.5	14.5	----	----	16.5	12.0
22	9.0	----	----	4.5	6.0	7.0	9.0	----	18.0	----	----	13.0
23	8.5	----	----	5.5	5.5	8.0	9.5	----	17.0	----	----	----
24	8.0	----	----	5.5	6.0	6.0	9.5	14.0	----	18.5	14.5	13.5
25	7.0	----	4.5	----	5.0	6.0	9.0	----	14.5	----	----	----
26	7.0	----	4.5	6.0	4.5	6.0	10.0	----	----	----	----	----
27	6.5	----	4.5	6.0	4.5	6.0	9.5	----	----	20.0	----	12.0
28	----	----	5.0	6.0	4.5	7.0	9.5	15.5	----	----	11.0	----
29	7.0	----	4.5	5.0	----	7.0	10.5	----	16.0	----	----	----
30	----	----	5.5	6.0	----	6.5	11.0	----	----	18.5	----	13.0
31	----	----	4.5	5.5	----	6.0	----	----	----	----	14.0	----

12026400 SKOOKUMCHUCK RIVER NEAR BUCODA, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	35	2	.19	80	3	.65	335	10	9.0
2	34	2	.18	71	2	.38	383	13	13
3	35	2	.19	52	2	.28	434	18	21
4	34	2	.18	52	2	.28	446	9	11
5	34	2	.18	54	3	.44	581	115	180
6	40	2	.22	58	3	.47	1500	247	1000
7	36	2	.19	59	3	.48	1200	57	185
8	34	2	.18	71	4	.77	819	36	80
9	34	2	.18	95	4	1.0	560	28	42
10	40	2	.22	99	4	1.1	500	28	38
11	42	2	.23	124	4	1.3	584	30	47
12	41	2	.22	184	10	5.0	500	18	24
13	37	1	.10	172	8	3.7	443	17	20
14	31	1	.08	150	7	2.8	422	17	19
15	34	1	.09	145	6	2.3	522	18	25
16	34	1	.09	156	5	2.1	707	32	61
17	33	2	.18	161	5	2.2	749	39	79
18	33	2	.18	189	6	3.1	570	17	26
19	41	2	.22	206	5	2.8	542	18	26
20	59	5	.80	196	5	2.6	592	21	34
21	168	19	8.6	191	5	2.6	567	17	26
22	216	23	13	182	5	2.5	504	17	23
23	341	63	58	187	6	3.0	606	24	39
24	472	48	61	332	52	47	640	24	41
25	443	21	25	353	26	25	602	22	36
26	326	8	7.0	289	9	7.0	588	18	29
27	221	5	3.0	300	9	7.3	536	18	26
28	161	4	1.7	281	10	7.6	494	17	23
29	130	4	1.4	252	8	5.4	676	42	77
30	107	4	1.2	252	7	4.8	1100	184	546
31	89	3	.72	--	--	--	2240	169	1020
TOTAL	3415	--	184.72	4993	--	145.95	20942	--	3826.0

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1530	48	198	864	35	82	560	11	17
2	1070	26	75	777	33	69	413	8	8.9
3	707	18	34	648	29	51	497	10	13
4	536	15	22	480	20	26	574	12	19
5	443	10	12	472	20	25	508	10	14
6	395	6	6.4	434	22	26	476	4	5.1
7	386	10	10	395	18	19	560	14	21
8	437	12	14	365	17	17	707	26	50
9	742	35	70	289	16	12	752	12	24
10	1230	47	156	371	18	18	819	12	27
11	1240	31	104	522	27	38	1820	112	550
12	945	20	51	560	25	38	2970	116	930
13	756	13	27	584	24	38	2010	62	336
14	696	14	26	536	21	30	1260	31	105
15	1350	104	380	833	56	126	966	15	39
16	2950	126	1000	1180	47	150	777	12	25
17	2420	67	438	945	30	77	602	12	20
18	1710	38	175	763	16	33	446	7	8.4
19	2170	55	322	700	17	32	438	8	9.5
20	2520	52	354	612	14	23	399	5	5.4
21	1640	33	146	536	10	14	358	4	3.9
22	1310	26	92	500	12	16	377	4	4.1
23	1550	32	134	490	9	12	499	27	36
24	2500	82	554	564	17	26	905	59	144
25	4520	107	1310	742	20	40	836	22	50
26	6090	85	1400	760	17	35	831	25	56
27	3360	110	998	724	12	23	1010	33	90
28	1720	72	334	672	10	18	1000	18	49
29	1220	48	158	--	--	--	941	55	140
30	1040	44	124	--	--	--	1530	100	413
31	931	34	85	--	--	--	1610	42	183
TOTAL	50114	--	8809.4	17318	--	1114	27451	--	3396.3

12026400 SKOOKUMCHUCK RIVER NEAR BUCODA, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1100	19	56	206	4	2.2	138	4	1.5
2	846	12	27	208	5	2.8	131	4	1.4
3	684	10	18	226	6	3.7	125	4	1.4
4	570	7	11	244	6	4.0	125	4	1.4
5	499	8	11	244	2	1.3	248	4	2.7
6	470	9	11	223	2	1.2	236	3	1.9
7	483	6	7.8	200	2	1.1	166	2	.90
8	489	18	24	191	2	1.0	164	2	.89
9	1040	92	258	195	2	1.1	158	2	.85
10	1670	47	212	186	4	2.0	134	2	.72
11	1360	23	84	172	2	.93	127	2	.69
12	1020	15	41	176	3	1.4	133	2	.72
13	795	10	21	224	2	1.2	132	2	.71
14	649	6	11	256	4	2.8	137	3	1.1
15	556	9	14	223	4	2.4	131	3	1.1
16	493	9	12	253	6	4.1	135	4	1.5
17	479	5	6.5	389	4	4.2	133	4	1.4
18	430	3	3.5	319	4	3.4	134	4	1.4
19	381	1	1.0	274	4	3.0	143	4	1.5
20	341	6	5.5	271	4	2.9	141	3	1.1
21	322	6	5.2	251	4	2.7	137	2	.74
22	288	6	4.7	224	4	2.4	135	2	.73
23	262	7	5.0	206	4	2.2	135	3	1.1
24	251	4	2.7	198	4	2.1	136	6	2.2
25	238	6	3.9	202	4	2.2	192	8	4.1
26	226	3	1.8	202	4	2.2	198	8	4.3
27	224	5	3.0	188	3	1.5	230	7	4.3
28	233	4	2.5	175	3	1.4	207	6	3.4
29	229	5	3.1	164	3	1.3	194	6	3.1
30	217	3	1.8	155	4	1.7	177	6	2.9
31	--	--	--	144	4	1.6	--	--	--
TOTAL	16845	--	869.0	6789	--	68.03	4712	--	51.75

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	170	5	2.3	93	2	.50	113	6	1.8
2	166	5	2.2	80	2	.43	122	6	2.0
3	163	4	1.8	87	2	.47	166	6	2.7
4	151	4	1.6	95	2	.51	182	6	2.9
5	130	3	1.1	93	2	.50	168	5	2.3
6	127	3	1.0	93	2	.50	163	5	2.2
7	126	3	1.0	89	2	.48	159	4	1.7
8	126	3	1.0	87	2	.47	154	5	2.1
9	124	2	.67	87	3	.70	154	5	2.1
10	113	2	.61	87	4	.94	136	6	2.2
11	117	2	.63	95	4	1.0	134	7	2.5
12	113	2	.61	93	4	1.0	145	6	2.3
13	111	2	.60	80	4	.86	143	5	1.9
14	107	2	.58	70	58	11	143	4	1.5
15	93	2	.50	91	85	21	126	4	1.4
16	93	2	.50	91	42	10	132	4	1.4
17	91	2	.49	82	25	5.5	141	4	1.5
18	89	2	.48	82	15	3.3	141	4	1.5
19	91	2	.49	75	10	2.0	116	5	1.6
20	84	2	.45	59	5	.80	133	6	2.2
21	107	2	.58	80	2	.43	138	8	3.0
22	91	2	.49	91	2	.49	138	6	2.2
23	89	2	.48	89	1	.24	138	6	2.2
24	89	2	.48	93	1	.25	140	6	2.3
25	89	2	.48	105	2	.57	127	5	1.7
26	87	2	.47	105	2	.57	122	5	1.6
27	91	2	.49	105	3	.85	100	4	1.1
28	91	2	.49	105	4	1.1	128	4	1.4
29	91	2	.49	105	4	1.1	145	4	1.6
30	93	2	.50	105	5	1.4	121	4	1.3
31	93	2	.50	107	6	1.7	--	--	--
TOTAL	3396	--	24.06	2799	--	70.66	4168	--	58.2

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 162942
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 18618.07

12026550 HANAFORD CREEK NEAR BUCODA, WASH.

LOCATION.--Lat 46°45'44", long 122°53'47", in NW¼NE¼ sec.26, T.15 N., R.2 W., Lewis County, 0.3 mile upstream from South Hanaford Creek, 4.5 miles northeast of intersection of Harrison Avenue and Interstate Highway 5 in Centralia.

DRAINAGE AREA.--33.7 sq mi.

REMARKS.--Water discharge estimated from stage readings, weather records, and the hydrograph of the Skookumchuck River near Bucoda.

MONTHLY SUMMARY OF WATER AND SUSPENDED-SEDIMENT DISCHARGE
WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Month	Discharge (cfs-days)	Suspended Sediment (tons)
October 1970	168	5
November	1,186	32
December	7,352	319
January 1971	15,090	790
February	3,481	206
March	8,050	913
April	5,095	288
May	718	19
June	431	15
July	305	10
August	140	7
September	113	6
WTR YR 1971	42,129	2,610

12027500 CHEHALIS RIVER NEAR GRAND MOUND, WASH.

LOCATION.--Lat 46°46'34", long 123°02'04", in NE¼NE¼ sec.22, T.15 N., R.3 W., Thurston County, temperature recorder at gaging station on left bank, at downstream side of highway bridge at Meadows, 1.5 miles southwest of Grand Mound, 7.0 miles downstream from Skookumchuck River, and at mile 59.9.

DRAINAGE AREA.--895 sq. mi.

PERIOD OF RECORD.--Water temperatures: March 1952 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 24.0°C July 26, 27, 29, Aug. 10-12; minimum, 3.5°C Jan. 5-8, 14-15.

Period of record:
Water temperatures: Maximum (1952-67, 1970), 26.5°C July 22, 23, 1959; minimum, freezing point several days during January and February 1957.

REMARKS.--Miscellaneous suspended sediment data published for water years 1962-64.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12027500 CHEHALIS RIVER NEAR GRAND MOUND, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12031000 CHEHALIS RIVER AT PORTER, WASH.

LOCATION.--Lat 46°56'17", long 123°18'45", on north line of NE¼ sec.28, T.17 N., R.5 W., Grays Harbor County, at gaging station at bridge on County Highway at mouth of Porter Creek, 0.1 mile west of Porter, and at mile 33.3.

DRAINAGE AREA.--1,294 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971.
Water temperatures: July 1959 to September 1960, October 1961 to September 1971.
Sediment records: October 1961 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 26.5°C Aug. 9; minimum, 2.0°C Jan. 13, 14.
Sediment concentrations: Maximum daily, 157 mg/l Dec. 6; minimum daily, 1 mg/l Sept. 25.
Sediment loads: Maximum daily, 15,900 tons Jan. 27; minimum daily, 1.2 tons Sept. 25.

Period of record:
Water temperatures: Maximum, 27.0°C June 17, 1969; minimum, freezing point Dec. 15, 17, 1967, Dec. 30, 1968, several days during January 1969.
Sediment concentrations: Maximum daily, 452 mg/l Jan. 10, 1967; minimum daily, less than 1 mg/l on many days of most year.
Sediment loads: Maximum daily, 15,900 tons Jan. 27, 1971; minimum daily, less than 0.50 ton on many days most years.

REMARKS.--Dissolved oxygen, Ph, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	0935	2340	.16	.000	.06	.5	.010	.020
DEC.								
21...	0945	9480	.48	.000	.07	.6	.020	.040
JAN.								
04...	1000	10700	--	--	--	--	.030	--
18...	0915	29800	.25	.000	.07	.4	.12	.040
FEB.								
01...	0935	10000	.10	.000	.08	.3	.050	.16
16...	0925	8000	.18	.000	.14	.4	.050	.060
MAR.								
01...	0940	6120	.20	.000	.07	.4	.000	.030
15...	0945	5670	.20	.010	.07	.4	.040	.15
APR.								
05...	0940	6550	.13	.000	.24	.4	--	.17
19...	0945	4330	.26	.000	.07	.3	.050	.10
MAY								
03...	1205	2110	.30	.000	.11	.1	.060	.12
17...	0950	3230	.12	.000	.00	.1	.070	.16
JUNE								
01...	0930	1270	.02	.000	.01	.2	.010	.020
14...	0925	1130	.03	.000	.00	.3	.020	.030
JULY								
06...	1020	950	.03	.000	.03	.3	.040	.040
19...	0945	614	.18	.010	.04	.3	.040	.060
AUG.								
02...	0940	454	.10	.010	.06	.2	--	--
16...	1000	355	.14	.000	.05	.09	.020	.030
SEP.								
06...	1000	865	.18	.010	.03	.8	.020	.050
21...	0930	412	.26	.010	.06	.6	.010	.030

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
23...	95	7.0	4.7	59	9	12.1	250
DEC.							
21...	56	6.9	4.5	43	8	11.5	1100
JAN.							
04...	53	6.9	3.4	39	10	12.4	>16000
18...	45	6.9	6.5	74	20	11.1	1400
FEB.							
01...	53	6.7	8.1	51	10	10.8	700
16...	48	7.0	7.1	67	20	11.2	1800
MAR.							
01...	56	6.9	3.3	42	6	12.5	1000
15...	47	6.8	6.3	56	10	11.1	1000
APR.							
05...	57	7.0	9.1	34	4	10.5	1300
19...	65	6.9	8.7	41	8	10.9	1100
MAY							
03...	78	7.0	14.9	29	3	9.8	<200
17...	71	7.2	11.7	41	4	10.0	900
JUNE							
01...	78	7.3	13.0	42	4	9.6	800
14...	79	7.1	13.5	38	4	9.6	--
JULY							
06...	74	6.9	15.4	31	2	9.6	200
19...	105	7.2	21.3	28	1	7.8	600
AUG.							
02...	120	7.1	--	23	1	8.3	120
16...	96	7.4	20.6	29	1	8.4	<100
SEP.							
06...	95	7.0	15.2	62	5	9.0	500
21...	92	7.0	14.5	29	2	9.1	250

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.5	7.0	4.0	4.5	8.0	3.5	8.5	15.5	13.5	15.0	21.5	16.0
2	19.5	10.0	4.0	4.0	9.5	4.0	9.5	11.5	12.0	16.5	19.0	15.5
3	15.0	5.5	4.5	3.5	5.5	4.0	10.5	15.5	13.0	15.5	20.5	15.5
4	14.0	8.0	4.0	3.5	6.0	4.5	8.5	10.5	12.0	16.0	20.0	16.5
5	14.0	7.0	5.0	3.0	5.5	4.5	11.0	13.5	17.0	15.5	22.0	15.5
6	11.0	9.5	7.0	3.5	6.0	4.5	9.0	11.5	14.5	16.0	20.5	15.0
7	13.0	9.5	4.5	3.0	4.5	5.0	10.0	15.5	11.0	15.0	23.5	18.5
8	11.5	4.5	3.5	6.5	5.5	5.5	8.5	14.5	10.5	16.5	21.5	15.0
9	14.0	10.0	4.0	5.5	4.5	6.0	8.0	13.0	15.5	16.5	26.5	18.5
10	13.0	9.0	6.5	5.5	6.5	6.0	7.0	18.5	14.0	16.0	23.5	16.5
11	13.5	9.5	6.5	4.0	7.0	5.5	8.0	15.0	16.0	15.5	25.5	18.5
12	11.0	9.5	5.5	3.0	5.5	6.5	9.5	16.0	14.5	19.5	20.0	15.5
13	13.0	7.0	5.5	2.0	8.5	8.0	11.0	13.0	14.0	16.5	21.0	18.0
14	10.5	8.5	5.5	2.0	8.5	7.0	9.5	15.5	13.5	20.5	19.0	15.5
15	13.5	4.5	5.5	4.0	7.0	7.0	10.0	13.0	15.5	20.0	22.0	16.5
16	9.5	5.5	5.5	4.0	8.5	7.0	8.0	11.5	16.5	21.5	20.0	15.5
17	11.5	5.5	6.0	5.5	4.5	8.0	10.0	12.0	16.5	19.5	21.5	18.5
18	11.5	9.0	4.5	4.5	8.0	8.5	8.5	12.0	14.5	22.0	19.5	13.0
19	11.5	8.5	4.0	4.0	7.0	8.0	10.5	11.0	16.0	21.5	21.5	16.5
20	10.5	7.0	9.5	5.5	4.5	8.5	10.0	13.0	15.0	24.0	20.0	15.0
21	10.0	5.5	4.5	5.0	6.0	7.0	10.0	13.0	15.0	20.0	20.5	16.5
22	10.0	4.0	3.5	5.5	6.5	6.5	10.0	14.5	17.0	21.5	20.0	14.0
23	10.0	5.0	4.5	6.0	6.0	9.0	10.5	13.0	18.0	18.5	19.5	15.5
24	8.0	9.0	4.5	6.5	4.5	6.0	10.0	14.0	14.0	22.0	21.5	15.0
25	9.0	6.0	3.5	6.5	5.5	7.0	11.0	15.0	15.0	19.5	18.5	15.0
26	6.5	5.0	4.5	8.0	4.0	6.0	11.0	16.0	16.5	22.0	21.5	13.5
27	8.0	5.5	4.5	8.0	4.0	7.0	11.5	10.5	14.5	20.5	19.0	14.0
28	5.0	5.0	5.0	7.0	4.0	8.0	11.0	16.0	14.5	---	25.5	12.0
29	9.0	4.0	4.0	6.5	---	8.5	13.0	10.5	13.5	20.0	19.0	13.0
30	6.0	4.5	5.5	7.0	---	8.0	13.0	10.5	16.5	21.0	19.0	11.5
31	10.5	---	5.5	5.5	---	8.0	---	13.5	---	20.0	16.5	---
MONTH	11.5	7.0	5.0	5.0	6.0	6.5	10.0	13.5	14.5	19.0	21.0	15.5

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	390	4	4.2	860	2	4.6	4760	12	154
2	375	4	4.1	780	2	4.2	5770	22	343
3	363	4	3.9	724	3	5.9	6280	18	305
4	354	3	2.9	673	2	3.6	7410	33	660
5	358	4	3.9	676	2	3.7	7950	33	708
6	353	4	3.8	734	2	4.0	14100	157	5980
7	373	3	3.0	771	3	6.2	25000	125	8440
8	374	4	4.0	1000	7	19	29100	97	7620
9	381	3	3.1	2100	18	102	32100	61	5290
10	384	3	3.1	2400	11	71	25300	43	2940
11	442	4	4.8	2690	14	102	17000	42	1930
12	450	4	4.9	4260	29	334	14700	42	1670
13	415	3	3.4	4670	24	303	11800	32	1020
14	390	3	3.2	3500	13	123	9080	29	711
15	369	2	2.0	2700	8	58	9240	36	898
16	355	3	2.9	2460	6	40	13100	55	1950
17	351	3	2.8	2770	7	52	17500	73	3450
18	351	2	1.9	2960	8	64	18600	52	2610
19	359	2	1.9	3200	10	86	16200	30	1310
20	450	5	6.1	3060	10	83	12000	24	778
21	691	12	22	2820	8	61	9380	19	481
22	1260	23	78	2550	7	48	7780	13	273
23	2270	44	270	2530	6	41	6510	13	229
24	4080	61	672	4420	60	717	5820	15	236
25	3890	30	315	7720	118	2460	5310	12	172
26	2760	14	104	6960	43	808	4870	10	131
27	2060	8	44	5880	20	318	4550	14	172
28	1590	4	17	6070	22	361	4770	22	283
29	1300	4	14	5230	13	184	7070	40	764
30	1100	4	12	4460	9	108	12800	84	2900
31	961	3	7.8	--	--	--	18200	120	5900
TOTAL	29599	--	1625.7	91628	--	6575.2	384050	--	60308

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	23200	78	4890	12000	42	1360	6080	12	197
2	23400	46	2910	9500	38	975	5360	10	145
3	15900	27	1160	7980	33	711	5990	12	194
4	10500	24	680	7140	28	540	7490	24	485
5	7740	20	418	6650	17	305	7380	13	259
6	6320	14	239	5970	15	242	6580	12	213
7	5500	12	178	5420	11	161	6910	12	224
8	5310	10	143	4990	12	162	8970	37	896
9	7190	22	427	4660	10	126	9330	26	655
10	10200	57	1570	5010	13	176	9750	30	790
11	11700	40	1260	5900	18	287	14400	120	4670
12	10700	23	664	5920	20	320	20400	90	4960
13	8600	17	395	5410	9	131	24300	47	3080
14	7170	10	194	5360	10	145	25400	30	2060
15	8580	84	1940	6690	24	434	19900	25	1340
16	16800	125	5670	8000	71	1530	14900	24	966
17	25800	67	4670	10000	53	1430	11500	22	683
18	29700	42	3370	8930	25	603	8890	17	408
19	30400	32	2630	7920	22	470	7330	15	297
20	27200	46	3380	7050	16	305	6390	8	138
21	26400	34	2420	6200	11	184	5690	10	154
22	23000	29	1800	5680	10	153	5360	10	145
23	18500	27	1350	5410	8	117	6160	12	200
24	20800	30	1680	5500	16	238	8640	38	886
25	28000	52	3930	7320	32	632	9880	40	1070
26	37000	96	9590	7880	30	638	9580	32	828
27	46500	127	15900	7500	16	324	12600	47	1600
28	37500	78	7900	6910	14	261	13900	35	1310
29	26000	60	4210	--	--	--	13800	25	932
30	20000	42	2270	--	--	--	14300	34	1310
31	15000	34	1380	--	--	--	15500	52	2180
TOTAL	590610	--	89218	192900	--	12960	342660	--	33275

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	15400	31	1290	2250	7	43	1270	7	24
2	12500	21	709	2160	6	35	1240	4	13
3	9620	19	494	2110	2	11	1210	3	9.8
4	7650	18	372	2080	4	22	1160	4	13
5	6480	13	227	2050	2	11	1120	6	18
6	5790	14	219	1980	2	11	1180	6	19
7	5420	13	190	1890	4	20	1180	6	19
8	5140	13	180	1790	3	14	1120	4	12
9	6160	23	383	1720	4	19	1110	6	18
10	8800	47	1120	1660	4	18	1060	4	11
11	10400	38	1070	1600	2	8.6	1040	6	17
12	9980	23	620	1540	8	33	1040	6	17
13	8670	18	421	1550	2	8.4	1030	6	17
14	7200	15	292	1740	5	23	1140	6	18
15	6120	12	198	1820	8	39	1190	7	22
16	5400	9	131	1950	6	32	1130	6	18
17	5100	9	124	3050	21	173	1040	7	20
18	4800	10	130	2890	13	101	1010	7	19
19	4280	14	162	2380	8	51	1050	6	17
20	3910	20	211	2160	4	23	1150	7	22
21	3650	16	158	2040	8	44	1120	6	18
22	3440	13	121	1900	6	31	1030	6	17
23	3260	11	97	1760	7	33	995	6	16
24	3080	13	108	1660	4	18	1010	6	16
25	2910	10	79	1620	6	26	1470	17	67
26	2760	14	104	1630	4	18	2330	23	145
27	2640	12	86	1610	4	17	2030	10	55
28	2570	8	56	1510	6	24	1740	8	38
29	2470	8	53	1420	4	15	1540	6	25
30	2360	7	45	1340	3	11	1400	7	26
31	--	--	--	1300	7	25	--	--	--
TOTAL	177960	--	9450	58160	--	958.0	37135	--	766.8

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1250	7	24	454	4	4.9	440	6	7.1
2	1140	7	22	454	2	2.5	783	11	23
3	1070	4	12	442	3	3.6	1270	14	48
4	1000	6	16	424	3	3.4	1270	6	21
5	960	6	16	424	2	2.3	1010	5	14
6	945	8	20	415	4	4.5	871	7	16
7	930	2	5.0	409	4	4.4	908	4	9.8
8	895	4	9.7	403	2	2.2	799	6	13
9	880	4	9.5	394	3	3.2	711	4	7.7
10	890	4	9.6	382	2	2.1	649	2	3.5
11	955	2	5.2	373	6	6.0	619	4	6.7
12	1010	6	16	367	2	2.0	582	3	4.7
13	965	6	16	356	4	3.8	590	4	6.4
14	870	4	9.4	356	3	2.9	562	2	3.0
15	800	3	6.5	347	3	2.8	532	2	2.9
16	735	2	4.0	354	3	2.9	499	3	4.0
17	685	6	11	355	3	2.9	469	4	5.1
18	645	6	10	345	4	3.7	460	4	5.0
19	614	2	3.3	337	5	4.5	450	2	2.4
20	590	2	3.2	337	5	4.5	430	2	2.3
21	562	2	3.0	329	5	4.4	418	4	4.5
22	546	3	4.4	353	2	1.9	423	3	3.4
23	530	4	5.7	390	4	4.2	420	3	3.4
24	526	3	4.3	414	3	3.4	425	2	2.3
25	518	4	5.6	395	4	4.3	444	1	1.2
26	510	2	2.8	385	3	3.1	485	2	2.6
27	486	2	2.6	373	2	2.0	554	4	6.0
28	474	2	2.6	365	6	5.9	623	4	6.7
29	462	3	3.7	361	4	3.9	740	7	14
30	450	3	3.6	363	4	3.9	1100	16	48
31	450	5	6.1	373	6	6.0	--	--	--
TOTAL	23343	--	272.8	11829	--	112.1	19536	--	297.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1959410
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 215819.3

12033305 CHEHALIS RIVER ABOVE SATSOP RIVER AT FULLER, WASH.

LOCATION.--Lat 46°58'43", long 123°28'42", in NW¼NE¼ sec.7, T.17 N., R.6 W., Grays Harbor County, at county road bridge at Fuller, 0.1 mile upstream from Satsop River, 1.6 miles south of Satsop, and at mile 20.4.

DRAINAGE AREA.--1,455 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to August 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO AUGUST 1971

DATE	TIME	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.							
23...	1000	.16	.000	.03	.47	.000	.010
DEC.							
21...	1015	.33	.000	.07	.66	.120	.130
JAN.							
04...	1100	--	--	--	--	--	--
18...	0940	--	--	--	--	--	--
FEB.							
01...	1005	--	--	--	--	--	--
16...	1010	--	--	--	--	--	--
MAR.							
01...	1020	--	--	--	--	--	--
APR.							
19...	1045	--	--	--	--	--	--
MAY							
03...	1230	--	--	--	--	--	--
17...	1020	--	--	--	--	--	--
JUNE							
01...	1000	--	--	--	--	--	--
14...	1000	--	--	--	--	--	--
JULY							
06...	1055	--	--	--	--	--	--
19...	1015	--	--	--	--	--	--
AUG.							
02...	1015	--	--	--	--	--	--
16...	1030	--	--	--	--	--	--

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
NOV.							
23...	67	7.0	4.7	55	6	11.9	1500
DEC.							
21...	58	6.9	--	43	8	11.3	800
JAN.							
04...	55	6.9	--	43	10	11.8	>16000
18...	45	6.8	--	75	25	11.3	1400
FEB.							
01...	54	6.7	--	56	15	10.4	900
16...	51	7.0	--	61	20	11.2	2300
MAR.							
01...	55	6.7	--	42	5	12.4	700
APR.							
19...	64	6.9	--	44	9	10.7	400
MAY							
03...	74	7.0	--	31	4	9.5	250
17...	70	7.2	--	45	4	10.2	600
JUNE							
01...	80	7.3	--	40	4	9.4	500
14...	78	7.0	--	31	3	9.5	--
JULY							
06...	74	6.9	--	31	2	9.3	150
19...	105	7.3	--	28	1	7.7	1000
AUG.							
02...	115	7.1	--	29	1	8.6	500
16...	92	7.2	--	27	3	8.8	100

12035000 SATSOP RIVER NEAR SATSOP, WASH.

LOCATION.--Lat 47°00'03", long 123°29'37", in NE¼SE¼ sec.36, T.18 N., R.7 W., Grays Harbor County, at gaging station at bridge on old U.S. Highway 410, 0.6 mile west of Satsop, and 2.3 miles upstream from mouth.

DRAINAGE AREA.--299 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1971 (discontinued). Sediment records --November 1961 to June 1965 (partial-record station).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	1020	1550	.00	.000	.00	.41	.000	.000
DEC.								
21...	1030	3090	.12	.000	.01	.32	.000	.010
JAN.								
04...	1115	2520	.00	.000	.00	.16	.010	.040
18...	1000	7640	.03	.000	.00	.25	.050	.060
FEB.								
01...	1030	4120	.02	.000	.01	--	.010	.090
16...	1025	5640	.06	.000	.04	.34	.030	.040
MAR.								
01...	1035	2350	.81	.000	.03	.25	.000	.010
15...	1020	4590	.18	.010	.06	.27	.030	.080
APR.								
05...	1015	2800	.15	.000	.12	.66	--	.16
19...	1100	1880	.21	.000	.07	.14	.050	.080
MAY								
03...	1240	1520	.18	.000	.05	.05	.050	.10
17...	1040	1880	.11	.000	.00	.07	.040	.10
JUNE								
01...	1015	753	.01	.000	.00	.09	.000	.010
14...	1015	762	.01	.000	.00	.11	.010	.010
JULY								
06...	1120	610	.08	.000	.02	.14	.020	.020
19...	1030	514	.23	.010	.13	.19	.020	.030
AUG.								
02...	1035	408	.08	.000	.02	.14	.010	.020
16...	1100	298	.08	.000	.02	.11	.010	.010
SEP.								
06...	1050	717	.14	.000	.04	.43	.000	.010
21...	1020	387	.20	.000	.06	.30	.000	.010

12035000 SATSOP RIVER NEAR SATSOP, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
23...	61	7.1	4.5	16	1	12.4	170
DEC.							
21...	58	7.1	5.1	18	4	12.1	140
JAN.							
04...	54	7.1	3.7	2	5	13.0	<100
18...	45	6.9	6.7	33	20	12.0	270
FEB.							
01...	49	6.9	7.3	23	4	11.5	100
16...	42	7.0	6.5	33	15	11.8	200
MAR.							
01...	50	6.9	3.6	18	1	12.8	100
15...	45	6.9	5.4	18	3	12.2	100
APR.							
05...	48	7.1	8.4	12	2	11.6	140
19...	54	7.0	8.7	13	2	11.9	200
MAY							
03...	54	7.2	13.3	11	2	11.9	70
17...	48	7.1	8.8	25	3	11.9	240
JUNE							
01...	60	7.4	10.6	21	3	11.0	120
14...	59	7.2	11.5	12	1	11.3	--
JULY							
06...	60	6.9	13.2	9	1	11.1	60
19...	87	7.3	18.3	11	1	9.1	300
AUG.							
02...	85	7.2	15.4	9	1	9.7	260
16...	68	7.1	16.4	11	1	9.6	<40
SEP.							
06...	77	7.1	13.0	14	2	10.5	600
21...	118	7.0	12.0	17	1	10.6	200

12035100 CHEHALIS RIVER NEAR MONTESANO, WASH.

LOCATION.--Lat 46°57'45", long 123°36'12", near center of N½ sec.18, T.17 N., R.7 W., Grays Harbor County, at State Highway 107 bridge, 0.1 mile upstream from Wynoochee River, 1.3 miles south of Montesano, and at mile 13.2.

DRAINAGE AREA.--1,782 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	1100	4440	--	--	--	--	--	--
DEC.								
21...	1050	14200	--	--	--		--	--
JAN.								
04...	1130	16200	.12	.010	.08	.46	.020	.070
18...	1050	40000	.21	.000	.04	.43	.040	.060
FEB.								
01...	1050	16000	.08	.000	.06	--	.020	.16
16...	1045	16100	.12	.000	.06	.34	.040	.060
MAR.								
01...	1050	9700	.26	.000	.17	.45	.010	.020
15...	1045	27900	.21	.010	.05	.38	.030	.15
APR.								
05...	1035	10400	.20	.000	.07	.41	--	.10
19...	1125	6920	.23	.000	.08	.29	.050	.090
MAY								
03...	1300	4040	.16	.000	.05	.18	.060	.13
17...	1115	5020	.11	.000	.01	.16	.060	.10
JUNE								
01...	1030	2240	--	--	--	--	--	--
14...	1030	2180	.04	.010	.01	.25	.020	.030
JULY								
06...	1145	1710	.04	.000	.01	.52	.030	.030
19...	1050	1250	.26	.010	.17	.26	.030	.040
AUG.								
02...	1110	964	.17	.000	.06	.20	.020	.040
16...	1200	740	--	.000	.05	.09	.010	.030
SEP.								
06...	1115	1630	.15	.000	.06	.55	.010	.040
21...	1045	880	.17	.000	.01	.46	.010	.030

12035100 CHEHALIS RIVER NEAR MONTESANO, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
23...	64	7.0	4.5	37	4	11.9	210
DEC.							
21...	57	6.9	4.5	37	8	11.5	500
JAN.							
04...	55	6.9	3.7	41	10	12.0	16000
18...	46	6.9	6.5	66	25	11.4	1100
FEB.							
01...	52	6.8	7.9	53	15	10.5	800
16...	49	6.9	7.4	50	20	11.3	1100
MAR.							
01...	57	6.8	4.2	35	4	12.3	370
15...	46	6.9	6.3	58	15	11.1	800
APR.							
05...	47	7.1	9.6	25	4	10.8	370
19...	61	6.9	9.3	30	6	11.0	350
MAY							
03...	68	7.0	14.5	23	4	9.6	300
17...	60	7.1	10.7	40	4	10.4	1800
JUNE							
01...	73	7.3	--	34	3	9.9	600
14...	74	7.0	13.8	21	2	9.6	--
JULY							
06...	70	6.9	15.2	21	2	9.5	200
19...	99	7.3	20.7	23	1	8.2	300
AUG.							
02...	102	7.2	18.5	20	2	8.8	400
16...	88	7.2	20.2	20	3	8.3	<100
SEP.							
06...	92	7.1	15.6	24	3	8.5	>1600
21...	90	7.0	--	27	2	8.9	220

12037400 WYNOOCHEE RIVER ABOVE BLACK CREEK NEAR MONTESANO, WASH.

LOCATION.--Lat 47°00'42", long 123°39'35", in SE¼SE¼ sec.27, T.18 N., R.8 W., Grays Harbor County, temperature recorder at gaging station on left bank, 2,000 ft upstream from Black Creek and 3.5 miles northwest of Montesano, and at mile 5.9.

DRAINAGE AREA.--155 sq mi.

PERIOD OF RECORD.--Water temperature: October 1969 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 24.0°C Aug. 10; minimum, 3.0°C Jan. 15.

Period of record:
Water temperatures: Maximum, 24.0°C Aug. 10, 1971; minimum, 3.0°C Jan. 15, 1971.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	13.0	9.5	8.5	5.5	5.0	5.5	5.0	6.0	6.0	4.5	4.0
2	15.0	13.0	9.0	8.5	5.0	5.0	5.5	5.0	6.0	5.5	4.5	4.0
3	14.5	13.5	9.0	8.5	5.0	5.0	5.0	5.0	5.5	5.0	4.5	4.0
4	14.5	14.0	9.0	8.5	5.5	5.0	5.0	4.5	5.0	4.5	5.0	4.0
5	14.0	13.0	9.0	9.0	5.5	5.5	4.5	4.5	5.0	4.5	4.5	4.5
6	14.0	12.0	9.5	9.0	5.5	5.5	5.0	4.5	5.0	4.5	4.5	4.5
7	14.0	13.0	9.5	9.5	6.0	5.5	5.5	5.0	4.5	4.5	5.0	4.5
8	14.0	13.5	9.5	9.0	6.0	5.5	5.5	5.5	4.5	4.0	5.0	4.5
9	14.5	14.0	9.0	9.0	5.5	5.5	6.0	5.5	4.5	4.5	4.5	4.5
10	14.5	14.0	9.0	8.5	6.0	5.5	5.5	5.0	5.5	4.5	5.0	4.5
11	14.5	13.5	8.5	8.5	6.0	6.0	5.0	4.5	5.5	5.5	4.5	4.5
12	13.5	13.0	8.5	8.5	6.0	5.5	4.5	4.5	5.5	5.5	5.0	4.5
13	13.5	12.0	8.5	8.0	6.0	5.5	4.5	4.0	5.5	5.5	5.0	4.5
14	13.0	11.5	8.0	8.0	6.0	6.0	4.0	3.5	6.0	5.5	5.0	5.0
15	13.0	11.5	9.0	8.0	6.0	6.0	4.5	3.0	6.0	5.5	5.5	5.0
16	11.5	10.5	9.0	9.0	6.0	6.0	4.5	4.0	5.5	5.5	5.5	4.5
17	11.5	10.5	9.0	8.5	6.0	6.0	5.0	4.5	5.5	5.5	5.5	4.5
18	11.5	11.0	8.5	8.5	6.0	5.5	5.5	5.0	6.0	5.5	6.0	4.5
19	11.5	11.0	8.5	8.5	6.0	5.5	5.5	5.0	6.0	5.5	6.5	5.0
20	11.0	10.0	8.5	7.0	5.5	5.5	5.0	5.0	5.5	5.5	6.5	5.0
21	10.0	9.5	7.0	5.5	5.5	5.5	5.5	5.0	5.5	5.5	6.0	5.5
22	9.5	9.0	5.5	4.5	5.5	5.5	5.5	5.5	6.0	5.5	6.0	6.0
23	9.0	9.0	6.0	4.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0
24	9.0	9.0	6.5	6.0	5.5	5.5	5.5	5.5	6.0	5.5	6.0	5.5
25	9.0	9.0	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.0	5.5	5.0
26	9.0	8.5	6.5	6.0	5.5	5.5	5.5	5.5	5.0	4.0	5.5	5.5
27	9.0	8.0	6.0	6.0	5.5	5.5	5.5	5.5	4.5	3.5	5.5	5.0
28	8.0	8.0	6.0	5.5	5.5	5.5	5.5	5.5	4.5	4.0	5.5	5.0
29	8.0	8.0	5.5	5.5	5.5	5.0	5.5	5.5	---	---	5.5	5.5
30	8.0	8.0	5.5	5.5	5.5	5.5	6.0	5.5	---	---	5.5	5.0
31	9.5	8.0	---	---	5.5	5.5	6.0	6.0	---	---	5.0	4.5
MONTH	15.0	8.0	9.5	4.5	6.0	5.0	6.0	3.0	6.0	3.5	6.5	4.0

12037400 WYNOOCHEE RIVER ABOVE BLACK CREEK NEAR MONTESANO, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.

LOCATION.--Lat 47°35'46", long 123°37'23", in SW¼ sec.6, T.24 N., R.7 W., Jefferson County, Olympic National Park, on right bank at gaging station, 15.5 miles northeast of Amanda Park, and at mile 5.2.

DRAINAGE AREA.--74.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1965 to September 1971.
Water temperatures: March 1965 to September 1971.
Sediment records: April 1965 to September 1971 (partial-record station).

EXTREMES.--1970-71:
Water temperatures: Maximum, 10.5°C Aug. 10, 11, 19, 20; minimum, 1.0°C during period Dec. 16 to Jan. 20 and Mar. 1, 2.

Period of record:
Water temperatures: Maximum, 14.5°C Aug. 7, 16-18, 1965; minimum, 1.0°C Jan. 31, 1968, sometime during period Dec. 16, 1970 to Jan. 20, 1971, Mar. 1, 2, 1971.

REMARKS.--Recorder stopped Dec. 16 to Jan. 20; range in temperature, 1.0°C to 3.5°C.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
OCT.										
15...	1025	138	4.7	18	.8	1.9	.0	44	0	36
DEC.										
16...	1030	985	4.3	11	.6	1.3	.1	29	0	24
JAN.										
21...	1400	1030	4.5	11	.6	1.4	.2	29	0	24
MAR.										
18...	--	334	5.4	14	2.7	1.8	.2	43	0	35
APR.										
29...	1030	692	4.9	12	.6	1.4	.3	31	0	25
JUNE										
17...	1020	1170	4.3	10	.8	1.2	.1	29	0	24
AUG.										
03...	1000	1130	3.7	8.4	.2	1.3	.1	26	0	21
SEP.										
16...	1630	326	5.1	13	.2	1.4	.2	42	0	34

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
OCT.										
15...	14	.4	.0	.00	.010	66	62	49	13	107
DEC.										
16...	7.6	.6	.1	.00	.000	42	40	30	6	68
JAN.										
21...	8.0	1.1	.1	.1	--	46	41	30	6	71
MAR.										
18...	12	1.1	.2	.02	.040	59	59	46	11	87
APR.										
29...	9.8	1.8	.2	--	--	--	46	32	7	76
JUNE										
17...	.0	.7	.1	.05	.010	--	31	28	4	58
AUG.										
03...	4.3	.6	.1	.07	.010	52	32	22	0	53
SEP.										
16...	8.5	.7	.1	.06	--	56	50	33	0	85

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT. 15...	7.4	6.2	0	3	--	--	--	--	--	--
DEC. 16...	7.2	3.3	0	20	--	--	--	--	--	--
JAN. 21...	7.1	2.7	0	4	--	--	--	--	--	--
MAR. 18...	7.7	2.6	--	20	--	--	--	--	--	--
APR. 29...	7.7	4.5	--	20	--	--	--	--	--	--
JUNE 17...	7.4	5.0	--	20	--	--	--	--	--	--
AUG. 03...	8.0	8.0	4	--	--	--	--	--	--	--
SEP. 16...	7.5	9.7	4	3	6	0	3	0	170	10

DATE	TEMP-ERATURE (DEG C)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)
SEP. 16...	9.7	.00	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	PARA-THION (UG/L)	METHYL PARA-THION (UG/L)	MALA-THION (UG/L)	DI-AZINON (UG/L)
SEP. 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	3.5	4.5	3.5	5.0	4.5	7.0	6.0	9.0	8.0	9.0	8.5
2	4.0	3.5	4.0	3.0	5.0	4.5	8.0	6.0	9.0	7.0	9.0	8.5
3	4.0	3.5	4.5	3.0	5.0	4.5	8.5	6.0	8.5	8.0	9.0	9.0
4	4.5	3.5	3.5	3.0	5.5	5.0	7.0	6.5	9.0	8.0	9.0	9.0
5	4.5	4.0	4.0	3.5	6.0	4.5	6.5	6.5	9.5	8.0	9.0	9.0
6	4.0	4.0	4.5	3.5	5.5	4.5	6.5	6.0	9.5	8.0	9.0	8.0
7	4.0	4.0	4.5	3.5	5.0	4.5	8.0	6.0	9.5	8.0	9.0	8.0
8	4.0	3.5	4.5	3.5	5.0	4.5	7.0	6.5	10.0	8.5	9.0	8.5
9	3.5	3.5	4.5	3.0	5.5	4.5	6.5	6.5	10.0	8.5	9.0	8.5
10	3.5	2.0	4.5	3.5	5.5	5.0	6.5	6.0	10.5	8.5	9.0	8.5
11	3.5	2.0	5.0	4.0	5.5	5.0	6.0	5.5	10.5	8.5	9.0	8.5
12	3.5	3.5	4.5	4.0	5.5	5.0	7.0	5.5	10.0	8.5	9.0	8.0
13	4.0	3.5	4.0	4.0	5.0	5.0	8.0	6.0	9.5	9.0	9.0	8.0
14	3.5	3.5	4.5	4.0	5.0	5.0	8.0	6.0	9.5	9.0	8.5	8.0
15	4.0	3.5	4.5	4.0	5.5	5.0	8.0	6.0	9.5	8.5	9.0	8.0
16	3.5	3.5	4.0	4.0	6.5	5.0	8.0	6.0	9.5	8.5	10.0	8.0
17	4.0	3.5	5.0	3.5	6.5	5.5	8.0	6.0	9.5	8.5	9.0	8.5
18	3.5	3.5	4.5	4.0	6.0	5.5	8.0	6.0	10.0	9.0	9.0	8.5
19	4.5	3.5	5.0	4.5	6.0	5.5	8.0	6.0	10.5	9.0	9.5	8.5
20	4.0	4.0	5.0	4.0	6.0	5.5	8.5	6.5	10.5	9.5	9.5	9.0
21	4.0	3.5	5.5	4.0	7.0	5.5	8.5	6.5	9.5	9.0	9.0	8.5
22	3.5	3.5	5.5	4.0	6.0	5.5	8.5	6.5	9.0	8.5	9.5	8.5
23	4.0	3.5	5.5	4.0	5.5	5.5	8.5	6.5	9.5	8.5	9.5	9.0
24	4.5	3.5	4.5	4.0	5.5	5.5	8.5	6.5	10.0	9.0	9.0	9.0
25	5.0	3.5	4.5	4.0	6.0	5.5	9.0	6.5	10.0	9.5	9.0	8.5
26	4.5	3.5	5.0	4.0	6.5	5.5	9.0	7.0	9.5	8.5	8.5	8.5
27	3.5	3.5	5.5	4.0	6.5	6.0	9.0	7.0	9.5	9.0	8.5	7.0
28	3.5	3.5	5.5	4.0	6.5	6.0	9.0	7.0	10.0	9.0	7.0	6.5
29	3.5	3.5	5.0	4.5	7.0	6.0	9.5	7.0	10.0	9.5	6.5	6.0
30	4.0	3.5	4.5	4.0	6.5	6.0	9.5	8.0	10.0	9.5	6.0	5.0
31	---	---	5.0	4.0	---	---	9.0	8.0	9.5	9.0	---	---
MONTH	5.0	2.0	5.5	3.0	7.0	4.5	9.5	5.5	10.5	7.0	10.0	5.0

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT.					JUNE				
15.....	1040	145	2	0.78	16.....	1550	1150	5	16
JAN.					AUG.				
21.....	1420	1030	1	2.8	03.....	1000	1130	5	15
MAR.					SEPT.				
18.....	1210	334	4	3.6	16.....	1420	326	1	0.88
APR.									
29.....	1125	692	8	15					

12041200 HOH RIVER AT U.S. HIGHWAY 101, NEAR FORKS, WASH.

LOCATION.--Lat 47°48'25", long 124°14'59", in NE¼NE¼ sec.33, T.27 N., R.12 W., Jefferson County, temperature recorder at gaging station on left bank 250 ft downstream from U.S. Highway 101, 1.0 mile downstream from Hell Roaring Creek, 11.5 miles southeast of Forks, and at mile 15.4.

DRAINAGE AREA.--253 sq mi.

PERIOD OF RECORD.--November 1970 to April 1971 (discontinued).

EXTREMES.--November 1970 to April 1971.
Water temperatures: Maximum, 9.0°C Apr. 13; minimum, 2.0°C Jan. 11-14, Feb. 27.

TEMPERATURE (°C) OF WATER, NOVEMBER 1970 TO APRIL 1971

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

12053000 DOSEWALLIPS RIVER NEAR BRINNON, WASH.

LOCATION.--Lat 47°43'35", long 123°00'30", in SW¼SW¼ sec.24, T.26 N., R.3 W., Jefferson County, temperature recorder at discontinued gaging station on left bank, 0.6 mile upstream from Corrigenda Ranger Station, 5.5 miles northwest of Brinnon, and at mile 7.0.

DRAINAGE AREA.--93.5 sq mi.

PERIOD OF RECORD.--Water temperature: October 1969 to January 1971 (discontinued).

EXTREMES.--October 1970 to January 1971:
Water temperatures: Maximum, 10.5°C Oct. 3; minimum, freezing point Jan. 15.

Period of record:
Water temperatures: Maximum, 14.0°C Aug. 11, 1970; minimum, freezing point Jan. 15, 1971.

TEMPERATURE (°C) OF WATER, OCTOBER TO JANUARY 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	8.5	6.0	5.5	3.0	1.5	4.0	3.5	---	---	---	---
2	10.0	8.5	6.0	5.5	3.5	2.0	3.5	3.0	---	---	---	---
3	10.5	9.0	5.5	5.5	3.0	1.0	3.5	3.0	---	---	---	---
4	9.5	9.0	6.0	5.5	3.5	3.0	3.0	3.0	---	---	---	---
5	9.0	8.0	6.5	6.0	3.5	3.0	3.0	2.0	---	---	---	---
6	8.0	6.5	7.0	6.0	4.5	3.5	3.5	3.0	---	---	---	---
7	8.0	6.0	6.5	6.5	5.0	4.5	4.5	3.5	---	---	---	---
8	9.0	7.0	6.5	6.0	5.0	4.5	4.5	4.0	---	---	---	---
9	9.0	8.0	6.0	5.5	4.5	4.0	4.5	3.5	---	---	---	---
10	9.0	8.5	6.0	5.5	4.5	4.5	4.0	3.5	---	---	---	---
11	9.0	8.5	6.5	6.0	4.5	4.5	3.5	2.0	---	---	---	---
12	8.5	7.0	6.5	5.5	4.5	4.0	3.0	1.5	---	---	---	---
13	7.0	6.0	6.0	5.0	5.0	4.5	1.5	1.0	---	---	---	---
14	7.0	6.0	6.0	5.5	5.0	4.5	3.0	0.5	---	---	---	---
15	7.0	6.0	6.5	6.0	4.5	3.5	1.5	0	---	---	---	---
16	7.0	6.0	6.5	6.0	5.0	4.0	3.5	1.5	---	---	---	---
17	8.0	5.5	6.5	6.0	5.5	5.0	4.5	3.5	---	---	---	---
18	8.5	7.0	6.0	5.5	5.0	4.5	4.5	4.5	---	---	---	---
19	8.0	7.0	6.0	5.5	5.0	4.0	4.5	3.0	---	---	---	---
20	8.0	7.0	5.5	4.5	4.5	4.5	4.5	4.0	---	---	---	---
21	7.0	6.5	4.5	3.0	4.5	4.0	---	---	---	---	---	---
22	7.0	6.5	3.0	2.0	4.0	3.5	---	---	---	---	---	---
23	6.5	6.0	3.5	2.0	4.0	3.5	---	---	---	---	---	---
24	6.5	6.0	5.0	3.5	3.5	3.5	---	---	---	---	---	---
25	6.5	5.5	4.5	4.0	3.5	3.0	---	---	---	---	---	---
26	5.5	5.0	4.0	4.0	4.0	3.5	---	---	---	---	---	---
27	5.5	4.5	4.0	3.5	4.0	3.0	---	---	---	---	---	---
28	5.5	5.0	4.0	3.5	3.0	1.0	---	---	---	---	---	---
29	5.5	5.0	4.0	3.5	3.5	2.0	---	---	---	---	---	---
30	5.5	4.5	4.0	2.0	4.0	3.0	---	---	---	---	---	---
31	6.5	5.5	---	---	4.0	4.0	---	---	---	---	---	---
MONTH	10.5	4.5	7.0	2.0	5.5	1.0	---	---	---	---	---	---

12056500 NORTH FORK SKOKOMISH RIVER BELOW STAIRCASE RAPIDS, NEAR HOODSPORT, WASH.

LOCATION.--Lat 47°30'52", long 123°19'43", in NW¼ sec.4, T.23 N., R.5 W., Mason County, Olympic National Park, temperature recorder at gaging station on left bank 1.2 miles upstream from Lake Cushman, 2.8 miles upstream from Dry Creek, 11.3 miles northwest of Hoodsport, and at mile 29.2.

DRAINAGE AREA.--57.2 sq mi.

PERIOD OF RECORD.--Water temperatures: April 1965 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 10.0°C Aug. 8-10, 12; minimum, 2.0°C Jan. 15., 16.

Period of record:
Water temperatures: Maximum, 14.0°C Aug. 17, 18, 1965; minimum (1965-67, 68-70), 0.5°C Dec. 27, 1965.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12056500 NORTH FORK SKOKOMISH RIVER BELOW STAIRCASE RAPIDS, NEAR HOODSPORT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	4.5	4.5	4.0	5.5	5.0	6.0	5.5	9.5	9.0	9.0	8.5
2	5.0	4.5	4.5	4.0	5.0	5.0	6.5	5.5	9.5	8.5	8.5	8.5
3	5.0	5.0	4.5	4.0	5.0	4.5	7.0	5.5	9.0	8.5	8.5	8.5
4	5.0	5.0	4.5	4.0	5.5	5.0	6.5	5.5	9.5	9.0	9.0	8.5
5	5.0	5.0	4.0	4.0	6.0	5.0	6.0	5.5	9.5	9.0	9.0	9.0
6	5.0	5.0	5.0	4.0	5.5	5.0	6.0	5.5	9.5	9.0	9.0	8.5
7	5.0	5.0	5.0	4.0	5.0	5.0	6.5	5.5	9.5	9.0	8.5	8.0
8	5.0	4.5	5.0	4.0	5.0	5.0	6.5	6.0	10.0	9.0	8.5	8.0
9	4.5	4.5	5.0	4.0	6.0	5.0	6.0	6.0	10.0	9.0	8.5	8.0
10	4.5	4.5	5.0	4.0	6.0	5.0	6.0	5.5	10.0	9.5	8.0	8.0
11	4.5	4.0	5.0	4.0	5.5	5.0	6.0	5.5	9.5	9.0	8.5	8.0
12	5.0	4.5	4.0	4.0	5.5	5.0	6.5	5.5	10.0	9.0	8.0	8.0
13	5.0	3.5	4.0	4.0	5.5	5.0	7.0	5.5	9.5	9.0	8.0	8.0
14	3.5	3.5	4.5	4.0	5.5	5.0	7.0	6.0	9.5	9.0	8.0	7.0
15	4.0	3.5	4.5	4.0	6.0	5.0	8.0	6.0	9.5	9.0	8.0	7.0
16	3.5	3.5	4.5	4.0	6.0	5.0	8.0	6.0	9.0	9.0	8.0	7.0
17	4.0	3.5	4.5	4.0	6.0	5.0	8.0	6.0	9.5	8.5	8.0	7.0
18	4.0	3.5	4.5	4.5	6.0	5.5	8.5	6.5	9.5	9.0	8.0	7.0
19	4.0	3.5	5.0	4.5	5.5	5.0	8.5	6.5	9.5	9.0	8.5	8.0
20	4.0	4.0	5.0	4.0	5.5	5.0	8.5	7.0	9.5	9.5	8.5	8.0
21	4.0	3.5	5.5	4.5	6.5	5.0	9.0	7.0	9.5	9.0	8.0	7.0
22	4.0	3.5	6.0	5.0	6.0	5.5	9.0	7.0	9.0	8.5	8.0	7.0
23	4.0	3.5	6.0	5.0	5.5	5.0	9.0	7.0	9.0	8.5	8.0	8.0
24	4.0	3.5	5.0	5.0	5.5	5.0	9.0	7.0	9.0	8.5	8.0	8.0
25	4.5	3.5	5.0	5.0	5.5	5.0	9.0	7.0	9.5	9.0	8.0	8.0
26	4.5	4.0	5.5	5.0	5.5	5.0	9.0	8.0	9.5	9.0	8.0	8.0
27	4.5	4.0	6.0	5.0	5.5	5.0	9.5	8.0	9.5	9.0	8.0	7.0
28	4.5	4.0	6.0	5.0	5.5	5.0	9.5	8.0	9.5	9.0	8.0	7.0
29	4.5	4.0	5.5	5.0	6.0	5.0	9.5	8.5	9.5	9.5	7.0	7.0
30	4.5	4.0	5.0	5.0	6.0	5.5	9.5	8.5	9.5	9.5	7.0	6.5
31	---	---	5.5	5.0	---	---	9.5	8.5	9.5	9.0	---	---
MONTH	5.0	3.5	6.0	4.0	6.5	4.5	9.5	5.5	10.0	8.5	9.0	6.5

12059500 NORTH FORK SKOKOMISH RIVER NEAR POTLATCH, WASH.

LOCATION.--Lat 47°19'42", long 123°14'33", in NE¼NW¼ sec.7, T.21 N., R.4 W., Mason County, temperature recorder at gaging station on left bank, 1.0 mile upstream from mouth, 5.4 miles southwest of Potlatch, and 7.2 miles downstream from city of Tacoma's Cushman Dam No.-2.

DRAINAGE AREA.--117 sq mi, including 99 sq mi upstream from Cushman Dam No. 2, which is normally noncontributing .

PERIOD OF RECORD.--Water temperatures: March 1965 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 16.5°C July 29, Aug. 9-11; minimum, 1.0°C Jan. 14, 15.

Period of record:
Water temperatures: Maximum, 19.0°C July 8, 1968; minimum, 1.0°C Dec. 27, 1965, Dec. 31, 1968, Jan. 23, 31, Feb. 7, 1969, Jan. 14, 15, 1971.

REMARKS.--Recorded stopped Mar. 18-Apr. 13; range in temperature 4.5°C to 8.5°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12059500 NORTH FORK SKOKOMISH RIVER NEAR POTLATCH, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	12.0	8.0	10.0	9.0	11.0	9.0	15.5	11.5	10.5	10.0
2	---	---	13.0	8.0	10.0	9.0	13.5	8.5	15.5	11.0	12.0	10.5
3	---	---	13.5	8.0	10.0	8.5	14.0	8.5	15.5	11.0	11.5	10.0
4	---	---	9.5	8.0	11.0	8.0	13.5	10.0	14.5	11.5	13.5	10.0
5	---	---	9.0	8.0	13.5	8.0	12.0	10.0	15.5	11.0	12.0	11.0
6	---	---	12.0	8.0	11.0	9.0	13.5	9.0	15.5	11.0	11.0	10.0
7	---	---	13.5	8.0	12.0	9.0	13.5	9.0	15.5	11.0	12.0	9.5
8	---	---	11.0	8.0	10.5	8.5	12.0	10.0	16.0	11.0	10.5	10.0
9	---	---	11.5	8.0	12.0	8.0	11.5	10.0	16.5	11.5	13.0	10.0
10	---	---	13.0	7.0	13.5	9.5	10.5	10.0	16.5	11.5	12.0	10.0
11	---	---	14.0	8.0	12.0	9.0	13.0	10.0	16.5	11.5	13.0	10.0
12	---	---	10.0	9.0	12.0	9.0	14.5	9.0	16.0	11.5	13.0	9.5
13	---	---	9.0	8.0	10.0	9.0	14.5	9.5	15.5	11.5	13.0	10.0
14	8.5	5.5	10.5	6.5	11.0	9.0	15.0	9.5	14.0	11.5	12.0	9.0
15	9.0	5.5	9.5	8.0	13.0	9.0	15.5	10.0	14.5	10.5	12.0	9.0
16	6.5	5.5	10.0	8.0	12.0	9.0	15.5	10.0	14.5	10.5	12.0	9.0
17	8.0	5.5	11.0	6.5	12.0	8.5	16.0	10.0	14.5	10.0	12.0	9.0
18	9.0	5.5	9.5	7.0	11.0	10.0	14.5	8.0	14.5	10.0	12.0	9.0
19	9.0	5.5	12.0	8.0	12.0	10.0	9.0	8.0	15.0	10.5	12.0	9.0
20	8.5	6.5	10.0	6.5	11.0	10.0	10.0	8.5	14.5	12.0	12.0	9.0
21	9.0	6.5	12.0	6.5	15.0	10.0	11.0	8.0	13.0	11.5	11.5	9.0
22	7.0	6.5	13.5	8.0	13.0	10.0	14.0	10.0	14.0	10.0	11.5	9.0
23	9.5	5.5	13.5	9.0	14.0	9.5	12.0	10.5	14.5	10.0	11.5	9.5
24	8.5	5.5	11.5	9.0	11.0	9.0	14.5	10.0	14.5	10.0	11.5	10.5
25	11.0	5.5	11.0	9.5	12.0	8.0	15.5	10.0	13.5	11.0	11.5	10.5
26	12.0	6.5	11.5	9.0	9.0	7.0	16.0	10.5	14.0	10.0	12.0	10.5
27	9.0	8.0	14.5	9.0	8.0	7.0	16.0	11.0	13.5	10.0	11.0	10.0
28	10.0	7.0	14.0	9.0	9.0	7.0	16.0	11.0	14.5	10.0	10.5	10.5
29	9.0	7.0	11.0	9.5	11.0	8.5	16.5	11.5	14.0	10.0	11.0	10.0
30	10.0	7.0	10.0	9.0	11.0	8.0	15.5	11.5	11.5	10.0	11.0	9.0
31	---	---	10.0	8.5	---	---	13.5	11.5	11.0	10.5	---	---
MONTH	---	---	14.5	6.5	15.0	7.0	16.5	8.0	16.5	10.0	13.5	9.0

12061500 SKOKOMISH RIVER NEAR POTLATCH, WASH.

LOCATION.--Lat 47°18'36", long 123°10'33", in SE¼NW¼ sec.15, T.21 N., R.4 W., Mason County, temperature recorder at gaging station at bridge on U.S. Highway 101, 3.7 miles downstream from confluence of North and South Forks, 4.7 miles southwest of Potlatch, and 5.3 miles upstream from mouth.

DRAINAGE AREA.--227 sq mi.

PERIOD OF RECORD.--Chemical analyses: August 1960 to September 1961, October 1961 to September 1970 (partial-record station).
Water temperatures: May 1955 to September 1962, October 1963 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 13.0°C on several days during July and August; minimum, 2.0°C Jan. 15, 16, Mar. 2, 3.

Period of record:
Water temperatures: Maximum, 20.5°C July 13, 1961; minimum (1955-62, 1964-71), 1.0°C Mar. 7, 1956.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12061500 SKOKOMISH RIVER NEAR POTLATCH, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12070455 ISLAND LAKE NEAR KEYPORT, WASH.

LOCATION.--Lat 47°40'42", long 122°39'32", on line between NW¼ and NE¼ sec.10, T.25 N., R.1 E., Kitsap County, 2.4 miles southwest of Keyport.

DRAINAGE AREA.--0.71 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to November 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1970 TO NOVEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
08...	1020	3.0	--	1.2	2.8	1.5	3.0	.4	17	0	4.6	2.8
08...	1021	10	--	1.1	2.8	1.5	2.9	.4	17	0	4.6	2.9
08...	1022	20	--	1.1	2.8	1.5	2.9	.4	17	0	4.6	2.9
FEB.												
10...	1007	12	--	2.9	--	--	--	--	12	0	3.4	--
MAY												
11...	1200	3.0	17.0	2.0	--	--	--	--	23	--	3.8	--
11...	1205	20	9.0	--	--	--	--	--	--	--	--	--
JUNE												
28...	1030	3.0	18.0	1.4	--	--	--	--	16	--	2.8	--
AUG.												
12...	1115	3.0	25.0	--	--	--	--	--	--	--	--	--
12...	1125	20	12.0	--	--	--	--	--	--	--	--	--
SEP.												
16...	0850	3.0	17.2	1.3	--	--	--	--	--	--	4.0	--
16...	0855	20	13.0	1.6	--	--	--	--	--	--	5.3	--
NOV.												
02...	0825	3.0	7.9	--	--	--	--	--	--	--	--	--
02...	0830	21	7.8	--	--	--	--	--	--	--	--	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.												
08...	.1	.27	.06	.02	.000	.010	34	13	0	45	6.8	5
08...	.1	.25	.07	.05	.000	.010	39	13	0	45	6.8	10
08...	.1	.21	.05	.05	.000	.010	41	13	0	45	6.8	10
FEB.												
10...	--	.30	.04	.14	.000	.000	41	--	--	43	7.4	10
MAY												
11...	--	.04	.14	.06	.020	.020	--	--	--	41	7.3	20
11...	--	.04	.02	.37	.010	.010	--	--	--	43	7.2	--
JUNE												
28...	--	.02	.02	.00	.000	.000	--	--	--	41	7.1	--
AUG.												
12...	--	.13	.07	.05	.010	.010	--	--	--	41	7.7	15
12...	--	.09	.07	.02	.000	.010	--	--	--	46	7.3	25
SEP.												
16...	--	.17	.12	.02	.010	.020	--	--	--	42	7.8	25
16...	--	.21	.16	.02	.010	.030	--	--	--	47	7.3	35
NOV.												
02...	--	--	.04	.02	.010	.020	--	--	--	43	7.4	30
02	--	--	.03	.02	.010	.020	--	--	--	43	7.7	30

12071000 WILDCAT LAKE NEAR BREMERTON, WASH.

LOCATION.--Lat 47°35'59", long 122°45'35", in SE¼NE¼ sec.2, T.24 N., R.1 W., Kitsap County, 6.0 miles west of Olympic College in Bremerton.

DRAINAGE AREA.--2.50 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
07...	1100	3.0	--	6.6	4.9	2.0	2.3	.1	28	0	2.0	1.2
07...	1101	29	--	7.6	5.8	2.0	2.1	.2	32	0	1.6	1.3
07...	1102	15	--	6.5	4.8	1.9	2.3	.1	28	0	1.8	1.3
FEB.												
10...	1500	16	--	9.7	--	--	--	--	20	0	.6	--
MAY												
10...	1130	3.0	16.0	4.2	--	--	--	--	27	0	3.5	--
10...	1135	25	7.0	--	--	--	--	--	--	--	--	--
JUNE												
28...	1430	3.0	17.0	4.6	--	--	--	--	23	--	1.8	--
SEP.												
08...	0915	3.0	18.8	5.1	--	--	--	--	--	--	3.0	--
08...	0925	27	10.0	6.9	--	--	--	--	--	--	3.5	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.												
07...	.1	.13	.02	.05	.010	.040	43	20	0	54	7.0	0
07...	.1	.27	.24	.18	.040	.040	51	23	0	58	6.7	10
07...	.1	.11	.02	.02	.010	.010	45	20	0	53	7.0	5
FEB.												
10...	--	.25	.04	.25	.000	.000	41	--	--	43	7.6	10
MAY												
10...	--	.09	.09	.00	.010	.010	--	--	--	40	7.6	20
10...	--	.01	.01	.24	.010	.010	--	--	--	40	7.3	--
JUNE												
28...	--	.02	.02	.00	.000	.000	--	--	--	43	7.2	--
SEP.												
08...	--	.17	.07	.09	.000	.010	--	--	--	44	7.5	10
08...	--	.12	.04	.09	.000	.020	--	--	--	52	7.0	25

12071500 KITSAP LAKE NEAR BREMERTON, WASH.

LOCATION.--Lat 47°34'47", long 122°42'34", in SW¼SW¼ sec.8, T.24 N., R.1 E., Kitsap County, 3.6 miles west of Olympic College in Bremerton.

DRAINAGE AREA.--2.73 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)
FEB.								
22...	0945	14	--	14	41	0	3.6	14
MAY								
10...	1620	23	11.0	--	--	--	--	.01
10...	1625	3.0	15.0	11	40	0	1.0	.06
JUNE								
30...	1500	3.0	18.5	13	44	--	2.8	.44
30...	1505	23	17.0	--	--	--	--	.09
SEP.								
08...	1420	3.0	19.0	16	--	--	3.5	.30
08...	1425	23	18.0	16	--	--	3.5	.18

DATE	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
FEB.								
22...	.07	.25	.000	.010	60	84	7.3	5
MAY								
10...	.01	.33	.010	.010	--	80	8.3	--
10...	.07	.03	.010	.010	--	78	7.7	20
JUNE								
30...	.38	.02	.010	.020	--	81	8.2	--
30...	.09	.02	.010	.010	--	82	7.6	--
SEP.								
08...	.30	.02	.020	.040	--	85	7.7	25
08...	.07	.02	.020	.030	--	86	7.7	25

12078200 SUMMIT LAKE NEAR KAMILCHE, WASH.

LOCATION.--Lat 47°03'12", long 123°07'20", in NW¼NE¼ sec.13, T.18 N., R.4 W., Thurston County, 5.5 miles southwest of Kamilche.

DRAINAGE AREA.--2.82 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
FEB.												
22...	1530	42	--	14	4.2	1.5	2.7	.2	19	0	.2	5.9
MAY												
20...	1021	3.0	12.0	4.8	4.2	1.6	--	--	23	0	1.3	--
20...	1026	72	8.0	--	--	--	--	--	--	--	--	--
JULY												
07...	0940	3.0	16.2	4.4	--	--	2.6	.1	22	--	1.0	2.4
07...	0945	75	8.5	--	--	--	--	--	--	--	--	--
SEP.												
21...	1210	3.0	17.3	4.7	--	--	--	--	--	--	4.0	--
21...	1215	79	8.8	8.1	--	--	--	--	--	--	3.0	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
FEB.												
22...	.0	--	--	.05	.000	.000	35	18	2	49	7.6	5
MAY												
20...	--	.00	.02	.00	.000	.000	--	17	0	47	7.5	5
20...	--	.00	.00	.55	.010	.010	--	--	--	47	7.3	--
JULY												
07...	--	.02	.01	.00	.010	.010	--	--	--	47	7.1	--
07...	--	.03	.02	.02	.010	.010	--	--	--	--	7.0	--
SEP.												
21...	--	.17	.10	.02	.020	.020	--	--	--	47	8.2	35
21...	--	.19	.03	.10	.010	.020	--	--	--	51	7.1	40

12078700 BLACK LAKE NEAR TUMWATER, WASH.

LOCATION.--Lat 47°00'36", long 122°57'50", in NE¼NW¼ sec.32, T.18 N., R.2 W., Thurston County, 2.8 miles west of Tumwater.

DRAINAGE AREA.--10.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
FEB.												
23...	1145	15	--	13	4.4	1.8	2.9	.6	23	0	1.2	3.0
MAY												
20...	1340	3.0	12.0	14	5.5	2.0	--	--	25	0	2.8	--
20...	1345	25	14.0	--	--	--	--	--	--	--	--	--
JULY												
07...	1230	3.0	18.0	15	--	--	3.2	.6	29	--	2.5	1.8
07...	1235	23	14.0	--	--	--	--	--	--	--	--	--
SEP.												
21...	1635	3.0	18.8	18	--	--	--	--	--	--	3.8	--
21...	1640	24	17.0	18	--	--	--	--	--	--	3.5	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
FEB.												
23...	.1	.20	.05	.34	.010	.020	48	19	0	53	7.5	40
MAY												
20...	--	.04	.21	.88	.030	.030	--	22	1	52	7.3	--
20...	--	.23	.04	.40	.020	.020	--	--	--	53	7.3	--
JULY												
07...	--	.24	.23	.05	.010	.020	--	--	--	55	8.0	--
07...	--	.11	.11	.06	.010	.020	--	--	--	64	7.0	--
SEP.												
21...	--	.22	.21	.01	.020	.070	--	--	--	58	7.5	65
21...	--	.12	.07	.02	.030	.060	--	--	--	62	7.4	60

12080600 LONG LAKE NEAR LACEY, WASH.

LOCATION.--Lat 47°02'03", long 122°46'48", in SE¼NE¼ sec.22, T.18 N., R.1 W., Thurston County, 2.0 miles east of Lacey.

DRAINAGE AREA.--8.25 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Description location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
FEB.												
25...	1030	10	--	14	6.8	2.9	4.3	1.0	36	0	6.4	3.7
MAY												
18...	1120	3.0	--	8.7	7.9	3.3	--	--	46	--	5.8	--
18...	1125	18	--	--	--	--	--	--	--	--	--	--
JULY												
12...	1000	3.0	18.0	8.1	--	--	4.3	.8	44	--	5.0	2.8
12...	1005	16	14.0	--	--	--	--	--	--	--	--	--
SEP.												
20...	0850	3.0	17.5	12	--	--	--	--	--	--	9.3	--
20...	0855	15	17.2	12	--	--	--	--	--	--	7.5	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
FEB.												
25...	.1	.48	.06	.11	.000	.010	51	29	0	83	7.5	10
MAY												
18...	--	--	.18	.03	.020	.020	--	33	0	82	7.6	20
18...	--	--	.17	.12	.010	.020	--	--	--	103	7.6	--
JULY												
12...	--	.15	.13	.05	.010	.010	--	--	--	85	7.9	--
12...	--	.64	.53	.07	.010	.030	--	--	--	99	7.9	--
SEP.												
20...	--	.42	.47	.02	.020	.050	--	--	--	92	8.1	40
20...	--	.39	.44	.02	.020	.050	--	--	--	95	7.8	30

12082500 NISQUALLY RIVER NEAR NATIONAL, WASH.

LOCATION.--Lat 46°45'10", long 122°04'57", in SW¼SW¼ sec.29, T.15 N., R.6 E., Pierce County, temperature recorder at gaging station on right bank 100 ft downstream from railroad bridge, 1.2 miles west of National, 3.3 miles upstream from Mineral Creek, and at mile 57.8.

DRAINAGE AREA.--133 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1951 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 15.5°C July 24; minimum, freezing point Nov. 21-23, Jan. 2, Mar. 1.

Period of record:
Water temperatures: Maximum, 18.5°C July 13, 1961, July 3, 1970; minimum (1951-63, 1965-71), freezing point on many days during winter months.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	5.0	7.0	4.0	1.5	1.0	1.0	0.5	4.0	3.5	2.0	0
2	11.5	5.5	7.0	4.5	1.5	1.0	1.0	0	4.0	3.0	1.5	1.0
3	10.5	6.0	6.5	5.0	1.5	1.0	1.0	0.5	3.0	3.0	1.5	1.0
4	9.0	6.0	5.5	5.0	1.5	1.0	0.5	0.5	3.0	2.0	2.0	1.0
5	8.0	6.0	6.0	4.5	2.0	1.5	0.5	0.5	3.0	1.5	3.0	1.0
6	6.5	5.0	6.5	5.5	3.0	2.0	1.5	0.5	2.0	1.0	2.0	1.5
7	6.5	3.5	6.5	5.5	3.5	3.0	2.0	1.0	3.0	1.0	3.0	2.0
8	6.5	5.0	6.5	6.0	3.5	3.5	2.0	1.5	4.0	1.5	4.0	2.0
9	6.0	5.5	6.5	4.5	3.5	3.5	2.0	1.5	3.0	2.0	3.0	3.0
10	9.0	6.0	5.0	4.0	3.5	3.5	2.0	2.0	3.5	3.0	3.0	2.0
11	8.5	6.5	5.5	4.5	3.5	3.0	2.0	1.5	4.5	3.5	3.0	2.0
12	9.0	6.0	5.5	4.5	3.0	2.0	1.5	1.5	5.0	4.0	5.0	3.0
13	8.5	4.0	5.0	3.5	3.5	3.0	1.5	1.0	5.0	4.5	4.0	1.5
14	9.0	5.0	5.0	4.0	3.5	3.0	1.0	1.0	4.5	4.0	3.5	2.0
15	9.0	4.5	5.5	5.0	3.0	3.0	2.0	1.0	4.0	3.5	4.0	2.0
16	9.0	4.0	5.0	5.0	3.0	3.0	3.0	2.0	4.0	3.5	4.5	1.5
17	9.0	5.0	5.0	4.5	3.0	2.0	3.5	3.0	4.5	4.0	5.5	2.0
18	8.5	7.0	4.5	4.0	2.0	1.0	4.0	3.5	4.0	3.5	5.5	1.5
19	7.0	6.0	4.0	4.0	1.5	1.0	4.0	3.5	4.0	3.5	6.0	1.5
20	7.0	5.5	4.0	1.5	2.0	1.5	3.5	3.0	4.0	1.5	6.0	2.0
21	6.0	5.5	1.5	0	2.0	1.5	3.0	2.0	4.0	3.5	6.0	2.0
22	6.0	5.5	0	0	1.5	0.5	2.0	1.0	5.0	4.0	4.5	4.0
23	6.5	6.0	1.5	0	2.0	1.0	1.0	1.0	4.0	3.5	5.0	4.0
24	6.0	5.5	3.5	1.5	2.0	1.0	1.5	1.0	4.0	2.0	5.0	3.0
25	5.5	5.0	3.0	3.0	2.0	1.0	2.0	1.5	3.0	2.0	4.5	2.0
26	6.0	4.0	3.0	2.0	1.5	1.0	4.0	2.0	2.0	1.0	4.0	3.5
27	6.0	3.0	2.0	2.0	2.0	1.0	3.5	3.0	2.0	1.0	4.0	3.5
28	6.5	4.0	2.0	1.5	2.0	2.0	3.5	3.0	1.5	0.5	4.5	3.5
29	6.0	2.0	2.0	1.0	2.0	1.5	3.5	3.0	---	---	4.5	4.0
30	6.0	3.0	2.0	1.5	1.5	1.5	3.5	3.0	---	---	4.0	3.5
31	6.5	4.5	---	---	2.0	1.0	3.5	3.0	---	---	5.0	3.0
MONTH	11.5	2.0	7.0	0	3.5	0.5	4.0	0	5.0	0.5	6.0	0

12082500 NISQUALLY RIVER NEAR NATIONAL, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	3.0	9.5	4.5	5.5	5.0	10.5	6.5	13.0	8.0	9.5	7.0
2	6.5	3.5	9.5	4.0	6.0	5.5	12.0	6.0	13.5	6.5	9.5	8.5
3	7.0	3.0	9.5	4.0	6.0	5.5	12.0	5.5	13.5	7.0	11.5	8.5
4	8.5	3.0	5.5	4.5	10.5	5.5	11.0	6.0	9.0	8.0	---	8.0
5	9.0	4.0	5.0	4.5	10.0	5.0	9.5	6.0	13.5	8.5	11.5	9.0
6	6.0	4.0	8.5	4.5	9.5	5.5	10.5	6.0	13.0	9.0	11.5	8.0
7	6.5	4.0	9.5	4.0	8.0	6.0	12.0	5.0	15.0	8.0	---	7.0
8	5.5	4.5	8.5	4.0	9.5	5.5	10.5	7.0	13.0	7.0	---	8.0
9	5.0	3.5	8.5	4.0	9.0	4.5	8.5	6.5	11.5	7.0	---	8.5
10	6.0	3.5	9.5	4.0	8.0	5.5	8.0	6.0	10.5	8.0	---	8.0
11	6.0	3.0	10.0	4.5	10.5	5.0	9.5	6.0	9.0	8.5	---	8.5
12	8.0	3.0	5.5	4.5	10.5	5.0	13.0	5.5	9.5	8.5	13.0	6.5
13	8.5	4.0	5.5	4.5	8.0	5.5	13.5	5.5	10.0	9.0	12.0	8.0
14	7.0	4.0	6.5	4.0	8.5	5.0	14.0	5.5	10.0	9.5	12.0	5.0
15	6.5	4.0	6.5	4.5	10.5	5.5	14.0	6.0	---	---	12.0	5.5
16	5.5	4.0	5.0	2.0	10.5	5.5	13.0	6.5	---	---	11.5	5.5
17	5.5	4.0	6.5	3.0	9.0	4.5	14.0	6.0	---	8.0	11.5	5.5
18	6.0	4.0	8.5	3.5	8.5	6.0	13.5	7.0	---	7.0	12.0	5.0
19	9.0	3.5	6.0	4.5	10.5	5.5	13.5	6.5	---	8.5	12.0	5.5
20	6.0	4.5	6.0	4.0	8.5	5.5	14.0	6.5	---	10.0	11.5	6.0
21	6.0	3.5	10.5	4.0	13.0	5.5	14.0	6.5	12.0	10.0	11.5	5.0
22	6.0	3.0	11.0	4.5	10.0	5.5	14.0	7.0	11.5	8.0	12.0	5.0
23	6.0	3.5	11.0	4.5	8.5	6.0	14.5	7.0	---	7.0	11.5	5.0
24	5.0	4.0	9.5	5.5	8.0	5.0	15.5	7.0	---	7.0	9.0	7.0
25	9.5	3.5	8.0	5.5	8.0	5.5	14.5	7.0	---	7.0	9.0	7.0
26	10.5	4.0	6.0	5.0	10.0	5.0	15.0	7.0	14.5	7.0	9.5	6.5
27	7.0	4.0	9.0	5.0	9.0	5.5	15.0	7.0	14.0	6.5	9.0	6.5
28	6.0	4.0	10.0	4.5	8.0	5.5	15.0	7.0	15.0	7.0	8.0	6.5
29	6.5	4.0	7.0	5.0	10.0	5.5	14.0	8.0	14.0	8.0	9.0	5.5
30	8.0	4.0	5.5	4.5	10.5	6.5	13.0	7.0	12.0	8.5	8.5	6.0
31	---	---	5.5	5.0	---	---	13.0	8.0	9.0	8.0	---	---
MONTH	10.5	3.0	11.0	2.0	13.0	4.5	15.5	5.0	---	6.5	13.0	5.0

12086500 NISQUALLY RIVER AT LA GRANDE, WASH.

LOCATION.--Lat 46°50'25", long 122°19'38", in NW¼SE¼ sec.29, T.16 N., R.4 E., Pierce County, temperature recorder at gaging station on right bank, 0.4 mile downstream from city of Tacoma powerplant, 0.6 miles northwest of La Grande, 0.8 mile upstream from Mashel River, and at mile 40.4.

DRAINAGE AREA.--292 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1965 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 14.0°C Oct. 1; minimum, 4.5°C during the period Dec. 12-Feb. 1.

Period of record:
Water temperatures: Maximum, 14.0°C Oct. 11-15, 1966, Oct. 1, 1970; minimum, 3.0°C Feb. 15, 18, 21, 1966, on many days during February and March, 1969.

REMARKS.--Recorder stopped Nov. 10 to Dec. 3 and Dec. 12 to Feb. 1; range in temperature 7.0°C to 11.0°C and 4.5°C to 6.5°C, respectively.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	13.5	11.0	11.0	---	---	---	---	---	---	4.0	3.5
2	13.5	13.5	11.0	10.5	---	---	---	---	3.5	3.5	3.5	3.5
3	13.5	13.5	11.0	10.5	---	---	---	---	3.5	3.5	3.5	3.5
4	13.5	13.5	11.0	10.5	6.5	6.5	---	---	3.5	3.5	3.5	3.5
5	13.5	13.5	11.0	11.0	6.5	6.5	---	---	3.5	3.5	3.5	3.5
6	13.5	13.5	11.0	11.0	6.5	6.5	---	---	3.5	3.5	3.5	3.5
7	13.5	13.5	11.0	11.0	6.5	6.5	---	---	3.5	3.5	3.5	3.5
8	13.5	13.5	11.0	10.5	6.5	6.5	---	---	3.5	3.5	3.5	3.5
9	13.5	13.5	11.0	11.0	6.5	6.5	---	---	3.5	3.5	3.5	3.5
10	13.5	13.5	---	---	6.5	6.5	---	---	3.5	3.0	3.5	3.5
11	13.5	13.5	---	---	6.5	6.5	---	---	3.5	3.0	3.5	3.5
12	13.5	13.5	---	---	---	---	---	---	3.5	3.0	3.5	3.5
13	13.5	13.5	---	---	---	---	---	---	3.5	3.5	3.5	3.5
14	13.5	13.5	---	---	---	---	---	---	3.5	3.5	3.5	3.5
15	13.5	13.5	---	---	---	---	---	---	3.5	3.5	3.5	3.5
16	13.5	13.5	---	---	---	---	---	---	3.5	3.5	3.5	3.5
17	13.5	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
18	13.0	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
19	13.0	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
20	13.5	13.0	---	---	---	---	---	---	4.0	3.5	3.5	3.5
21	13.5	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.0
22	13.0	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
23	13.0	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
24	13.0	13.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
25	13.0	13.0	---	---	---	---	---	---	3.5	3.5	4.0	3.5
26	13.0	12.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
27	12.0	12.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
28	12.0	11.0	---	---	---	---	---	---	3.5	3.5	3.5	3.5
29	11.0	11.0	---	---	---	---	---	---	---	---	4.0	3.5
30	11.0	11.0	---	---	---	---	---	---	---	---	4.0	4.0
31	11.0	11.0	---	---	---	---	---	---	---	---	4.0	4.0
MONTH	14.0	11.0	---	---	---	---	---	---	4.0	3.0	4.0	3.0

12086500 NISQUALLY RIVER AT LA GRANDE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	3.5	6.0	5.0	7.0	7.0	9.0	9.0	10.0	9.5	11.0	11.0
2	4.0	4.0	6.0	5.5	7.0	7.0	9.0	9.0	10.5	9.5	11.5	11.0
3	4.5	4.0	6.0	5.5	7.0	7.0	9.0	9.0	10.5	10.0	11.5	11.0
4	4.5	4.0	6.0	6.0	7.0	7.0	9.0	9.0	10.0	10.0	11.5	11.0
5	4.5	4.0	6.0	6.0	8.0	7.0	9.5	9.0	10.0	10.0	11.5	11.5
6	4.5	4.0	6.0	5.5	8.0	7.0	9.5	9.0	10.0	10.0	12.0	11.5
7	4.5	4.0	6.0	5.5	8.0	8.0	9.5	9.0	10.5	10.0	12.0	11.5
8	4.0	4.0	6.0	6.0	8.0	8.0	9.5	9.0	10.5	10.0	12.0	11.5
9	4.0	4.0	6.0	6.0	8.0	8.0	9.5	9.0	10.5	10.0	12.0	11.5
10	4.5	4.0	6.5	5.5	8.0	8.0	9.5	9.0	10.5	10.0	12.0	11.5
11	4.5	4.0	6.5	5.5	8.0	8.0	9.5	9.0	10.5	10.0	12.0	11.5
12	4.5	4.0	6.5	6.0	8.5	8.0	9.5	9.0	10.5	10.0	12.0	11.5
13	5.0	4.5	6.5	6.5	8.5	8.0	9.5	9.0	10.5	10.0	12.0	12.0
14	5.0	4.5	6.5	6.0	8.5	8.0	9.5	9.0	11.0	10.5	12.0	11.5
15	5.0	5.0	6.5	6.0	8.5	8.0	9.5	9.0	11.0	10.5	12.0	11.5
16	5.0	5.0	6.5	6.5	9.0	8.5	9.5	9.0	11.0	10.5	12.0	12.0
17	5.0	5.0	6.5	6.0	9.0	8.5	10.0	9.0	11.0	10.5	12.0	12.0
18	5.0	5.0	6.5	6.0	8.5	8.5	10.0	9.5	11.0	10.5	12.0	12.0
19	5.0	5.0	6.5	6.5	8.5	8.5	10.0	9.5	11.0	10.5	12.0	12.0
20	5.0	5.0	6.5	6.5	9.0	8.5	10.0	9.5	11.0	10.5	12.0	12.0
21	5.5	5.0	7.0	6.5	9.0	8.5	10.0	9.5	11.0	10.5	12.0	12.0
22	5.5	5.0	7.0	6.5	9.0	8.5	10.0	9.5	11.0	10.5	13.0	12.0
23	5.5	5.5	7.0	6.5	9.0	8.5	10.0	9.5	11.0	10.5	13.0	12.0
24	5.5	5.5	7.0	6.5	9.0	8.5	10.0	9.5	11.0	10.5	13.0	12.0
25	5.5	5.0	7.0	6.5	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
26	5.5	5.0	7.0	6.5	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
27	5.5	5.5	7.0	6.5	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
28	5.5	5.5	7.0	6.5	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
29	5.5	5.5	8.0	7.0	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
30	5.5	5.5	8.0	7.0	9.0	9.0	10.0	9.5	11.0	10.5	13.0	13.0
31	---	---	7.0	7.0	---	---	10.0	9.5	11.0	10.5	---	---
MONTH	5.5	3.5	8.0	5.0	9.0	7.0	10.0	9.0	11.0	9.5	13.0	11.0

12087400 OHOP LAKE NEAR EATONVILLE, WASH.

LOCATION.--Lat 46°53'06", long 122°16'38", in NE¼SE¼ sec.10, T.16 N., R.4 E., Pierce County, 1.3 miles north of Eatonville.

DRAINAGE AREA.--17.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body. Records of lake elevations for current year are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
OCT.										
12...	1030	3.0	--	16	--	36	0	7.0	2.4	.1
12...	1031	10	--	16	--	36	0	7.2	2.4	.1
12...	1032	17	--	16	--	35	0	7.0	2.4	.1
FEB.										
18...	1100	10	--	14	--	11	0	8.2	--	--
MAY										
12...	1400	3.0	10.0	17	--	23	0	8.3	--	--
12...	1405	16	18.0	--	--	--	--	--	--	--
JULY										
06...	1400	3.0	18.0	18	--	29	--	8.0	--	--
06...	1405	16	12.5	--	--	--	--	--	--	--
SEP.										
10...	1510	3.0	18.9	18	--	--	--	8.3	--	--
10...	1515	17	15.0	18	--	--	--	8.5	--	--

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.									
12...	.04	.02	.16	.000	.010	65	85	7.1	10
12...	.04	.02	.02	.000	.000	59	86	7.0	10
12...	.03	.02	.27	.000	.010	63	86	7.0	10
FEB.									
18...	.19	.09	.38	.000	.020	61	54	6.8	50
MAY									
12...	.03	.16	.06	.020	.020	--	59	7.4	--
12...	.48	.03	.52	.030	.030	--	61	7.4	--
JULY									
06...	.49	.12	.01	.020	.030	--	65	7.6	--
06...	.36	.22	.06	.020	.040	--	74	7.1	--
SEP.									
10...	.27	.25	.02	.020	.040	--	73	7.8	35
10...	.19	.12	.01	.020	.050	--	75	7.1	45

12088300 SILVER LAKE NEAR LA GRANDE, WASH.

LOCATION.--Lat 46°52'53", long 122°21'55", in SW¼SE¼ sec.12, T.16 N., R.3 E., Pierce County, 4.0 miles northwest of La Grande.

DRAINAGE AREA.--1.83 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.									
12...	1515	3.0	--	5.7	44	0	2.4	4.2	.1
12...	1520	10	--	5.6	44	0	2.2	4.0	.1
12...	1525	17	--	5.6	43	0	2.2	4.2	.1
FEB.									
11...	1500	10	--	11	33	0	1.2	--	--
MAY									
18...	1600	3.0	16.0	5.9	41	0	4.8	--	--
18...	1605	16	13.0	--	--	--	--	--	--
JULY									
01...	1300	3.0	19.0	5.8	35	--	5.0	--	--
01...	1305	16	13.0	--	--	--	--	--	--
SEP.									
13...	1155	3.0	17.0	4.7	--	--	9.3	--	--
13...	1200	16	17.0	5.4	--	--	8.5	--	--

DATE	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.									
12...	.12	.08	.50	.030	.050	88	95	6.9	20
12...	.10	.07	.14	.020	.030	84	93	6.9	20
12...	.07	.05	.32	.010	.020	79	93	6.9	20
FEB.									
11...	.68	.35	.18	.010	.040	78	79	7.4	50
MAY									
18...	.45	.23	.21	.040	.040	--	76	7.5	50
18...	.12	.06	.21	.020	.020	--	78	7.4	--
JULY									
01...	.34	.26	.02	.010	.020	--	78	8.4	--
01...	.30	.20	.01	.030	.030	--	89	7.2	--
SEP.									
13...	.30	.23	.01	.020	.060	--	82	8.0	50
13...	.29	.21	.02	.020	.060	--	92	7.4	50

12088900 TANWAX LAKE NEAR KAPOWSIN, WASH.

LOCATION.--Lat 46°56'40", long 122°16'26", in SW¼NW¼ sec.23, T.17 N., R.4 E., Pierce County, 3.4 miles south of Kapowsin.

DRAINAGE AREA.--4.08 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body. Records of lake elevations for current year are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.									
13...	1035	3.0	--	13	41	0	3.0	2.6	.1
13...	1040	12	--	14	42	0	3.2	2.5	.1
13...	1041	21	--	14	42	0	3.0	2.6	.1
FEB.									
18...	1445	12	--	15	30	0	.4	--	--
MAY									
12...	1100	3.0	18.5	11	39	0	3.0	--	--
12...	1105	20	10.0	--	--	--	--	--	--
JULY									
06...	1100	3.0	18.0	8.0	34	--	3.3	--	--
06...	1120	20	11.0	--	--	--	--	--	--
SEP.									
10...	1100	3.0	19.0	9.3	--	--	5.3	--	--
10...	1105	20	11.9	17	--	--	4.3	--	--

DATE	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.									
13...	.07	.05	.14	.080	.10	57	82	6.9	30
13...	.05	.03	.14	.060	.080	53	83	7.0	30
13...	.03	.02	.20	.050	.070	57	82	6.9	30
FEB.									
18...	.30	.08	.59	.000	.030	70	68	7.5	60
MAY									
12...	.52	.24	.43	.020	.020	--	63	8.8	30
12...	.07	.05	.79	.020	.020	--	70	7.4	--
JULY									
06...	.15	.09	.01	.010	.020	--	63	8.1	--
06...	.60	.27	.01	.030	.050	--	92	7.3	--
SEP.									
10...	.32	.28	.01	.010	.030	--	66	8.9	50
10...	.20	.11	.01	.040	.040	--	120	7.5	70

12089020 CLEAR LAKE NEAR MCKENNA, WASH.

LOCATION.--Lat 46°49'42", long 122°28'32", in NE¼SW¼ sec.31, T.16 N., R.3 E., Thurston County, 8.5 miles southeast of McKenna.

DRAINAGE AREA.--2.61 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
FEB.												
25...	1500	12	--	13	6.1	2.3	4.1	.8	38	0	.0	2.1
MAY												
19...	1330	3.0	14.5	16	7.1	2.6	--	--	41	0	1.3	--
19...	1335	20	13.0	--	--	--	--	--	--	--	--	--
JULY												
12...	1235	3.0	18.0	16	--	--	3.9	1.2	42	--	1.0	1.6
12...	1240	18	15.0	--	--	--	--	--	--	--	--	--
SEP.												
22...	1545	3.0	18.7	18	--	--	--	--	--	--	2.8	--
22...	1550	19	18.0	18	--	--	--	--	--	--	3.3	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
FEB.												
25...	.1	.32	.05	.00	.000	.020	42	25	0	67	7.7	0
MAY												
19...	--	--	.33	.09	.030	.030	--	28	0	66	7.9	5
19...	--	--	.14	.06	.030	.030	--	--	--	71	7.6	--
JULY												
12...	--	.19	.13	.05	.010	.010	--	--	--	70	8.2	--
12...	--	.75	.63	.05	.020	.020	--	--	--	84	7.6	--
SEP.												
22...	--	.39	.44	.04	.090	.12	--	--	--	72	7.6	5
22...	--	.15	.09	.04	.10	.12	--	--	--	77	7.5	10

12089200 HARTS LAKE NEAR MCKENNA, WASH.

LOCATION.--Lat 46°53'32", long 122°28'18", in SW¼NE¼ sec.7, T.16 N., R.3 E., Pierce County, 5.0 miles southeast of McKenna.

DRAINAGE AREA.--3.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to November 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1970 TO NOVEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.									
13...	1550	3.0	--	17	76	0	.4	4.8	.1
13...	1555	18	--	17	76	0	.4	4.9	.2
13...	1600	40	--	24	85	0	.2	4.8	.2
FEB.									
11...	1025	22	--	20	62	0	3.2	--	--
MAY									
13...	1040	3.0	18.0	3.0	58	0	5.0	--	--
13...	1045	40	7.5	--	--	--	--	--	--
JULY									
01...	1100	3.0	18.5	8.5	67	--	5.0	--	--
01...	1105	40	6.0	--	--	--	--	--	--
AUG.									
13...	1130	3.0	24.9	--	--	--	--	--	--
13...	1135	40	6.5	--	--	--	--	--	--
SEP.									
13...	0945	3.0	18.6	13	--	--	5.8	--	--
13...	0950	40	6.5	23	--	--	4.5	--	--
NOV.									
01...	0910	3.0	8.9	--	--	--	--	--	--
01...	0915	39	6.8	--	--	--	--	--	--

DATE	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.									
13...	.07	.03	--	.030	--	100	144	7.3	20
13...	.07	.03	.09	--	.040	107	144	7.3	20
13...	4.4	3.3	.14	.39	.49	134	156	6.7	100
FEB.									
11...	.78	.64	.27	.14	.17	109	129	7.6	50
MAY									
13...	.14	.07	1.2	.17	.20	--	120	10.2	30
13...	.82	.81	.03	.060	.060	--	130	7.4	--
JULY									
01...	.58	.41	.01	.030	.030	--	119	10.2	--
01...	.74	.72	.06	.020	.33	--	146	7.2	--
AUG.									
13...	.13	.12	.02	.010	.030	--	115	9.0	30
13...	.77	.75	.05	.49	.52	--	155	7.2	75
SEP.									
13...	.45	.42	.01	.010	.050	--	122	8.6	40
13...	1.6	1.2	.01	.55	.82	--	164	6.9	85
NOV.									
01...	--	.28	.01	.040	.080	--	128	7.7	45
01...	--	2.1	.01	.72	--	--	170	7.5	90

12090300 AMERICAN LAKE NEAR TILLICUM, WASH.

LOCATION.--Lat 47°06'30", long 122°35'18", in SW¼NW¼ sec.29, T.19 N., R.2 E., Pierce County, 2.0 miles southwest of Tillicum.

DRAINAGE AREA.--24.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.									
19...	1115	3.0	--	2.1	50	0	8.0	3.3	.1
19...	1116	44	--	4.7	50	0	8.4	3.4	.1
19...	1117	87	--	4.8	54	0	11	3.5	.1
19...	1500	3.0	--	1.9	50	0	7.2	3.4	.1
19...	1501	44	--	2.0	50	0	7.6	3.4	.1
19...	1502	60	--	4.0	53	0	8.4	3.5	.1
FEB.									
12...	1230	45	--	.8	48	0	7.2	--	--
MAY									
17...	1400	3.0	13.0	.8	54	0	6.3	--	--
17...	1405	80	8.0	--	--	--	--	--	--
JUNE									
30...	1000	3.0	17.0	.3	48	--	7.3	--	--
30...	1005	90	8.0	--	--	--	--	--	--
AUG.									
11...	1500	3.0	25.0	--	--	--	--	--	--
11...	1510	85	8.2	--	--	--	--	--	--
SEP.									
16...	1225	3.0	18.5	1.0	--	--	8.3	--	--
16...	1230	85	8.1	5.1	--	--	8.0	--	--

DATE	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.									
19...	.08	.07	.20	.010	.010	62	109	7.5	0
19...	.07	.06	.00	.010	.010	63	110	7.1	0
19...	1.6	1.3	.16	.16	.20	61	120	6.6	0
19...	.08	.07	.18	.010	.010	53	109	7.5	0
19...	.03	.02	.11	.010	.010	57	110	7.2	0
19...	.25	.18	.66	.070	.090	63	114	6.9	0
FEB.									
12...	.16	.02	.16	.010	.020	62	105	8.4	5
MAY									
17...	.02	.00	.67	.000	.010	--	97	7.9	5
17...	.04	.04	.33	.000	.000	--	--	7.2	--
JUNE									
30...	.67	.03	.02	.010	.020	--	98	8.7	--
30...	.73	.63	.06	.020	.040	--	--	6.8	--
AUG.									
11...	.07	.02	.02	.000	.000	--	95	8.2	0
11...	1.1	1.1	.02	.090	.090	--	116	7.0	--
SEP.									
16...	.12	.07	.02	.010	.020	--	99	8.8	10
16...	1.2	1.1	.02	.12	.17	--	113	7.2	15

12090990 STEILACOOM LAKE NEAR STEILACOOM, WASH.

LOCATION.--Lat 47°10'40", long 122°32'04", in center of sec.34, T.20 N., R.2 E., Pierce County, 3.0 miles east of Steilacoom.

DRAINAGE AREA.--89.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake bod

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
OCT.									
22...	1235	3.0	--	15	61	0	8.4	5.1	.1
22...	1240	10	--	15	61	0	8.4	5.1	.1
22...	1245	17	--	15	60	0	8.0	5.0	.1
FEB.									
26...	1140	10	--	13	45	0	7.6	--	--
MAY									
18...	1530	3.0	15.0	7.7	48	--	6.3	--	--
18...	1535	17	12.0	--	--	--	--	--	--
JULY									
23...	1030	3.0	23.0	5.4	55	--	7.5	--	--
23...	1035	16	13.0	--	--	--	--	--	--
SEP.									
15...	0805	3.0	17.0	13	--	--	8.3	--	--
15...	0810	15	15.2	14	--	--	8.5	--	--

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.									
22...	.08	.05	.18	.050	.060	89	133	7.7	0
22...	.05	.03	.23	.050	.060	89	133	7.7	0
22...	.05	.03	.04	.050	.050	89	133	7.7	0
FEB.									
26...	.66	.02	1.3	.000	.020	75	--	--	5
MAY									
18...	--	.19	1.1	.020	.020	--	108	8.4	5
18...	--	.20	1.3	.030	.030	--	113	7.5	--
JULY									
23...	--	.05	.62	.010	.020	--	108	8.7	--
23...	.16	.12	.87	.010	.030	--	132	7.7	--
SEP.									
15...	.39	.47	.05	.010	.040	--	120	9.2	20
15...	.36	.49	.15	.010	.080	--	129	8.1	25

12093500 PUYALLUP RIVER NEAR ORTING, WASH.

LOCATION.--Lat 47°02'20", long 122°12'15", in SW¼SW¼ sec.17, T.18 N., R.5 E., Pierce County, at State Highway 162 bridge 600 ft upstream from gaging station, 4.0 miles south of Orting, and at mile 26.5.

DRAINAGE AREA.--172 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.											
17...	1000	642	.08	.000	.00	.01	.040	.040	60	7.2	6.6
DEC.											
01...	1150	635	.08	.000	.00	.02	.010	.010	61	7.1	3.1
14...	1130	724	.06	.000	.00	.16	.020	.020	58	7.3	4.4
JAN.											
25...	1135	2470	.04	.000	.00	.32	.040	.090	46	6.6	4.7
FEB.											
08...	1050	605	.12	.000	.09	.20	.050	.080	57	7.0	2.9
22...	1055	670	.10	.000	.00	.20	--	--	51	7.2	5.6
MAR.											
08...	1255	500	.16	.010	.03	.43	.010	.020	56	7.3	5.2
23...	1040	565	.24	.000	.03	.16	--	.090	57	7.3	7.9
APR.											
12...	1100	676	.25	.000	.07	.29	--	.110	55	7.3	7.0
26...	1015	525	.12	.000	.02	.00	.030	.100	58	7.3	11.1
MAY											
10...	1030	946	.19	.000	.00	.02	.030	.110	47	7.1	8.4
25...	1030	1050	.12	.000	.00	.02	.030	.080	44	7.2	10.0
JUNE											
22...	1115	1530	.08	.000	.00	.02	.010	.020	47	7.0	9.4
JULY											
11...	1200	960	.02	.010	.01	.06	.010	.020	43	7.0	10.8
26...	1145	1110	--	.010	.21	.08	.000	.060	50	7.2	13.9
AUG.											
09...	1105	890	.11	.000	.07	.23	.010	.120	37	7.0	12.2
23...	1220	535	.21	.020	.20	.00	.120	.120	50	7.0	12.7
SEP.											
13...	1110	485	.17	.000	.04	.09	.000	.110	51	7.3	11.3
27...	1100	344	.13	.000	.05	.15	.000	.040	68	7.2	9.2

12093500 PUYALLUP RIVER NEAR ORTING, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
17...	47	6	12.3	240	0	0	0	0	1.0	0	0
DEC.											
01...	24	4	13.2	120	0	0	0	0	1.0	0	0
14...	20	4	12.6	150	0	0	0	0	.0	0	0
JAN.											
25...	87	30	12.2	400	0	0	0	0	.2	0	0
FEB.											
08...	9	5	13.1	270	0	0	0	0	.1	0	0
22...	30	2	12.3	<100	0	0	0	0	.1	0	0
MAR.											
08...	47	20	12.8	350	1	1	6	22	.1	120	10
23...	35	4	12.0	130	0	0	2	0	.0	170	20
APR.											
12...	36	6	12.4	70	1	0	2	9	.0	230	10
26...	27	1	12.2	80	0	0	1	2	.1	60	0
MAY											
10...	18	3	12.3	130	0	4	380	15	1.4	3	2
25...	22	4	11.1	200	0	1	1	0	.0	40	0
JUNE											
22...	22	15	11.0	250	0	5	10	31	2.5	0	0
JULY											
11...	15	7	11.3	200	0	1	0	4	4.0	60	0
26...	130	150	11.1	700	0	20	8	0	.3	130	10
AUG.											
09...	100	65	11.4	800	2	14	2	13	.2	50	10
23...	43	55	11.3	1500	1	6	6	8	1.1	50	10
SEP.											
13...	64	40	11.6	<400	0	2	2	0	.0	50	0
27...	27	15	11.5	300	8	1	8	16	.2	110	0

12094300 CARBON RIVER ABOVE SOUTH PRAIRIE CREEK, NEAR ORTING, WASH.

LOCATION.--Lat 47°05'56", long 122°09'05", in SW¼SE¼ sec.27, T.19 N., R.5 E., Pierce County, at State Highway 162 bridge, 0.2 mile upstream from South Prairie Creek, 2.3 miles east of Orting, and at mile 18.0.

DRAINAGE AREA.--96.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
17...	0945	--	.11	.000	.00	.14	.030	.040
DEC.								
01...	1120	--	.01	.000	.00	.18	.010	.010
14...	1105	--	.08	.000	.00	.18	.000	.010
JAN.								
25...	1120	--	.02	.000	.00	.50	.030	.080
FEB.								
08...	1040	--	.08	.000	.07	.18	.050	.080
22...	1030	--	.08	.000	.00	.20	--	--
MAR.								
08...	1140	--	.79	.010	.00	.25	.000	.000
23...	1025	--	.23	.000	.07	.20	--	.060
APR.								
12...	1040	--	.12	.000	.02	.29	--	.100
26...	0955	--	.13	.000	.01	.02	.030	.080
MAY								
10...	1015	--	.11	.000	.00	.05	.030	.080
25...	1005	--	.13	.000	.00	.05	.020	.070
JUNE								
22...	1100	--	.06	.000	.00	.02	.000	.010
JULY								
11...	1130	805	.03	.010	.01	.06	.010	.010
26...	1110	805	.15	.010	.15	.08	.010	.030
AUG.								
09...	1040	543	.10	.000	--	.09	.010	.080
23...	1150	510	.15	.010	.15	.01	.140	.140
SEP.								
13...	1040	420	.14	.000	.02	.50	.000	.100
27...	1030	300	.14	.000	.11	.24	.000	.030

12094300 CARBON RIVER ABOVE SOUTH PRAIRIE CREEK, NEAR ORTING, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
NOV.							
17...	44	7.2	6.5	33	5	12.3	200
DEC.							
01...	56	7.1	3.5	20	4	13.0	350
14...	51	7.3	4.5	2	2	12.7	140
JAN.							
25...	47	6.8	4.6	50	15	12.7	250
FEB.							
08...	54	7.1	2.8	6	5	13.5	130
22...	51	7.1	5.2	17	2	12.3	180
MAR.							
08...	64	7.3	4.3	17	2	13.0	>400
23...	65	7.3	7.6	20	4	12.1	400
APR.							
12...	61	7.3	6.0	18	5	12.6	190
26...	59	7.4	10.0	23	2	12.2	200
MAY							
10...	40	7.0	7.7	15	3	12.3	100
25...	36	7.0	8.5	17	2	11.7	150
JUNE							
22...	37	7.0	9.4	31	25	11.0	250
JULY							
11...	32	6.9	9.5	17	10	11.6	400
26...	33	7.2	12.2	71	120	11.5	200
AUG.							
09...	26	7.0	11.5	60	70	11.7	120
23...	33	7.0	11.5	28	45	11.7	250
SEP.							
13...	41	7.3	10.9	34	35	11.4	130
27...	59	7.1	9.6	23	10	11.4	200

12095000 SOUTH PRAIRIE CREEK AT SOUTH PRAIRIE, WASH.

LOCATION.--Lat 47°08'23", long 122°05'28", in NE¼NW¼ sec.18, T.19 N., R.6 E., Pierce County, temperature recorder at gaging station on left bank 30 ft downstream from railroad bridge, 200 ft upstream from bridge on State Highway 162, 0.3 mile east of South Prairie, and at mile 5.9.

DRAINAGE AREA.--79.5 sq mi.

PERIOD OF RECORD.--Water temperatures: September 1970 to September 1971.

EXTREMES.--September 1970 to September 1971:
Water temperature: Maximum, 20.5°C Aug. 8-12; minimum, 0.5°C Nov. 22, Jan. 2-3, Mar. 1.

REMARKS.--Recorder not operating Jan. 4-7; recorded range in temperature 0.5°C to 3.5°C. Miscellaneous suspended sediment data published for water year 1955.

TEMPERATURE (°C) OF WATER, SEPTEMBER 1970

DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
9	13.0	---	14	12.0	8.5	19	11.5	9.5	23	10.5	9.0	27	11.5	8.5
10	13.5	9.0	15	12.0	8.5	20	11.0	10.0	24	10.0	7.0	28	12.0	9.0
11	13.5	10.0	16	13.0	10.0	21	11.0	9.0	25	10.0	6.5	29	12.0	9.5
12	11.5	8.0	17	12.0	11.5	22	11.5	10.0	26	11.0	7.0	30	11.5	10.5
13	11.0	7.0	18	12.0	10.5									

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	9.0	7.0	5.5	3.5	3.5	3.5	1.5	6.0	5.0	3.5	0.5
2	11.5	9.0	6.5	5.5	3.5	3.0	1.5	0.5	6.0	4.5	4.0	1.0
3	12.0	9.5	6.5	5.0	4.0	3.0	1.0	0.5	4.5	4.0	3.5	1.5
4	11.5	10.5	7.0	5.5	3.5	3.0	---	---	4.5	4.0	3.5	2.0
5	11.0	9.5	7.0	6.0	5.0	3.0	---	---	4.5	3.0	4.5	2.0
6	9.5	8.5	8.0	6.5	5.5	5.0	---	---	3.5	1.5	4.0	3.0
7	9.5	6.0	8.5	7.0	6.0	5.0	---	---	3.5	1.5	5.0	3.5
8	10.0	9.0	8.5	8.0	5.0	4.5	4.0	4.0	3.5	1.5	5.0	3.5
9	10.0	9.5	8.0	6.5	4.5	4.0	4.5	3.5	4.0	3.0	5.0	4.0
10	9.5	9.5	7.0	6.0	5.5	4.0	4.5	3.5	5.0	4.0	5.0	4.0
11	10.5	9.5	7.0	7.0	5.5	3.5	3.5	3.0	5.5	4.5	5.0	4.0
12	10.0	8.5	7.0	5.5	4.0	3.0	3.0	2.0	6.0	5.0	6.5	4.5
13	8.5	6.5	5.5	5.0	4.5	3.5	3.0	2.0	7.0	6.0	5.5	4.0
14	9.0	6.0	6.0	5.0	4.5	3.5	3.0	1.5	6.5	5.5	5.5	4.0
15	9.0	6.0	8.0	5.5	5.0	4.5	5.0	3.0	6.5	5.5	5.5	3.5
16	8.5	6.0	8.5	6.5	5.0	4.5	5.0	4.5	6.0	4.5	6.0	3.0
17	9.0	7.0	7.0	6.5	5.0	3.5	5.5	5.0	5.5	5.0	6.0	3.5
18	10.0	8.5	7.0	6.5	3.5	1.5	6.0	5.5	6.0	5.0	6.0	3.0
19	9.5	8.5	6.5	5.5	3.0	1.5	6.5	4.5	5.5	4.0	7.0	3.0
20	9.0	8.0	6.0	4.0	4.0	3.0	5.0	4.5	5.0	3.0	7.0	3.5
21	8.0	8.0	4.0	1.0	3.5	2.0	4.5	3.5	5.5	4.0	6.5	3.5
22	8.5	7.0	2.0	0.5	2.0	1.0	4.0	3.5	6.0	5.0	6.5	5.0
23	8.5	7.0	5.5	2.0	3.5	2.0	4.5	4.0	6.0	5.0	6.5	5.5
24	8.5	7.0	6.0	4.5	3.0	2.0	4.5	4.5	6.0	4.5	6.0	4.0
25	7.0	6.0	4.5	4.0	3.0	2.0	5.5	4.5	4.5	3.5	5.5	3.5
26	6.0	4.5	4.5	4.0	2.0	1.5	6.0	5.5	4.0	3.0	6.5	4.5
27	5.5	3.5	4.5	4.0	3.5	2.0	5.5	5.0	3.5	2.0	6.0	4.5
28	6.0	4.0	4.0	3.0	4.0	3.0	5.0	4.5	3.0	1.0	6.5	4.5
29	6.0	4.0	3.5	2.0	4.0	3.0	5.5	4.5	---	---	8.0	6.0
30	6.0	4.0	4.0	3.5	4.5	3.5	6.0	5.5	---	---	6.0	4.5
31	7.0	5.5	---	---	4.0	3.5	6.0	5.0	---	---	6.0	4.5
MONTH	12.0	3.5	8.5	0.5	6.0	1.0	6.5	0.5	7.0	1.0	8.0	0.5

12095000 SOUTH PRAIRIE CREEK AT SOUTH PRAIRIE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12098500 WHITE RIVER NEAR BUCKLEY, WASH.

LOCATION.--Lat 47°09'05", long 121°57'00", in SW¼NW¼ sec.8, T.19 N., R.7 E., King County, temperature recorder at gaging station on right bank 0.4 mile upstream from Red Creek, 1.7 miles downstream from Mud Mountain Dam, 3.8 miles east of Buckley, and at mile 27.9.

DRAINAGE AREA.--401 sq mi.

PERIOD OF RECORD.--Water temperatures: March to September 1971.

EXTREMES.--March to September 1971:
Water temperatures: Maximum, 16.5°C Aug. 5-6; minimum, 0.5°C Mar. 4.

REMARKS.--Miscellaneous suspended sediment data published for water year 1955.

TEMPERATURE (°C) OF WATER, MARCH 1971

DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
1	----	----	9	----	----	17	5.0	4.0	25	5.0	3.0
2	----	----	10	3.5	3.0	18	5.0	4.5	26	5.0	4.0
3	----	----	11	3.5	2.0	19	4.5	4.0	27	4.5	3.5
4	1.5	0.5	12	5.0	3.0	20	4.5	4.5	28	5.0	3.5
5	3.0	1.0	13	5.0	4.5	21	4.5	4.5	29	6.0	4.5
6	3.0	1.0	14	5.0	4.0	22	5.0	4.5	30	6.0	4.0
7	3.0	1.5	15	5.0	3.5	23	5.0	4.5	31	5.5	3.5
8	3.5	2.0	16	5.0	3.5	24	5.0	4.0			

TEMPERATURE (°C) OF WATER, APRIL TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.5	3.5	10.5	6.0	11.0	6.0	11.5	8.5	15.5	10.5	11.5	8.5
2	6.0	5.5	11.0	5.5	11.0	6.5	12.0	7.0	14.5	10.0	9.0	8.5
3	6.0	5.5	10.5	5.5	8.0	6.5	13.0	7.0	15.0	10.0	9.5	9.0
4	6.5	5.0	10.0	5.0	10.0	6.0	12.0	8.0	16.0	11.0	10.0	9.0
5	7.0	5.0	6.0	5.5	11.5	6.0	10.5	8.0	16.5	11.5	11.5	10.0
6	7.0	5.0	10.0	5.5	11.0	6.5	10.0	7.0	16.5	11.5	10.0	9.0
7	6.0	4.5	11.0	5.5	10.0	7.0	12.0	6.5	15.5	11.0	9.5	9.0
8	5.5	4.0	10.5	5.5	8.5	6.0	11.5	8.5	15.5	12.0	10.5	9.5
9	4.5	4.0	10.0	5.5	10.0	5.5	10.5	8.5	15.5	11.5	10.5	10.0
10	6.5	3.0	10.5	5.0	9.0	6.5	9.5	8.0	15.0	11.5	11.0	10.0
11	5.5	4.0	11.0	6.0	10.0	6.5	10.0	7.0	15.0	11.5	11.0	10.0
12	7.0	3.0	11.0	6.0	10.0	6.5	13.0	7.0	16.0	12.0	10.5	9.0
13	8.5	4.5	8.0	5.5	10.0	7.0	14.0	8.0	16.0	10.5	10.5	9.0
14	7.0	4.5	8.0	4.5	9.0	6.5	14.5	8.5	15.0	11.5	10.0	8.5
15	6.0	4.5	8.5	5.5	10.5	7.0	14.5	8.5	15.0	10.0	9.0	8.0
16	6.0	4.0	8.5	5.0	10.5	7.0	14.0	8.5	15.0	11.0	10.0	8.5
17	6.0	4.5	8.0	4.5	10.0	6.5	14.0	9.0	15.0	10.0	10.0	9.0
18	6.0	4.5	9.5	5.0	10.0	7.0	13.5	10.0	15.0	11.0	10.0	9.0
19	9.5	4.5	9.0	6.5	12.0	8.0	13.5	10.5	16.0	11.5	10.5	9.0
20	9.0	5.5	7.0	5.0	11.5	7.0	12.0	10.5	16.0	13.0	11.0	9.5
21	6.0	4.5	11.0	5.0	13.5	7.0	11.5	10.5	14.5	10.5	10.5	9.0
22	6.5	4.0	11.5	6.5	13.5	7.0	11.5	10.5	13.5	11.0	10.5	9.5
23	7.0	4.5	11.5	6.5	11.0	8.0	11.0	10.5	14.5	10.0	10.5	9.5
24	6.5	4.5	11.0	7.0	9.0	6.0	11.0	10.5	15.0	10.5	10.5	9.5
25	10.0	3.5	---	---	8.5	6.5	12.0	11.0	15.0	11.0	10.0	9.0
26	10.5	5.0	10.0	7.0	10.0	7.0	13.0	11.5	14.5	10.5	9.0	8.5
27	10.0	5.0	11.5	7.0	10.0	7.0	13.5	12.0	14.5	10.5	9.5	8.5
28	6.5	5.0	11.5	6.0	9.0	7.0	14.5	13.0	14.5	12.0	9.0	8.0
29	8.5	5.0	11.0	6.0	9.0	8.0	16.0	11.0	14.5	12.0	8.5	6.5
30	9.0	5.0	6.5	5.5	11.5	9.0	16.0	10.0	14.0	12.0	10.0	6.5
31	---	---	6.5	5.5	---	---	15.5	10.5	13.0	11.5	---	---
MONTH	10.5	3.0	11.5	4.5	13.5	5.5	16.0	6.5	16.5	10.0	11.5	6.5

12100500 WHITE RIVER NEAR SUMNER, WASH.

LOCATION.--Lat 47°15'55", long 122°13'40", in SE¼NE¼ sec.36, T.21 N., R.4 E., Pierce County, at State Highway 167 bridge, 1.5 miles upstream from gaging station, 2.8 miles upstream from White River Powerplant outlet canal, 4 miles north of Sumner and at mile 6.4.

DRAINAGE AREA.--470 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
17...	1055	89	.13	.010	.01	.36	.080	.090
DEC.								
01...	1325	135	--	--	--	--	--	--
14...	1330	205	.21	.000	.07	.50	.060	.060
JAN.								
25...	1300	3160	.06	.000	.02	.32	.060	.090
FEB.								
08...	1215	240	.09	.000	.07	.25	.080	.100
22...	1240	374	.15	.000	.02	.36	--	--
MAR.								
08...	1435	245	.54	.010	.15	1.0	.040	.070
23...	1200	240	.35	.010	.15	.56	--	.170
APR.								
12...	1300	1970	.56	.000	.12	.20	--	.120
26...	1200	1770	.12	.000	.02	.02	.040	.080
MAY								
10...	1210	3520	.16	.000	.00	.05	.050	.120
25...	1200	2370	.10	.000	.00	.02	.030	.100
JUNE								
22...	1305	3380	.08	.000	.00	.02	.010	.020
JULY								
11...	1310	2010	.03	.010	.00	.06	.020	.020
26...	1345	4350	.14	.010	.10	.05	.010	.010
AUG.								
09...	1250	220	.18	.000	.19	.23	.030	.080
23...	1410	155	.15	.010	.15	.04	.120	.120
SEP.								
13...	1235	65	.17	.000	.08	.30	.040	.060
27...	1230	215	.13	.000	.04	.21	.040	.070

12100500 WHITE RIVER NEAR SUMNER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
NOV.							
17...	112	8.0	7.9	35	3	9.2	1000
DEC.							
01...	108	7.1	4.5	24	3	12.5	>8000
14...	97	7.2	5.4	14	2	12.3	<1000
JAN.							
25...	53	6.6	4.9	66	15	12.5	4000
FEB.							
08...	70	7.1	4.5	7	5	13.2	<1000
22...	71	7.1	7.4	22	2	11.8	250
MAR.							
08...	92	7.3	7.0	54	4	11.9	800
23...	94	7.3	8.7	49	7	11.2	1200
APR.							
12...	66	7.1	8.8	26	5	11.9	200
26...	61	7.4	12.9	24	1	11.6	500
MAY							
10...	52	6.8	8.1	19	10	11.3	200
25...	50	7.2	11.3	18	8	11.0	400
JUNE							
22...	47	7.4	12.4	32	70	10.4	500
JULY							
11...	48	7.0	12.2	4	6	11.0	270
26...	74	8.8	18.0	68	65	10.3	1500
AUG.							
09...	61	7.1	19.1	72	70	9.8	700
23...	59	7.3	17.5	31	45	10.2	1500
SEP.							
13...	105	8.0	16.8	33	5	11.3	200
27...	108	7.4	12.6	28	4	10.8	200

12101500 PUYALLUP RIVER AT PUYALLUP, WASH.

LOCATION.--Lat 47°12'52", long 122°20'25", in SE¼SE¼ sec.18, T.20 N., R.4 E., Pierce County, at Clark Creek bridge 0.8 mile downstream from gaging station, 2.8 miles northwest of Puyallup City Hall, and at mile 5.8.

DRAINAGE AREA.--948 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to February 1968, November 1970 to September 1971.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.											
17...	1145	2920	6.5	1.6	3.8	.8	27	0	22	7.4	1.9
DEC.											
01...	1010	2740	7.6	1.9	4.2	1.0	31	0	25	8.4	2.3
14...	0930	3620	6.8	1.6	3.7	.9	27	0	22	6.8	1.9
JAN.											
25...	1020	12900	4.9	1.4	2.6	1.0	20	0	16	4.8	1.9
FEB.											
08...	0950	3780	6.6	1.7	3.5	.6	28	0	23	5.8	1.9
22...	0920	3620	7.1	2.2	3.6	.8	34	0	28	5.4	2.3
MAR.											
08...	1015	4000	8.4	2.4	4.2	1.9	37	0	30	6.0	2.1
23...	0925	1790	--	--	--	--	--	--	--	--	--
APR.											
12...	0915	4210	--	--	--	--	--	--	--	--	--
26...	0835	2790	7.2	1.8	3.8	.7	32	0	26	5.0	1.9
MAY											
10...	0920	6050	5.7	1.3	2.7	.6	26	0	21	4.0	1.5
25...	0900	5790	5.8	1.1	2.8	.7	22	0	18	3.3	1.1
JUNE											
22...	0915	7050	5.4	1.3	2.9	.7	25	0	21	2.5	1.1
JULY											
11...	1025	4420	5.9	1.4	2.8	.7	27	0	22	6.8	1.7
26...	0940	6820	6.6	1.6	2.2	.7	21	0	17	4.0	1.8
AUG.											
09...	0930	3750	6.5	2.2	3.1	.7	22	0	18	6.2	1.0
23...	1020	2450	8.1	1.5	3.6	.4	27	0	22	6.0	2.3
SEP.											
13...	0935	2000	6.8	1.7	3.6	.9	38	0	31	6.0	1.9
27...	0930	1860	8.5	2.2	4.7	1.2	40	0	33	6.8	1.9

12101500 PUYALLUP RIVER AT PUYALLUP, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.											
17...	.20	.010	.04	.23	.070	.080	23	1	61	7.2	7.0
DEC.											
01...	.10	.000	.08	.18	.020	.030	27	2	84	7.0	4.5
14...	.18	.020	.00	.23	.030	.030	24	2	71	7.3	4.3
JAN.											
25...	.08	.010	.04	.43	.050	.050	18	2	52	6.7	4.5
FEB.											
08...	.21	.000	.12	.29	.060	.110	24	1	64	6.9	3.4
22...	.15	.000	.02	.32	--	--	27	0	71	7.0	6.2
MAR.											
08...	.25	.010	.12	.50	.020	.050	31	1	77	7.2	4.4
23...	.34	.000	.19	.29	--	.100	--	--	86	7.0	7.8
APR.											
12...	.16	.000	.02	.25	--	.110	--	--	64	7.2	5.6
26...	.21	.000	.02	.02	.050	.080	25	0	70	7.2	10.3
MAY											
10...	.20	.000	.00	.05	.040	.070	20	0	51	6.9	9.5
25...	.14	.000	.02	.05	.040	.070	19	1	51	7.0	11.5
JUNE											
22...	.03	.000	.00	.02	.020	.030	19	0	50	7.3	12.7
JULY											
11...	.05	.020	.02	.09	.010	.010	20	0	50	6.9	11.0
26...	--	.000	.20	.12	.010	.070	23	6	60	7.1	14.1
AUG.											
09...	.15	.000	.14	.14	.000	.060	25	7	47	6.9	16.3
23...	.16	.020	.15	.03	.120	.120	26	4	57	7.0	13.5
SEP.											
13...	.17	--	.07	1.1	.010	.050	24	0	68	7.1	13.4
27...	.34	.000	.29	.24	.040	.100	30	0	91	7.0	10.9

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
17...	41	20	12.1	1700	0	0	0	0	1.0	0	0
DEC.											
01...	29	10	12.1	5000	0	0	0	0	.0	0	0
14...	20	5	12.3	800	0	0	0	0	.0	0	0
JAN.											
25...	75	30	12.5	2000	0	0	0	0	.2	0	0
FEB.											
08...	11	10	12.6	800	0	0	0	0	.1	0	0
22...	34	3	11.5	500	--	--	--	0	.0	--	--
MAR.											
08...	48	20	12.1	6500	0	13	5	22	.2	110	20
23...	41	7	11.2	2000	--	--	--	--	--	--	--
APR.											
12...	36	5	12.3	1000	--	--	--	--	--	--	--
26...	26	1	11.1	4000	0	0	2	2	.1	0	0
MAY											
10...	23	7	11.2	400	0	4	14	8	.4	180	0
25...	23	6	10.5	700	0	1	2	0	.1	50	0
JUNE											
22...	27	15	10.0	800	0	6	6	32	.2	0	0
JULY											
11...	31	10	11.0	3500	0	2	0	0	3.3	410	10
26...	70	90	10.7	2500	0	9	4	1	.2	60	10
AUG.											
09...	69	90	9.8	3000	1	11	0	0	.1	200	0
23...	43	45	10.8	2200	1	6	0	0	.8	70	20
SEP.											
13...	42	20	9.9	4000	0	3	2	0	.1	70	0
27...	35	10	10.3	5000	5	1	4	2	.0	130	0

12109010 GREEN RIVER AT AUBURN ACADEMY NEAR AUBURN, WASH.

LOCATION.--Lat 47°17'18", long 122°09'33", in SE¼SW¼ sec.22, T.21 N., R.5 E., King County, at county road bridge 0.4 mile north of Auburn Academy, 3.3 miles east of Auburn and at mile 35.1.

DRAINAGE AREA.--328 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.											
01...	1350	1030	6.3	1.4	3.4	.5	29	0	24	3.2	1.7
14...	1400	1130	6.5	1.5	3.5	.5	30	0	25	3.6	1.7
JAN.											
25...	1320	6410	4.3	1.0	2.2	.5	20	0	16	2.4	1.2
FEB.											
08...	1230	1680	6.3	1.4	3.2	.3	29	0	24	3.0	1.4
22...	1315	1700	5.7	1.4	3.0	.3	27	0	22	2.8	1.3
MAR.											
08...	1500	1190	7.3	2.0	3.5	.9	35	0	28	6.3	1.6
23...	1220	1310	6.7	1.8	3.3	.9	31	0	25	5.5	1.5
APR.											
12...	1320	1780	--	--	--	--	--	--	--	--	--
26...	1230	1340	6.4	1.2	3.1	.3	28	0	22	2.3	1.6
MAY											
10...	1240	3030	4.7	1.0	2.3	.1	23	0	18	3.0	1.4
25...	1235	2860	4.8	.9	2.3	.1	20	0	16	.0	.9
JUNE											
22...	1335	1140	5.3	1.1	2.9	.3	29	0	24	1.0	.8
JULY											
11...	1330	1070	6.3	1.4	3.0	.3	32	0	26	3.5	1.3
26...	1430	652	6.5	1.3	3.2	.2	31	0	25	2.5	1.0
AUG.											
09...	1330	327	7.8	1.7	4.0	.4	37	0	30	2.5	1.5
23...	1440	292	8.7	1.5	3.9	.0	41	0	34	4.0	2.8
SEP.											
13...	1310	340	7.6	1.4	3.7	.4	40	0	33	4.0	2.1
27...	1300	245	9.0	1.9	4.3	.6	45	0	37	2.5	1.9

12109010 GREEN RIVER AT AUBURN ACADEMY NEAR AUBURN, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
01...	.04	.000	.01	.23	.010	.020	22	0	62	7.1	4.5
14...	.06	.010	.00	.29	.020	.020	22	0	64	7.3	5.2
JAN.											
25...	.05	.000	.00	.25	.040	.080	15	0	43	6.7	5.3
FEB.											
08...	.05	.000	.03	.27	.040	.150	22	0	58	7.0	5.4
22...	.14	.000	.00	.29	--	--	20	0	54	7.1	7.2
MAR.											
08...	.16	.010	.03	.52	.010	.020	26	0	64	7.3	6.0
23...	.42	.000	.05	.45	--	.120	24	0	66	7.2	7.2
APR.											
12...	.16	.000	.00	.43	--	.100	--	--	53	7.4	8.6
26...	.76	.000	.03	.11	.030	.060	21	0	54	7.4	13.0
MAY											
10...	.18	.000	.00	.07	.040	.070	16	0	45	7.0	12.4
25...	--	--	--	.07	.030	.060	16	0	40	7.2	11.1
JUNE											
22...	--	--	.01	.07	.010	.060	18	0	50	7.4	12.4
JULY											
11...	.04	.010	.01	.15	.010	.010	21	0	52	7.2	14.2
26...	.03	.020	.03	.19	.010	.020	22	0	55	7.9	20.4
AUG.											
09...	.10	.000	.02	.36	.000	.010	26	0	74	7.3	21.0
23...	.10	.000	.02	.20	.020	.020	28	0	77	7.3	19.9
SEP.											
13...	.14	.000	.02	.40	.000	.010	25	0	72	8.3	15.7
27...	.12	.000	.01	.43	.000	.010	30	0	83	7.5	12.5

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
01...	8	3	12.6	400	0	0	0	0	1.0	0	0
14...	10	5	12.2	160	0	0	0	0	.0	0	0
JAN.											
25...	42	25	12.5	600	0	0	0	0	.2	0	0
FEB.											
08...	3	4	12.7	<100	0	0	0	0	.1	0	0
22...	10	3	11.9	70	0	0	0	0	.0	0	0
MAR.											
08...	20	4	12.5	300	1	0	10	2	.0	70	10
23...	23	7	12.2	800	1	0	9	0	.0	290	0
APR.											
12...	14	3	12.8	120	--	--	--	--	--	--	--
26...	17	1	12.5	100	0	0	5	6	.0	10	1
MAY											
10...	14	6	11.8	200	0	0	3	5	.0	30	6
25...	15	5	11.5	120	0	1	3	0	.1	20	0
JUNE											
22...	8	1	10.8	250	--	4	0	32	.2	100	0
JULY											
11...	0	2	11.1	220	0	0	0	0	1.0	500	0
26...	10	4	10.5	200	0	2	3	8	.0	40	0
AUG.											
09...	11	1	9.9	250	0	1	1	4	.0	20	0
23...	9	1	10.4	300	0	0	0	0	.4	40	0
SEP.											
13...	13	1	12.6	200	0	0	2	0	.1	40	0
27...	8	2	12.2	120	4	0	6	0	.0	150	0

12110002 WILDERNESS LAKE NEAR MAPLE VALLEY, WASH.

LOCATION.--Lat 47°22'04", long 122°02'12", in NE¼SE¼ sec.21, T.22 N., R.6 E., King County, 2.1 miles south of Maple Valley.

DRAINAGE AREA.--0.66 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
OCT.									
20...	1100	3.0	--	10	38	0	3.0	1.9	.1
20...	1101	24	--	9.4	38	0	3.2	1.9	.1
20...	1102	28	--	9.6	39	0	3.4	1.9	.1
FEB.									
09...	1200	16	--	12	42	0	3.0	--	--
MAY									
14...	1100	3.0	15.5	8.1	36	0	3.3	1.8	--
14...	1105	28	8.0	--	--	--	--	--	--
JUNE									
29...	0930	3.0	17.0	7.9	34	--	2.8	--	--
29...	0935	29	9.0	--	--	--	--	--	--
AUG.									
10...	1400	3.0	26.0	--	--	--	--	--	--
10...	1410	28	10.5	--	--	--	--	--	--
SEP.									
14...	0945	3.0	18.5	9.4	--	--	4.5	--	--
14...	0950	28	10.5	16	--	--	4.3	--	--

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.									
20...	.17	.11	.27	.020	.030	50	76	7.1	5
20...	.04	.00	.23	.030	.030	53	76	7.2	5
20...	.02	.01	.27	.040	.050	53	78	7.0	5
FEB.									
09...	.33	.17	.05	.000	.030	53	70	7.8	5
MAY									
14...	.14	.07	.03	.010	.010	--	66	7.7	5
14...	.07	.00	.37	.030	.050	--	77	7.2	--
JUNE									
29...	.05	.03	.05	.010	.010	--	65	7.6	--
29...	.24	.23	.02	.040	.080	--	79	7.0	--
AUG.									
10...	.07	.04	.02	.000	.050	--	66	8.7	5
10...	.13	.13	.02	.020	.070	--	100	7.6	30
SEP.									
14...	.25	.18	.01	.020	.020	--	67	8.9	5
14...	.29	.31	.01	.020	.060	--	100	7.2	30

12110004 PIPE LAKE NEAR MAPLE VALLEY, WASH.

LOCATION.--Lat 47°21'58", long 122°03'06", in SW¼NW¼ sec.28, T.22 N., R.6 E., King County, 3.0 miles south of Maple Valley.

DRAINAGE AREA.--0.63 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
OCT.									
21...	1330	3.0	--	2.3	20	0	4.2	2.5	.1
21...	1331	26	--	2.3	21	0	4.0	2.5	.1
21...	1335	55	--	4.9	26	0	3.2	2.3	.1
FEB.									
17...	1050	30	--	4.4	19	0	4.0	--	--
MAY									
27...	1340	3.0	18.0	3.6	20	0	3.0	--	--
27...	1345	55	5.5	--	--	--	--	--	--
JUNE									
29...	1400	3.0	18.0	3.6	20	--	3.8	--	--
29...	1405	57	5.0	--	--	--	--	--	--
SEP.									
14...	1500	3.0	19.4	3.5	--	--	5.0	--	--
14...	1505	57	5.3	5.0	--	--	5.3	--	--

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.									
21...	.07	.05	.07	.010	.010	32	52	7.1	5
21...	.09	.07	.11	.010	.010	40	52	7.1	5
21...	.53	.39	.25	.020	.030	45	59	6.5	30
FEB.									
17...	.25	.06	.25	.000	.010	42	53	7.4	10
MAY									
27...	.06	.05	.18	.000	.000	--	48	7.4	5
27...	.02	.02	.64	.010	.010	--	54	7.0	--
JUNE									
29...	.30	.06	.02	.010	.010	--	49	7.4	--
29...	.16	.02	.45	.010	.020	--	54	7.0	--
SEP.									
14...	.16	.07	.02	.010	.020	--	49	7.6	10
14...	.13	.07	.25	.010	.020	--	56	7.2	25

12112600 BIG SOOS CREEK, ABOVE HATCHERY, NEAR AUBURN, WASH.

LOCATION.--Lat 47°18'35", long 122°10'05", in SE¼NE¼ sec.16, T.21 N., R.5 E., King County, at State Fish Hatchery diversion dam 1.0 mile upstream from gaging station, 1.9 miles upstream from mouth, and 3.0 miles east of Auburn.

DRAINAGE AREA.--66.7 sq mi, excluding 3.67 sq mi in vicinity of Youngs Lake, upstream from gaging station.

PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1971 (discontinued).

REMARKS.--Minor inflow between sampling point and gaging station. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
01...	1405	89	10	3.9	5.0	1.4	43	0	35
14...	1420	157	9.0	3.4	5.9	1.2	38	0	31
JAN.									
25...	1335	397	7.7	2.8	5.2	1.2	33	0	27
FEB.									
08...	1250	193	9.1	3.5	5.8	.8	41	0	34
22...	1330	242	8.4	3.4	5.3	.9	38	0	31
MAR.									
08...	1525	331	7.7	3.0	4.8	1.8	40	0	33
23...	1240	274	8.7	2.8	4.9	1.2	37	0	30
APR.									
12...	1330	278	8.2	2.9	5.0	1.4	35	0	29
26...	1250	133	9.4	3.4	6.1	.0	43	0	35
MAY									
10...	1230	92	10	3.5	5.6	1.2	46	--	38
25...	1300	88	10	3.6	5.0	.8	45	0	37
JUNE									
22...	1355	68	10	3.4	5.7	.9	56	0	46
JULY									
11...	1345	76	9.9	3.7	5.6	.7	55	0	45
26...	1450	44	10	3.4	5.1	.7	51	0	42
AUG.									
09...	1350	38	9.7	3.7	5.3	.9	52	0	43
23...	1450	38	11	3.8	5.3	.6	58	0	48
SEP.									
13...	1330	40	9.9	3.5	5.2	.8	56	0	46
27...	1320	40	10	3.7	5.4	1.2	57	0	47

12112600 BIG SOOS CREEK, ABOVE HATCHERY, NEAR AUBURN, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
DEC.									
01...	9.8	4.3	.18	.000	.09	.66	.020	.040	41
14...	9.6	3.5	.25	.010	.00	.93	.030	.030	37
JAN.									
25...	9.2	3.1	.02	.000	.00	.79	.040	.100	31
FEB.									
08...	10	2.9	.07	.000	.05	.72	.050	.090	37
22...	10	2.9	.15	.000	.01	.77	--	--	35
MAR.									
08...	11	3.0	.23	.010	.02	.95	.010	.020	32
23...	8.0	2.5	.25	.000	.00	.70	--	.090	33
APR.									
12...	10	2.6	.22	.000	.03	.72	--	.100	32
26...	11	2.9	.12	.000	.04	.61	.040	.070	37
MAY									
10...	8.3	3.2	.16	.010	.02	.54	.060	.070	39
25...	7.0	2.2	.14	.000	.00	.45	.050	.070	40
JUNE									
22...	4.3	2.1	.03	.000	.00	.52	.030	.040	39
JULY									
11...	9.0	2.9	.02	.010	.02	.76	.020	.020	40
26...	6.5	2.2	.02	.020	.02	1.0	.010	.020	39
AUG.									
09...	6.5	2.2	.07	.000	.02	.81	.020	.040	39
23...	4.8	2.7	.09	.000	.01	.66	.030	.050	43
SEP.									
13...	4.8	3.4	.16	.000	.02	1.1	.000	.030	39
27...	7.0	2.8	.14	.000	.02	1.1	.010	.030	40

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.								
01...	6	114	7.2	4.7	61	2	11.4	2000
14...	6	105	7.4	5.8	39	4	12.0	680
JAN.								
25...	4	93	6.9	6.1	66	5	12.2	700
FEB.								
08...	4	102	7.1	5.2	11	3	12.8	<400
22...	4	95	7.2	7.5	49	2	11.6	350
MAR.								
08...	0	86	7.3	6.2	55	4	12.2	1000
23...	3	90	7.3	8.4	51	5	11.4	660
APR.								
12...	4	91	7.4	9.9	49	4	11.3	400
26...	2	102	7.4	13.1	30	2	11.0	700
MAY								
10...	2	105	7.4	11.8	22	15	11.7	200
25...	3	105	7.6	12.8	30	1	10.9	200
JUNE								
22...	0	110	7.5	13.9	27	1	10.0	150
JULY								
11...	0	105	7.4	13.8	18	1	10.4	800
26...	0	100	7.6	17.1	22	2	10.5	600
AUG.								
09...	0	109	7.3	16.9	20	1	10.0	2500
23...	0	112	7.4	15.5	19	1	10.3	900
SEP.								
13...	0	110	7.8	12.7	19	1	10.9	500
27...	0	83	7.3	10.8	26	1	10.6	250

12113000 GREEN RIVER NEAR AUBURN, WASH.

LOCATION (revised).--Lat 47°18'45", long 122°12'10", in NW¼NW¼ sec.17, T.21 N., R.5 E., King County, temperature recorder at gaging station on left bank, 1.2 miles east of Auburn, 1.8 miles downstream from Big Soos Creek, and at mile 32.0.

DRAINAGE AREA.--399 sq mi, excluding 3.67 sq mi in the vicinity of Youngs Lake.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970.
Water temperatures: March 1952 to September 1971

EXTREMES.--1970-71:
Water temperatues: Maximum, 20.5°C July 29, Aug. 8-12; minimum, 3.0°C Feb. 28-Mar. 1.

Period of record:
Water temperatures: Maximum, 24.0°C July 28, 1958; minimum, 0.5°C Feb. 16, 17, 1956, Dec. 18-21, 1964.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12113000 GREEN RIVER NEAR AUBURN, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	5.5	9.5	8.5	8.0	7.0	13.0	10.5	17.0	15.5	16.0	14.5
2	7.0	6.0	10.0	9.0	8.0	8.0	13.5	10.5	18.0	14.5	14.5	14.0
3	7.0	6.0	10.0	9.0	8.0	8.0	14.0	11.5	18.5	15.0	15.5	14.5
4	8.0	6.5	10.0	7.0	9.0	8.0	13.5	12.0	18.5	16.0	17.0	14.0
5	8.5	7.0	7.0	6.5	12.0	9.0	12.0	11.5	19.5	16.0	17.0	15.0
6	8.0	6.5	8.0	6.5	11.5	10.0	13.0	11.0	19.5	16.5	15.5	14.0
7	6.5	6.5	10.5	6.5	11.0	10.0	14.0	11.0	19.0	15.5	16.0	13.5
8	6.5	6.0	10.5	7.0	10.5	8.5	14.0	12.0	20.5	16.0	16.0	14.0
9	6.0	6.0	8.5	7.0	10.5	8.5	12.0	11.5	20.5	16.5	16.0	15.0
10	6.0	6.0	9.5	8.0	11.0	10.5	12.0	11.5	20.5	16.5	16.0	14.5
11	6.5	6.0	10.0	8.5	11.5	11.0	13.0	11.5	20.5	16.5	16.0	14.5
12	7.0	6.0	9.5	8.0	12.0	10.5	15.0	12.0	20.5	16.5	16.0	14.0
13	8.5	7.0	8.0	8.0	11.5	11.0	15.0	13.0	20.0	16.5	15.5	14.5
14	8.5	8.0	8.0	7.0	11.5	10.5	15.0	13.0	18.5	16.0	15.5	13.0
15	8.0	7.0	8.0	7.0	13.0	10.5	15.5	13.5	18.5	15.0	15.0	12.0
16	7.0	6.5	8.0	7.0	13.0	11.0	15.5	13.5	18.5	15.0	14.5	12.0
17	8.0	6.5	8.5	6.5	13.0	10.5	15.5	13.5	18.5	15.0	15.0	12.0
18	7.0	6.5	9.0	8.0	12.0	11.5	16.5	14.0	18.5	15.0	15.0	12.0
19	9.0	6.5	8.5	8.0	14.0	11.5	16.5	14.5	19.0	15.5	15.0	13.0
20	9.0	8.0	8.0	7.0	14.0	11.5	16.5	15.0	18.5	16.5	15.0	13.5
21	8.0	7.0	9.5	6.5	16.5	11.5	17.0	15.0	18.0	16.0	15.0	13.0
22	7.0	6.5	11.0	9.0	16.0	12.0	16.0	15.0	18.0	15.5	15.0	13.0
23	8.5	7.0	10.5	10.0	12.0	11.0	15.0	14.0	18.0	15.0	15.0	13.5
24	8.0	7.0	10.0	9.0	11.5	10.0	16.5	13.5	18.0	15.0	14.5	14.0
25	9.5	6.5	9.5	9.0	11.5	10.5	18.5	14.5	18.5	15.5	14.0	14.0
26	11.0	8.5	9.5	9.0	13.0	10.5	19.0	15.5	18.5	15.5	14.0	13.0
27	10.5	7.0	10.0	9.0	12.0	11.0	20.0	15.5	18.0	15.5	13.0	12.0
28	7.0	7.0	10.0	10.0	11.5	10.5	19.5	16.0	18.5	16.0	12.0	12.0
29	8.5	7.0	10.0	8.0	13.0	10.5	20.5	16.0	18.5	16.0	12.0	11.0
30	9.0	8.0	8.0	8.0	13.0	10.5	20.0	16.0	17.0	16.0	11.5	11.0
31	---	---	8.0	7.0	---	---	17.0	15.5	17.0	16.0	---	---
MONTH	11.0	5.5	11.0	6.5	16.5	7.0	20.5	10.5	20.5	14.5	17.0	11.0

12113340 GREEN RIVER AT 212th STREET, NEAR KENT, WASH.

LOCATION.--Lat 47°24'45", long 122°15'49", in NE¼NW¼ sec.11, T.22 N., R.4 E., King County, at 212th Street bridge, 2.5 miles northwest of Kent City Hall, 2.7 miles southeast of main terminal building of Sea-Tac Airport, and at mile 18.3.

DRAINAGE AREA.--433 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.											
01...	1455	1610	7.0	1.8	4.3	.8	33	0	27	4.8	2.9
14...	1505	1630	7.7	2.0	4.9	.9	34	0	28	5.2	3.3
JAN.											
25...	1425	7170	4.6	1.2	2.5	.7	20	0	16	3.8	1.9
FEB.											
08...	1325	2360	7.1	1.9	4.7	.6	33	0	27	4.6	3.2
22...	1420	2380	6.8	1.9	4.5	.6	32	0	26	4.0	3.3
MAR.											
08...	1635	1940	8.1	2.6	5.5	1.8	42	0	34	6.8	3.1
23...	1325	1860	9.1	2.7	5.0	1.4	38	0	31	9.5	3.2
APR.											
12...	1415	2380	7.4	2.0	4.2	1.0	31	0	25	4.8	2.3
26...	1350	1530	8.0	2.1	5.2	.6	3	0	29	3.3	4.0
MAY											
10...	1330	3330	5.3	1.1	2.8	.6	23	0	19	4.0	1.7
25...	1350	3100	5.2	1.2	2.8	.2	22	0	18	.5	1.2
JUNE											
22...	1435	1240	7.3	1.6	4.1	.8	33	0	27	1.0	1.9
JULY											
11...	1425	1220	7.7	1.9	4.6	.5	36	0	30	4.0	3.0
26...	1545	780	7.0	1.8	5.7	.5	40	0	33	2.0	4.4
AUG.											
09...	1440	445	10	3.0	8.2	.8	50	0	41	4.5	6.6
23...	1530	392	10	2.9	8.4	.5	54	0	44	3.3	7.4
SEP.											
13...	1420	420	9.4	2.6	7.7	.9	54	0	44	3.2	7.2
27...	1425	338	11	3.1	8.2	1.1	55	0	45	4.0	7.7

12113340 GREEN RIVER AT 212th STREET, NEAR KENT, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
01...	.23	.000	.21	.29	.030	.040	25	0	76	7.1	4.1
14...	.16	.010	.05	.36	.050	.050	27	0	85	7.2	4.9
JAN.											
25...	.02	.000	.00	.29	.060	.10	17	0	50	6.7	5.6
FEB.											
08...	.16	.000	.13	.34	.080	.13	26	0	73	7.0	5.0
22...	.24	.000	.02	.47	--	--	25	0	73	7.1	7.4
MAR.											
08...	.37	.020	.25	.58	.050	.090	31	0	91	7.2	5.4
23...	.38	.000	.30	.66	--	.10	34	3	86	7.1	7.6
APR.											
12...	.26	.000	.07	.45	--	.13	27	1	75	7.2	8.3
26...	.39	.000	.06	.29	.060	.080	29	0	78	7.3	12.0
MAY											
10...	.23	.000	.00	.11	.060	.070	18	0	47	6.9	10.4
25...	.12	.000	.00	.09	.050	.070	18	0	46	7.0	11.7
JUNE											
22...	.03	.000	.03	.18	.030	.050	25	0	66	7.2	14.8
JULY											
11...	.12	.020	.07	.30	.070	.070	27	0	71	7.1	14.5
26...	.05	.020	.05	.41	.020	.040	25	0	81	7.2	20.2
AUG.											
09...	.14	.010	.09	.60	.040	.060	37	0	114	7.3	23.8
23...	.13	.11	.01	.57	.14	.14	37	0	119	7.3	20.5
SEP.											
13...	.24	--	.14	--	.10	.15	34	0	112	7.6	17.0
27...	.16	.010	.13	.85	.070	.10	40	0	125	7.0	12.6

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
01...	20	7	12.0	2200	0	0	0	0	.0	0	0
14...	16	3	11.7	--	0	0	0	0	.0	0	0
JAN.											
25...	47	30	12.2	1000	--	--	--	0	.3	--	--
FEB.											
08...	6	5	12.3	<400	0	0	0	0	.0	0	0
22...	24	4	11.3	600	0	0	0	0	.0	0	0
MAR.											
08...	47	5	11.9	1400	2	0	9	0	.1	50	50
23...	35	8	11.1	1100	1	0	5	0	.0	250	20
APR.											
12...	29	5	11.8	1100	1	0	8	0	.0	240	5
26...	27	3	11.0	700	0	0	1	20	.1	340	0
MAY											
10...	15	4	11.1	260	0	3	32	1	9.3	0	20
25...	16	5	10.6	500	0	1	2	0	.0	30	0
JUNE											
22...	15	1	9.2	900	0	4	0	25	2.0	130	20
JULY											
11...	9	2	10.2	300	0	0	0	0	1.3	690	0
26...	17	9	9.4	2500	0	2	3	0	.2	70	0
AUG.											
09...	23	2	8.2	1300	0	2	7	7	.0	670	60
23...	24	3	9.2	1100	1	0	0	0	.4	70	0
SEP.											
13...	25	1	9.3	340	0	0	0	0	.1	50	0
27...	22	3	9.4	400	5	3	3	0	.0	120	0

12117500 CEDAR RIVER NEAR LANDSBURG, WASH.

LOCATION.--Lat 47°23'38", long 121°57'12", on west line NW¼SW¼ sec.17, T.22 N., R.7 E., King County, temperature recorder at gaging station on left bank, 1.8 miles upstream from intake of Seattle water-supply system near Landsburg, 4.0 miles east of Maple Valley, 5.9 miles downstream from Taylor Creek and at mile 23.4.

DRAINAGE AREA.--122 sq mi, includes Rock Creek drainage upstream from Walsh Lake Diversion.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1961.
Water temperatures: August 1953 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum recorded, 15.0°C Aug. 4; minimum, 2.0°C several days in January.

Period of record:
Water temperatures: Maximum, 19.5°C July 27, 28, 1960, July 13, 1961; minimum, 2.0°C on several days during January and February in 1956, 1957, and 1960 and January 1971.

REMARKS.--Recorder not operating Jan. 15 to Feb. 15 (recorded range in temperature 2.0°C to 4.0°C); Feb. 17-21 and Aug. 25 to Sept. 3 (no range in temperature obtained).

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12117500 CEDAR RIVER NEAR LANDSBURG, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12119000 CEDAR RIVER AT RENTON, WASH.

LOCATION.--Lat 47°28'58", long 122°12'08", in SW¼NW¼ sec.17, T.23 N., R.5 E., King County, at gaging station 125 ft downstream from bridge on Mill Avenue at Renton, and at mile 1.6.

DRAINAGE AREA.--186 sq mi, including 3.67 sq mi in vicinity of Youngs Lake in Big Soos Creek Basin.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).
Water temperatures: August 1965 to February 1967.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
30...	1125	495	.16	.000	.00	.32	.000	.010
DEC.								
14...	1100	1040	.16	.000	.02	.34	.010	.010
JAN.								
04...	1005	630	.04	.000	.02	.38	.010	.030
18...	1100	1320	.00	.000	.00	.25	.030	.040
FEB.								
01...	1020	1790	.07	.000	.05	.20	.010	.060
15...	1045	2150	.18	.000	.15	.20	.040	.040
MAR.								
01...	0945	1200	.08	.000	.12	.27	.010	.010
15...	1010	1440	.20	.010	.07	.29	.030	.130
APR.								
12...	1010	956	.14	.000	.07	.52	--	.070
26...	0840	658	.12	.000	.00	.14	.030	.050
MAY								
10...	1000	940	.08	.000	.00	.11	.050	.060
24...	0930	1130	.28	.000	.02	.11	.050	.050
JUNE								
07...	1010	856	.24	.000	.05	.09	.030	.070
21...	0950	793	.01	.000	.00	.09	.010	.010
JULY								
12...	1005	550	.04	.010	.04	.26	.010	.010
26...	1020	360	.20	.010	.19	.05	.000	.010
AUG.								
09...	1005	264	.07	.010	.01	.24	.010	.020
23...	1000	188	.15	.010	.09	.28	.020	.030
SEP.								
13...	0950	274	.16	.000	.01	.37	.000	.010
27...	0945	324	.16	.000	.12	.67	.040	.020

12119000 CEDAR RIVER AT RENTON, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
30...	64	7.1	5.7	16	1	12.2	440
DEC.							
14...	53	7.2	5.2	16	3	12.3	250
JAN.							
04...	67	7.2	2.7	4	1	13.5	200
18...	51	7.1	6.5	26	4	12.2	230
FEB.							
01...	47	7.0	6.3	25	4	12.1	100
15...	44	7.1	6.0	31	15	11.9	400
MAR.							
01...	50	7.0	3.1	14	2	13.1	<100
15...	58	6.9	6.5	18	4	12.1	100
APR.							
12...	54	6.9	7.2	15	1	12.4	330
26...	63	7.4	9.5	14	1	11.8	130
MAY							
10...	57	7.3	9.5	9	1	12.7	220
24...	55	7.0	10.3	13	2	11.1	400
JUNE							
07...	57	7.0	11.4	11	6	11.3	350
21...	50	6.9	13.2	7	1	10.9	80
JULY							
12...	59	7.1	12.8	11	1	11.0	250
26...	82	7.2	17.2	16	2	11.4	400
AUG.							
09...	75	7.4	17.3	8	1	9.5	900
23...	89	7.4	15.3	12	3	10.4	500
SEP.							
13...	78	7.7	13.0	9	3	10.7	800
27...	85	7.2	11.2	14	3	10.6	1600

12121600 ISSAQUAH CREEK NEAR MOUTH, NEAR ISSAQUAH, WASH.

LOCATION.--Lat 47°33'09", long 122°02'48", in SE¼NW¼ sec.21, T.24 N., R.6 E., King County, at gaging station at bridge on SE 56th Street, 0.7 mile downstream from North Fork, 1.2 mile upstream from mouth, and 1.6 miles northwest of Issaquah.

DRAINAGE AREA.--54.7 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1964 to September 1971 (discontinued).
Water temperatures: September 1970 to September 1971.

EXTREMES.--September 1970 to September 1971:
Water temperatures: Maximum, 20.5°C July 26, 27; minimum, 2.0°C Mar. 1.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
30...	1200	141	.49	.020	.21	1.3	.030	.140
DEC.								
14...	1200	223	.30	.000	.07	1.2	.000	.060
JAN.								
04...	1110	148	.10	.000	.06	1.1	.020	.060
18...	1140	345	.21	.000	.00	1.3	.030	.050
FEB.								
01...	1050	219	.02	.000	.00	.85	.020	.090
15...	1130	336	.20	.000	.12	.59	.050	.070
MAR.								
01...	1030	168	.20	.000	.07	.61	.010	.010
15...	1045	362	.20	.010	.06	.93	.040	.150
APR.								
12...	1055	287	.16	.000	.07	1.0	--	.080
26...	0950	106	.10	.000	.00	.63	.050	.070
MAY								
10...	1045	73	.10	.010	.06	59	.060	.080
24...	1020	112	.25	.000	.05	.63	.050	.070
JUNE								
07...	1040	90	.14	.000	.00	.61	.030	.070
21...	1035	90	.06	.000	.02	.61	.030	.040
JULY								
12...	1045	83	.07	.020	.05	.79	.010	.020
26...	1045	47	.45	.020	.09	.07	.010	.020
AUG.								
09...	1040	36	.09	.000	.06	.95	.040	.040
23...	1040	37	.16	.010	.07	.85	.030	.040
SEP.								
13...	1030	37	.11	.010	.02	4.2	.010	.040
27...	1030	37	.29	.000	.20	1.2	.010	.040

12121600 ISSAQUAH CREEK NEAR MOUTH, NEAR ISSAQUAH, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
30...	104	6.9	5.3	35	5	11.4	3400
DEC.							
14...	90	7.2	6.1	22	10	11.6	2000
JAN.							
04...	93	7.2	2.7	12	4	13.2	2300
18...	78	7.1	7.7	40	5	11.6	700
FEB.							
01...	83	7.0	8.1	36	3	11.2	200
15...	72	7.1	6.9	59	20	11.6	1100
MAR.							
01...	86	7.0	2.8	25	3	13.3	250
15...	74	7.0	6.1	36	10	12.1	500
APR.							
12...	73	7.0	7.8	35	9	12.1	400
26...	100	7.2	10.4	25	1	11.4	500
MAY							
10...	111	7.3	11.3	21	1	12.4	500
24...	94	7.1	11.5	30	4	10.8	800
JUNE							
07...	95	7.2	12.0	35	5	11.0	900
21...	93	7.1	14.0	28	1	10.4	600
JULY							
12...	97	7.3	13.1	34	3	11.3	800
26...	151	7.3	17.1	27	3	9.9	1200
AUG.							
09...	145	7.4	17.6	23	1	9.5	2000
23...	129	7.4	15.2	25	3	10.1	2500
SEP.							
13...	116	7.7	13.2	23	3	11.0	2500
27...	131	7.3	11.6	31	3	10.2	3800

12121600 ISSAQUAH CREEK NEAR MOUTH, NEAR ISSAQUAH, WASH.--Continued

TEMPERATURE (°C) OF WATER, SEPTEMBER 1970

DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
1	----	----	7	----	----	13	12.0	9.0	19	----	----	25	13.0	9.5
2	----	----	8	----	----	14	13.5	10.0	20	----	----	26	14.0	10.0
3	----	----	9	----	----	15	13.0	9.5	21	12.0	10.5	27	14.5	11.0
4	----	----	10	14.5	10.5	16	14.0	10.5	22	13.5	11.5	28	14.5	11.0
5	----	----	11	14.0	11.0	17	14.0	13.0	23	12.0	----	29	14.5	11.5
6	----	----	12	13.0	9.5	18	----	----	24	12.0	9.5	30	14.5	12.0

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12121600 ISSAQUAH CREEK NEAR MOUTH, NEAR ISSAQUAH, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	5.5	14.5	10.5	11.0	10.0	13.5	11.5	---	---	14.0	12.0
2	9.5	6.5	15.0	10.5	11.0	10.0	15.5	11.0	---	---	13.5	13.0
3	9.5	6.0	15.5	11.0	10.5	10.0	16.0	11.5	---	---	14.5	13.0
4	10.5	6.0	13.5	10.5	11.5	10.0	14.5	13.0	---	---	15.5	12.0
5	11.5	7.0	10.5	10.0	14.5	10.0	13.5	12.0	19.0	---	14.5	13.0
6	9.5	8.0	14.0	9.5	14.0	11.0	13.5	11.5	18.5	15.5	14.5	12.0
7	9.5	7.0	15.5	10.5	13.0	11.0	15.5	11.0	19.0	14.5	14.5	11.5
8	8.0	6.5	14.0	11.0	12.0	10.5	14.0	13.0	19.5	15.0	14.0	11.5
9	7.0	6.5	14.0	9.5	14.0	9.5	14.0	13.0	19.5	15.5	15.5	13.0
10	8.5	6.0	14.5	10.0	13.5	11.5	13.5	12.0	19.5	15.0	15.0	12.0
11	8.5	6.5	16.0	11.0	13.5	11.0	14.5	12.0	19.5	15.0	15.5	13.0
12	10.0	5.5	15.0	13.0	13.5	10.5	16.5	12.0	19.5	15.5	15.0	12.0
13	11.0	8.0	13.0	11.5	12.0	10.5	17.0	12.0	18.0	15.0	14.5	12.0
14	9.5	8.0	12.0	10.5	12.0	9.5	18.0	13.0	18.0	14.5	13.5	10.5
15	10.0	8.0	12.0	10.0	13.5	10.5	18.5	14.0	18.0	14.0	13.5	10.5
16	9.0	7.0	11.0	9.0	13.0	10.5	18.5	13.5	18.0	14.0	14.0	10.5
17	10.0	7.0	10.5	8.0	13.5	10.0	18.5	13.5	18.0	14.0	13.5	10.5
18	9.5	8.0	11.5	8.5	13.0	11.5	20.0	14.5	18.0	14.0	13.5	10.5
19	11.5	7.0	11.0	9.0	---	11.5	20.0	15.5	18.5	14.0	14.0	11.0
20	10.5	8.5	9.5	8.5	---	---	20.0	15.5	18.0	15.5	14.0	11.0
21	9.5	8.0	12.0	8.0	---	---	20.0	16.0	16.0	14.5	13.5	10.5
22	9.5	6.5	13.5	9.5	15.0	---	19.0	15.5	16.0	14.5	13.5	10.5
23	10.5	8.0	13.5	10.0	15.0	13.0	17.0	15.0	17.0	14.0	13.5	11.0
24	9.5	8.5	13.0	10.5	13.5	11.5	18.5	14.0	17.0	13.5	13.0	11.5
25	13.5	7.0	14.0	11.0	13.5	11.5	20.0	15.0	17.0	14.0	13.0	11.0
26	14.0	9.0	14.0	11.5	15.0	11.0	20.5	15.5	17.0	13.5	12.0	11.0
27	12.0	10.0	15.5	11.0	13.5	11.5	20.5	16.0	17.0	13.5	12.0	11.0
28	10.5	9.0	15.5	11.0	11.5	11.0	20.0	16.5	17.0	14.0	11.5	10.5
29	13.0	9.0	14.0	10.5	14.0	11.0	---	---	16.5	14.5	12.0	10.0
30	13.0	9.0	10.5	10.0	14.0	11.0	---	---	16.0	14.5	11.0	10.0
31	---	---	10.5	10.0	---	---	---	---	15.5	14.0	---	---
MONTH	14.0	5.5	16.0	8.0	15.0	9.5	20.5	11.0	19.5	13.5	15.5	10.0

12125500 BEAR CREEK AT WOODINVILLE, WASH.

LOCATION.--Lat 47°45'25", long 122°09'48", in SE¼NE¼ sec.9, T.26 N., R.5 E., King County, temperature recorder at discontinued gaging station on left bank 25 ft downstream from 130th Avenue N.E. culvert at Woodinville and 0.3 mile upstream from mouth.

DRAINAGE AREA.--15.3 sq mi.

PERIOD OF RECORD.--Water temperatures: September 1970 to September 1971.

EXTREMES.--September 1970-September 1971:
Water temperatures: Maximum, 20.5°C July 29; minimum, freezing point Mar. 1.

REMARKS.--Recorder stopped Jan. 9-14 and June 19-24; range in temperature 2.0°C to 4.5°C and 11.5°C to 18.0°C, respectively.

TEMPERATURE (°C) OF WATER, SEPTEMBER 1970

DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
1	---	---	6	---	---	11	12.0	10.5	16	12.0	10.0	21	11.5	10.5	26	11.0	8.5
2	---	---	7	---	---	12	11.0	9.0	17	12.0	11.5	22	11.5	11.0	27	12.0	9.5
3	---	---	8	---	---	13	11.0	8.0	18	12.0	11.5	23	11.0	10.0	28	12.0	9.5
4	---	---	9	---	---	14	11.5	10.0	19	13.0	11.5	24	10.0	8.5	29	11.5	10.0
5	---	---	10	13.0	---	15	11.5	9.0	20	12.0	11.5	25	10.0	8.0	30	11.5	10.0

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12125500 BEAR CREEK AT WOODINVILLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	5.0	15.5	9.5	11.0	9.5	14.5	11.0	18.5	15.5	13.5	12.0
2	11.0	7.0	16.0	9.5	10.5	10.0	15.0	10.0	18.5	14.5	14.0	12.0
3	11.0	6.0	16.0	9.5	10.5	9.5	15.5	10.5	18.5	15.0	14.5	13.0
4	12.0	6.0	13.5	10.0	12.0	9.5	13.5	11.5	19.0	15.5	15.5	11.5
5	13.5	6.5	14.5	9.0	11.5	9.0	13.5	11.0	19.0	15.0	14.0	13.0
6	10.0	8.0	14.0	9.5	13.0	8.0	12.0	10.5	19.0	15.5	14.0	12.0
7	10.5	6.5	15.0	8.5	14.0	10.5	15.5	10.0	18.5	14.0	14.5	10.5
8	8.5	7.0	13.5	10.5	13.0	10.5	14.0	12.0	19.0	15.0	13.5	11.0
9	7.0	6.0	---	---	---	---	14.5	12.0	19.0	15.0	15.0	12.0
10	9.5	5.5	13.0	11.0	15.0	8.5	13.5	12.0	19.5	15.0	14.0	11.0
11	10.0	6.0	13.0	10.5	16.0	9.5	15.0	11.5	19.0	15.0	15.5	13.0
12	11.0	5.5	13.0	10.0	15.0	11.5	15.5	11.5	19.0	15.0	15.5	11.0
13	11.5	7.0	11.5	9.5	13.0	11.0	16.0	11.0	18.0	15.5	15.0	11.5
14	10.0	7.0	13.5	9.0	13.5	10.5	16.5	11.5	17.0	14.5	14.0	9.5
15	10.5	6.5	13.0	9.5	13.0	10.5	17.0	12.0	16.5	13.0	13.0	9.5
16	9.0	6.5	10.5	9.0	15.0	10.5	17.0	12.0	15.5	13.0	13.0	9.5
17	11.0	6.0	11.5	8.0	14.5	9.5	18.0	13.0	16.0	12.0	13.0	9.0
18	9.5	8.0	13.0	8.0	13.5	11.0	18.5	14.0	16.0	12.0	13.5	9.5
19	13.0	6.0	10.5	9.5	---	---	18.5	14.5	16.5	13.0	14.0	9.5
20	9.0	8.0	10.5	8.5	---	---	19.0	15.0	18.0	14.5	13.5	9.5
21	11.0	6.5	13.5	7.0	---	---	19.5	15.0	15.5	14.5	14.0	9.0
22	10.0	6.0	14.5	9.0	---	---	18.5	16.0	16.5	14.0	13.0	9.0
23	11.0	6.5	14.0	9.5	---	---	17.0	15.5	15.5	12.0	13.0	9.5
24	8.5	6.5	13.5	10.0	---	---	18.0	14.0	16.0	12.0	13.0	10.5
25	14.0	6.0	14.5	10.5	15.5	11.0	19.0	14.5	16.5	13.0	11.5	10.5
26	15.0	8.0	14.5	11.0	15.5	10.5	20.0	15.5	16.0	11.5	12.0	10.5
27	11.0	9.5	15.5	10.0	14.0	11.0	20.0	16.0	15.5	11.5	11.5	11.0
28	10.0	8.0	15.0	9.5	12.0	11.0	19.5	16.5	16.0	13.0	11.0	10.0
29	11.5	8.0	14.5	10.0	15.0	11.0	20.5	16.0	16.0	13.0	11.0	9.5
30	14.0	8.5	10.5	9.0	14.5	10.0	19.5	16.5	15.5	13.5	11.0	9.5
31	---	---	10.5	9.5	---	---	17.0	16.0	14.5	13.5	---	---
MONTH	15.0	5.0	16.0	7.0	---	---	20.5	10.0	19.5	11.5	15.5	9.0

12126500 SAMMAMISH RIVER AT BOTHELL, WASH.

LOCATION.--Lat 47°45'32", long 122°12'02", in NW¼NW¼ sec.8, T.26 N., R.5 E., King County, at 102nd Street bridge at Bothell, 1.0 mile downstream from North Creek, and at mile 3.5.

DRAINAGE AREA.--212 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
02...	1315	428	.21	.020	.08	.54	.020	.060
16...	1200	1020	.48	.000	.05	.88	.040	.080
JAN.								
06...	1245	591	.25	.000	.08	.66	.020	.070
20...	1100	1400	.32	.000	.06	1.1	.050	.070
FEB.								
03...	1115	799	.08	.000	.07	.50	.010	.080
17...	1330	776	.15	.000	.08	.66	.060	.060
MAR.								
03...	1145	790	.25	.000	.16	.72	.030	.060
17...	1130	997	.24	.010	.05	.54	.030	.080
APR.								
14...	1205	701	.19	.000	.04	.50	--	.080
28...	1055	336	.41	.000	.02	.34	.040	.070
MAY								
12...	1240	209	.10	.010	.00	.29	.050	.050
26...	1100	312	.20	.000	.06	.27	.030	.050
JUNE								
09...	1110	186	.21	.000	.10	.32	.040	.060
23...	1130	201	.08	.000	.06	.16	.030	.050
JULY								
14...	1205	212	.15	.020	.06	.39	.010	.020
28...	1130	127	.53	.000	.12	.03	.020	.080
AUG.								
11...	1130	80	.16	.010	.16	.28	.040	.040
25...	1130	71	.20	.010	.19	.35	.050	.060
SEP.								
15...	1150	111	.21	.010	.07	.49	.030	.050
29...	1130	149	.29	.000	.19	.79	.040	.060

12126500 SAMMAMISH RIVER AT BOTHELL, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.							
02...	120	7.1	6.5	59	4	10.4	220
16...	114	7.2	6.7	53	10	10.3	>16000
JAN.							
06...	120	7.0	5.5	24	5	11.3	500
20...	102	6.9	5.6	70	5	11.3	1600
FEB.							
03...	107	6.9	5.4	50	4	11.2	1200
17...	104	7.3	7.0	62	4	11.2	2000
MAR.							
03...	107	7.0	4.4	57	5	11.3	2500
17...	99	7.0	6.3	50	4	12.2	800
APR.							
14...	110	7.2	9.3	52	3	11.8	500
28...	117	7.1	11.0	60	2	10.8	2000
MAY							
12...	125	7.2	15.6	49	3	9.9	1100
26...	114	7.1	14.8	50	4	9.4	1500
JUNE							
09...	120	7.1	15.0	53	5	9.7	500
23...	110	7.0	17.2	63	2	8.3	1100
JULY							
14...	119	7.0	18.8	24	4	8.7	2000
28...	173	7.2	22.6	66	7	8.8	2000
AUG.							
11...	151	7.0	22.4	73	4	8.1	2000
25...	158	7.0	18.4	65	3	10.0	4000
SEP.							
15...	145	7.4	14.8	57	4	9.8	3500
29...	133	7.3	12.6	68	7	8.9	5000

12135000 WALLACE RIVER AT GOLD BAR, WASH.

LOCATION.--Lat 47°51'50", long 121°41'47", in NW¼NE¼ sec.6, T.27 N., R.9 E., Snohomish County, temperature recorder at gaging station on right bank, 30 ft downstream from highway bridge, 0.5 mile north of Gold Bar, 1.3 miles upstream from Olney Creek, and at mile 5.8.

DRAINAGE AREA.--19.0 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1955 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 16.5°C on several days during July and August; minimum, 3.0°C Jan. 7-17, 19-24.

Period of record:
Water temperatures: Maximum, 21.0°C July 29, Aug. 8, 9, 1960, July 13, 1961, Aug. 16, 1967; minimum, freezing point on several days during February 1956, January 1957, and Dec. 16-18, 1964.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	11.0	8.0	7.0	5.0	5.0	4.0	4.0	4.0	4.0	4.5	4.5
2	11.0	11.0	8.0	8.0	5.0	5.0	4.0	4.0	4.5	4.0	4.5	4.5
3	12.0	11.0	8.0	8.0	5.0	5.0	4.0	3.5	4.5	4.5	4.5	4.5
4	12.0	11.5	8.0	8.0	5.0	5.0	3.5	3.5	4.5	4.5	4.5	4.5
5	11.5	10.0	8.0	8.0	5.0	5.0	3.5	3.5	4.5	4.5	4.5	4.5
6	10.0	9.0	8.5	8.0	5.0	5.0	3.5	3.5	4.5	4.0	4.5	4.5
7	9.0	9.0	8.0	8.0	5.0	5.0	3.5	3.0	4.0	4.0	4.5	4.5
8	9.0	9.0	8.0	8.0	5.0	5.0	3.0	3.0	4.5	4.0	5.0	4.5
9	9.0	9.0	8.0	8.0	5.0	5.0	3.0	3.0	4.5	4.5	5.0	5.0
10	9.0	9.0	8.0	8.0	5.0	5.0	3.0	3.0	4.5	4.5	5.0	5.0
11	9.0	9.0	8.0	8.0	5.0	4.5	3.0	3.0	5.0	4.5	5.0	5.0
12	9.0	9.0	8.0	7.0	4.5	4.5	3.0	3.0	5.0	5.0	5.5	5.0
13	9.0	9.0	7.0	7.0	4.5	4.5	3.0	3.0	5.0	5.0	5.5	5.5
14	9.0	9.0	7.0	7.0	4.5	4.5	3.0	3.0	5.0	5.0	5.5	5.5
15	9.0	9.0	8.0	7.0	4.5	4.5	3.0	3.0	5.0	5.0	5.5	5.5
16	9.0	9.0	8.0	8.0	4.5	4.5	3.0	3.0	5.0	5.0	5.5	5.5
17	9.0	9.0	8.0	7.0	4.5	4.5	3.5	3.0	5.0	5.0	5.5	5.5
18	9.0	9.0	7.0	7.0	4.5	4.5	3.5	3.5	5.0	5.0	5.5	5.5
19	9.0	9.0	7.0	7.0	4.5	4.5	3.5	3.0	5.0	5.0	6.0	5.5
20	9.0	9.0	7.0	6.5	4.5	4.5	3.0	3.0	5.5	5.0	6.0	5.5
21	9.0	8.5	6.5	5.5	4.5	4.5	3.0	3.0	5.5	5.5	5.5	5.5
22	8.5	8.5	5.5	5.5	4.5	4.5	3.0	3.0	5.5	5.5	5.5	5.5
23	8.5	8.5	5.5	5.5	4.5	4.5	3.0	3.0	5.5	5.5	5.5	5.5
24	9.0	8.0	5.5	5.5	4.5	4.5	3.5	3.0	5.5	5.5	5.5	5.5
25	8.0	8.0	5.5	5.5	4.5	4.5	4.0	3.5	5.5	5.0	5.5	5.5
26	8.0	8.0	5.5	5.5	4.5	4.0	4.0	3.5	5.0	5.0	5.5	5.5
27	8.0	7.0	5.5	5.0	4.0	4.0	4.0	3.5	5.0	4.5	5.5	5.5
28	7.0	7.0	5.0	5.0	4.0	4.0	4.0	4.0	4.5	4.5	5.5	5.5
29	7.0	7.0	5.0	5.0	4.0	4.0	4.0	4.0	---	---	5.5	5.0
30	7.0	7.0	5.0	5.0	4.0	4.0	4.0	4.0	---	---	5.5	5.0
31	7.0	7.0	---	---	4.0	4.0	4.0	4.0	---	---	5.5	5.0
MONTH	12.0	7.0	8.5	5.0	5.0	4.0	4.0	3.0	5.5	4.0	6.0	4.5

12135000 WALLACE RIVER AT GOLD BAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	5.5	8.0	7.0	7.0	7.0	9.0	8.5	15.5	15.5	12.0	11.0
2	6.0	5.5	8.0	6.5	7.0	7.0	9.5	7.0	15.5	14.5	12.0	10.5
3	6.5	5.5	8.0	6.5	7.0	7.0	10.0	8.0	15.0	14.5	12.0	10.5
4	7.0	6.0	6.5	6.0	7.0	7.0	9.5	9.0	16.0	14.5	14.0	10.5
5	8.0	6.5	6.0	6.0	8.5	7.0	9.0	8.5	15.5	14.5	13.0	11.5
6	7.0	6.5	8.0	6.0	8.5	7.0	8.5	7.0	16.0	15.0	12.0	10.5
7	6.5	6.0	8.0	7.0	8.5	7.0	10.0	7.0	15.5	14.5	13.0	10.0
8	6.0	6.0	7.0	6.5	7.0	7.0	10.0	9.0	16.5	15.5	12.0	10.5
9	6.0	6.0	8.0	7.0	8.5	7.0	9.0	8.5	16.5	15.5	14.0	11.5
10	6.0	5.5	8.0	6.5	8.5	7.0	8.5	8.0	16.5	15.5	14.0	11.5
11	6.0	5.5	8.0	7.0	8.0	7.0	8.5	8.0	16.5	15.5	13.0	11.0
12	6.5	5.5	7.0	7.0	8.0	7.0	10.0	8.0	16.5	15.5	13.0	10.5
13	7.0	6.5	7.0	6.5	8.0	7.0	11.0	8.5	16.0	15.5	13.0	10.0
14	7.0	6.5	6.5	6.0	7.0	6.5	12.0	9.0	15.5	15.0	12.0	9.5
15	6.5	5.5	7.0	6.0	7.0	6.5	12.0	10.0	16.0	14.0	13.0	9.5
16	6.5	5.5	7.0	6.0	7.0	6.5	12.0	10.0	15.5	14.5	13.5	10.0
17	6.0	6.0	6.0	6.0	8.5	7.0	13.0	10.0	15.5	14.0	13.5	9.0
18	6.5	6.0	8.0	6.0	8.5	8.0	13.5	11.0	16.0	14.0	13.5	10.0
19	7.0	6.0	7.0	6.5	8.0	7.0	14.0	11.5	16.5	14.0	13.5	10.0
20	7.0	7.0	6.5	6.0	8.0	7.0	14.0	12.0	16.5	14.5	13.5	10.0
21	7.0	6.5	8.0	6.0	11.0	8.0	14.0	12.0	16.0	14.0	13.5	10.0
22	6.5	6.5	8.5	7.0	9.5	8.5	14.0	12.0	14.5	13.0	14.0	10.5
23	7.0	6.5	8.5	7.0	8.5	8.5	14.0	12.0	15.5	11.5	13.5	10.5
24	6.5	6.5	8.0	7.0	8.5	8.5	13.5	12.0	16.5	12.0	12.0	10.5
25	8.0	6.0	8.0	7.0	8.5	7.0	15.0	13.0	16.5	13.0	11.0	10.0
26	8.0	6.5	8.0	7.0	8.0	7.0	15.0	14.0	16.5	13.0	10.5	10.0
27	7.0	6.5	8.5	7.0	8.0	7.0	15.0	14.0	16.5	13.0	10.0	9.0
28	6.5	6.5	8.5	7.0	8.0	7.0	15.0	14.5	16.5	13.0	9.5	9.0
29	6.5	6.0	8.0	7.0	8.5	7.0	16.5	14.5	15.5	13.5	9.0	8.0
30	8.0	6.5	7.0	7.0	9.0	7.0	16.5	15.5	16.0	14.0	9.5	8.0
31	---	---	7.0	7.0	---	---	15.5	15.5	14.5	12.0	---	---
MONTH	8.0	5.5	8.5	6.0	11.0	6.5	16.5	7.0	16.5	11.5	14.0	8.0

12137000 SKYKOMISH RIVER AT SULTAN, WASH.

LOCATION.--Lat 47°51'38", long 121°48'44", in NE¼NW¼ sec.5, T.27 N., R.8 E., Snohomish County, at county road bridge 0.1 mile south of Sultan, 0.4 mile upstream from Sultan River, and at mile 34.8.

DRAINAGE AREA.--618 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.											
30...	1535	--	4.0	.8	1.7	.4	16	0	13	2.0	1.3
DEC.											
14...	1520	--	4.4	.8	1.6	.5	17	0	14	2.2	1.2
JAN.											
04...	1515	--	4.6	.8	1.9	.4	19	0	16	2.3	1.3
18...	1425	--	3.6	.7	1.3	.4	14	0	11	2.0	1.0
FEB.											
01...	1330	--	4.1	.9	1.4	.5	16	0	13	2.8	1.0
15...	1550	--	2.7	.6	1.0	.3	12	0	10	1.0	.7
MAR.											
01...	1410	--	4.8	.9	2.3	.7	23	0	18	6.3	1.1
15...	1335	--	5.1	1.0	1.9	.4	24	0	20	2.2	1.4
APR.											
12...	1415	--	4.0	.4	1.6	.6	16	0	13	3.0	1.2
26...	1310	--	--	--	--	--	--	--	--	--	--
MAY											
10...	1445	--	3.2	.6	1.0	.3	15	0	12	1.8	1.0
24...	1330	--	3.5	.5	1.1	.4	13	0	11	1.0	1.0
JUNE											
07...	1310	--	2.8	.4	1.1	.3	15	0	12	2.2	1.6
21...	1415	--	2.9	.4	.9	.3	15	0	12	.0	.6
JULY											
12...	1400	8930	2.9	.4	1.0	.3	12	0	10	2.0	.7
26...	1420	9720	2.5	.3	1.2	.9	14	0	11	1.5	.9
AUG.											
09...	1425	3860	3.8	.8	1.1	.3	13	0	11	.5	.6
23...	1345	2290	3.6	.2	1.8	.3	20	0	16	.3	1.3
SEP.											
13...	1415	1740	3.6	.4	1.6	.4	21	0	17	2.0	1.9
27...	1400	1380	5.0	.5	2.3	.6	21	0	17	1.8	2.5

12137000 SKYKOMISH RIVER AT SULTAN, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG. C)
NOV.											
30...	.11	.000	.00	.18	.000	.000	14	1	40	7.0	4.0
DEC.											
14...	.08	.000	.00	.25	.010	.010	15	1	41	7.1	4.1
JAN.											
04...	.00	.000	.00	.07	.000	.010	15	0	43	7.1	1.8
18...	.00	.000	.00	.20	.010	.020	12	1	34	6.9	5.8
FEB.											
01...	.01	.000	.00	.41	.010	.050	14	1	38	6.4	5.6
15...	.02	.000	.00	.14	.030	.030	9	0	24	6.8	4.7
MAR.											
01...	.09	.000	.03	.11	.000	.000	16	0	36	6.9	3.5
15...	.18	.000	.05	.23	.020	.050	16	0	42	6.8	6.1
APR.											
12...	.07	.000	.02	.36	--	.050	12	0	34	7.0	7.9
26...	.07	.000	.00	.00	.020	.050	--	--	34	7.1	10.9
MAY											
10...	.07	.000	.00	.09	.030	.040	10	0	25	7.0	8.3
24...	.16	.000	.02	.07	.020	.030	11	0	26	6.9	8.0
JUNE											
07...	.14	.000	.00	.02	.010	.020	9	0	26	6.9	7.8
21...	.08	.000	.04	.02	.010	.010	9	0	22	6.8	11.3
JULY											
12...	.02	.010	.02	.10	.000	.000	9	0	23	6.8	10.5
26...	.10	.000	.06	.06	.000	.000	7	0	29	7.0	13.8
AUG.											
09...	.10	.000	.02	.09	.000	.010	13	2	27	7.0	17.3
23...	.20	.000	.18	.09	.010	.010	10	0	35	6.9	15.0
SEP.											
13...	.12	.000	.00	.27	.000	.010	11	0	36	7.4	14.2
27...	.08	.000	.00	.50	.000	.010	15	0	44	7.1	11.0

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
30...	2	2	12.6	55	0	0	0	0	.0	0	0
DEC.											
14...	0	1	12.6	>400	0	0	0	0	.0	0	0
JAN.											
04...	6	2	14.9	<100	0	0	0	0	.0	0	0
18...	26	2	12.7	>400	--	--	--	0	.1	--	--
FEB.											
01...	27	10	12.4	130	0	0	0	0	.1	0	10
15...	29	10	13.0	140	0	0	0	0	.0	0	0
MAR.											
01...	7	2	13.7	56	0	0	11	0	.0	10	50
15...	16	3	13.0	130	0	8	3	0	.0	50	3
APR.											
12...	10	1	13.0	20	0	1	6	0	.0	190	20
26...	14	3	12.4	46	0	0	2	0	.1	9	0
MAY											
10...	27	2	12.9	43	0	1	2	0	.0	40	70
24...	15	5	12.2	160	0	9	310	0	3.7	0	20
JUNE											
07...	16	5	12.2	550	0	6	400	0	2.4	20	20
21...	12	2	11.8	200	0	0	0	33	.3	100	0
JULY											
12...	14	2	11.5	70	0	0	0	0	.1	540	20
26...	19	2	10.7	140	0	12	510	0	1.5	70	0
AUG.											
09...	10	1	10.0	250	0	11	3	0	.4	30	10
23...	9	1	10.6	250	1	39	410	8	1.4	50	20
SEP.											
13...	11	7	10.7	200	0	1	4	0	.2	40	0
27...	8	2	11.0	400	5	1	4	0	.1	90	0

12138200 SULTAN RIVER AT SULTAN, WASH.

LOCATION.--Lat 47°51'40", long 121°49'10", in NE¼NE¼ sec.6, T.27 N., R.8 E., Snohomish County, at U.S. Highway 2 bridge, 0.1 mile upstream from confluence with Skykomish River and 0.3 mile west of Sultan.

DRAINAGE AREA.--106 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
NOV.									
30...	1525	--	3.6	.8	1.1	.3	13	0	11
DEC.									
14...	1500	--	3.4	.7	.9	.2	12	0	10
JAN.									
04...	1500	--	3.6	.8	1.1	.2	15	0	12
18...	1410	--	3.3	.7	.9	.3	12	0	10
FEB.									
01...	1320	--	4.4	1.1	1.2	.5	18	0	15
15...	1610	--	2.6	.5	1.7	2.0	10	0	8
MAR.									
01...	1350	--	8.6	1.2	1.4	.5	31	0	25
15...	1305	--	4.1	1.0	1.4	.6	21	0	17
APR.									
12...	1400	--	3.6	.8	.9	.4	14	0	11
26...	1245	--	--	--	--	--	--	--	--
MAY									
10...	1420	--	3.3	.7	.7	.2	14	--	11
24...	1310	--	3.6	.5	1.1	.4	12	0	10
JUNE									
07...	1300	--	3.4	.4	1.2	.7	15	0	12
21...	1400	--	2.7	.5	.7	.3	12	0	10
JULY									
12...	1345	1100	3.3	.5	1.5	.2	16	0	13
26...	1405	1160	4.8	.5	1.5	1.1	12	0	10
AUG.									
09...	1410	280	3.2	.7	.8	.2	14	0	11
23...	1320	202	3.6	.2	1.3	.1	17	0	14
SEP.									
13...	1400	210	3.4	.4	1.1	.3	18	0	15
27...	1335	155	4.4	.6	1.3	.8	19	0	16

12138200 SULTAN RIVER AT SULTAN, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)
NOV.									
30...	3.0	.8	.31	.000	.00	.18	.000	.010	13
DEC.									
14...	2.8	.8	.05	.000	.02	.16	.010	.010	12
JAN.									
04...	2.6	.8	.23	.000	.02	.07	.000	.020	13
18...	2.6	.9	.35	.000	.04	.14	.010	.010	11
FEB.									
01...	3.0	.9	--	.000	.00	.25	.010	.040	15
15...	1.8	.6	.04	.000	.02	.14	.070	.080	9
MAR.									
01...	5.0	1.3	.08	.000	.05	.16	.000	.000	26
15...	1.5	1.2	.21	.000	.05	.11	.020	.040	14
APR.									
12...	2.8	.8	.08	.000	.07	.38	--	.070	12
26...	--	--	.10	.000	.02	.05	.020	.040	--
MAY									
10...	2.8	1.4	.07	.000	.02	.05	.020	.030	11
24...	.8	1.0	.14	.000	.00	.05	.010	.030	11
JUNE									
07...	3.2	1.5	.18	.000	.00	.02	.010	.030	10
21...	.0	.5	.02	.000	.00	.02	.000	.010	9
JULY									
12...	2.8	1.2	.03	.000	.01	.11	.000	.000	10
26...	2.3	.9	.46	.000	.12	.09	.000	.020	14
AUG.									
09...	1.3	.9	.05	.000	.00	.11	.000	.020	11
23...	.5	1.1	.19	.000	.12	.02	.010	.010	10
SEP.									
13...	3.0	1.1	.14	.000	.00	.30	.000	.010	10
27...	1.5	1.6	.14	.000	.04	.09	.000	.020	13

DATE	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.								
30...	2	34	7.0	4.4	30	3	12.4	65
DEC.								
14...	2	31	7.0	4.0	14	3	12.8	150
JAN.								
04...	0	33	7.1	2.9	16	3	13.1	70
18...	1	29	6.9	4.4	32	5	13.3	110
FEB.								
01...	1	37	6.5	5.1	30	10	12.1	150
15...	1	22	6.7	4.5	49	10	13.0	>160
MAR.								
01...	1	30	6.8	4.3	17	2	13.3	<40
15...	0	34	6.8	5.8	23	4	12.9	100
APR.								
12...	1	27	6.8	7.7	18	2	12.5	20
26...	--	29	7.0	10.9	23	2	11.9	40
MAY								
10...	0	26	7.0	11.5	35	1	12.0	34
24...	1	29	6.7	10.9	15	2	11.4	140
JUNE								
07...	0	30	6.9	9.4	16	3	11.6	250
21...	0	23	6.8	14.0	9	1	10.9	150
JULY								
12...	0	25	6.8	13.1	22	5	10.7	270
26...	4	39	7.0	18.6	20	2	9.3	170
AUG.								
09...	0	25	6.9	20.1	14	1	9.7	250
23...	0	31	6.9	16.5	16	1	10.1	500
SEP.								
13...	0	32	7.4	16.3	20	3	10.1	100
27...	0	41	7.0	12.8	13	2	10.4	200

12141090 WOODS CREEK AT MONROE, WASH.

LOCATION.--Lat 47°51'16", long 121°57'50", in NW¼SW¼ sec.6, T.27 N., R.7 E., Snohomish County, at road bridge on east side of Monroe, 0.3 mile downstream from U.S. Highway 2 bridge, and 0.6 mile upstream from mouth.

DRAINAGE AREA.--59.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
NOV.									
30...	1350	174	5.0	2.3	2.6	.5	20	0	16
DEC.									
14...	1330	210	4.8	2.2	2.2	.7	18	0	15
JAN.									
04...	1305	144	5.1	2.3	2.4	.4	21	0	17
18...	1250	354	3.9	1.7	2.0	.6	13	0	11
FEB.									
01...	1200	1180	2.9	1.3	1.7	.5	10	0	8
15...	1330	372	3.7	1.6	2.0	.6	14	0	11
MAR.									
01...	1150	206	4.1	2.2	2.4	.3	23	0	19
15...	1200	420	4.0	1.7	2.0	.9	23	0	19
APR.									
12...	1225	276	4.0	1.6	2.0	.7	24	0	20
26...	1100	93	--	--	--	--	--	--	--
MAY									
10...	1230	63	7.4	3.5	2.8	.5	37	--	30
24...	1145	99	6.1	2.3	2.6	.6	35	0	29
JUNE									
07...	1150	68	6.8	2.8	2.9	.9	38	0	31
21...	1225	65	6.2	2.8	2.8	.6	37	0	30
JULY									
12...	1200	87	5.7	2.6	2.5	.7	32	0	26
26...	1230	34	9.5	2.2	5.8	.5	46	0	38
AUG.									
09...	1230	24	9.1	4.1	3.3	.9	49	0	40
23...	1200	29	9.3	4.0	3.5	.9	53	0	43
SEP.									
13...	1210	27	8.4	3.7	3.4	.7	50	0	41
27...	1205	22	9.6	4.3	4.1	1.4	51	0	42

12141090 WOODS CREEK AT MONROE, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
NOV.									
30...	3.6	2.4	.25	.000	.00	1.5	.000	.040	22
DEC.									
14...	3.6	2.4	1.6	.000	.05	1.4	.030	.030	21
JAN.									
04...	3.9	2.3	.39	.000	.02	1.5	.010	.070	22
18...	3.2	2.0	.30	.000	.02	1.3	.020	.030	17
FEB.									
01...	3.4	1.6	.03	.000	.02	.90	.010	.050	13
15...	3.2	2.0	.16	.000	.10	.63	.030	.060	16
MAR.									
01...	4.2	2.4	.12	.000	.11	1.0	.010	.020	19
15...	2.5	1.9	.35	.010	.10	1.0	.030	.080	17
APR.									
12...	3.3	1.7	.15	.000	.02	1.1	--	.070	17
26...	--	--	.35	.000	.00	.56	.030	.080	--
MAY									
10...	5.5	2.8	.07	.000	.00	.43	.030	.050	33
24...	2.8	.2	.21	.000	.01	.52	.030	.050	25
JUNE									
07...	7.0	2.6	.14	.000	.02	.56	.030	.050	28
21...	2.3	1.7	.12	.000	.07	.43	.040	.050	27
JULY									
12...	5.8	1.8	.31	.010	.08	.69	.010	.020	25
26...	3.3	5.1	.25	.010	.09	.02	.010	.050	33
AUG.									
09...	3.5	1.9	.15	.010	.10	.69	.020	.060	40
23...	4.3	3.3	.12	.010	.12	.66	.030	.040	40
SEP.									
13...	5.3	3.7	.19	.000	.06	1.1	.010	.030	36
27...	4.0	4.0	.25	.000	.12	1.0	.020	.040	42

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
NOV.								
30...	6	63	7.0	5.0	41	3	12.0	1100
DEC.								
14...	6	66	7.0	5.5	33	6	12.0	2600
JAN.								
04...	5	63	7.1	2.6	24	2	12.6	500
18...	6	50	6.8	6.7	53	5	12.0	900
FEB.								
01...	5	38	6.5	6.8	57	20	11.7	900
15...	4	43	6.8	6.8	55	15	11.7	>1600
MAR.								
01...	0	49	6.8	2.4	42	3	13.3	1300
15...	0	46	6.8	5.4	43	7	12.2	3000
APR.								
12...	0	45	6.8	8.2	45	3	12.1	660
26...	--	63	7.2	11.9	43	3	11.4	900
MAY								
10...	3	75	7.1	12.0	31	2	12.2	2500
24...	0	61	6.9	12.2	49	3	10.7	6500
JUNE								
07...	0	74	7.2	12.1	48	3	10.5	7000
21...	0	67	7.1	15.7	51	2	10.0	8000
JULY								
12...	0	60	7.0	13.6	74	7	10.1	2500
26...	0	85	7.1	18.9	48	3	9.0	8000
AUG.								
09...	0	98	7.2	19.0	40	1	9.2	13000
23...	0	100	7.3	15.2	52	2	9.9	40000
SEP.								
13...	0	91	7.6	13.5	47	3	10.3	8000
27...	0	136	6.8	11.8	40	2	10.6	3300

12142295 HANCOCK LAKE NEAR SNOQUALMIE, WASH.

LOCATION.--Lat 47°34'21", long 121°41'12", in SE¼SE¼ sec.8, T.24 N., R.9 E., King County, 6.6 miles east of Snoqualmie.

DRAINAGE AREA.--7.67 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.									
19...	1300	3.0	--	4.0	7	0	1.2	.7	.1
19...	1315	14	--	3.9	8	0	1.2	.8	.0
19...	1320	31	--	3.9	7	0	1.2	.8	.1
FEB.									
19...	1100	18	--	4.0	7	0	.4	--	--
MAY									
21...	1135	3.0	7.0	3.8	13	0	1.3	--	--
21...	1140	30	6.0	--	--	--	--	--	--
JULY									
13...	1135	3.0	12.0	3.1	7	--	.0	--	--
13...	1140	30	6.0	--	--	--	--	--	--
SEP.									
30...	1110	3.0	11.3	3.6	--	--	1.8	--	--
30...	1115	30	7.3	3.5	--	--	2.5	--	--

DATE	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.									
19...	.01	.01	.11	.000	.010	17	18	6.6	10
19...	.04	.03	.23	.000	.000	18	18	6.8	10
19...	.02	.00	.11	.000	.000	19	18	6.6	10
FEB.									
19...	.02	.00	.14	.000	.000	16	10	7.2	10
MAY									
21...	.03	.02	.15	.000	.000	--	18	7.2	20
21...	.03	.02	.18	.000	.000	--	16	7.1	--
JULY									
13...	.00	.00	.05	.000	.000	--	14	7.1	--
13...	.06	.04	.07	.010	.010	--	13	7.1	--
SEP.									
30...	.09	.04	.03	.010	.010	--	14	7.0	5
30...	.08	.03	.05	.010	.010	--	15	6.7	5

12149000 SNOQUALMIE RIVER NEAR CARNATION, WASH.

LOCATION.--Lat 47°39'58", long 121°55'27", in NW¼SW¼ sec.9, T.25 N., R.7 E., King County, at highway bridge 40 ft upstream from gaging station, 1.3 miles northwest of Carnation, 1.9 miles downstream from Tolt River, and at mile 23.0.

DRAINAGE AREA.--603 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.											
30...	1315	3100	4.8	1.0	1.8	.4	19	0	16	2.4	1.2
DEC.											
14...	1245	3450	5.0	1.0	1.6	.4	20	0	16	2.8	1.1
JAN.											
04...	1200	2090	5.7	1.2	2.0	.3	24	0	20	3.3	1.2
18...	1215	6850	3.4	.7	1.4	.4	14	0	11	1.4	1.1
FEB.											
01...	1125	11000	3.0	.6	1.2	.3	12	0	10	2.0	.7
15...	1230	13000	2.4	.5	1.1	.3	11	0	9	.6	.8
MAR.											
01...	1110	2950	5.6	1.3	1.9	1.0	27	0	22	6.0	1.0
15...	1120	3770	6.0	1.2	1.8	.4	28	0	23	3.5	1.4
APR.											
12...	1140	3900	4.9	.9	1.7	.5	22	0	18	3.3	1.2
26...	1010	2880	--	--	--	--	--	--	--	--	--
MAY											
10...	1130	6280	3.0	.6	1.0	.2	13	0	11	2.5	1.1
24...	1100	7060	3.5	.7	1.3	.4	14	0	11	1.5	1.0
JUNE											
07...	1110	6010	3.1	.5	1.4	.4	15	0	12	4.8	1.4
21...	1135	6660	3.1	.4	1.0	.3	16	0	13	.0	.5
JULY											
12...	1120	5190	3.2	.5	1.0	.2	14	0	11	2.5	1.6
26...	1120	4090	3.8	.7	1.1	.6	18	0	14	1.8	.9
AUG.											
09...	1120	1800	4.7	.9	1.4	.3	21	0	17	1.5	.6
23...	1110	1450	6.1	.6	1.7	.0	25	0	21	3.0	1.2
SEP.											
13...	1110	1320	5.0	.7	1.6	.4	25	0	21	3.8	1.5
27...	1115	1180	--	--	--	--	--	--	--	--	--

12149000 SNOQUALMIE RIVER NEAR CARNATION, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.											
30...	.06	.000	.00	.36	.000	.010	16	1	45	7.0	4.5
DEC.											
14...	.08	.000	.00	.41	.000	.010	17	0	46	7.0	4.6
JAN.											
04...	.07	.000	.01	.34	.010	.020	19	0	53	7.1	2.2
18...	.33	.000	.01	.27	.020	.030	12	0	33	7.0	6.3
FEB.											
01...	.02	.000	.02	.20	.010	.050	10	0	28	6.8	5.4
15...	.02	.000	.00	.20	.020	.020	8	0	72	6.8	5.0
MAR.											
01...	.08	.000	.08	.34	.000	.010	19	0	46	6.8	2.9
15...	.24	.000	.02	.34	.020	.120	20	0	48	6.9	5.5
APR.											
12...	.15	.000	.00	.23	--	.520	16	0	40	6.8	7.1
26...	.51	.000	.00	.09	.030	.050	--	--	44	7.1	11.4
MAY											
10...	.07	.000	.00	.11	.020	.040	10	0	27	6.9	9.7
24...	.16	.000	.02	.11	.020	.030	12	0	30	6.8	10.6
JUNE											
07...	.18	.000	.00	.14	.010	.030	10	0	30	7.0	10.3
21...	.02	.000	.00	.07	.010	.010	9	0	25	7.1	11.8
JULY											
12...	.03	.010	.03	.17	.010	.010	10	0	26	7.1	11.5
26...	.20	.000	.13	.15	.010	.020	12	0	35	7.1	17.1
AUG.											
09...	.15	.000	.01	.23	.000	.010	15	0	40	7.1	18.8
23...	.12	.000	.06	.18	.010	.020	18	0	49	7.2	16.0
SEP.											
13...	.13	.000	.01	.49	.000	.010	15	0	44	7.6	14.1
27...	.21	.000	.10	.40	.020	.040	--	--	186	3.6	11.8

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
30...	20	2	12.1	560	0	0	0	0	.0	0	0
DEC.											
14...	6	5	12.2	1000	0	0	0	0	.0	0	0
JAN.											
04...	4	2	13.9	700	0	0	0	0	.0	0	0
18...	39	8	12.6	300	0	0	0	0	.1	0	0
FEB.											
01...	38	15	13.0	130	0	0	0	0	.2	0	20
15...	45	20	13.3	400	0	0	0	0	.0	0	0
MAR.											
01...	19	2	12.9	600	0	0	2	2	.0	50	40
15...	27	4	12.2	680	0	5	6	0	.0	50	1
APR.											
12...	23	3	12.4	540	0	0	0	13	.1	320	3
26...	14	2	10.9	900	0	0	2	0	.1	0	0
MAY											
10...	19	3	12.4	700	0	0	2	5	.1	90	40
24...	66	3	11.3	900	0	6	270	0	1.0	30	0
JUNE											
07...	21	5	11.4	1000	0	--	--	0	.5	60	20
21...	17	2	11.3	600	0	0	0	43	.3	0	0
JULY											
12...	23	3	10.9	1000	0	0	0	0	.2	760	0
26...	19	4	9.5	3500	0	2	4	0	.0	60	0
AUG.											
09...	13	1	9.0	2000	0	2	1	8	.0	80	10
23...	16	1	9.8	2400	0	0	0	0	.4	20	10
SEP.											
13...	18	3	10.1	3000	0	1	3	0	.1	40	0
27...	7	4	10.4	2600	--	--	--	--	--	--	--

12155400 PILCHUCK RIVER AT SNOHOMISH, WASH.

LOCATION.--Lat 47°54'47", long 122°04'56", in NW¼SE¼ sec.18, T.28 N., R.6 E., Snohomish County, at U.S. Highway 2 bridge on east side of Snohomish, and at mile 1.9.

DRAINAGE AREA.-- 132 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
01...	0900	--	5.3	2.3	2.6	.6	22	0	18
14...	1550	--	5.3	2.2	2.3	.6	20	0	16
JAN.									
04...	1545	--	5.4	2.3	3.3	.5	23	0	19
18...	1455	--	3.9	1.6	1.9	.5	15	0	12
FEB.									
01...	1355	--	3.3	1.7	1.7	.7	12	0	10
15...	1635	--	3.3	1.5	1.7	5.0	14	0	11
MAR.									
01...	1450	--	4.7	2.3	2.5	.5	26	0	21
15...	1400	--	4.8	1.8	2.4	.8	26	0	21
APR.									
12...	1450	--	4.7	1.8	2.0	.7	27	0	22
26...	1345	--	--	--	--	--	--	--	--
MAY									
10...	1515	--	5.0	2.3	2.1	.5	28	--	23
24...	1410	--	5.1	1.6	2.1	.7	20	0	16
JUNE									
07...	1340	--	4.9	1.8	2.2	.7	28	0	23
21...	1450	--	4.1	1.7	2.1	.7	25	0	21
JULY									
12...	1435	420	4.6	1.8	1.8	.4	24	0	20
26...	1500	140	5.1	2.2	3.1	.9	31	0	25
AUG.									
09...	1500	81	6.8	2.8	2.9	.6	36	0	30
23...	1410	150	5.8	1.9	2.9	.6	32	0	26
SEP.									
13...	1455	170	6.1	2.2	2.9	.7	34	0	28
27...	1430	150	7.4	2.9	3.5	.9	38	0	31

12155400 PILCHUCK RIVER AT SNOHOMISH, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)
DEC.									
01...	4.6	2.6	.16	.000	.00	.95	.000	.020	23
14...	4.4	2.5	.28	.000	.02	1.1	.000	.020	22
JAN.									
04...	4.6	2.6	.14	.000	.03	.56	.010	.030	23
18...	3.8	2.1	.16	.000	.01	.68	.010	.020	16
FEB.									
01...	4.2	.9	--	.000	.00	.59	.010	.060	15
15...	3.8	1.6	.08	.000	.06	.45	.040	.050	14
MAR.									
01...	5.0	3.1	.09	.000	.07	.79	.010	.010	21
15...	4.0	2.1	.20	.010	.03	.63	.030	.060	20
APR.									
12...	4.2	1.7	.19	.000	.05	.50	--	.040	19
26...	--	--	.41	.000	.02	.18	.030	.050	--
MAY									
10...	5.0	2.3	.08	.000	.02	.07	.010	.040	22
24...	3.0	1.9	.24	.000	.01	.16	.010	.030	19
JUNE									
07...	3.3	2.2	.17	.000	.02	.14	.030	.050	20
21...	3.0	1.5	.04	.000	.04	.07	.020	.030	17
JULY									
12...	4.8	1.9	.14	.010	.02	.26	.010	.010	19
26...	4.5	2.3	.32	.010	.26	.20	.000	.020	22
AUG.									
09...	3.5	2.0	.12	.000	.06	.38	.010	.090	28
23...	4.5	2.7	.18	.000	.15	.29	.010	.020	22
SEP.									
13...	5.3	2.4	.17	.000	.02	.55	.000	.030	24
27...	3.8	3.5	.15	.000	.04	.61	.000	.020	30

DATE	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.								
01...	5	66	7.0	4.3	55	3	12.0	700
14...	6	62	7.0	5.2	41	2	11.9	600
JAN.								
04...	4	65	7.1	2.4	39	2	12.7	400
18...	4	48	6.9	6.8	62	4	11.9	600
FEB.								
01...	5	40	6.5	6.9	84	70	11.6	500
15...	3	38	6.8	6.2	69	30	11.7	1200
MAR.								
01...	0	54	6.7	3.9	42	3	12.8	406
15...	0	52	6.9	6.7	22	8	12.0	>1600
APR.								
12...	0	45	6.9	9.5	41	5	11.6	330
26...	--	58	7.1	14.5	28	1	11.3	1300
MAY								
10...	0	51	8.3	15.2	32	3	13.0	110
24...	3	50	6.9	13.5	37	5	11.0	1000
JUNE								
07...	0	53	7.2	13.3	33	5	11.0	5000
21...	0	45	7.0	17.8	35	2	10.1	800
JULY								
12...	0	45	6.8	15.9	51	2	10.4	600
26...	0	64	7.1	22.9	17	2	9.1	250
AUG.								
09...	0	74	6.9	23.4	35	25	8.7	700
23...	0	63	6.9	18.6	43	3	9.3	>1600
SEP.								
13...	0	65	7.3	15.7	34	7	10.0	3000
27...	0	83	7.0	12.6	18	3	10.6	3200

12155500 SNOHOMISH RIVER AT SNOHOMISH, WASH.

LOCATION.--Lat 47°54'40", long 122°05'50", in NE¼SE¼ sec.13, T.28 N., R.5 E., Snohomish County, at discontinued gaging station at bridge on State Highway 9 in Snohomish, 0.7 mile downstream from Pilchuck River, and at mile 12.7.

DRAINAGE AREA.--1,714 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).
Water temperatures: July 1959 to September 1961.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.											
01...	0920	--	4.8	1.4	1.9	.5	19	0	16	3.2	2.4
14...	1605	--	5.0	1.2	1.8	.6	19	0	16	3.2	1.4
JAN.											
04...	1600	--	5.4	1.4	2.2	.4	22	0	18	3.3	1.6
18...	1510	--	3.5	.9	1.4	.5	14	0	11	2.2	1.6
FEB.											
01...	1415	--	2.9	.8	1.2	.4	12	0	10	2.2	.9
15...	1650	--	2.8	.6	1.2	.3	11	0	9	1.6	.9
MAR.											
01...	1510	--	5.3	1.4	2.0	1.1	25	0	20	4.5	1.4
15...	1420	--	5.3	1.3	2.0	.5	25	0	21	3.2	1.6
APR.											
12...	1505	--	4.7	1.2	1.8	.6	22	0	18	2.5	1.4
26...	1400	--	--	--	--	--	--	--	--	--	--
MAY											
10...	1530	--	3.1	.8	1.1	.3	13	0	11	4.5	1.2
24...	1425	--	3.8	.7	1.3	.4	19	0	16	2.3	1.0
JUNE											
07...	1355	--	3.3	.7	1.3	.5	16	0	13	3.0	1.3
21...	1515	--	3.1	.8	1.0	.6	15	0	12	.0	.8
JULY											
12...	1450	14200	3.4	.6	1.1	.3	14	0	11	3.0	.9
26...	1500	14400	2.9	.7	1.4	.4	15	0	12	2.8	.9
AUG.											
09...	1535	6280	4.1	.9	1.4	.4	17	0	14	5.8	1.0
23...	1430	4170	5.2	.5	2.2	.4	24	0	20	2.3	1.5
SEP.											
13...	1510	3550	5.8	.9	2.6	.8	25	0	21	2.5	2.2
27...	1455	2630	5.8	.9	2.6	.8	25	0	21	2.5	2.2

12155500 SNOHOMISH RIVER AT SNOHOMISH, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
01...	.12	.000	.00	.45	.000	.020	18	3	44	6.9	4.0
14...	.41	.000	.02	.61	.010	.010	18	2	49	7.0	4.4
JAN.											
04...	.13	.000	.02	.29	.010	.030	20	2	53	7.1	2.2
18...	.00	.000	.00	.32	.020	.030	12	1	36	6.8	6.1
FEB.											
01...	.02	.000	.00	.27	.000	.040	11	1	29	6.5	5.5
15...	.04	.000	.00	.18	.040	.050	10	1	25	6.8	5.5
MAR.											
01...	.09	.000	.06	.38	.010	.010	19	0	46	6.8	3.2
15...	.15	.000	.03	.43	.030	.060	18	0	46	6.8	5.9
APR.											
12...	.13	.000	.12	.34	--	.030	17	0	39	6.9	8.2
26...	.24	.000	.00	.11	.020	.050	--	--	44	7.0	11.8
MAY											
10...	.12	.000	.00	.09	.010	.030	11	0	27	7.0	9.8
24...	.19	.000	.00	.11	--	.030	12	0	30	6.8	10.2
JUNE											
07...	.21	.000	.00	.14	.010	.030	11	0	32	6.9	--
21...	.08	.000	.04	.00	.010	.020	11	0	25	6.9	17.8
JULY											
12...	.02	.010	.02	.15	.000	.020	11	0	27	6.8	11.8
26...	.07	.000	.07	.15	.000	.020	10	0	28	7.0	15.9
AUG.											
09...	.07	.000	.01	.18	.000	.010	14	0	35	6.9	19.9
23...	.12	.000	.06	.14	.010	.020	15	0	44	7.0	16.8
SEP.											
13...	1.9	.000	.10	.90	.010	.020	18	0	42	7.4	24.0
27...	.19	.000	.10	.90	.010	.020	18	0	56	7.1	12.4

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
01...	18	3	12.1	900	0	0	0	0	.0	0	0
14...	20	2	11.3	>1600	0	0	0	0	.0	0	0
JAN.											
04...	10	3	13.5	2000	0	0	0	0	.0	0	0
18...	43	6	12.5	1200	0	0	0	0	.2	0	0
FEB.											
01...	45	25	12.5	600	0	0	0	0	.1	0	10
15...	39	20	12.6	700	0	0	0	0	.0	0	0
MAR.											
01...	25	4	13.0	1100	0	0	5	2	.0	50	20
15...	47	3	12.1	1600	0	8	2	0	.1	70	4
APR.											
12...	23	3	12.2	190	1	1	5	0	.0	280	3
26...	22	2	11.5	350	0	0	1	14	.3	10	0
MAY											
10...	16	3	12.3	180	0	0	2	0	.0	130	0
24...	20	5	11.6	800	0	7	650	0	2.8	90	20
JUNE											
07...	20	4	11.5	1000	0	--	--	0	.4	90	30
21...	16	3	11.4	800	0	0	0	27	.3	0	0
JULY											
12...	24	2	11.1	900	0	0	0	0	.1	780	20
26...	24	3	10.9	180	0	40	400	0	1.4	50	20
AUG.											
09...	13	2	9.4	200	0	24	4	9	.2	0	20
23...	18	3	9.8	>1600	1	46	390	18	2.0	60	50
SEP.											
13...	18	5	9.8	100	7	69	400	2	3.6	110	70
27...	14	2	9.9	2000	--	--	--	2	3.6	110	--

12167000 NORTH FORK STILLAGUAMISH RIVER NEAR ARLINGTON, WASH.

LOCATION.--Lat 48°16'05", long 122°00'45", in NE¼NE¼ sec.15, T.32 N., R.6 E., Snohomish County, at State Highway 530 bridge, 3.0 miles upstream from gaging station, 6.7 miles northeast of Arlington, and at mile 9.5.

DRAINAGE AREA.--262 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: November 1961 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
01...	1020	1410	--	--	--	--	--	--
15...	0930	2360	--	--	--		--	--
JAN.								
05...	1055	900	.00	.000	.00	.34	.010	.060
19...	0945	15200	.21	.010	.16	.18	.020	.030
FEB.								
02...	0940	6010	.02	.000	.00	.50	.010	.060
16...	0900	5000	.06	.000	.04	.20	.030	.040
MAR.								
02...	0910	1240	.12	.000	.04	.27	.010	.010
16...	0945	1510	.21	.000	.05	.18	.030	.060
APR.								
13...	0930	2050	.12	.000	.02	.34	--	.040
27...	0720	3280	.02	.000	.02	.05	.020	.050
MAY								
11...	0910	3780	10	.000	.00	.09	.010	.030
25...	0910	3420	.21	.000	.00	.09	--	.030
JUNE								
08...	0915	3200	.23	.000	.01	.07	--	.040
22...	0900	3710	.02	.000	.00	.00	.000	.010
JULY								
13...	0850	2120	.01	.000	.00	.18	.030	.030
27...	0910	1410	.06	.000	.05	.12	.000	.000
AUG.								
10...	0855	639	.08	.010	.01	.15	.010	.020
24...	0905	519	.11	.000	.06	.02	.010	.020
SEP.								
14...	0850	618	.20	.000	.02	.90	.000	.010
28...	0900	3920	.26	.000	.26	.76	.010	.14

12167000 NORTH FORK STILLAGUAMISH RIVER NEAR ARLINGTON, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.							
01...	49	7.1	3.7	18	5	12.6	150
15...	51	7.3	4.3	31	9	12.6	160
JAN.							
05...	70	7.2	1.2	8	3	13.7	110
19...	30	7.1	4.0	109	160	12.8	750
FEB.							
02...	39	6.8	4.3	44	25	12.5	150
16...	36	6.9	4.2	42	15	12.6	220
MAR.							
02...	59	7.1	1.9	16	1	13.2	120
16...	59	7.0	4.5	32	2	12.8	50
APR.							
13...	48	7.0	6.2	22	4	12.5	50
27...	36	7.0	6.1	41	8	12.0	250
MAY							
11...	31	7.0	7.1	51	5	12.5	120
25...	34	6.9	7.4	30	7	11.9	120
JUNE							
08...	33	7.1	6.9	43	10	12.1	800
22...	24	7.1	8.9	27	6	11.6	250
JULY							
13...	38	6.9	9.7	24	2	11.1	160
27...	47	6.9	14.4	15	3	10.2	400
AUG.							
10...	52	7.0	15.4	12	2	9.9	200
24...	65	7.0	13.6	20	3	10.1	>800
SEP.							
14...	60	7.2	9.8	25	4	10.7	370
28...	42	7.1	9.5	137	55	12.3	3300

12167700 STILLAGUAMISH RIVER NEAR SILVANA, WASH.

LOCATION.--Lat 48°11'50", long 122°12'30", in SW¼SE¼ sec.6, T.31 N., R.5 E., Snohomish County, at bridge on U.S. Highway 99 and Interstate 5, 1.5 miles east of Silvana, 6.7 miles downstream from confluence of the North and South Forks, and at mile 11.1.

DRAINAGE AREA.--557 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
02...	1145	1990	.07	.000	.00	.38	.000	.010
16...	1110	3830	.16	.000	.12	.32	.010	.050
JAN.								
06...	1155	1440	.10	.000	.01	.29	.000	.030
20...	1010	11600	.00	.000	.00	.54	.010	.020
FEB.								
03...	1025	7310	.01	.000	.00	.38	.020	.060
17...	1110	5930	.02	.000	.00	.23	.030	.050
MAR.								
03...	1100	2400	.06	.000	.06	.36	.010	.010
17...	1040	2380	.24	.000	.07	.29	.030	.050
APR.								
14...	1115	3710	.11	.000	.02	.27	--	.040
28...	0940	4520	.12	.000	.00	.07	.020	.040
MAY								
12...	1130	9440	.12	.000	.00	.09	.010	.030
26...	1015	6490	.21	.000	.04	.07	.020	.030
JUNE								
09...	1030	4500	.25	.000	.06	.09	.030	.050
23...	1035	6830	.02	.000	.00	.00	.010	.010
JULY								
14...	1030	4070	.01	.000	.01	.18	.000	.000
28...	1030	2660	.08	.000	.07	.12	.000	.020
AUG.								
11...	1035	1280	.04	.010	.01	.10	.010	.020
25...	1030	894	.16	.000	.09	.11	.010	.020
SEP.								
15...	1105	1050	.13	.000	.00	.70	.000	.010
29...	1020	3250	.23	.000	.23	.70	.010	.030

12167700 STILLAGUAMISH RIVER NEAR SILVANA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
02...	68	7.1	4.0	25	4	12.4	1100
16...	68	7.2	4.7	37	15	12.2	5000
JAN.							
06...	73	7.2	1.8	6	3	13.7	<400
20...	33	7.0	3.8	48	35	13.1	400
FEB.							
03...	43	6.9	3.4	42	25	12.7	400
17...	42	7.0	4.7	37	10	12.6	400
MAR.							
03...	58	7.1	3.1	24	6	12.5	350
17...	64	7.1	5.5	28	7	12.6	<100
APR.							
14...	47	7.0	7.4	27	5	11.7	70
28...	38	7.0	6.8	32	3	12.1	150
MAY							
12...	26	6.9	8.1	41	20	12.1	300
26...	37	6.9	9.3	30	6	11.5	200
JUNE							
09...	40	6.9	9.6	32	10	11.8	260
23...	26	6.8	9.8	49	6	10.8	200
JULY							
14...	38	7.0	12.7	60	3	10.4	250
28...	62	7.2	16.1	19	6	9.6	800
AUG.							
11...	57	7.0	19.2	19	2	9.0	250
25...	130	7.0	16.2	21	2	9.6	>1600
SEP.							
15...	76	7.3	--	26	2	10.3	600
29...	44	7.5	9.5	79	20	10.9	2000

12168000 CAVANAUGH LAKE NEAR OSO, WASH.

LOCATION.--Lat 49°19'29", long 122°02'09", in NE¼SW¼ sec.22, T.33 N., R.6 E., Skagit County, 5.9 miles northwest of Oso.

DRAINAGE AREA.--7.36 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
MAR.												
16...	1325	38	--	3.1	5.0	1.2	1.2	.1	16	0	1.0	1.2
MAY												
25...	0920	3.0	13.0	2.8	2.5	1.0	--	--	11	0	.5	--
25...	0925	72	6.0	--	--	--	--	--	--	--	--	--
JULY												
15...	1145	3.0	18.0	2.1	--	--	1.1	.1	12	--	2.8	.9
15...	1150	72	7.0	--	--	--	--	--	--	--	--	--
SEP.												
24...	1325	3.0	16.5	2.3	--	--	--	--	--	--	4.0	--
24...	1330	72	7.1	4.3	--	--	--	--	--	--	2.8	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
MAR.												
16...	.2	.12	.00	.18	.010	.030	26	18	5	--	--	--
MAY												
25...	--	.05	.04	.37	.000	.000	--	10	1	28	7.2	10
25...	--	.04	.03	.37	.000	.000	--	--	--	26	7.4	--
JULY												
15...	--	.00	.00	.10	.000	.000	--	--	--	30	8.0	--
15...	--	.03	.02	.18	.000	.000	--	--	--	29	7.2	--
SEP.												
24...	--	.14	.06	.01	.010	.010	--	--	--	28	8.1	0
24...	--	.19	.11	.14	.010	.010	--	--	--	36	7.5	15

12168500 PILCHUCK CREEK NEAR BRYANT, WASH.

LOCATION.--Lat 48°15'58", long 122°09'46", in NE¼NE¼ sec.16, T.32 N., R.5 E., Snohomish County, temperature recorder at gaging station on right bank, 500 ft upstream from bridge on State Highway 534, 1.8 miles north of Bryant, and at mile 6.4.

DRAINAGE AREA.--52.0 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1952 to August 1968, March 1969 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 23.5°C Aug. 9-11.

Period of record:
Water temperatures: Maximum, 28.0°C July 28, 1958; minimum, 1.0°C on many days during winter months.

REMARKS.--Recorder not operating Dec. 15 to June 6; no range in temperature obtained.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12168500 PILCHUCK CREEK NEAR BRYANT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	---	---	11.5	10.0	20.0	18.5	15.5	13.5
2	---	---	---	---	---	---	13.5	10.0	21.0	17.0	13.5	11.5
3	---	---	---	---	---	---	14.0	10.5	20.0	17.0	13.5	11.5
4	---	---	---	---	---	---	13.0	11.5	21.0	18.0	14.0	12.0
5	---	---	---	---	---	---	11.5	10.0	20.5	18.0	14.0	13.0
6	---	---	---	---	---	---	10.0	9.0	21.5	18.0	14.0	12.0
7	---	---	---	---	10.5	9.5	11.5	8.5	21.0	17.0	14.0	11.5
8	---	---	---	---	10.5	9.0	11.5	11.0	23.0	18.0	13.5	12.0
9	---	---	---	---	12.0	8.5	12.0	11.5	23.5	18.5	14.5	13.0
10	---	---	---	---	11.0	9.5	11.5	11.0	23.5	18.5	14.0	13.0
11	---	---	---	---	10.0	8.5	11.5	10.5	23.5	18.5	15.0	13.5
12	---	---	---	---	11.0	9.0	13.5	10.0	22.0	18.0	14.5	13.0
13	---	---	---	---	11.5	10.5	15.0	11.5	19.0	17.0	14.0	12.0
14	---	---	---	---	10.5	8.5	15.5	12.0	19.5	16.5	13.5	10.5
15	---	---	---	---	11.0	8.5	16.5	13.5	20.0	16.0	13.0	10.0
16	---	---	---	---	11.0	9.5	17.0	13.5	20.0	16.5	13.0	10.0
17	---	---	---	---	12.0	9.0	18.0	14.0	19.5	15.5	13.0	10.0
18	---	---	---	---	11.5	11.0	19.5	15.5	20.5	16.0	13.0	10.0
19	---	---	---	---	11.5	10.0	20.0	16.5	20.5	16.0	13.0	10.5
20	---	---	---	---	11.0	10.0	21.0	17.0	20.0	17.0	13.0	10.5
21	---	---	---	---	14.5	10.5	21.0	17.0	19.0	17.0	12.0	10.0
22	---	---	---	---	14.5	13.0	20.5	17.0	18.0	16.5	13.0	10.0
23	---	---	---	---	13.0	11.5	19.0	16.5	18.5	15.0	13.0	10.5
24	---	---	---	---	11.5	10.0	18.5	15.5	18.5	14.5	13.5	12.0
25	---	---	---	---	10.5	8.5	20.5	15.5	18.5	15.5	13.0	11.5
26	---	---	---	---	11.0	9.0	22.0	17.0	18.5	14.5	12.0	11.0
27	---	---	---	---	10.0	9.5	22.0	18.5	18.0	14.5	12.0	11.5
28	---	---	---	---	10.0	9.5	22.0	18.5	18.5	15.0	12.0	9.5
29	---	---	---	---	11.5	9.5	23.0	19.0	18.5	15.0	10.0	9.0
30	---	---	---	---	11.0	10.0	23.0	19.5	19.0	16.5	9.5	8.5
31	---	---	---	---	---	---	21.0	19.0	18.0	15.5	---	---
MONTH	---	---	---	---	14.5	8.5	23.0	8.5	23.5	14.5	15.5	8.5

12179000 SKAGIT RIVER ABOVE ALMA CREEK, NEAR MARBLEMOUNT, WASH.

LOCATION.--Lat 48°36'27", long 121°21'37", in SW¼NE¼ sec.15, T.36 N., R.11 E., Skagit County, Ross Lake National Recreation Area, temperature recorder at gaging station on right bank, 0.6 mile upstream from Alma Creek, 6.8 miles north of Marblemount, and at mile 85.8.

DRAINAGE AREA.--1,274 sq mi, of which 400 sq mi is in Canada.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1960.
Water temperatures: January 1953 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 11.0°C several days in July and August; minimum, 2.0°C Feb. 3-12.

Period of record:
Water temperatures: Maximum, 13.5°C July 30, 1961, Sept. 5, 1966, July 31, 1970; minimum, 1.5°C Mar. 1, 1956, many days January to February 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	10.0	8.5	8.5	6.5	6.5	5.0	5.0	3.0	3.0	3.0	3.0
2	10.0	10.0	8.5	8.5	6.5	6.5	5.0	4.5	3.0	3.0	3.0	3.0
3	10.5	10.0	8.5	8.0	6.5	6.5	4.5	4.5	3.0	2.0	3.0	3.0
4	10.0	10.0	8.0	8.0	6.5	6.5	4.5	4.5	2.0	2.0	3.0	3.0
5	10.0	10.0	8.0	8.0	6.5	5.5	4.5	4.5	2.0	2.0	3.0	3.0
6	10.0	9.5	8.5	8.0	6.0	5.5	4.5	4.5	2.0	2.0	3.0	3.0
7	9.5	9.5	8.5	8.0	5.5	5.5	4.5	4.5	2.0	2.0	3.5	3.0
8	9.5	9.5	8.5	8.5	5.5	5.5	4.5	4.5	2.0	2.0	3.5	3.5
9	9.5	9.5	8.5	8.0	5.5	5.5	4.5	4.5	2.0	2.0	3.5	3.5
10	9.5	9.5	8.0	8.0	5.5	5.5	4.5	4.5	2.0	2.0	3.5	3.5
11	9.5	9.5	8.0	8.0	6.0	5.5	4.5	4.5	2.0	2.0	3.5	3.5
12	10.0	9.5	8.0	8.0	6.0	6.0	4.5	4.5	3.0	2.0	3.5	3.5
13	9.5	9.5	8.0	8.0	6.0	5.5	4.5	4.5	3.0	3.0	4.0	3.5
14	9.5	9.0	8.0	8.0	5.5	5.5	4.5	4.0	3.0	3.0	4.0	4.0
15	9.5	9.0	8.0	8.0	5.5	5.5	4.0	4.0	3.5	3.0	4.0	4.0
16	9.5	9.0	8.0	8.0	5.5	5.5	4.0	4.0	3.5	3.5	4.0	4.0
17	9.0	9.0	8.0	8.0	6.0	5.5	4.0	4.0	3.5	3.5	4.0	4.0
18	9.5	9.0	8.0	8.0	6.0	6.0	4.0	4.0	3.5	3.5	4.0	4.0
19	9.5	9.5	8.0	8.0	6.0	6.0	4.0	3.5	3.5	3.5	4.0	4.0
20	9.5	9.0	8.0	7.0	6.0	5.5	3.5	3.5	3.5	3.5	4.0	4.0
21	9.0	9.0	8.0	7.0	5.5	5.5	3.5	3.5	3.5	3.5	4.0	4.0
22	9.0	9.0	7.0	6.5	5.5	5.5	3.5	3.5	3.5	3.5	4.0	4.0
23	9.0	9.0	6.5	6.0	5.5	5.5	3.5	3.0	3.5	3.5	4.0	4.0
24	9.0	9.0	6.0	6.0	5.5	5.5	3.0	3.0	3.5	3.5	4.0	4.0
25	9.0	8.5	6.0	6.0	5.5	5.5	3.0	3.0	3.5	3.5	4.0	4.0
26	8.5	8.5	6.5	6.0	5.5	5.5	3.0	3.0	3.5	3.5	4.0	4.0
27	8.5	8.5	6.5	6.5	5.5	5.5	3.0	3.0	3.5	3.5	4.0	4.0
28	8.5	8.5	6.5	6.5	5.5	5.5	3.0	3.0	3.5	3.0	4.0	4.0
29	8.5	8.5	6.5	6.5	5.5	5.0	3.0	3.0	---	---	4.0	4.0
30	8.5	8.5	6.5	6.5	5.0	5.0	3.0	3.0	---	---	4.0	4.0
31	8.5	8.5	---	---	5.0	5.0	3.0	3.0	---	---	4.0	4.0
MONTH	10.5	8.5	8.5	6.0	6.5	5.0	5.0	3.0	3.5	2.0	4.0	3.0

12179000 SKAGIT RIVER ABOVE ALMA CREEK, NEAR MARBLEMOUNT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12182500 CASCADE RIVER AT MARBLEMOUNT, WASH.

LOCATION.--Lat 48°31'26", long 121°22'58", in N½ sec.16, T.35 N., R.11 E., Skagit County, temperature recorder at gaging station on right bank, 1.1 miles downstream from Boulder Creek, 2.2 miles east of Marblemount, and at mile 2.9.

DRAINAGE AREA.--168 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1952 to November 1963, September 1964, October 1965 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 13.0°C Aug. 7; minimum, 1.5°C on several days in January and March.

Period of record:
Water temperatures: Maximum, 15.0°C Aug. 4, 1970; minimum, freezing point Feb. 1, 2, 18, 1956, Nov. 16, 1959, Jan. 19, 1960, Jan. 5, 1966, Jan. 29-Feb. 1, 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12182500 CASCADE RIVER AT MARBLEMOUNT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

12189500 SAUK RIVER NEAR SAUK, WASH.

LOCATION.--Lat 48°25'29", long 121°34'02", in NW¼NW¼ sec.19, T.34 N., R.10 E., Skagit County, temperature recorder at gaging station on left bank, 4.4 miles southeast of Rockport, 7.6 miles southeast of Sauk, 7.8 miles downstream from Suiattle River, and at mile 5.4.

DRAINAGE AREA.--714 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1970 to April 1971 (discontinued).

EXTREMES.--October 1970 to April 1971:
Water temperatures: Maximum, 11.5°C Oct. 1-3; minimum, 0.5°C Nov. 22, Dec. 21, Jan. 5.

Period of record:
Water temperatures: Maximum, 16.5°C Aug. 5, 11, 12, 22, 1970; minimum, 0.5°C Nov. 22, Dec. 21, 1970 and Jan. 5, 1971.

REMARKS.--Recorder not operating Dec. 16-21; recorded range in temperature 0.5°C to 4.5°C.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO APRIL 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	9.5	6.0	4.5	3.5	3.0	3.5	2.0	5.0	4.5	3.0	1.0
2	11.5	9.0	6.0	4.5	3.5	3.0	3.5	2.0	5.0	5.0	2.0	1.5
3	11.5	9.5	6.0	4.5	3.5	2.0	2.0	1.0	5.0	4.0	3.0	1.5
4	11.0	10.0	6.5	5.0	2.0	1.5	2.0	1.5	4.5	4.0	3.5	1.0
5	10.0	9.0	6.5	5.5	2.0	1.0	1.5	0.5	4.5	3.5	4.5	2.0
6	9.5	8.0	8.0	6.0	4.0	2.0	3.0	1.5	3.5	3.0	3.5	3.0
7	8.0	6.5	7.0	6.5	4.5	4.0	3.5	2.0	4.0	2.0	3.5	3.0
8	8.0	7.0	8.0	6.5	4.5	4.0	4.0	3.5	4.5	3.0	4.0	3.0
9	8.5	8.0	7.0	6.5	4.0	3.0	4.0	3.5	4.5	3.5	4.0	3.0
10	9.0	8.5	6.5	6.0	4.0	3.5	3.5	2.0	5.0	4.5	3.5	3.0
11	9.5	8.5	6.5	6.0	4.0	3.5	2.0	1.5	4.5	4.0	3.5	3.0
12	9.5	8.5	6.5	6.0	3.5	3.0	1.5	1.0	5.0	4.5	4.5	3.5
13	9.0	7.0	6.0	5.5	4.0	3.5	1.5	1.0	5.0	4.5	4.5	3.5
14	8.5	6.0	6.0	5.0	4.0	4.0	1.5	1.0	5.0	4.5	4.0	3.0
15	8.0	5.5	6.5	5.5	4.0	4.0	2.0	1.0	5.0	4.5	4.5	3.0
16	8.0	5.5	6.5	6.5	---	---	3.5	2.0	5.0	4.0	5.5	3.5
17	7.0	5.5	6.5	6.0	---	---	4.5	3.5	5.0	4.0	5.5	3.5
18	9.5	7.0	6.0	5.5	---	---	5.0	4.0	5.0	4.5	5.5	3.0
19	9.0	8.5	5.5	5.0	---	---	5.0	3.5	5.0	4.0	6.0	3.0
20	8.5	8.0	5.5	3.0	---	---	3.5	3.5	5.0	4.0	5.5	3.5
21	8.0	7.0	3.0	1.0	---	---	3.5	3.0	5.0	4.0	5.5	3.0
22	8.0	7.0	1.5	0.5	1.5	0.5	3.0	1.5	5.5	4.5	4.5	4.0
23	7.0	6.5	3.0	1.0	3.0	1.5	3.5	2.0	5.0	4.5	5.0	4.0
24	7.0	5.5	4.5	3.0	3.0	1.5	4.0	3.5	5.0	3.0	5.0	3.5
25	6.0	5.5	4.0	3.5	3.5	2.0	4.0	3.5	3.0	1.0	5.5	3.0
26	6.0	4.5	4.0	3.5	3.5	2.0	4.0	3.5	3.0	1.5	5.0	3.5
27	5.5	3.5	4.5	4.0	4.0	3.5	4.5	3.5	3.0	2.0	4.0	3.0
28	6.0	4.0	4.0	3.0	4.5	3.5	4.5	4.5	3.5	1.5	4.5	3.5
29	5.5	4.0	3.5	2.0	4.5	4.0	4.5	4.0	---	---	4.0	3.5
30	5.5	4.0	4.0	3.5	4.0	3.0	4.0	4.0	---	---	4.5	3.0
31	6.0	4.5	---	---	3.5	3.0	5.0	4.0	---	---	5.0	3.0
MONTH	11.5	3.5	8.0	0.5	4.5	0.5	5.0	0.5	5.5	1.0	6.0	1.0

DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN	DAY	MAX	MIN
Apr. 1	5.5	3.5	Apr. 7	6.0	4.5	Apr. 13	7.0	5.0	Apr. 19	8.5	5.0	Apr. 25	---	---
2	6.5	4.5	8	5.5	4.5	14	6.5	5.0	20	8.0	6.0	26	---	---
3	6.0	4.0	9	5.0	4.0	15	6.0	4.5	21	6.5	5.0	27	---	---
4	7.0	4.0	10	5.0	4.0	16	5.5	4.0	22	6.0	5.0	28	---	---
5	7.0	4.5	11	6.0	4.0	17	7.0	4.0	23	6.5	5.0	29	---	---
6	6.5	5.0	12	7.0	4.0	18	7.0	5.0	24	---	---	30	---	---
												31	---	---

12194000 SKAGIT RIVER NEAR CONCRETE, WASH.

LOCATION.--Lat 48°31'28", long 121°46'11", in SE¼NE¼ sec.16, T.35 N., R.8 E., Skagit County, at county road bridge downstream from gaging station, 1.3 miles southwest of Concrete, 2.4 miles downstream from Baker River, and at mile 54.1.

DRAINAGE AREA.--2,737 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
01...	1230	11400	.02	.000	.02	.41	.000	.000	60	7.1	6.0
15...	1050	12900	.08	.000	.04	.09	.010	.010	61	7.3	5.5
JAN.											
05...	1225	13000	.00	.000	.00	.05	.000	.020	65	7.2	3.7
19...	1120	34100	.07	.000	.00	.14	.010	.020	38	7.1	4.0
FEB.											
02...	1100	31100	.02	.000	.00	.14	.010	.060	46	6.8	4.6
16...	1020	26600	.01	.000	.00	.16	.060	.070	31	7.0	4.7
MAR.											
02...	1100	14800	.06	.000	.09	.14	.000	.010	61	7.1	2.6
16...	1135	12800	.24	.000	.03	.07	.030	.040	64	7.1	4.8
APR.											
13...	1050	9350	.16	.000	.02	.16	--	.040	60	7.2	6.6
27...	0910	12400	.13	.000	.00	.02	.020	.040	49	7.2	8.3
MAY											
11...	1030	26900	.08	.000	.02	.09	.020	.040	43	7.1	8.3
25...	1100	27000	.17	.000	.02	.09	.010	.030	40	6.9	8.3
JUNE											
08...	1100	34800	.18	.000	.04	.02	.020	.040	47	7.1	7.6
22...	1025	40000	.02	.000	.00	.05	.010	.010	32	7.1	9.4
JULY											
13...	1115	28600	.01	.010	.01	.13	.000	.010	42	6.9	10.3
27...	1045	41000	.07	.000	.07	.37	.000	.010	45	7.0	12.2
AUG.											
10...	1035	20300	.07	.010	.00	.13	.040	.040	36	7.1	13.0
24...	1050	13700	.12	.000	.07	.07	.010	.010	44	7.0	12.1
SEP.											
14...	1110	10800	.13	.000	.00	.30	.000	.010	44	7.3	11.0
28...	1110	6180	.18	.000	.07	.09	.000	.020	51	7.1	10.9

12194000 SKAGIT RIVER NEAR CONCRETE, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
01...	14	3	12.0	60	0	0	0	0	.0	0	0
15...	0	5	12.4	60	0	0	0	0	.0	0	0
JAN.											
05...	0	3	13.1	80	0	0	0	0	.0	0	0
19...	50	40	12.8	600	0	0	0	0	.1	0	0
FEB.											
02...	26	15	12.3	80	0	0	0	0	.1	0	0
16...	24	10	12.8	160	0	0	0	0	.0	0	0
MAR.											
02...	31	2	13.2	<40	--	--	--	--	--	--	--
16...	30	4	12.9	<20	0	0	0	0	.0	50	14
APR.											
13...	9	1	12.4	50	1	0	3	4	2.6	350	0
27...	16	3	12.0	100	0	0	1	4	.1	20	0
MAY											
11...	16	2	12.6	80	0	0	1	0	.1	10	0
25...	14	6	12.0	200	2	8	410	0	3.6	110	20
JUNE											
08...	13	5	12.2	250	1	15	620	0	.4	80	30
22...	16	20	11.8	320	0	2	0	29	.3	60	0
JULY											
13...	11	2	11.2	160	0	0	0	9	.2	250	--
27...	18	10	10.7	200	0	14	570	0	8.0	4	40
AUG.											
10...	14	9	10.6	100	0	2	3	3	.1	0	0
24...	12	5	10.9	120	1	17	500	3	3.3	40	30
SEP.											
14...	10	4	11.0	100	0	2	2	0	.1	50	0
28...	10	10	10.9	230	6	35	540	14	2.8	100	70

12200675 SOUTH FORK SKAGIT RIVER AT CONWAY, WASH.

LOCATION.--Lat 48°20'31", long 122°21'03", in SW¼SW¼ sec.18, T.33 N., R.4 E., Skagit County, at Conway Bridge, 0.2 mile west of Conway and at mile 4.4.

DRAINAGE AREA.--3,105 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
02...	1055	5000	.02	.000	.00	.16	.000	.010	64	7.3	5.5
16...	1010	6400	.29	.000	.00	.16	.000	.020	67	7.9	5.6
JAN.											
06...	1100	5200	.00	.000	.00	.11	.010	.020	69	7.3	3.4
20...	0920	18000	.07	.000	.00	.16	.020	.030	37	6.9	3.5
FEB.											
03...	0930	13200	.04	.000	.00	.18	.020	.18	51	7.0	4.1
17...	0945	10100	.02	.000	.00	.25	.030	.040	51	7.2	4.7
MAR.											
03...	1005	5600	.08	.000	.11	.20	.000	.010	62	7.2	3.0
17...	0950	4300	.20	.000	.05	.11	.030	.050	66	7.2	5.1
APR.											
14...	1025	3900	.13	.000	.04	.27	--	.040	66	7.1	8.0
28...	0830	6100	.08	.000	.00	.05	.010	.050	50	7.2	7.6
MAY											
12...	1020	13000	.07	.000	.00	.09	.020	.040	40	7.2	9.6
26...	0930	11200	.18	.000	.00	.09	--	.030	38	6.9	8.7
JUNE											
09...	0925	14400	.16	.000	.10	.07	.030	.040	53	7.0	8.7
23...	0945	18800	.02	.000	.00	.02	.010	.020	36	6.8	9.3
JULY											
14...	0920	10600	.01	.000	.01	.16	.010	.010	45	7.1	11.6
28...	0935	15700	.14	.000	.07	.12	.000	.020	49	7.3	12.9
AUG.											
11...	0930	7500	.07	.000	.01	.11	.000	.040	40	7.3	14.6
25...	0940	3600	.12	.000	.07	.11	.010	.030	50	7.0	13.7
SEP.											
15...	1000	2800	.16	.000	.00	.21	.000	.010	50	7.4	11.9
29...	0930	4000	.18	.000	.07	.27	.000	.020	52	7.6	10.5

12200675 SOUTH FORK SKAGIT RIVER AT CONWAY, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
02...	6	3	12.1	600	0	0	0	0	.0	0	0
16...	12	2	12.1	1500	0	0	0	0	.0	0	0
JAN.											
06...	10	4	13.2	2700	0	0	0	0	.0	50	0
20...	45	50	12.9	600	0	0	0	0	.3	0	0
FEB.											
03...	37	25	12.3	300	0	0	0	0	.2	0	0
17...	31	15	12.4	460	0	0	0	0	.0	0	0
MAR.											
03...	13	6	12.6	400	0	0	6	5	.0	40	10
17...	21	5	12.6	320	2	0	5	0	.0	80	78
APR.											
14...	15	2	11.5	500	0	0	0	0	.0	380	18
28...	21	4	11.8	1600	0	0	3	2	.2	30	0
MAY											
12...	21	6	11.7	3000	0	0	0	6	.2	6	4
26...	20	8	11.6	1600	0	6	310	0	5.9	200	20
JUNE											
09...	14	8	12.1	3000	1	16	660	0	.5	60	30
23...	12	8	11.0	2000	0	1	0	37	.3	30	0
JULY											
14...	14	4	10.9	5000	0	0	0	0	.3	710	0
28...	14	9	10.8	8000	0	13	320	0	2.5	90	20
AUG.											
11...	16	20	10.0	12000	0	1	3	0	.0	50	0
25...	10	3	10.5	20000	1	7	1100	0	30	6	20
SEP.											
15...	12	4	10.7	9000	0	3	4	0	.0	40	20
29...	25	10	10.8	5000	7	23	440	19	3.6	70	20

12200850 SAMISH LAKE NEAR BELLINGHAM, WASH.

LOCATION.--Lat 48°33'56", long 122°22'15", in SE¼SW¼ sec.36, T.37 N., R.3 E., Whatcom County, 8.5 miles southeast pf Bellingham.

DRAINAGE AREA.--17.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
MAR.												
03...	1145	70	--	4.9	5.3	1.4	4.2	.4	18	0	5.8	4.9
MAY												
24...	1400	3.0	15.0	--	--	--	--	--	--	--	--	--
24...	1405	127	4.0	5.3	5.7	1.4	--	--	27	0	4.5	--
JULY												
14...	1255	3.0	17.0	--	--	--	--	--	--	--	--	--
14...	1300	125	4.0	5.5	--	--	4.2	.3	20	--	4.5	4.0
SEP.												
23...	1435	3.0	17.0	1.3	--	--	--	--	--	--	10	--
23...	1440	128	4.0	6.5	--	--	--	--	--	--	7.5	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
MAR.												
03...	.1	1.6	.06	.77	--	.040	30	23	4	64	7.2	5
MAY												
24...	--	.06	.04	.67	.000	.000	--	--	--	63	7.5	--
24...	--	.05	.00	1.3	.000	.000	--	20	0	65	6.9	5
JULY												
14...	--	--	.04	.24	.000	.000	--	--	--	63	7.5	--
14...	--	.06	.05	.97	.010	.010	--	--	--	70	7.0	--
SEP.												
23...	--	.13	.07	.02	.010	.010	--	--	--	62	8.8	5
23...	--	.39	.47	.29	.020	.020	--	--	--	75	7.5	40

12201500 SAMISH RIVER NEAR BURLINGTON, WASH.

LOCATION.--Lat 48°32'55", long 122°20'00", in SE¼SE¼ sec.6, T.35 N., R.4 E., Skagit County, at Washington State Fisheries fish trap, 0.2 mile upstream from bridge on U.S. Highway 99, 0.2 mile downstream from Friday Creek, 0.3 mile upstream from gaging station, 4.9 miles north of Burlington, and at mile 10.6.

DRAINAGE AREA.--87.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
02...	1010	250	.21	.010	.16	.93	.000	.030
16...	0900	379	.41	.000	.07	.93	.010	.040
JAN.								
06...	1000	227	.21	.000	.07	.93	.000	.040
20...	0830	630	.19	.000	.04	1.0	.010	.030
FEB.								
03...	0845	900	.21	.000	.00	.63	.010	.080
17...	0830	652	.08	.000	.04	.63	.040	.060
MAR.								
03...	0850	378	.16	.000	.09	.86	.010	.020
17...	0855	305	.26	.000	.15	.81	.030	.060
APR.								
14...	0930	385	.15	.000	.12	.90	--	.040
28...	0720	218	.27	.000	.02	.54	.020	.050
MAY								
12...	0900	188	.13	.000	.00	.47	.020	.040
26...	0845	152	.16	.000	.00	.54	.020	.030
JUNE								
09...	0840	126	.38	.000	.13	.70	.020	.040
23...	0810	124	.04	.000	.02	.61	.020	.030
JULY								
14...	0830	128	.06	.020	.06	.84	.010	.010
28...	0845	60	.15	.010	.07	.66	.010	.030
AUG.								
11...	0835	42	.08	.000	.04	1.1	.020	.030
25...	0845	31	.16	.010	.15	1.1	.020	.030
SEP.								
15...	0845	34	.14	.000	.06	1.6	.010	.020
29...	0815	91	.21	.000	.16	1.2	.000	.030

12201500 SAMISH RIVER NEAR BURLINGTON, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
02...	81	7.1	4.9	41	6	12.2	800
16...	86	7.3	5.6	57	6	11.8	2600
JAN.							
06...	81	7.2	2.4	20	5	13.5	3200
20...	59	7.1	4.6	51	15	12.3	700
FEB.							
03...	59	6.8	4.3	46	25	12.3	300
17...	56	7.1	4.7	50	20	12.2	400
MAR.							
03...	67	7.0	3.2	37	7	12.4	1400
17...	74	7.0	3.9	35	7	13.0	1500
APR.							
14...	61	7.1	8.5	37	6	11.0	400
28...	78	7.2	9.0	44	5	10.7	700
MAY							
12...	58	7.2	12.0	56	6	10.8	1600
26...	72	7.1	10.8	49	5	10.8	1000
JUNE							
09...	81	7.0	9.4	55	5	11.2	2400
23...	77	7.0	13.0	40	4	9.7	1000
JULY							
14...	83	7.1	13.0	49	4	10.0	700
28...	120	7.1	15.1	32	3	9.5	2000
AUG.							
11...	103	7.1	15.1	23	3	9.5	3000
25...	145	7.1	13.1	20	2	10.1	2000
SEP.							
15...	106	7.5	9.5	25	3	10.6	2000
29...	87	7.9	9.6	76	10	10.3	3000

12210500 NOOKSACK RIVER AT DEMING, WASH.

LOCATION.--Lat 48°50'30", long 122°17'35", in SE¼NE¼ sec.28, T.39 N., R.4 E., Whatcom County, at State Highway 542 bridge, 4.0 mile northwest of Deming, 5.7 miles downstream from gaging station, and at mile 30.9.

DRAINAGE AREA.--584 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued). Prior to November 1962 published at "at Lawrence."

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.											
01...	1410	1800	10	3.3	1.9	.4	41	0	34	8.2	.9
15...	1245	2870	9.3	3.0	1.6	.4	39	0	32	7.2	1.1
JAN.											
05...	1425	1370	12	3.8	2.2	.4	48	0	39	9.6	1.2
19...	1305	12800	5.0	2.6	1.1	.7	21	0	17	3.8	1.2
FEB.											
02...	1245	9050	7.7	2.7	1.5	.8	30	0	25	6.0	.8
16...	1230	8450	7.0	2.4	1.4	.5	30	0	25	5.4	.8
MAR.											
02...	1325	2420	12	3.5	2.1	1.1	49	0	40	9.5	1.0
16...	1315	2130	12	3.5	2.1	.4	50	0	41	7.0	1.8
APR.											
13...	1305	3370	10	3.1	1.8	.6	41	0	34	7.8	1.0
27...	1135	5000	--	--	--	--	--	--	--	--	--
MAY											
11...	1250	6480	7.2	2.2	1.1	.3	30	0	25	5.3	1.1
25...	1235	7200	7.8	2.3	1.3	.8	32	0	26	6.3	.9
JUNE											
08...	1230	6350	7.2	2.3	1.8	.7	30	0	25	8.0	1.5
22...	0725	8400	6.4	1.8	.9	.4	29	0	24	.0	.8
JULY											
13...	1255	4660	7.9	2.1	1.2	.2	29	0	24	7.3	.8
27...	1250	5300	8.4	2.4	1.3	.2	24	0	20	6.0	.8
AUG.											
10...	1220	2960	8.4	2.2	1.3	.4	26	0	21	8.3	.4
24...	1230	1920	9.9	2.1	2.3	.3	33	0	27	12	.8
SEP.											
14...	1255	1420	9.7	2.7	1.7	.5	40	0	33	15	1.1
28...	1300	3510	9.2	3.7	1.8	1.2	33	0	27	8.0	1.6

12210500 NOOKSACK RIVER AT DEMING, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
01...	.07	.000	.00	.40	--	--	39	5	92	7.3	3.8
15...	.02	.000	.02	.32	.010	.060	36	4	84	7.5	4.7
JAN.											
05...	.02	.010	.00	.25	.010	.060	43	4	106	7.4	1.8
19...	.31	.010	.16	.20	.030	.040	23	6	46	7.1	4.6
FEB.											
02...	.02	.000	.00	.23	.010	.080	30	6	64	7.1	4.6
16...	.02	.000	.00	.23	.060	.070	28	3	60	7.3	5.2
MAR.											
02...	.08	.000	.07	.29	.000	.010	44	4	89	7.3	3.1
16...	.21	.000	.03	.20	.030	.050	44	3	94	7.3	5.6
APR.											
13...	.15	.000	.03	.36	--	.040	38	4	79	7.2	9.0
27...	.53	.000	.02	.07	.010	.050	--	--	63	7.3	8.0
MAY											
11...	.10	.000	.02	.11	.020	.050	27	2	56	7.2	11.1
25...	.24	.000	.02	.11	.010	.050	29	3	56	7.1	8.8
JUNE											
08...	.19	.000	.02	.09	.020	.040	27	3	60	7.2	8.1
22...	.06	.000	.00	.07	.010	.010	23	0	45	7.2	9.8
JULY											
13...	.07	.010	.01	.15	.010	.010	28	5	60	6.9	12.6
27...	.22	.000	.20	.18	.000	.040	31	11	66	7.0	15.5
AUG.											
10...	.08	.000	.08	.14	.000	.040	30	9	59	7.3	14.1
24...	.12	.000	.06	.11	.010	.040	33	6	80	7.3	13.2
SEP.											
14...	.16	.000	.00	.33	.000	.020	35	3	84	7.3	11.4
28...	.24	.000	.17	.27	.000	.080	38	11	75	7.0	9.7

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
01...	16	3	12.5	160	0	0	0	0	.0	0	0
15...	24	10	12.1	270	0	0	0	0	.0	50	0
JAN.											
05...	2	5	14.0	80	0	0	0	0	.0	100	0
19...	161	250	12.1	1200	0	0	0	0	.4	50	0
FEB.											
02...	71	75	12.3	250	0	0	0	0	.1	50	10
16...	51	50	12.4	400	0	0	0	0	.0	0	0
MAR.											
02...	19	8	12.9	100	4	0	2	5	.0	90	90
16...	15	5	12.7	<40	0	0	5	0	.0	100	7
APR.											
13...	22	5	11.8	40	1	1	0	9	.0	360	9
27...	45	20	11.9	120	4	1	2	0	4.0	60	1
MAY											
11...	39	25	12.0	100	0	1	2	2	.1	0	50
25...	37	25	11.7	200	0	11	290	0	3.4	180	40
JUNE											
08...	41	25	11.9	130	--	19	540	0	.4	70	50
22...	53	40	11.4	200	0	5	0	30	.4	100	10
JULY											
13...	21	15	10.8	100	0	0	0	0	.2	600	0
27...	33	75	10.6	220	1	230	420	0	5.0	80	460
AUG.											
10...	35	30	10.4	80	1	4	2	0	1.3	60	0
24...	19	20	10.5	270	1	22	510	8	6.3	130	50
SEP.											
14...	17	7	11.1	90	0	1	1	0	.1	80	0
28...	54	50	12.2	800	12	51	770	0	3.0	140	20

12213095 NOOKSACK RIVER NEAR FERNDALE, WASH.

LOCATION.--Lat 48°51'16", long 122°34'55", in NW¼SE¼ sec.20, T.39 N., R.2 E., Whatcom County, at U.S. Highway 99 (I-5) bridge, 0.6 mile northeast of Ferndale and at mile 6.6.

DRAINAGE AREA.--786 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.											
02...	0915	2490	11	3.7	2.9	.6	42	0	34	11	2.6
15...	1510	3660	10	3.5	2.4	.7	40	0	33	9.0	2.2
JAN.											
05...	1640	1770	13	4.4	3.3	.6	50	0	41	12	3.3
19...	1550	12700	5.7	2.5	1.5	.7	23	0	19	5.0	1.1
FEB.											
02...	1450	13700	7.0	3.0	2.0	1.2	30	0	25	7.2	1.6
16...	1515	10600	7.5	2.8	2.0	.8	30	0	25	7.0	2.0
MAR.											
02...	1550	3220	12	4.3	2.9	1.4	52	0	43	11	2.6
16...	1525	2760	13	4.2	3.1	.7	51	0	42	9.5	2.5
APR.											
13...	1520	3980	11	3.7	2.6	.8	50	0	41	9.3	2.1
27...	1410	5140	--	--	--	--	--	--	--	--	--
MAY											
11...	1510	6610	7.9	2.3	1.4	.4	32	0	26	6.0	1.3
25...	1430	6050	8.2	2.6	1.6	.8	32	0	26	5.3	1.1
JUNE											
08...	1425	7000	7.6	2.7	1.7	.7	34	0	28	7.0	2.2
22...	1525	8670	7.2	3.4	1.2	.8	30	0	25	1.0	1.1
JULY											
13...	1500	4780	8.1	2.4	1.5	.2	33	0	27	7.8	1.2
27...	1500	6120	8.7	2.6	1.5	1.4	26	0	21	6.3	1.2
AUG.											
10...	1430	3410	8.3	2.4	1.7	.4	26	0	21	8.0	.7
24...	1415	2170	9.9	2.6	2.3	.3	34	0	28	10	1.4
SEP.											
14...	1445	1520	11	2.9	2.1	.6	42	0	34	11	--
28...	1530	1720	12	3.4	2.9	1.1	41	0	34	14	2.4

12213095 NOOKSACK RIVER NEAR FERNDALE, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DEC.											
02...	.15	.000	.00	.27	.010	.010	43	8	107	7.3	3.5
15...	.51	.000	.15	.45	.010	.060	40	7	90	7.5	4.8
JAN.											
05...	.12	.000	.02	.34	.010	.040	51	10	120	7.4	1.5
19...	.41	.000	.08	.25	.030	.050	25	6	56	7.0	5.4
FEB.											
02...	.12	.000	.07	.23	.010	.060	30	6	72	7.0	4.8
16...	.05	.000	.02	.32	.050	.070	30	6	72	7.2	5.5
MAR.											
02...	.12	.000	.06	.32	.000	.010	48	5	106	7.3	3.2
16...	.24	.000	.29	.38	.050	.060	50	8	110	7.1	5.9
APR.											
13...	.16	.000	.05	.41	--	.020	43	2	91	7.2	9.4
27...	.14	.000	.02	.11	.010	.050	--	--	71	7.3	9.5
MAY											
11...	.13	.000	.00	.14	.030	.030	29	3	62	7.3	12.3
25...	.25	.000	.00	.16	.020	.020	31	5	63	7.0	10.1
JUNE											
08...	.21	.000	.03	.11	.030	.050	30	2	62	7.2	9.0
22...	.02	.000	.00	.02	.010	.020	32	7	50	7.5	10.1
JULY											
13...	.07	.000	.02	.20	.010	.010	30	3	67	7.2	13.3
27...	.35	.000	.15	.27	.000	.020	32	11	70	7.1	16.1
AUG.											
10...	.10	.000	.07	.18	.000	.070	31	9	63	7.1	16.3
24...	.35	.000	.07	.18	.010	.040	35	8	83	7.3	15.1
SEP.											
14...	.13	.000	--	1.9	.010	.030	39	5	88	7.5	13.1
28...	.18	.000	.08	.40	.020	.030	44	10	106	7.3	10.7

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.											
02...	35	5	12.4	500	0	0	0	0	.0	30	0
15...	22	9	12.0	4000	0	0	0	0	.0	50	20
JAN.											
05...	16	4	13.8	200	0	0	0	0	.0	100	0
19...	105	130	12.0	1700	0	0	0	0	.5	50	0
FEB.											
02...	97	100	11.8	400	0	0	0	0	.2	50	10
16...	68	65	11.9	1200	0	0	0	0	.1	0	0
MAR.											
02...	22	6	12.8	400	2	0	3	5	.0	5	0
16...	31	9	12.6	680	2	4	3	0	.0	110	2
APR.											
13...	36	8	11.6	200	2	1	3	13	.0	380	2
27...	58	30	11.2	600	3	3	1	0	.1	330	0
MAY											
11...	47	20	11.4	300	0	2	4	6	.1	80	20
25...	36	25	11.2	700	0	13	550	0	21	220	40
JUNE											
08...	55	30	11.5	1000	4	26	640	0	3.6	100	30
22...	57	55	11.1	500	4	8	0	42	6.1	0	5
JULY											
13...	24	10	10.6	220	0	1	0	0	1.0	690	10
27...	37	100	10.2	400	1	670	860	0	3.7	30	240
AUG.											
10...	23	40	9.9	>1600	1	6	5	8	.1	120	0
24...	23	25	10.1	1000	1	27	610	0	11	110	20
SEP.											
14...	18	9	10.6	<400	1	2	3	0	.2	80	0
28...	16	15	10.7	2500	--	--	--	--	--	--	--

12214550 SUMAS RIVER AT SUMAS, WASH.

LOCATION.--Lat 48°59'34", long 122°15'10", on south line sec.35, T.41 N., R.4 E., Whatcom County, at county road bridge 0.36 mile upstream from Johnson Creek, and 0.7 mile southeast of Sumas.

DRAINAGE AREA.--34.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.							
01...	1510	.18	.020	.09	.63	.020	.060
15...	1330	.44	.010	.40	.86	.010	.10
JAN.							
05...	1505	.26	.010	.16	.95	.040	.080
19...	1350	.33	.000	.12	.70	.060	.070
FEB.							
02...	1320	.12	.000	.01	.63	.040	.14
16...	1330	.20	.000	.10	.63	.10	.14
MAR.							
02...	1405	.19	.000	.12	.88	.030	.050
16...	1350	.25	.000	.15	.67	.070	.10
APR.							
13...	1345	.19	.000	.05	.70	--	.050
27...	1230	.13	.000	.00	.45	.060	.070
MAY							
11...	1330	.09	.000	.00	.38	.030	.050
25...	1300	.27	.000	.04	.61	.040	.050
JUNE							
08...	1300	.25	.000	.08	.54	.050	.070
22...	1400	.16	.000	.11	.68	.020	.030
JULY							
13...	1330	.16	.030	.06	.83	.020	.030
27...	1325	.58	.010	.07	.05	.010	.070
AUG.							
10...	1255	.09	.000	.04	.81	.030	.040
24...	1300	.12	.010	.09	.78	.030	.030
SEP.							
14...	1325	.14	.010	.02	4.2	.010	.030
28...	1345	.19	.000	.19	1.6	.010	.060

12214550 SUMAS RIVER AT SUMAS, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.							
01...	275	7.6	3.3	18	35	11.9	1300
15...	234	7.8	5.0	18	60	11.3	1400
JAN.							
05...	259	7.7	1.7	27	20	12.9	700
19...	190	7.5	6.1	38	45	10.5	3500
FEB.							
02...	176	7.4	6.2	60	55	10.6	800
16...	17	7.6	6.7	69	30	10.7	2300
MAR.							
02...	250	7.5	3.4	49	15	11.4	1200
16...	233	7.6	7.6	56	25	11.0	1600
APR.							
13...	200	7.5	10.4	50	20	10.9	3000
27...	244	7.8	13.0	61	10	10.8	>8000
MAY							
11...	261	7.8	16.1	56	7	12.3	600
25...	26	7.5	14.6	62	10	9.3	8000
JUNE							
08...	217	7.6	12.9	78	35	8.8	30000
22...	254	7.3	17.2	81	10	7.8	4000
JULY							
13...	275	7.6	17.4	47	8	9.1	900
27...	355	7.5	21.1	40	15	9.0	4000
AUG.							
10...	29	7.3	19.8	68	10	9.5	4000
24...	296	7.5	17.2	33	8	9.7	9000
SEP.							
14...	290	7.5	13.9	43	9	10.5	600
28...	296	7.2	11.4	55	20	7.5	7000

12215100 SUMAS RIVER NEAR HUNTINGTON, BRITISH COLUMBIA

LOCATION.--Lat 49°00'09", long 122°13'50", at gaging station at highway bridge 0.25 mile north of internationa boundary and 1.5 miles east of Huntington.

DRAINAGE AREA.--57.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.								
01...	1530	259	7.4	3.4	35	15	11.2	4000
15...	1355	226	7.6	5.1	45	30	10.5	400
JAN.								
05...	1525	250	7.6	1.9	39	15	12.2	5000
19...	1410	179	7.3	5.4	83	35	10.3	6300
FEB.								
02...	1345	169	7.2	6.6	104	30	9.5	1200
16...	1345	170	7.5	6.9	92	25	10.1	5000
MAR.								
02...	1425	225	7.4	3.7	65	10	11.1	7000
16...	1415	215	7.4	7.5	75	10	10.6	6600
APR.								
13...	1405	195	7.4	11.6	73	15	10.3	12000
27...	1250	225	7.6	13.0	75	10	10.1	6000
MAY								
11...	1330	233	7.7	12.0	54	5	11.3	16000
25...	1320	23	7.5	14.0	70	20	8.6	40000
JUNE								
08...	1315	209	7.5	--	95	30	8.3	50000
22...	1415	245	7.5	16.2	76	7	7.5	9000
JULY								
13...	1350	245	7.4	16.9	58	6	9.2	8000
27...	1340	310	7.6	--	49	10	9.1	30000
AUG.								
10...	1320	250	7.1	--	61	7	9.1	8000
24...	1320	246	7.5	--	29	5	9.0	35000
SEP.								
14...	1345	252	7.5	--	46	7	9.8	14000
28...	1410	250	7.3	--	111	15	9.5	80000

DATE	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC.							
01...	0	0	0	0	.0	0	0
15...	0	0	0	0	.0	50	0
JAN.							
05...	0	0	0	0	15	100	0
19...	0	0	0	0	.2	100	0
FEB.							
02...	0	0	0	0	.0	50	10
16...	0	0	0	0	.1	0	0
MAR.							
02...	5	0	3	5	.0	110	20
16...	5	0	6	0	.0	100	8
APR.							
13...	2	3	2	9	.0	410	10
27...	1	0	1	5	.2	60	0
MAY							
11...	0	0	2	4	1.3	120	0
25...	0	6	930	0	1.2	320	30
JUNE							
08...	8	16	1800	0	.4	110	30
22...	0	0	0	37	.4	100	0
JULY							
13...	0	0	0	1	.1	710	5
27...	--	0	840	8	21	100	20
AUG.							
10...	--	--	--	--	--	--	--
24...	1	1	0	0	.5	120	10
SEP.							
14...	0	0	4	0	.0	100	10
28...	7	2	7	9	.0	140	10

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.
(Irrigation network station)

LOCATION.--Lat 48°55'00", long 117°47'40", in SW¼SW¼ sec.33, T.40 N., R.40 E., Stevens County, at bridge on State Highway 25 at Northport, 10.9 miles downstream from gaging station at international boundary, and at mile 734.1.

DRAINAGE AREA.--59,700 sq mi, approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: February 1910 to January 1911, November 1951 to September 1971. Water temperatures: November 1951 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 191 micromhos Mar. 26; minimum daily, 126 micromhos Aug. 14.
Water temperatures: Maximum, 19.5°C several days in August; minimum, 15°C Jan. 4-6, 21.

Period of record:
Specific conductance: Maximum daily, 257 micromhos Feb. 23, 1963; minimum daily, 120 micromhos Aug. 28, 1968.
Water temperatures: Maximum, 21.0°C May 14, 19, 1959; minimum, freezing point on several days during January in 1960, 1962, and 1963.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)
NOV.											
18...	1415	72000	4.1	21	4.4	3.0	.8	76	0	62	14
JAN.											
06...	1330	75900	4.1	22	4.6	1.7	.7	78	0	64	15
FEB.											
24...	1730	75800	6.3	25	5.4	2.8	.1	92	0	75	18
APR.											
01...	1000	42400	3.9	17	3.8	1.0	.5	70	0	57	8.8
22...	1400	87900	6.8	24	5.1	2.6	1.4	84	0	69	15
JUNE											
04...	1340	290000	5.8	20	4.2	1.9	.7	77	0	63	10
SEP.											
20...	1730	45600	3.9	21	4.2	1.7	.6	73	0	60	17

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.										
18...	.5	.2	.01	.020	86	71	8	155	7.4	8.0
JAN.										
06...	.4	.2	.01	--	87	74	10	158	7.9	2.5
FEB.										
24...	1.3	--	.00	.070	110	84	9	177	7.1	3.5
APR.										
01...	.4	.1	.15	--	71	58	1	120	7.2	15.0
22...	.8	.2	.00	--	97	81	12	169	6.8	7.0
JUNE										
04...	1.0	--	.09	--	82	67	4	151	7.7	10.5
SEP.										
20...	2.0	.3	.13	.070	87	70	10	151	7.5	16.0

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	153	167	159	175	179	174	159	145	133	129	138
2	152	160	177	163	178	178	172	159	145	138	129	136
3	152	152	158	163	178	178	173	145	144	136	130	141
4	152	154	164	161	173	179	170	157	144	137	130	147
5	156	153	156	161	182	172	172	147	148	136	130	149
6	---	155	157	159	179	182	176	154	147	137	128	142
7	---	152	161	157	179	179	174	154	147	135	135	139
8	160	161	163	164	179	172	178	155	147	135	135	140
9	158	155	164	162	178	171	177	154	147	136	129	137
10	159	159	163	156	180	169	174	149	146	138	129	140
11	157	158	162	158	178	170	172	147	150	136	130	142
12	154	159	165	161	174	175	173	146	150	138	---	140
13	149	154	166	159	180	177	169	146	146	137	127	140
14	156	153	157	163	184	175	171	144	146	137	126	135
15	157	155	156	158	175	169	160	146	146	133	129	138
16	154	161	160	160	179	172	170	157	142	132	131	143
17	152	161	159	165	178	---	172	149	144	131	137	148
18	155	157	162	169	180	171	167	145	142	131	133	151
19	160	161	159	173	181	173	172	147	143	137	136	155
20	165	159	161	188	178	180	167	146	140	137	137	152
21	159	158	162	188	176	173	171	147	133	135	142	149
22	160	158	161	186	179	176	168	151	136	136	139	148
23	162	158	163	187	166	178	169	151	134	136	141	142
24	157	159	159	182	181	179	---	149	136	129	138	141
25	160	162	157	181	181	182	167	146	134	131	139	144
26	168	163	161	180	183	191	168	144	133	131	138	144
27	162	164	165	185	151	184	164	137	136	130	139	142
28	163	155	---	189	182	184	161	139	136	131	138	143
29	160	153	---	186	---	184	162	141	137	130	138	146
30	161	160	169	182	---	181	161	139	135	129	141	146
31	154	---	166	181	---	174	---	143	---	129	139	---
MONTH	157	157	162	171	177	177	170	148	142	134	134	143

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	9.0	5.5	2.0	3.5	3.5	4.5	8.5	10.5	12.5	17.5	18.0
2	14.0	9.0	5.0	2.0	3.5	3.0	5.0	8.5	9.5	13.0	17.0	18.0
3	14.5	9.0	4.5	2.0	3.5	3.0	5.5	9.0	10.0	13.5	17.5	18.0
4	14.5	9.0	4.5	1.5	3.5	3.0	6.0	9.0	10.0	14.0	16.0	18.5
5	14.0	9.0	4.5	1.5	3.5	3.0	6.0	8.5	10.5	13.5	16.5	18.5
6	14.5	9.0	4.5	1.5	3.5	3.0	6.0	8.5	10.0	13.0	17.0	18.0
7	14.0	9.0	4.0	2.0	3.0	3.0	6.5	9.0	10.5	13.5	17.5	17.5
8	13.0	9.0	3.5	2.0	3.0	3.0	7.0	9.0	10.0	14.0	18.0	17.5
9	13.0	9.0	3.5	2.0	2.5	3.0	6.0	9.0	10.0	13.5	19.0	17.0
10	13.0	9.0	3.5	2.0	2.0	3.5	6.0	9.0	10.5	13.0	19.5	17.0
11	12.0	8.5	3.5	2.0	2.0	3.5	6.0	9.5	13.0	13.0	19.0	17.0
12	12.0	8.0	3.5	2.0	3.0	3.5	6.0	9.5	12.0	13.5	---	17.0
13	12.0	8.0	3.5	2.0	3.0	3.5	6.5	9.0	11.5	13.5	19.5	17.0
14	12.0	8.0	3.5	2.0	3.5	3.5	6.5	8.5	11.5	14.0	18.5	17.0
15	11.5	8.0	3.5	2.0	3.5	4.0	6.5	8.5	11.5	14.0	18.0	17.0
16	11.0	8.0	4.0	2.0	3.5	4.0	6.0	8.0	12.0	14.5	18.5	16.5
17	11.0	8.0	4.5	3.0	3.5	4.0	6.0	8.5	11.5	15.0	19.0	17.0
18	11.0	8.0	3.5	2.5	3.5	3.5	6.0	8.5	12.0	15.5	19.5	17.0
19	11.0	8.0	3.5	2.0	3.5	4.0	6.5	8.5	12.5	16.0	19.5	16.5
20	11.0	8.0	3.5	2.0	3.5	4.0	7.0	9.0	13.0	16.0	19.5	16.5
21	11.0	9.0	3.5	1.5	3.5	4.5	6.5	8.5	13.0	16.5	19.0	16.5
22	11.0	8.5	3.0	2.0	4.0	3.5	7.0	8.5	13.0	16.5	18.0	16.5
23	10.0	8.0	2.0	2.0	3.5	4.0	7.0	9.0	12.5	16.0	---	16.5
24	10.0	8.0	2.0	2.0	4.0	4.5	---	9.5	12.5	16.5	---	16.5
25	10.0	6.5	2.0	2.5	3.5	4.5	7.0	9.5	12.5	16.5	---	16.0
26	9.5	6.0	2.0	3.0	3.5	4.5	8.0	9.5	13.0	17.0	---	16.0
27	9.5	5.0	2.0	3.0	3.5	4.5	8.0	9.5	12.5	17.0	---	15.5
28	9.5	5.0	4.5	3.0	3.5	4.5	8.0	10.5	12.0	17.0	19.0	15.5
29	9.5	5.5	5.0	3.0	---	4.5	8.5	10.5	12.5	17.0	19.0	15.0
30	9.5	5.5	2.0	3.5	---	5.0	8.5	10.5	12.5	16.5	18.0	14.5
31	9.5	---	2.0	3.5	---	4.5	---	10.5	---	17.0	17.0	---
MONTH	11.5	8.0	3.5	2.5	3.5	4.0	6.5	9.0	11.5	15.0	18.0	17.0

12406500 LOON LAKE NEAR LOON LAKE, WASH.

LOCATION.--Lat 48°03'20", long 117°38'30", in NE¼SW¼ sec.33, T.30 N., R.41 E., Stevens County, 0.8 mile southwest of town of Loon Lake.

DRAINAGE AREA.--14.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body. Records of lake elevations for the current year are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
MAY												
26...	0950	6.0	15.0	8.8	17	5.5	6.4	2.0	92	0	3.8	1.5
26...	0955	97	4.0	--	--	--	--	--	--	--	--	--
JULY												
19...	0900	6.0	22.0	8.1	--	--	6.2	2.0	92	--	2.0	1.4
19...	0905	93	5.0	--	--	--	--	--	--	--	--	--
SEP.												
28...	1515	3.0	14.5	8.0	--	--	--	--	--	--	4.5	--
28...	1520	96	5.0	13	--	--	--	--	--	--	3.8	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
MAY												
26...	.2	.06	.02	.03	.000	.000	84	65	0	145	8.3	5
26...	--	.01	.00	.33	.010	.010	--	--	--	151	7.3	--
JULY												
19...	--	.08	.00	.07	.000	.010	--	--	--	138	8.5	--
19...	--	.04	.02	.07	.010	.010	--	--	--	152	7.7	--
SEP.												
28...	--	.14	.04	.02	.010	.010	--	--	--	128	8.6	5
28...	--	.09	.03	.02	.11	.11	--	--	--	160	7.7	10

12409000 COLVILLE RIVER AT KETTLE FALLS, WASH.

LOCATION (revised).--Lat 48°35'40", long 118°03'53", in NE¼NE¼ sec.30, T.36 N., R.38 E., Stevens County, temperature recorder at gaging station on right bank 600 ft downstream from Washington Water Power Company's plant, 1.0 mile south of town of Kettle Falls, and at mile 5.0.

DRAINAGE AREA.--1,007 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1970.
Water temperatures: November 1969 to June 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures: Maximum, 17.0°C May 24, 27-29; minimum, 1.0°C on several days during December and January.

Period of record:
Water temperatures: Maximum, 25.5°C July 8, 13, 21, 22, 1970; minimum, freezing point on several days during November 1969 and January 1970.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

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

12409000 COLVILLE RIVER AT KETTLE FALLS, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.5	13.0	11.0	15.5	12.0	---	---	---	---	---	---
2	8.0	6.5	14.5	12.0	15.5	13.5	---	---	---	---	---	---
3	9.0	7.0	15.0	13.0	14.5	13.0	---	---	---	---	---	---
4	9.0	8.0	15.5	13.5	14.0	13.0	---	---	---	---	---	---
5	9.0	8.0	15.0	13.0	15.5	13.0	---	---	---	---	---	---
6	9.5	8.5	13.0	11.5	16.5	15.0	---	---	---	---	---	---
7	9.5	9.0	13.5	11.0	16.5	15.0	---	---	---	---	---	---
8	9.5	8.5	15.0	13.0	16.0	14.5	---	---	---	---	---	---
9	8.5	8.0	15.5	14.0	15.5	13.5	---	---	---	---	---	---
10	8.5	7.0	16.0	14.0	---	---	---	---	---	---	---	---
11	8.5	8.0	16.5	15.0	---	---	---	---	---	---	---	---
12	8.5	6.5	16.5	15.0	---	---	---	---	---	---	---	---
13	9.0	7.0	16.5	15.5	---	---	---	---	---	---	---	---
14	9.5	9.0	16.0	13.5	---	---	---	---	---	---	---	---
15	10.0	9.0	14.0	11.5	---	---	---	---	---	---	---	---
16	9.5	8.5	11.5	11.0	---	---	---	---	---	---	---	---
17	8.5	8.0	12.0	10.5	---	---	---	---	---	---	---	---
18	9.0	7.0	14.0	11.5	---	---	---	---	---	---	---	---
19	10.5	8.5	14.0	11.0	---	---	---	---	---	---	---	---
20	11.0	10.0	11.0	10.5	---	---	---	---	---	---	---	---
21	11.0	10.5	13.5	10.0	---	---	---	---	---	---	---	---
22	10.5	9.5	15.0	12.0	---	---	---	---	---	---	---	---
23	9.5	9.0	16.0	14.0	---	---	---	---	---	---	---	---
24	10.5	9.0	17.0	15.0	---	---	---	---	---	---	---	---
25	12.0	10.0	16.5	15.0	---	---	---	---	---	---	---	---
26	12.0	10.5	15.5	14.0	---	---	---	---	---	---	---	---
27	12.0	11.0	17.0	14.5	---	---	---	---	---	---	---	---
28	11.5	10.5	17.0	15.5	---	---	---	---	---	---	---	---
29	10.5	10.0	17.0	15.5	---	---	---	---	---	---	---	---
30	11.5	10.0	16.5	14.0	---	---	---	---	---	---	---	---
31	---	---	14.0	12.0	---	---	---	---	---	---	---	---
MONTH	12.0	6.5	17.0	10.0	---	---	---	---	---	---	---	---

12419500 SPOKANE RIVER ABOVE LIBERTY BRIDGE, NEAR OTIS ORCHARDS, WASH.

LOCATION.--Lat 47°41'55", long 117°02'35", in NW¼NW¼ sec.6, T.25 N., R.46 E., Spokane County, at bridge on U.S. Highway 10 at state line, 2.1 miles upstream from gaging station, 3.3 miles upstream from Liberty Bridge, 3.5 miles east of Otis Orchards, and at mile 96.0.

DRAINAGE AREA.--3,880 sq mi approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).
Water temperatures: December 1963 to September 1965.

REMARKS.--No appreciable inflow between sampling point and gaging station except during period of heavy local runoff. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.											
30...	1030	3890	.01	.000	.00	.02	.010	.010	68	6.7	6.1
DEC.											
14...	1000	3820	.08	.000	.00	.09	.030	.030	62	7.2	4.4
JAN.											
03...	1315	3310	.00	.000	.00	.00	--	.030	63	7.2	2.8
24...	1415	5450	.00	.000	.00	.07	--	.070	64	7.0	2.7
31...	0800	11000	.02	.000	.00	--	.020	.060	63	7.1	3.7
FEB.											
15...	1000	10200	.01	.000	.00	.09	.030	.030	63	7.2	3.2
28...	0915	9790	.44	.000	.10	.05	.000	.030	62	7.2	2.0
MAR.											
14...	0815	7200	.14	.010	.07	.02	.020	.110	62	7.2	2.1
APR.											
04...	1420	8410	.17	.050	--	.11	--	.090	61	7.2	4.7
18...	0850	14000	.17	.000	.04	.02	.040	.080	62	7.1	4.5
MAY											
02...	1145	18100	.39	.000	.00	.02	.060	.120	59	7.3	8.1
16...	0850	33000	.10	.000	.02	.02	.050	.100	49	7.1	9.5
JUNE											
01...	0815	23700	.01	.000	.00	.00	.000	.010	41	7.3	11.9
13...	0915	17200	.01	.000	.00	.05	.000	.010	44	7.2	13.5
JULY											
11...	1025	4850	.04	.010	.02	.10	.010	.020	43	7.2	16.7
25...	1010	2800	.12	.000	.06	.02	.010	.020	57	7.6	23.4
AUG.											
01...	1240	1680	.12	.010	.11	.08	.000	.020	61	7.5	25.2
15...	1245	1420	.10	.000	.05	.01	.010	.020	57	7.7	29.2
SEP.											
06...	1205	1750	.21	.000	.07	.30	.000	.030	54	7.5	17.8
19...	1225	1740	.17	.000	.05	.24	.010	.020	48	7.5	16.4

12419500 SPOKANE RIVER ABOVE LIBERTY BRIDGE, NEAR OTIS ORCHARDS, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
30...	14	1	12.8	185	0	0	0	0	.0	0	430
DEC.											
14...	0	2	10.4	<100	0	50	0	0	.0	0	40
JAN.											
03...	2	1	11.7	300	0	0	0	0	.0	0	400
24...	19	2	10.3	210	0	0	0	0	.3	0	450
31...	19	2	11.7	<100	0	0	0	0	.3	0	470
FEB.											
15...	30	4	12.1	77	0	0	0	0	.1	0	730
28...	14	3	11.9	190	0	0	0	0	.0	0	500
MAR.											
14...	19	4	11.7	230	1	0	6	0	.1	30	610
APR.											
04...	15	3	11.7	<40	0	0	8	13	.1	160	490
18...	18	5	11.6	200	2	0	10	12	.5	200	220
MAY											
02...	19	4	11.5	20	0	0	19	8	4.0	70	210
16...	17	5	11.4	38	1	0	26	0	.4	120	210
JUNE											
01...	25	3	12.4	250	0	1	22	0	.3	60	290
13...	13	2	12.1	350	0	0	0	6	.7	150	190
JULY											
11...	13	1	9.9	400	0	0	0	0	3.0	330	190
25...	16	1	7.6	400	0	1	7	0	.2	340	120
AUG.											
01...	8	2	8.0	400	0	1	4	0	2.7	90	230
15...	13	1	8.2	1600	0	2	3	5	2.5	4	120
SEP.											
06...	8	1	9.8	2000	0	1	6	0	.6	40	180
19...	10	2	9.8	130	4	0	6	12	.7	100	160

12419800 NEWMAN LAKE NEAR NEWMAN LAKE, WASH.

LOCATION.--Lat 47°46'09", long 117°04'40", in SW¼NE¼ sec.11, T.26 N., R.45 E., Spokane County, 3 miles north of town of Newman Lake.

DRAINAGE AREA.--28.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body. Records of lake elevations for the current year are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
MAR.												
29...	1545	15	--	5.2	4.9	1.3	4.0	1.1	27	--	2.8	1.7
MAY												
26...	1400	3.0	18.0	6.4	4.6	.9	--	--	31	0	3.8	--
26...	1405	27	11.0	--	--	--	--	--	--	--	--	--
JULY												
19...	1410	3.0	24.0	4.4	--	--	3.8	.9	25	--	3.5	.8
19...	1415	26	13.0	--	--	--	--	--	--	--	--	--
SEP.												
29...	0830	3.0	--	--	--	--	--	--	--	--	4.5	--
29...	0835	26	--	--	--	--	--	--	--	--	4.5	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
MAR.												
29...	.1	.30	.20	.00	.030	.050	34	18	0	50	7.8	0
MAY												
26...	--	.11	.07	.00	.010	.010	--	15	0	47	7.8	10
26...	--	.13	.03	.12	.020	.020	--	--	--	50	7.1	--
JULY												
19...	--	.32	.23	.05	.000	.010	--	--	--	46	8.6	--
19...	--	.11	.02	.11	.000	.010	--	--	--	52	8.4	--
SEP.												
29...	--	--	.12	.02	.020	.020	--	--	--	46	7.9	20
29...	--	--	.16	.02	.010	.010	--	--	--	48	7.7	20

12420000 LIBERTY LAKE AT LIBERTY LAKE, WASH.

LOCATION.--Lat 47°39'09", long 117°05'20", in SE¼NE¼ sec.22, T.25 N., R.45 E., Spokane County, at town of Liberty Lake, 15 miles east of Spokane.

DRAINAGE AREA.--13.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body. Records of lake elevations for the current year are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
MAR.												
30...	1000	13	--	19	4.1	1.0	3.4	1.1	27	0	3.3	2.5
MAY												
26...	1800	3.0	19.0	18	3.7	1.1	--	--	22	0	2.3	--
26...	1805	21	14.0	--	--	--	--	--	--	--	--	--
JULY												
19...	1800	3.0	24.5	17	--	--	3.4	.8	23	--	2.5	2.3
19...	1805	21	19.0	--	--	--	--	--	--	--	--	--
SEP.												
27...	1330	3.0	14.5	21	--	--	--	--	--	--	4.0	--
27...	1335	20	14.5	20	--	--	--	--	--	--	4.8	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
MAR.												
30...	.1	.26	.12	.05	.050	.050	40	14	0	47	7.8	--
MAY												
26...	--	.09	.02	.00	.000	.010	--	14	0	42	7.2	10
26...	--	.11	.07	.00	.010	.020	--	--	--	44	7.3	--
JULY												
19...	--	.05	.01	.05	.010	.010	--	--	--	44	8.0	--
19...	--	.32	.21	.05	.010	.030	--	--	--	45	6.7	--
SEP.												
27...	--	.18	.12	.02	.010	.030	--	--	--	47	8.4	15
27...	--	.14	.13	.02	.010	.040	--	--	--	47	8.2	10

12426000 SPOKANE RIVER BELOW NINE-MILE DAM, NEAR SPOKANE, WASH.

LOCATION.--Lat 47°46'35", long 117°32'40", in SE¼SE¼ sec.6, T.26 N., R.42 E., Spokane County, at highway bridge 0.1 mile downstream from Nine-Mile Dam, 1.7 miles upstream from Little Spokane River, 9.0 miles downstream from Spokane city limits, and at mile 58.0.

DRAINAGE AREA.--5,205 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG. C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)
NOV.								
30...	1230	4700	112	7.3	6.1	16	2	13.3
DEC.								
14...	1245	4600	110	7.4	4.4	14	4	10.6
JAN.								
03...	1100	4200	115	7.6	2.5	8	4	10.9
24...	1045	6700	86	7.1	3.5	30	8	11.1
31...	0930	12300	78	7.1	4.5	30	15	12.0
FEB.								
15...	1150	12200	81	7.2	4.0	48	8	12.2
28...	1045	11200	81	7.2	2.6	20	6	12.2
MAR.								
14...	1000	9900	94	7.3	3.5	108	65	11.4
APR.								
04...	1100	9900	83	7.4	4.9	36	5	12.1
18...	1115	15200	72	7.2	5.2	20	5	11.5
MAY								
02...	1320	19400	67	7.4	8.0	24	7	11.1
16...	1110	34000	54	7.2	9.8	20	8	10.7
JUNE								
01...	0935	25200	55	7.6	12.0	25	5	11.7
13...	1125	19100	63	7.6	13.7	15	3	11.5
JULY								
11...	1220	6100	92	7.4	15.8	13	2	9.3
25...	1145	3800	150	7.5	20.2	20	2	7.4
AUG.								
01...	1000	2800	199	7.5	21.0	12	3	7.7
15...	1010	2200	167	7.7	19.5	21	1	7.4
SEP.								
06...	0915	2300	150	7.5	16.8	20	2	8.8
19...	0900	2500	150	7.6	14.4	16	3	10.0

12426000 SPOKANE RIVER BELOW NINE-MILE DAM, NEAR SPOKANE, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.								
30...	1200	--	--	--	--	--	--	--
DEC.								
14...	3500	0	0	0	0	.0	50	350
JAN.								
03...	<400	0	0	0	0	.0	50	350
24...	1200	0	0	0	0	.2	0	340
31...	700	0	0	0	0	.1	0	430
FEB.								
15...	500	0	0	0	0	.0	0	450
28...	1100	0	0	0	0	.0	0	450
MAR.								
14...	4300	2	0	10	0	.0	110	310
APR.								
04...	800	0	0	5	9	.1	130	460
18...	1000	0	0	12	9	.9	20	210
MAY								
02...	700	0	0	19	5	3.6	110	210
16...	700	3	0	29	4	.3	120	200
JUNE								
01...	1100	0	1	23	0	.3	10	270
13...	4000	0	--	--	2	.7	0	180
JULY								
11...	3000	0	0	0	0	2.6	200	170
25...	2500	0	1	5	0	.0	135	140
AUG.								
01...	800	0	0	0	0	3.1	30	110
15...	5500	0	2	3	6	2.6	90	110
SEP.								
06...	3000	0	2	5	5	1.0	30	130
19...	2000	6	1	6	9	.3	70	110

12431900 LITTLE SPOKANE RIVER NEAR MOUTH, NEAR SPOKANE, WASH.

LOCATION.--Lat 47°47'00", long 117°31'44", in SE¼NW¼ sec.5, T.26 N., R.42 E., Spokane County, at county road bridge, 5.8 miles northwest of Memorial Stadium in northwest Spokane, and at mile 1.1.

DRAINAGE AREA.--700 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
30...	1245	430	.04	.000	.00	.88	.010	.010
DEC.								
14...	1300	450	.11	.000	.00	.84	.020	.030
JAN.								
03...	1110	410	.26	.000	.02	.99	--	.070
24...	1115	580	.04	.000	.01	.81	--	.060
31...	0940	770	.08	.010	--	--	.100	.160
FEB.								
15...	1215	620	.15	.010	.12	.75	.070	.090
28...	1105	560	1.2	.000	.05	.97	.000	.040
MAR.								
14...	1030	820	.32	.010	.13	.90	.090	.220
APR.								
04...	1120	780	.16	.010	.07	.56	--	.120
18...	1130	1010	.16	.000	.06	.38	.070	.120
MAY								
02...	1340	820	.18	.000	.03	.36	.070	.160
16...	1130	630	.13	.000	.00	.61	.090	.110
JUNE								
01...	0950	570	.02	.000	.01	.72	.010	.020
13...	1140	560	.02	.000	.00	.86	.010	.010
JULY								
11...	1245	460	.06	.020	.02	1.2	.030	.030
25...	1200	400	.06	.010	.02	1.3	.030	.040
AUG.								
01...	0945	390	.07	.030	.02	1.2	.020	.040
15...	0950	380	.08	.010	.03	1.3	.020	.020
SEP.								
06...	0940	390	.13	.020	.02	2.1	.010	.020
19...	0925	400	.15	.000	.01	2.0	.020	.020

12431900 LITTLE SPOKANE RIVER NEAR MOUTH, NEAR SPOKANE, WASH.--Continued

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
30...	269	7.8	7.2	6	2	12.2	960
DEC.							
14...	259	8.0	5.0	4	3	9.5	800
JAN.							
03...	265	8.0	3.6	8	2	10.2	400
24...	225	7.6	5.2	45	15	9.5	700
31...	225	7.7	6.8	55	25	9.4	500
FEB.							
15...	21	7.7	6.1	39	20	9.9	400
28...	21	7.6	5.0	24	5	10.2	200
MAR.							
14...	190	7.6	5.0	74	20	9.1	3500
APR.							
04...	79	7.7	7.8	55	10	9.6	1000
18...	161	7.6	8.3	48	7	9.6	600
MAY							
02...	170	7.8	13.8	43	5	8.6	600
16...	210	7.7	10.9	30	6	8.7	700
JUNE							
01...	206	7.9	12.0	30	4	9.8	800
13...	210	7.8	13.9	17	3	9.5	700
JULY							
11...	230	7.4	13.8	11	3	9.4	1000
25...	303	7.8	15.9	11	2	8.6	2500
AUG.							
01...	315	7.7	15.8	5	4	8.2	2200
15...	260	7.7	13.7	9	1	9.0	1600
SEP.							
06...	255	7.4	12.8	10	2	10.0	800
19...	263	7.7	9.6	9	2	10.5	600

12433000 SPOKANE RIVER AT LONG LAKE, WASH.

LOCATION.--Lat 47°50'20", long 117°51'05", in NW¼SE¼ sec.14, T.27 N., R.39 E., Lincoln County, at bridge on Spring Creek Road (State Highway 231), 0.6 mile downstream from gaging station at Long Lake powerhouse, 0.8 mile upstream from Chamokane Creek, 12 miles north of Reardon, and at mile 33.3.

DRAINAGE AREA.--6,020 sq mi, approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971.
Water temperatures: July 1959 to September 1962, October 1966 to September 1970.

REMARKS.--No inflow between sampling point and gaging station. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.											
30...	1340	5000	18	7.1	3.8	1.4	84	0	69	11	2.3
DEC.											
14...	1400	5680	16	5.7	3.2	1.4	69	0	57	11	1.9
JAN.											
03...	1145	5100	14	4.8	3.0	1.2	60	0	49	11	1.6
24...	1200	6650	15	5.4	3.5	2.1	60	0	49	11	3.0
31...	1025	12200	12	4.5	3.3	1.8	52	0	43	11	1.8
FEB.											
15...	1300	12500	8.2	2.7	2.1	.9	32	0	26	11	.6
28...	1155	11000	8.6	2.9	2.3	.9	34	0	28	11	.7
MAR.											
14...	1110	11000	14	3.5	2.6	1.1	47	0	39	14	1.6
APR.											
04...	1220	10400	--	--	--	--	--	--	--	--	--
18...	1215	13400	8.9	2.9	2.4	1.1	33	0	27	10	1.1
MAY											
02...	1420	19700	9.0	2.7	2.2	.7	47	0	39	3.0	1.1
16...	1215	32400	6.5	2.1	1.8	.8	27	0	22	6.8	.9
JUNE											
01...	1030	25500	7.2	2.0	1.7	.8	28	0	23	5.5	.6
13...	1220	19800	6.8	2.5	1.6	.8	36	0	30	1.8	.8
JULY											
11...	1320	6090	9.4	3.2	2.0	.8	45	0	37	7.3	1.1
25...	1245	5100	12	4.5	2.4	.9	57	0	47	8.0	1.2
AUG.											
01...	0900	3850	13	4.8	2.6	1.1	62	0	51	12	1.4
15...	0910	1420	15	6.3	3.0	1.3	79	0	65	9.8	1.9
SEP.											
06...	1020	2700	18	6.8	3.4	1.4	92	0	75	8.5	2.8
19...	1010	1460	20	7.6	3.7	1.6	105	0	86	9.0	2.0

12433000 SPOKANE RIVER AT LONG LAKE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTMBER 1971

DATE	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV.											
30...	.25	.010	.21	.27	.030	.030	74	5	176	7.5	6.7
DEC.											
14...	--	--	--	.23	--	--	64	7	145	7.3	3.7
JAN.											
03...	.41	.000	.16	.23	--	.090	55	6	175	7.4	2.3
24...	.06	.010	.01	.70	--	.050	60	11	136	7.0	3.1
31...	.06	.020	--	.25	.100	.110	49	6	120	7.2	3.4
FEB.											
15...	.05	.000	.00	.18	.030	.060	32	6	77	7.1	3.0
28...	.10	.000	.04	.23	.000	.030	34	6	81	7.2	3.3
MAR.											
14...	.14	.010	.23	.15	.030	.190	50	11	101	7.3	3.5
APR.											
04...	.32	.010	.30	.72	--	.110	--	--	104	7.3	6.3
18...	.18	.010	.15	.11	.050	.100	34	7	82	7.3	6.6
MAY											
02...	.14	.000	.00	.07	.030	.160	34	0	74	7.5	8.0
16...	.13	.000	.00	.05	.050	.110	25	3	61	7.2	11.4
JUNE											
01...	.02	.000	.02	.05	.010	.030	26	3	63	7.2	12.9
13...	.04	.000	.02	.16	.020	.040	27	0	65	7.1	14.1
JULY											
11...	.18	.000	.16	.16	.030	.030	37	0	84	6.9	16.4
25...	.06	.010	.01	.26	.030	.040	48	2	108	7.2	19.4
AUG.											
01...	.07	.190	.06	.49	.020	.040	52	1	118	7.2	20.2
15...	.07	.020	.05	.77	.070	.070	63	0	147	7.1	20.0
SEP.											
06...	.25	.040	.21	1.1	.090	.100	73	0	157	7.0	17.5
19...	.13	.010	.01	.39	.080	.070	81	0	175	7.2	16.7

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV.											
30...	12	2	11.1	20	0	0	0	0	.0	50	100
DEC.											
14...	4	3	9.2	22	0	0	0	0	.0	50	200
JAN.											
03...	6	2	10.0	26	--	--	--	--	--	--	--
24...	92	70	10.0	>2000	0	0	0	0	.3	0	200
31...	76	40	11.9	600	0	0	0	0	.1	50	220
FEB.											
15...	20	3	14.1	200	0	0	0	0	.0	0	400
28...	17	4	12.9	320	0	0	0	0	.0	0	400
MAR.											
14...	21	4	12.7	<100	0	12	33	0	.1	90	33
APR.											
04...	74	25	11.4	1400	1	2	8	9	.1	190	270
18...	22	6	12.1	300	0	0	6	0	.7	160	210
MAY											
02...	24	7	12.9	600	0	0	8	20	4.1	30	280
16...	20	8	11.9	1500	1	0	14	9	.3	80	200
JUNE											
01...	25	4	13.3	500	0	1	7	0	.2	130	190
13...	15	4	12.6	250	--	--	--	2	.9	140	140
JULY											
11...	9	2	7.9	600	0	0	0	0	2.0	530	130
25...	13	2	8.2	100	1	1	0	2	.4	110	70
AUG.											
01...	8	3	6.1	800	1	2	4	13	3.0	50	100
15...	15	1	3.1	500	0	0	0	4	2.6	0	80
SEP.											
06...	18	1	3.7	1200	1	0	3	3	.6	30	40
19...	20	2	5.9	7500	--	--	--	--	--	--	--

12447200 OKANOGAN RIVER AT MALOTT, WASH.

LOCATION (revised).--Lat 48°16'53", long 119°42'12", in SW¼ sec.9, T.32 N., R.25 E., Okanogan County, temperature recorder at gaging station on right bank 75 ft upstream from highway bridge in Malott, 0.1 mile upstream from Loup Loup Creek, and at mile 17.0.

DRAINAGE AREA.--8,100 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970. Prior to November 1963 published as "near Brewster."
Water temperature: November 1969 to June 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures: Maximum, 14.5°C Oct. 1-4; minimum, freezing point on many days during November to April.

Period of record:
Water temperatures: Maximum, 21.5°C July 19, 20, Aug. 24, 1970; minimum, freezing point on many days during winter periods.

REMARKS.--Recorder not operating Oct. 17-20 and Mar. 12-15; recorded range in temperature 6.0°C to 10.5°C and 0°C to 5.5°C, respectively.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.5	11.0	8.0	4.0	3.0	0	5.5	0	0.5	0	4.5	0
2	14.5	11.0	8.0	4.0	1.5	0.5	6.5	2.0	1.0	0	3.5	1.0
3	14.5	11.0	8.0	4.5	2.0	0	8.0	2.0	2.0	0	3.0	0
4	14.5	12.0	8.0	5.0	3.5	0	6.5	2.0	1.0	0	3.5	0
5	14.0	12.0	6.0	6.0	3.0	1.0	5.5	2.0	3.5	0	4.0	0
6	14.0	11.0	6.5	6.0	1.0	0	3.0	1.0	4.0	0	4.0	1.0
7	13.0	9.0	7.0	6.0	1.0	0	3.0	1.0	4.0	0	3.0	1.0
8	10.5	9.0	6.5	6.0	3.0	0	2.0	0.5	3.5	0	3.5	0
9	11.0	9.0	7.0	5.0	4.0	0	2.0	0.5	3.5	0	4.0	1.5
10	11.5	8.5	8.5	6.5	3.0	1.0	3.0	0	1.0	0	4.0	3.0
11	10.5	8.5	7.0	6.5	3.0	0	4.5	3.0	0.5	0	4.5	2.0
12	11.0	8.5	7.0	6.0	3.0	0.5	4.5	3.5	0.5	0	---	---
13	11.5	9.0	8.0	5.5	4.0	1.0	4.5	3.5	0.5	0	---	---
14	11.0	7.0	7.0	5.5	4.0	1.0	4.0	3.0	0.5	0	---	---
15	11.0	6.5	7.0	5.0	1.5	0.5	3.5	1.5	1.0	0	7.0	---
16	10.5	6.0	7.0	6.0	1.0	0	2.0	0	1.5	0	8.0	4.5
17	---	---	7.0	6.0	0.5	0	0.5	0	1.0	0	8.5	5.0
18	---	---	7.0	4.0	0.5	0	0	0	0.5	0	9.0	5.0
19	---	---	5.0	1.5	1.5	0.5	1.0	0	0.5	0	9.0	5.0
20	---	9.0	4.5	1.5	1.5	1.0	2.0	0	1.5	0	8.5	5.5
21	10.5	9.5	4.0	1.0	3.5	0	1.5	0.5	1.0	0	8.5	5.5
22	9.5	7.0	3.5	2.0	5.0	0	3.0	0	3.0	0	8.5	6.5
23	9.5	8.0	2.0	1.5	3.5	0	3.0	0	4.0	2.0	8.0	7.0
24	9.5	7.0	1.5	0.5	5.0	1.5	1.5	0	4.0	1.0	8.5	6.0
25	9.5	6.0	1.5	1.0	5.0	1.5	1.0	0	4.5	1.0	9.0	6.5
26	9.5	5.5	2.0	1.5	1.5	0	1.0	0	4.5	1.5	9.0	8.0
27	9.0	4.5	1.5	0.5	2.0	0.5	1.5	0	4.5	1.5	8.5	6.5
28	8.5	4.5	3.5	0	1.5	0.5	0.5	0	4.5	1.0	8.5	6.5
29	9.0	4.5	3.5	1.5	3.0	0	0.5	0	---	---	8.0	5.5
30	9.0	4.5	1.5	0.5	2.0	0	0.5	0	---	---	9.0	6.5
31	8.5	3.5	---	---	3.0	0	0	0	---	---	9.5	6.5
MONTH	14.5	3.5	8.5	0	5.0	0	8.0	0	4.5	0	9.5	0

12447200 OKANOGAN RIVER AT MALOTT, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

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

12452000 LAKE CHELAN NEAR CHELAN, WASH.

LOCATION.--Lat 47°57'38", long 120°11'07", in NE¼NW¼ sec.3, T.28 N., R.21 E., Chelan County, sampling site at buoy about 50 feet from shore, 12.5 miles upstream from lake gaging station, and at mile 18.6.

DRAINAGE AREA.--924 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: June to September 1971.

DRAINAGE AREA.--924 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: June to September 1971.

REMARKS.--Location paragraph above is for "Site No. 2." "Site No. 1" is about 1,000 feet upstream from "Site No. 2." Temperature and dissolved oxygen data presented are field measurements made using temperature and oxygen sensors.

"SITE NO. 2"--CHEMICAL ANALYSES, JUNE TO SEPTEMBER 1971

DATE	TIME	DEPTH (METERS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	TOTAL ALKA-LINITY (CACO3) (MG/L)	SULFATE (SO4) (MG/L)
JUNE 8, 1971	1300	3	5.1	6.4	1.2	0.6	29	0	--	5.3
AUG. 16.....	1310	4	5.2	6.5	1.3	0.7	23	0	19	3.8
	1320	40	5.2	7.3	1.2	0.8	22	0	18	3.5

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (N) (MG/L)	TOTAL PHOS-PHATE (PO4) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)	DIS-SOLVED COPPER (CU) (UG/L)
JUNE 8, 1971	0.3	0.0	0.00	0.01	49	8.2	3	--
AUG. 16.....	0.5	0.0	--	--	47	7.3	6	32
	0.3	0.0	--	--	46	7.6	4	32

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 2"--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, JUNE TO SEPTEMBER 1971

Sample Depth (Meters Below Surface)	JUNE 8 (1230)		JUNE 23 (1445)		JULY 7 (1145)		JULY 20 (1400)		AUG. 3 (1515)		AUG. 16 (1330)		SEPT. 14 (1330)		SEPT. 28 (1345)	
	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)
Surface	11.0	11.0	13.0	11.0	12.5	11.2	16.5	10.6	17.0	10.1	19.5	9.9	16.5	9.6	15.0	9.6
1	11.0	11.2	13.0	11.1	12.5	11.2	15.5	10.4	17.0	10.3	19.5	9.5	---	---	15.0	9.6
2	11.0	11.4	13.0	11.2	12.0	11.3	15.0	10.5	17.0	10.1	19.5	9.4	16.5	9.4	15.0	9.6
3	11.0	11.4	12.5	11.2	12.0	11.2	15.0	10.5	17.0	10.2	---	---	---	---	15.0	9.6
4	10.5	11.4	12.5	11.1	12.0	11.1	15.0	10.5	16.5	10.1	19.0	9.3	16.5	9.4	15.0	9.7
5	10.5	11.4	12.5	11.2	12.0	11.1	14.5	10.6	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	16.5	10.3	19.0	9.3	16.5	9.3	15.0	9.6
7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	10.0	11.4	12.5	11.2	11.5	11.3	14.5	10.6	16.0	10.2	19.0	9.3	16.5	9.4	15.0	9.7
9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10	10.0	11.6	12.5	11.2	11.5	11.3	14.5	10.6	16.0	10.3	18.0	9.4	16.5	9.4	15.0	9.7
11	---	---	---	---	---	---	14.0	10.4	---	---	---	---	---	---	---	---
12	10.0	11.6	12.0	11.3	11.5	11.3	14.0	10.5	16.0	10.3	18.0	9.4	16.5	9.4	15.0	9.8
13	---	---	---	---	---	---	13.0	10.9	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	10.9	16.0	10.4	18.0	9.4	16.5	9.4	15.0	9.7
15	10.0	11.6	11.5	11.3	11.5	11.3	13.0	10.9	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	15.5	10.5	18.0	9.4	16.5	9.3	15.0	9.6
17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	11.5	11.3	12.5	11.0	15.5	10.5	18.0	9.4	16.5	9.3	15.0	9.6
19	10.0	11.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	10.5	11.4	11.5	11.3	12.0	11.0	15.0	10.6	17.5	9.4	16.0	9.2	15.0	9.6
21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	15.0	10.7	17.5	9.5	16.0	9.2	15.0	9.6
23	---	---	---	---	---	---	---	---	14.0	10.8	---	---	---	---	---	---
24	9.5	11.5	---	---	---	---	---	---	14.0	10.9	17.0	9.5	16.0	9.3	14.0	10.2
25	---	---	10.0	11.4	11.5	11.3	11.5	11.0	13.0	11.0	---	---	---	---	13.5	10.2
26	---	---	---	---	---	---	---	---	13.0	11.1	17.0	9.8	16.0	9.3	13.0	10.0
27	---	---	---	---	---	---	---	---	---	---	16.5	10.0	---	---	13.0	10.1
28	---	---	---	---	---	---	---	---	12.5	11.1	16.0	10.0	16.0	9.4	12.5	10.0
29	9.5	11.5	---	---	---	---	---	---	---	---	15.0	10.3	---	---	12.5	10.1
30	---	---	9.5	11.3	11.0	11.4	11.0	11.0	12.0	11.2	14.5	10.6	15.5	9.6	12.0	10.1
31	---	---	---	---	---	---	---	---	---	---	12.5	10.9	---	---	---	---
32	---	---	---	---	---	---	---	---	11.5	11.3	11.5	11.1	15.0	9.6	12.0	10.2
33	---	---	---	---	---	---	10.5	10.8	---	---	11.0	11.0	---	---	---	---
34	9.5	11.4	---	---	---	---	---	---	11.0	11.3	10.5	11.0	15.0	9.7	11.5	10.2
35	---	---	9.0	11.1	11.0	11.3	10.0	10.9	---	---	10.0	11.0	14.0	10.0	---	---
36	---	---	---	---	---	---	---	---	11.0	11.3	9.5	10.9	13.0	10.1	11.0	10.3
37	---	---	---	---	---	---	---	---	---	---	---	---	12.0	10.1	10.0	10.4
38	---	---	---	---	---	---	---	---	10.0	11.3	9.0	10.9	11.5	10.3	9.0	10.3
39	9.5	11.4	---	---	---	---	---	---	---	---	---	---	11.0	10.3	9.0	10.4
40	---	---	9.0	11.1	11.0	11.4	9.5	10.9	9.5	11.2	9.0	10.9	11.0	10.4	9.0	10.4
41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
42	---	---	---	---	---	---	---	---	9.0	11.2	8.5	10.8	10.5	10.6	9.0	10.4
43	---	---	---	---	---	---	9.0	10.8	---	---	---	---	---	---	---	---
44	9.0	11.4	---	---	---	---	---	---	9.0	11.1	8.5	10.8	9.5	10.5	8.5	10.4
45	---	---	8.5	11.2	10.5	11.4	8.5	11.0	---	---	---	---	---	---	---	---
46	---	---	---	---	---	---	---	---	9.0	11.2	8.0	10.8	9.0	10.6	8.5	10.3
47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
48	---	---	---	---	---	---	---	---	8.5	11.1	8.0	10.8	8.5	10.5	8.0	10.6
49	9.0	11.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
50	---	---	8.0	11.2	10.5	11.4	8.0	11.0	8.5	11.1	8.0	10.8	8.0	10.4	7.5	10.4
51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
52	---	---	---	---	---	---	---	---	8.5	11.0	8.0	10.8	8.0	10.5	7.5	10.4
53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
54	8.5	11.4	---	---	---	---	---	---	8.0	11.1	8.0	10.8	7.5	10.5	7.0	10.4
55	---	---	7.5	11.2	10.0	11.5	8.0	11.0	---	---	---	---	---	---	---	---
56	---	---	---	---	---	---	---	---	8.0	11.1	8.0	10.7	7.5	10.5	7.0	10.5
57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
58	---	---	7.5	11.2	9.5	11.4	---	---	8.0	11.1	8.0	10.7	7.0	10.6	7.0	10.5
59	8.0	11.2	---	---	---	---	7.5	10.9	8.0	11.0	7.5	10.7	---	---	7.0	10.5
SECCHI DISC TRANSPARENCY (METERS)	10.5		9.0		11.0		14.0		13.0		12.0		13.0		9.0	
SEDIMENT CONCENTRATION (PPM)	2		---		---		---		---		1		---		---	

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 1"--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, JUNE TO SEPTEMBER 1971

Sample Depth (Meters Below Surface)	JUNE 8 (1130)		JUNE 23 (1415)		JULY 7 (1100)		JULY 20 (1300)		AUG. 3 (1415)		AUG. 16 (1230)		SEPT. 14 (1215)		SEPT. 28 (1300)	
	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)	Temp. (°C)	D.O. (mg/l)
Surface	10.5	11.4	12.5	11.3	12.5	10.9	15.5	10.5	17.0	10.1	18.0	9.9	16.5	9.8	15.0	9.7
1	10.5	11.2	12.5	11.3	12.0	10.8	15.0	10.5	17.0	10.2	18.0	9.8	16.5	9.8	15.0	9.7
2	10.0	11.6	12.5	11.4	12.0	10.9	15.0	10.6	16.5	10.1	18.0	9.6	16.0	9.8	15.0	9.8
3	10.0	11.6	12.5	11.4	12.0	10.9	15.0	10.6	16.5	10.2	---	---	16.0	9.8	15.0	9.7
4	10.0	11.6	12.5	11.4	12.0	10.9	14.5	10.7	16.5	10.2	18.0	9.6	16.0	9.7	15.0	9.6
5	10.0	11.8	12.5	11.4	12.0	10.9	14.5	10.7	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	16.5	10.2	18.0	9.6	16.0	9.8	15.0	9.6
7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	12.0	11.4	11.5	11.0	14.5	10.7	16.0	10.3	18.0	9.6	16.0	9.9	15.0	9.7
9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10	10.0	11.8	12.0	11.5	11.5	11.0	14.0	10.7	16.0	10.2	18.0	9.7	16.0	9.9	15.0	9.7
11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	11.5	11.6	11.5	11.2	13.5	10.7	16.0	10.2	17.5	9.6	16.0	9.8	15.0	9.6
13	---	---	---	---	---	---	13.0	11.0	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	11.0	16.0	10.3	17.5	9.6	16.0	9.9	15.0	9.6
15	10.0	11.8	10.5	11.8	11.5	11.3	12.5	10.8	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	12.5	11.0	16.0	10.3	17.5	9.7	16.0	9.9	15.0	9.7
17	---	---	10.0	11.8	---	---	12.5	11.0	---	---	---	---	---	---	---	---
18	---	---	---	---	11.5	11.3	12.5	11.1	15.0	10.5	17.5	9.7	16.0	9.9	15.0	9.7
19	10.0	11.8			---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	10.0	11.8	11.5	11.3	12.5	11.1	15.0	10.6	17.5	9.8	16.0	9.9	15.0	9.6
21	---	---	---	---	---	---	12.0	11.0	15.0	10.8	---	---	---	---	---	---
22	---	---	---	---	---	---	11.5	11.1	14.5	10.8	17.0	9.8	16.0	10.0	15.0	9.6
23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	10.0	11.8	---	---	---	---	11.5	11.2	14.0	10.9	17.0	10.0	16.0	10.0	14.5	9.8
25	---	---	9.5	11.6	11.5	11.3	---	---	---	---	---	---	---	---	14.0	9.8
26	---	---	---	---	---	---	11.0	11.2	13.5	11.0	16.5	10.1	16.0	10.0	13.5	10.0
27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13.0	10.0
28	---	---	---	---	---	---	---	---	13.0	11.1	16.0	10.3	15.5	10.1	13.0	10.2
29	10.0	11.6	---	---	---	---	---	---	---	---	15.5	10.5	---	---	13.0	10.2
30	---	---	9.5	11.5	11.5	11.3	11.0	11.0	12.0	11.3	15.5	10.6	15.0	10.2	12.5	10.2
31	---	---	---	---	---	---	---	---	---	---	15.0	10.8	---	---	---	---
32	---	---	---	---	---	---	---	---	11.5	11.4	12.5	11.2	15.0	10.3	12.5	10.4
33	---	---	---	---	---	---	10.5	11.0	---	---	11.0	11.3	---	---	---	---
34	9.5	11.6	---	---	---	---	---	---	11.5	11.4	10.0	11.2	14.5	10.3	12.5	10.3
35	---	---	9.0	11.5	11.0	11.2	10.0	10.8	---	---	9.5	11.2	---	---	11.5	10.5
36	---	---	---	---	---	---	---	---	11.0	11.4	9.0	11.2	14.0	10.5	11.0	10.7
37	9.0*	11.6*	---	---	---	---	10.0	10.9	---	---	---	---	12.5	10.7	11.0	10.9
38	---	---	---	---	---	---	---	---	10.5	11.3	9.0	11.1	12.0	10.7	10.0	10.8
39	---	---	---	---	---	---	---	---	---	---	---	---	12.0	10.8	---	---
40	---	---	9.0	11.4	11.0	11.2	9.5	11.0	10.0	11.3	9.0	11.1	11.5	10.9	9.5	10.9
41	---	---	---	---	---	---	---	---	---	---	---	---	11.0	10.9	---	---
42	---	---	---	---	---	---	---	---	9.5	11.2	8.5	11.0	10.0	11.1	9.0	11.1
43	---	---	---	---	---	---	9.0	10.9	---	---	---	---	9.5	10.9	---	---
44	---	---	---	---	---	---	---	---	9.0	11.1	8.5	11.1	9.5	11.0	8.5	11.1
45	---	---	8.5	11.5	10.5	11.3	8.5	11.0	---	---	---	---	---	---	---	---
46	---	---	---	---	---	---	---	---	9.0	11.1	8.0	11.1	9.0*	11.1*	8.5	11.1
47	---	---	---	---	---	---	8.0	11.0	---	---	---	---	---	---	---	---
48	---	---	---	---	---	---	---	---	8.5	11.2	8.0	11.0	---	---	8.0	11.1
49	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
50	---	---	8.0	11.5	10.0*	11.5*	8.0	10.9	8.0	11.2	8.0	11.0	---	---	8.0*	11.1*
51	---	---	---	---	---	---	---	---	8.0*	11.1*	---	---	---	---	---	---
52	---	---	---	---	---	---	8.0*	11.0*	---	---	8.0*	11.0*	---	---	---	---
53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
55	---	---	7.5	11.5	---	---	---	---	---	---	---	---	---	---	---	---
56	---	---	7.5*	11.4*	---	---	---	---	---	---	---	---	---	---	---	---

* At lake bottom.

SECCHI DISC TRANSPARENCY (METERS)	11.0	9.5	12.0	14.0	13.0	12.0	12.5	9.0
SEDIMENT CONCENTRATION (PPM)	4	---	---	----	---	---	---	---

12454000 WHITE RIVER NEAR PLAIN, WASH.

LOCATION.--Lat 47°52'27", long 120°52'09", in NE¼NE¼ sec.5, T.27 N., R.16 E., Chelan County, temperature recorder at gaging station on left bank 200 ft downstream from Forest Service bridge, 1.2 miles downstream from Sears Creek, 12.5 miles northwest of Plain, and at mile 6.4.

DRAINAGE AREA.--150 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1970 to June 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures: Maximum, 9.5°C Oct. 1; minimum, freezing point on many days during winter period.

REMARKS.--Recorder not operating Oct. 2-10 and Apr. 18-20; no range in temperature obtained. Suspended sediment data for period July 1969 to June 1971 available in district office.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	7.0	3.5	1.5	0	0	0	0	1.5	0	1.5	0
2	---	7.0	3.0	1.5	0	0	0	0	2.0	0.5	0.5	0
3	---	---	3.0	1.0	0	0	0	0	2.0	0.5	0.5	0
4	---	---	3.0	1.0	0	0	0	0	3.0	1.0	1.5	0
5	---	---	3.5	2.0	0	0	0	0	1.5	0.5	2.0	0
6	---	---	4.0	3.0	0	0	0	0	1.0	0	1.5	0.5
7	---	---	4.5	3.5	0	0	0	0	1.5	0	1.0	0
8	6.5	---	5.0	4.0	0	0	0	0	1.5	0	3.0	0.5
9	---	---	5.0	3.5	0	0	0	0	1.5	0.5	3.0	1.5
10	---	---	4.0	3.5	0	0	0	0	3.0	1.0	2.0	0.5
11	8.5	6.0	3.5	2.0	0	0	0	0	3.0	1.5	1.5	0
12	8.0	6.0	3.5	2.0	0	0	0	0	3.5	2.0	2.0	0
13	6.5	5.0	3.0	2.0	0	0	0	0	3.5	2.0	3.5	1.0
14	6.0	4.5	3.0	1.5	0	0	0	0	3.5	2.0	3.0	1.0
15	5.5	4.0	3.0	2.0	0	0	0	0	3.0	1.5	3.5	1.0
16	5.0	3.5	3.0	2.0	0	0	0	0	3.5	2.0	3.5	1.0
17	4.5	3.5	4.0	2.0	0	0	0	0	3.5	2.0	3.5	0.5
18	6.0	4.0	3.5	3.0	0	0	0	0	3.5	2.0	3.5	0.5
19	6.0	5.5	4.0	3.0	0	0	0	0	3.5	1.5	4.0	0.5
20	6.5	5.5	3.5	0.5	0	0	0	0	3.0	1.0	4.0	1.0
21	5.5	4.5	0.5	0	0	0	0	0	3.0	1.5	4.0	1.0
22	5.0	4.5	0	0	0	0	0	0	3.5	2.0	3.0	1.0
23	5.0	4.0	0	0	0	0	0	0	3.5	2.0	2.0	1.0
24	4.5	3.5	0	0	0	0	0	0	3.0	1.0	4.5	1.5
25	4.5	3.0	0	0	0	0	0.5	0	2.0	0.5	4.0	1.5
26	3.5	1.5	0	0	0	0	0.5	0	3.5	1.0	3.5	0
27	3.0	1.0	0	0	0	0	1.0	0	3.0	0.5	2.0	0
28	3.5	1.5	0	0	0	0	1.5	0	1.0	0	2.0	0.5
29	3.5	1.5	0	0	0	0	2.0	1.0	---	---	1.5	0
30	3.0	1.5	0	0	0	0	1.0	0	---	---	4.5	0.5
31	3.0	1.0	---	---	0	0	0.5	0	---	---	4.5	2.0
MONTH	---	---	5.0	0	0	0	2.0	0	3.5	0	4.5	0

12454000 WHITE RIVER NEAR PLAIN, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	2.0	6.0	3.5	6.5	4.0	---	---	---	---	---	---
2	5.0	3.5	6.0	2.0	6.5	4.0	---	---	---	---	---	---
3	5.0	2.0	6.0	2.0	5.5	4.0	---	---	---	---	---	---
4	5.5	2.0	5.0	2.0	7.0	4.0	---	---	---	---	---	---
5	5.0	3.0	5.0	2.0	8.0	3.5	---	---	---	---	---	---
6	5.5	3.5	5.5	2.0	7.0	3.5	---	---	---	---	---	---
7	5.5	3.0	6.0	2.0	6.0	4.0	---	---	---	---	---	---
8	4.0	2.0	6.0	2.0	---	3.5	---	---	---	---	---	---
9	3.0	1.5	5.5	2.0	---	---	---	---	---	---	---	---
10	5.0	1.5	6.0	2.0	---	---	---	---	---	---	---	---
11	5.0	2.0	6.5	2.0	---	---	---	---	---	---	---	---
12	5.0	1.5	5.0	2.0	---	---	---	---	---	---	---	---
13	5.5	3.0	4.5	3.0	---	---	---	---	---	---	---	---
14	5.0	3.0	5.5	3.0	---	---	---	---	---	---	---	---
15	5.0	3.0	5.0	3.0	---	---	---	---	---	---	---	---
16	4.0	2.0	4.5	3.0	---	---	---	---	---	---	---	---
17	4.0	2.0	6.5	3.0	---	---	---	---	---	---	---	---
18	---	---	6.5	3.0	---	---	---	---	---	---	---	---
19	---	---	6.0	4.0	---	---	---	---	---	---	---	---
20	---	---	5.0	3.0	---	---	---	---	---	---	---	---
21	6.5	3.5	7.0	3.0	---	---	---	---	---	---	---	---
22	5.5	3.5	8.0	3.5	---	---	---	---	---	---	---	---
23	4.5	3.0	7.0	3.5	---	---	---	---	---	---	---	---
24	5.0	3.5	6.5	3.0	---	---	---	---	---	---	---	---
25	6.0	3.0	5.5	3.5	---	---	---	---	---	---	---	---
26	6.0	2.0	6.0	3.5	---	---	---	---	---	---	---	---
27	5.5	3.0	6.5	3.5	---	---	---	---	---	---	---	---
28	6.0	3.0	6.5	3.0	---	---	---	---	---	---	---	---
29	5.5	3.0	5.0	3.5	---	---	---	---	---	---	---	---
30	6.0	3.0	5.5	3.5	---	---	---	---	---	---	---	---
31	---	---	5.0	3.5	---	---	---	---	---	---	---	---
MONTH	6.5	1.5	8.0	2.0	---	---	---	---	---	---	---	---

12472200 CRAB CREEK NEAR OTHELLO, WASH.

LOCATION.--Lat 46°49'08", long 119°21'55", in SW¼NW¼ sec.6, T.15 N., R.28 E., Grant County, at bridge on State Highway 26, 4.2 miles east of Corfu, and 9.3 miles west of Othello.

DRAINAGE AREA.--4,696 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
08...	1455	--	.58	.050	.10	1.0	.070	.120
JAN.								
25...	1510	--	.16	.010	.00	1.1	.060	.110
FEB.								
08...	1300	--	.15	.010	.11	1.0	.070	.100
22...	1300	--	.25	.010	.03	1.3	--	--
MAR.								
08...	1330	--	1.3	.020	.26	1.9	.030	.040
22...	1245	--	.22	.010	.12	1.4	--	.200
APR.								
05...	1230	--	.45	.020	.10	1.1	--	.160
19...	1150	--	.22	.010	.00	1.0	.090	.140
MAY								
03...	0950	--	.18	.010	.05	.86	.050	.150
17...	1250	--	.63	.020	.05	.95	.090	.210
JUNE								
01...	1350	--	.02	.010	.01	.86	.030	.050
14...	1345	--	.05	.000	.02	.77	.030	.050
JULY								
05...	1345	--	.08	.000	.00	.72	.030	.040
19...	1345	--	.21	.050	.06	.76	.030	.090
AUG.								
02...	1315	115	.33	.000	.14	.72	.020	.070
16...	1245	130	--	.020	.25	.82	.030	--
SEP.								
06...	1340	278	.12	.020	.10	1.4	.000	.080
20...	1315	256	.27	.030	.09	1.8	.010	.080

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
08...	--	8.2	4.8	--	10	12.5	--
JAN.							
25...	615	8.1	6.4	27	10	12.2	700
FEB.							
08...	601	8.1	4.5	5	8	12.8	200
22...	590	8.2	5.5	22	8	12.1	90
MAR.							
08...	620	8.1	6.3	19	8	12.2	50
22...	600	8.3	7.9	24	15	11.7	220
APR.							
05...	591	8.1	13.2	44	15	10.8	200
19...	625	8.4	13.3	21	10	11.2	200
MAY							
03...	581	8.4	16.8	38	8	10.4	260
17...	595	8.1	15.2	42	80	9.0	2000
JUNE							
01...	581	8.4	18.5	38	20	9.2	2500
14...	494	8.6	18.6	23	15	9.7	--
JULY							
05...	506	8.4	19.8	21	10	9.9	170
19...	672	8.3	26.8	24	25	8.0	300
AUG.							
02...	580	8.3	25.6	26	20	9.0	600
16...	496	8.3	23.4	27	25	8.0	900
SEP.							
06...	535	8.3	19.0	24	10	8.9	3500
20...	510	8.2	15.9	20	10	10.4	2500

12472600 CRAB CREEK NEAR BEVERLY, WASH.

LOCATION.--Lat 46°49'55", long 119°48'55", in NE¼SE¼ sec.33, T.16 N., R.24 E., Grant County, at Lower Crab Creek Road bridge, 1.5 miles upstream from gaging station, 5.7 miles east of Beverly, and at mile 4.5.

DRAINAGE AREA.--4,842 sq mi, upstream from gaging station, of which 665 sq mi in the vicinity of Soap Lake is noncontributing.

PERIOD OF RECORD.--Chemical analyses: August 1959 to September 1971.
Water temperatures: August 1959 to September 1962, July 1968 to August 1970.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
08...	1345	249	.74	.030	.08	1.6	.130	.140
JAN.								
25...	1420	265	.70	.030	.08	1.1	.110	--
FEB.								
08...	1200	214	.21	.040	.17	1.5	.180	.330
22...	1210	204	.37	.020	.05	.41	--	--
MAR.								
08...	1210	202	1.3	.020	.33	2.9	.090	.110
22...	1200	202	.36	.010	.09	2.0	--	.230
APR.								
05...	1130	220	.57	.020	.28	1.1	--	.250
19...	1123	211	.35	.020	.02	.97	.110	.160
MAY								
03...	0900	180	.29	.010	.02	.59	.070	.260
17...	1205	188	.56	.020	.03	.86	.120	.210
JUNE								
01...	1300	201	.02	.010	.01	.99	.040	.050
14...	1250	192	.05	.010	.02	.81	.040	.070
JULY								
05...	1300	178	.40	.000	.00	.86	.060	.080
19...	1300	175	.46	.120	.15	1.1	.070	.130
AUG.								
02...	1230	190	.11	.010	.11	.78	.040	.190
16...	1200	190	--	.020	.17	1.3	.040	--
SEP.								
06...	1300	286	.13	.010	.13	.76	.070	.430
20...	1230	260	.31	.020	.10	2.1	.020	.100

DATE	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
08...	--	8.4	3.1	--	9	13.7	--
JAN.							
25...	994	8.3	6.4	47	20	13.3	250
FEB.							
08...	904	8.1	3.3	9	45	12.7	1000
22...	894	8.3	4.5	40	25	12.3	1500
MAR.							
08...	925	8.3	4.8	31	30	13.5	200
22...	856	8.4	9.2	58	40	11.8	1000
APR.							
05...	834	8.1	14.3	39	45	12.5	1000
19...	831	8.6	12.8	32	30	13.1	1500
MAY							
03...	780	8.6	18.6	37	45	10.5	1800
17...	765	8.5	11.8	41	20	13.4	1000
JUNE							
01...	809	8.3	17.9	54	40	10.3	1200
14...	751	8.7	17.8	35	50	10.6	--
JULY							
05...	765	8.3	17.5	38	20	10.5	350
19...	909	8.3	29.8	51	60	8.2	1000
AUG.							
02...	875	8.2	24.2	42	65	9.8	2500
16...	700	8.3	21.8	37	35	8.9	1100
SEP.							
06...	967	8.4	17.8	79	10	9.1	5500
20...	810	8.2	16.1	42	20	9.6	2500

12488000 BUMPING RIVER NEAR NILE, WASH.

LOCATION.--Lat 46°52'22", long 121°17'29", in SE¼ sec.14 (unsurveyed), T.16 N., R.12 E., Yakima County, Snoqualmie National Forest, temperature recorder at gaging station on left bank 0.3 mile downstream from spillway of Bumping Lake Dam, 1.9 miles southwest of Gooseprairie, 18.2 miles west of Nile, and at mile 16.6.

DRAINAGE AREA.--70.7 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1970 to May 1971 (discontinued).

EXTREMES.--October 1970 to May 1971:
Water temperatures: Maximum, 12.0°C Oct. 1, 2, 4; minimum, freezing point several days December to March.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO MAY 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	11.0	6.5	5.5	2.0	1.5	0.5	0	1.5	1.0	1.5	0.5
2	12.0	11.0	6.0	5.5	2.0	1.5	0.5	0	1.5	1.0	1.0	0.5
3	11.5	11.0	6.0	5.0	2.0	1.5	0	0	1.0	1.0	1.0	0.5
4	12.0	11.5	5.5	5.0	2.0	1.5	0.5	0	1.0	1.0	1.0	0.5
5	11.5	10.5	5.0	5.0	2.0	1.5	0.5	0	1.0	0	1.0	0
6	10.5	10.0	6.0	5.0	2.0	1.5	1.0	0	1.0	0	0.5	0
7	10.0	10.0	5.5	5.5	2.0	1.5	1.0	1.0	1.0	0	1.0	0.5
8	10.0	9.5	5.5	5.0	2.0	1.5	1.0	0.5	1.0	0	1.5	0.5
9	10.0	9.5	5.0	4.5	2.0	1.0	0.5	0.5	1.0	0.5	1.0	1.0
10	10.0	9.5	5.0	4.5	2.0	1.5	0.5	0.5	1.0	1.0	1.0	0.5
11	9.5	9.0	4.5	4.0	2.0	1.5	1.0	0.5	1.5	0.5	1.0	0.5
12	10.0	9.0	4.5	4.0	1.5	1.0	0.5	0	1.5	1.0	1.5	1.0
13	9.5	9.0	4.5	4.0	1.0	0.5	0	0	1.5	1.0	1.5	1.0
14	9.0	8.0	5.0	4.0	1.0	0.5	0.5	0	1.5	1.0	1.5	1.0
15	8.0	6.5	4.5	4.5	1.5	1.0	0.5	0	1.0	1.0	1.5	1.0
16	8.5	7.0	5.0	4.5	1.5	1.5	1.0	0.5	1.5	1.0	1.5	0
17	9.0	8.0	4.5	4.0	1.5	1.0	1.0	0.5	1.5	1.0	2.0	1.0
18	9.0	8.5	4.5	4.0	1.0	0.5	1.0	1.0	1.5	1.0	2.0	0
19	8.5	8.0	4.5	4.0	1.0	0.5	1.0	1.0	1.5	1.0	2.0	0.5
20	8.5	7.0	4.0	2.0	1.0	0.5	1.0	1.0	1.5	0.5	2.0	0.5
21	7.0	6.5	2.0	0.5	1.0	0.5	1.0	0.5	1.5	1.0	2.0	0.5
22	6.5	5.5	1.0	0.5	0.5	0	1.0	1.0	1.5	1.0	1.0	0
23	6.5	5.5	1.5	0.5	1.0	0.5	1.0	1.0	1.5	1.0	1.5	1.0
24	6.0	5.5	2.0	1.5	1.0	0.5	1.0	0.5	1.0	1.0	1.5	1.0
25	6.0	5.5	2.0	1.5	0.5	0	1.0	0.5	1.0	1.0	1.5	0.5
26	5.5	4.0	2.0	1.5	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5
27	6.0	5.0	2.0	1.5	1.0	0.5	1.0	1.0	1.0	0.5	1.0	0.5
28	6.0	5.0	3.0	2.0	1.0	0.5	1.5	1.0	1.0	0.5	1.5	0.5
29	6.0	5.0	3.0	2.0	1.0	0.5	1.5	1.0	---	---	2.0	1.0
30	6.0	5.0	3.0	1.5	1.0	0	1.5	1.0	---	---	2.0	1.0
31	6.5	5.5	---	---	1.0	0.5	1.5	1.0	---	---	2.0	0.5
MONTH	12.0	4.0	6.5	0.5	2.0	0	1.5	0	1.5	0	2.0	0

	APRIL		MAY			APRIL		MAY			APRIL		MAY	
DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN
1	3.0	1.0	---	---	11	3.5	1.0	5.0	4.0	21	---	---	5.5	4.5
2	2.0	1.0	---	---	12	3.5	1.0	5.0	4.5	22	---	---	7.0	5.5
3	3.0	0.5	4.5	---	13	3.0	1.0	4.5	3.5	23	---	---	8.0	6.0
4	3.5	1.0	4.0	3.0	14	3.0	1.5	4.0	3.0	24	---	---	8.0	7.0
5	3.5	1.0	3.5	2.0	15	3.5	1.5	4.5	3.5	25	---	---	8.0	6.5
6	3.0	1.0	3.5	3.0	16	3.0	1.5	4.0	3.5	26	---	---	8.0	6.5
7	2.0	1.0	4.0	3.0	17	3.0	1.5	5.0	3.5	27	---	---	8.0	7.0
8	1.5	1.0	4.0	3.0	18	---	1.5	5.5	4.5	28	---	---	9.5	8.0
9	1.5	1.0	4.5	3.5	19	---	---	5.5	5.0	29	---	---	9.0	8.0
10	3.5	1.0	4.5	3.5	20	---	---	5.0	4.5	30	---	---	8.0	6.5
										31	---	---	6.5	6.5
MONTH													9.5	2.0

12488500 AMERICAN RIVER NEAR NILE, WASH.

LOCATION.--Lat 46°58'39", long 121°10'05", in NW¼ sec.12, T.17 N., R.13 E., Yakima County, Snoqualmie National Forest, temperature recorder at gaging station on right bank, 300 ft upstream from Bumping River Road bridge, 4.9 miles downstream from Hall Creek, 16.0 miles northwest of Nile, and at mile 0.5.

DRAINAGE AREA.--78.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1964.
Water temperatures: October 1968 to May 1971 (discontinued).

EXTREMES.--October 1970 to May 1971:
Water temperatures: Maximum, 8.5°C Oct. 2, 3; minimum, freezing point on several days during November to March.

Period of record:
Water temperatures: Maximum, 15.5°C Aug. 14, 1969; minimum, freezing point on many days during winter periods.

REMARKS.--Prior to October 1968 sampling site 300 ft downstream.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO MAY 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	5.5	3.0	1.5	1.0	0	0	0	3.0	2.0	0	0
2	8.5	5.5	3.0	1.5	1.0	0	0	0	3.0	1.5	1.0	0
3	8.5	5.5	3.0	1.5	1.0	0	0	0	3.0	1.0	1.0	0
4	8.0	5.5	4.0	2.0	0	0	0	0	2.0	1.5	1.5	0
5	7.0	5.0	4.5	3.0	0.5	0	0	0	1.5	0.5	1.5	0
6	6.0	4.0	4.5	4.0	1.0	0.5	0	0	1.0	0	1.5	0
7	6.0	3.5	4.5	4.0	0.5	0.5	1.5	0	1.0	0	2.0	0
8	6.5	5.0	5.0	4.0	1.0	0	2.0	1.0	1.0	0	2.0	0
9	8.0	6.0	4.5	3.5	0.5	0	2.0	0.5	2.0	0.5	3.0	1.0
10	7.0	5.0	4.0	2.0	0.5	0	2.0	0.5	3.0	2.0	2.0	1.0
11	8.0	5.5	4.0	3.5	0.5	0	1.0	0.5	3.5	1.5	1.0	0.5
12	6.0	5.0	4.0	3.5	0	0	0.5	0	3.5	2.0	3.0	0.5
13	5.5	3.5	3.5	1.5	0.5	0	0	0	3.5	3.0	3.0	1.0
14	5.0	3.5	3.5	1.5	0.5	0	0.5	0	3.5	2.0	3.0	0.5
15	4.5	3.0	3.5	3.0	1.0	0	0	0	3.5	2.0	3.0	1.0
16	4.5	2.0	4.0	3.5	1.5	0.5	1.5	0	3.5	2.0	2.0	0
17	5.0	3.0	4.0	1.5	1.0	0	2.0	1.0	3.5	2.0	2.0	0
18	6.5	5.0	3.0	1.0	0	0	2.0	1.5	3.5	2.0	3.0	0
19	6.0	4.5	3.5	2.0	0	0	1.5	0.5	3.0	1.5	3.0	0
20	6.0	5.0	2.0	0.5	1.0	0	1.0	0.5	2.0	0.5	3.5	0.5
21	5.0	4.0	0.5	0	1.0	0	1.0	0.5	3.0	1.5	3.5	1.0
22	5.0	4.0	0.5	0	0	0	1.0	0.5	3.5	2.0	3.5	0.5
23	4.5	2.0	0	0	0	0	1.5	1.0	3.5	2.0	3.5	2.0
24	4.5	3.5	0	0	0	0	1.5	0.5	3.0	1.0	4.0	1.5
25	4.0	3.0	0.5	0	1.5	0	2.0	0.5	1.5	0.5	3.0	0.5
26	3.5	1.5	1.0	0	1.0	0	2.0	1.5	1.5	0.5	2.0	0
27	3.0	0.5	1.0	0.5	1.0	0	2.0	0.5	1.5	0	3.0	1.0
28	3.0	1.5	1.0	1.0	0.5	0	1.5	1.0	1.0	0	3.5	1.0
29	2.0	1.0	1.0	0	1.0	0	3.0	1.0	---	---	5.0	2.0
30	3.0	1.0	1.0	0.5	0.5	0	3.5	2.0	---	---	3.5	1.5
31	3.5	2.0	---	---	1.0	0	3.0	2.0	---	---	3.5	0.5
MONTH	8.5	0.5	5.0	0	1.5	0	3.5	0	3.5	0	5.0	0

	APRIL		MAY			APRIL		MAY			APRIL		MAY	
DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN	DAY	MAX	MIN	MAX	MIN
1	4.0	1.0	6.0	3.0	11	5.0	1.5	6.0	2.0	21	6.0	3.0	---	---
2	4.5	2.0	6.0	3.0	12	5.0	1.0	4.0	2.0	22	5.5	3.0	---	---
3	4.5	1.5	5.0	2.0	13	5.5	3.0	4.0	1.5	23	4.5	2.0	---	---
4	4.5	3.0	4.5	1.5	14	5.5	3.0	---	---	24	3.5	2.0	---	---
5	4.5	3.0	5.0	1.0	15	5.0	3.0	---	---	25	5.0	1.5	---	---
6	5.0	3.0	5.5	1.5	16	4.0	3.0	---	---	26	6.5	2.0	---	---
7	4.5	3.0	6.0	2.0	17	4.5	2.0	---	---	27	5.5	3.0	---	---
8	3.0	2.0	5.5	2.0	18	6.0	3.0	---	---	28	5.5	2.0	---	---
9	3.5	1.5	5.0	2.0	19	6.5	2.0	---	---	29	5.5	3.0	---	---
10	5.0	1.5	5.5	1.5	20	5.0	3.5	---	---	30	5.5	2.0	---	---
										31	---	---	---	---
MONTH											6.5	1.0	---	---

12500010 YAKIMA RIVER NEAR TERRACE HEIGHTS, WASH.

LOCATION.--Lat 46°36'21", long 120°28'27", in NW¼NE¼ sec.20, T.13 N., R.19 E., Yakima County, at Terrace Heights Way bridge 1.6 miles west of Terrace Heights and at mile 113.2.

DRAINAGE AREA.--3,250 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	* PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
10...	1320	1640	11	3.9	6.0	1.2	62	0	51
JAN.									
27...	1335	5220	12	4.4	5.7	1.9	63	0	52
FEB.									
08...	1500	3860	12	3.8	5.4	1.1	62	0	51
24...	1100	3460	13	5.0	5.4	.9	72	0	59
MAR.									
10...	1115	2540	12	4.4	5.8	1.4	68	0	56
24...	1305	2490	11	2.9	4.8	.9	63	0	52
APR.									
07...	1130	3590	12	4.1	4.8	.9	67	0	55
21...	1440	5840	9.8	2.8	4.0	1.2	49	0	40
MAY									
05...	1145	11800	--	--	--	--	--	--	--
19...	1115	4360	11	4.2	4.7	1.3	64	0	53
JUNE									
03...	1300	7830	9.4	3.6	3.6	.8	53	0	43
16...	1300	7850	7.2	3.1	2.6	.6	45	0	37
JULY									
07...	1210	3700	8.2	2.2	3.4	.8	30	8	38
21...	1140	6770	6.7	1.8	2.6	.6	36	0	30
AUG.									
04...	1200	3720	7.5	2.5	3.3	.8	44	0	36
18...	1120	3440	8.2	3.4	3.7	1.0	46	0	38
SEP.									
08...	1145	2640	9.9	4.3	4.0	1.0	63	0	52
22...	1245	2790	9.1	3.8	3.9	1.1	58	0	48

12500010 YAKIMA RIVER NEAR TERRACE HEIGHTS, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)
DEC.									
10...	4.6	2.3	.11	.010	.00	.11	.040	.040	44
JAN.									
27...	4.4	2.6	.49	.000	.18	.29	.110	.130	48
FEB.									
08...	4.4	2.1	.16	.000	.13	.27	.090	.100	46
24...	3.4	2.1	.24	.010	.04	.32	--	--	53
MAR.									
10...	9.2	2.4	1.3	.010	.12	.43	.030	.030	48
24...	5.3	1.9	.16	.000	.13	.32	--	.090	39
APR.									
07...	4.0	2.0	.25	.010	.05	.18	--	.120	47
21...	2.0	1.2	.17	.000	.00	.05	.080	.080	36
MAY									
05...	--	--	.28	.000	.06	.09	.030	.090	--
19...	3.3	1.9	.18	.010	.00	.20	.120	.150	45
JUNE									
03...	.0	1.1	.02	.000	.01	.14	.010	.020	38
16...	2.5	.9	.02	.000	.01	.05	.020	.030	31
JULY									
07...	2.5	1.2	.01	.000	.00	.09	.020	.030	30
21...	1.8	1.1	.64	.010	.06	.17	.020	--	24
AUG.									
04...	1.3	.2	.07	.010	.03	.06	.010	.060	29
18...	2.3	1.3	.08	.000	.07	.18	.010	.040	34
SEP.									
08...	2.0	1.7	.14	.000	.01	.24	.000	.030	42
22...	1.8	1.8	.15	.000	.01	.24	.010	.030	38

DATE	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.								
10...	0	--	7.9	2.0	--	2	14.6	200
JAN.								
27...	0	124	7.3	4.5	58	20	12.7	4000
FEB.								
08...	0	111	7.7	5.7	5	6	12.4	500
24...	0	140	7.7	4.6	19	7	12.4	600
MAR.								
10...	0	120	7.8	4.3	12	5	12.9	600
24...	0	109	7.8	5.9	17	8	12.1	640
APR.								
07...	0	109	7.9	8.6	31	15	11.6	400
21...	0	84	7.5	9.0	28	30	11.8	500
MAY								
05...	--	86	7.5	9.5	65	40	11.0	700
19...	0	116	7.6	11.0	19	10	10.7	600
JUNE								
03...	0	100	7.5	11.8	15	5	10.7	1200
16...	0	87	7.7	12.2	15	5	10.9	100
JULY								
07...	0	85	7.9	13.1	11	3	11.4	270
21...	0	89	8.1	18.9	14	5	9.2	1200
AUG.								
04...	0	100	7.9	18.4	16	3	9.7	1200
18...	0	99	7.8	16.0	22	2	10.2	3500
SEP.								
08...	0	105	7.8	14.5	12	3	10.1	1300
22...	0	108	7.7	12.6	12	3	10.8	600

12500440 WIDE HOLLOW CREEK NEAR YAKIMA, WASH.

LOCATION.--Lat 46°33'27", long 120°30'02", in SE¼SE¼ sec.6, T.12 N., R.19 E., Yakima County, 200 ft upstream from unnamed tributary from the north, 300 ft downstream from Northern Pacific Railway bridge and at mile 1.5.

DRAINAGE AREA.--64.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
10...	1230	--	.35	.010	.00	1.4	.220	.250
JAN.								
27...	1305	--	.66	.020	.17	1.4	.160	.280
FEB.								
10...	1435	--	.18	.010	.12	1.6	.300	.320
24...	1040	--	.31	--	--	1.7	--	--
MAR.								
10...	1100	--	.99	.020	.18	2.7	.180	.190
24...	1225	--	.12	.000	.09	1.5	--	.240
APR.								
07...	1110	--	.27	.010	.14	.88	--	.190
21...	1420	--	.16	.010	.04	.61	.150	.170
MAY								
05...	1045	--	.18	.000	.09	.66	.100	.200
19...	1100	--	.25	.010	.04	1.1	.230	.270
JUNE								
03...	1245	--	.02	.000	.01	.86	.040	.060
16...	1210	--	.06	.010	.01	1.3	.030	.050
JULY								
07...	1140	30	.02	.000	.00	1.4	.120	.150
21...	1115	27	.09	.030	.02	2.1	.170	.170
AUG.								
04...	1135	26	.09	.000	.02	1.8	.170	.170
18...	1100	30	.14	.010	.07	1.8	.010	.120
SEP.								
08...	1125	40	.19	.000	.03	2.2	.120	.180
22...	1215	39	.18	.000	.02	2.1	.080	.150

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
10...	--	--	7.7	--	--	--	--
JAN.							
27...	424	7.7	7.6	35	50	11.0	8000
FEB.							
10...	496	7.9	9.7	5	6	11.4	5000
24...	510	7.9	8.1	18	25	11.2	3000
MAR.							
10...	524	7.9	7.9	11	4	11.5	3500
24...	356	8.1	--	14	3	12.2	4000
APR.							
07...	261	8.0	9.3	27	10	12.1	4000
21...	250	8.0	11.1	25	5	11.7	3500
MAY							
05...	255	7.7	11.0	41	15	10.9	5000
19...	290	7.5	12.0	26	10	10.2	>16000
JUNE							
03...	270	7.6	13.1	33	15	9.7	50000
16...	341	7.8	13.7	21	3	10.6	25000
JULY							
07...	328	7.8	13.3	17	3	10.7	30000
21...	465	8.1	17.8	15	4	9.1	10000
AUG.							
04...	485	7.8	16.9	17	4	9.5	9000
18...	380	7.9	16.9	33	4	9.4	30000
SEP.							
08...	295	7.8	16.0	19	6	9.7	14000
22...	363	7.7	12.8	19	6	10.7	10000

12508990 YAKIMA RIVER AT MABTON, WASH.

LOCATION.--Lat 46°13'53", long 119°59'54", in SW¼SW¼ sec.30, T.9 N., R.23 E., Yakima County, at bridge on Mabton-Sunnyside road, 1.2 miles north of Mabton and at mile 59.8.

DRAINAGE AREA.--5,359 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
10...	0930	--	20	8.1	15	2.4	116	0	95
JAN.									
27...	1025	6370	17	7.0	11	2.4	97	0	80
FEB.									
10...	1020	5130	17	6.8	11	1.8	96	0	79
24...	0755	5090	17	6.6	11	1.7	98	0	80
MAR.									
10...	0855	3490	--	--	--	--	--	--	--
24...	0950	3630	18	6.3	12	2.0	108	0	89
APR.									
07...	0905	3940	17	6.4	10	4.5	98	0	80
21...	1010	8060	14	4.8	7.6	2.1	72	0	59
MAY									
05...	0825	15400	13	4.1	5.6	1.6	70	--	57
19...	0900	4870	17	6.3	11	2.2	95	--	78
JUNE									
03...	0940	7290	14	5.0	8.1	1.5	83	0	68
16...	0935	9200	12	4.5	6.2	1.3	69	0	57
JULY									
07...	0915	1950	24	8.9	16	2.6	134	0	110
21...	0900	4370	14	4.3	7.5	1.5	74	0	61
AUG.									
04...	0905	1120	27	10	18	3.3	155	0	127
18...	0855	1540	23	8.8	17	3.0	143	0	117
SEP.									
08...	0850	2150	26	11	19	3.4	153	0	126
22...	0935	2180	24	9.4	16	3.0	146	0	120

12508990 YAKIMA RIVER AT MABTON, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)
DEC.									
10...	14	5.4	.30	.040	.19	.59	.130	.140	84
JAN.									
27...	10	4.0	.45	.010	.19	.50	.140	.200	72
FEB.									
10...	9.2	4.0	.15	.010	.13	.47	.110	.160	71
24...	8.6	3.5	.21	.000	.04	.45	--	--	70
MAR.									
10...	--	--	.63	.010	.20	.95	.070	.080	--
24...	13	3.5	.19	.010	.12	.61	.070	.220	71
APR.									
07...	7.8	3.7	.16	.010	.12	.70	--	.160	69
21...	4.8	2.3	.21	.000	.02	--	.100	--	55
MAY									
05...	5.3	2.0	.39	.000	.12	.20	.050	.110	49
19...	9.0	3.9	.21	.010	.02	.66	.160	.190	68
JUNE									
03...	5.5	2.0	.02	.000	.01	.43	.020	.030	0
16...	6.8	1.5	.02	.010	.01	.25	.030	.040	48
JULY									
07...	16	4.6	.15	.020	.07	1.4	.080	.090	96
21...	6.0	2.2	.39	.050	.35	.76	.070	.080	53
AUG.									
04...	18	5.2	.14	.020	.09	1.4	.100	.130	110
18...	15	4.9	.18	.020	.17	1.1	.080	.100	94
SEP.									
08...	17	6.6	.19	.010	.04	2.4	.060	.120	110
22...	14	5.0	.16	.010	.04	1.3	.030	.090	99

DATE	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.								
10...	0	--	7.8	3.9	--	4	12.1	4000
JAN.								
27...	0	194	7.6	5.6	45	15	11.6	3000
FEB.								
10...	0	184	7.6	5.5	6	8	12.0	1000
24...	0	173	7.6	6.2	28	20	11.5	660
MAR.								
10...	--	198	7.7	5.5	17	20	11.8	500
24...	0	186	7.9	8.2	24	10	11.4	110
APR.								
07...	0	175	7.9	12.3	36	15	10.6	2000
21...	0	135	7.1	9.8	29	25	10.4	1500
MAY								
05...	0	112	7.5	12.5	73	40	9.3	2500
19...	0	180	7.5	13.5	27	7	9.3	2000
JUNE								
03...	0	145	7.5	14.1	16	20	9.5	2500
16...	0	124	7.6	14.7	16	10	9.8	1600
JULY								
07...	0	255	7.8	16.2	19	20	9.7	2500
21...	0	179	7.9	22.0	21	30	7.8	3500
AUG.								
04...	0	360	8.0	22.4	21	15	7.8	4400
18...	0	261	7.9	20.7	31	5	10.9	6500
SEP.								
08...	0	295	7.9	17.0	17	2	9.4	5000
22...	0	269	7.7	13.7	16	6	10.7	10000

12510500 YAKIMA RIVER AT KIONA, WASH.

LOCATION.--Lat 46°15'10", long 119°28'35", in SE¼NE¼ sec.19, T.9 N., R.27 E., Benton County, at highway bridge, 0.1 mile downstream from gaging station at Kiona, 3.7 miles downstream from Corral Canyon Creek, 5.1 miles downstream from intake of Kiona Canal, and at mile 29.8.

DRAINAGE AREA.--5,615 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1952 to September 1971.
Water temperatures: December 1952 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 674 micromhos Dec. 3; minimum daily, 121 micromhos May 13, 14.
Water temperatures: Maximum, 28.0°C Aug. 1; minimum, 0.5°C Jan. 4-6, 14, 15.

Period of record:
Specific conductance: Maximum daily, 674 micromhos Dec. 3, 1970; minimum daily, 99 micromhos Dec. 17, 1959.
Water temperatures: Maximum, 29.0°C July 18, 1960, July 12, 1961; minimum, freezing point on several days during winter months most years.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
10...	0820	2880	22	8.6	16	2.7	122	0	100
JAN.									
27...	0840	6130	18	7.5	12	2.9	103	0	84
FEB.									
10...	0815	5110	18	7.2	11	2.0	102	0	84
24...	0700	4870	18	6.4	10	1.7	98	0	80
MAR.									
10...	0755	3520	19	6.8	12	2.6	111	0	91
24...	0830	3300	20	7.5	11	2.2	107	0	88
APR.									
07...	0800	3730	--	--	--	--	--	--	--
21...	0855	6540	15	5.1	8.6	2.4	80	0	66
MAY									
05...	0710	13100	12	4.5	5.9	2.2	61	--	50
19...	0805	5030	--	--	--	--	--	--	--
JUNE									
03...	0800	7330	15	5.1	8.6	1.6	85	0	70
16...	0820	8410	13	4.9	6.9	1.4	73	0	60
JULY									
07...	0750	1990	28	1.0	18	3.1	155	0	127
21...	0755	4130	17	5.5	12	2.0	96	0	79
AUG.									
04...	0750	1260	30	11	19	3.6	165	0	135
18...	0800	1810	29	11	20	3.8	168	0	138
SEP.									
08...	0715	2470	32	11	21	4.0	166	0	136
22...	0810	2380	28	10	18	3.4	163	0	134

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
DEC.									
10...	15	6.1	.38	.040	.16	.68	.130	.160	91
JAN.									
27...	11	4.8	.41	.010	.23	.56	.130	.140	76
FEB.									
10...	11	3.9	.21	.010	.13	.52	.120	.170	75
24...	9.0	4.0	.22	.000	.03	.45	--	--	72
MAR.									
10...	11	4.7	.37	.010	.21	.95	.070	.080	76
24...	15	4.2	.22	.010	.09	.66	--	.150	81
APR.									
07...	--	--	--	--	--	--	--	--	--
21...	6.8	2.1	.26	.010	.03	.36	.100	.150	--
MAY									
05...	6.8	2.1	.39	.010	.12	.23	.050	.110	48
19...	--	--	--	.010	.04	.63	.150	.190	--
JUNE									
03...	6.5	2.3	.03	.000	.01	.47	.020	.040	58
16...	10	1.8	.05	.000	.01	.52	.050	.070	53
JULY									
07...	21	6.5	.20	.010	.00	1.3	.070	.140	110
21...	10	3.4	.09	.050	.08	.72	.080	.090	65
AUG.									
04...	210	4.9	.16	.000	.10	1.2	.080	.120	120
18...	20	6.5	.35	.020	.29	1.2	.090	.120	120
SEP.									
08...	22	7.2	.33	.010	.06	2.3	.080	.140	130
22...	18	6.0	.21	.010	.06	1.9	.040	.110	110

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.								
10...	0	--	7.9	3.9	--	3	12.0	27000
JAN.								
27...	0	210	7.6	4.9	47	20	12.0	>80000
FEB.								
10...	0	194	7.6	4.4	7	10	12.2	25000
24...	0	170	7.9	5.8	22	15	11.8	700
MAR.								
10...	0	201	7.8	5.3	15	15	12.0	6000
24...	0	206	7.9	8.2	37	7	11.1	6000
APR.								
07...	--	184	7.9	11.5	35	15	10.2	10000
21...	--	146	7.0	10.1	27	30	10.3	5000
MAY								
05...	0	118	7.6	12.1	71	50	9.7	5000
19...	--	178	7.4	13.0	30	25	9.9	12000
JUNE								
03...	0	162	7.6	13.3	19	35	9.7	7000
16...	0	135	7.7	14.5	21	20	10.0	16000
JULY								
07...	0	290	7.5	17.2	21	15	9.5	1700
21...	0	235	8.1	22.1	21	30	7.4	8000
AUG.								
04...	0	393	8.0	23.1	25	7	8.1	>16000
18...	0	347	7.1	20.8	35	4	8.2	55000
SEP.								
08...	0	323	7.7	17.5	26	15	8.5	25000
22...	0	288	7.2	13.3	19	7	10.2	>80000

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TEMP-ERATURE (DEG C)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)
OCT.									
15...	12.0	.00	.00	.00	.00	.00	.00	.00	.00
NOV.									
24...	3.0	.00	.00	.00	.00	.00	.00	.00	.00
DEC.									
29...	2.0	.00	.00	.00	.00	.00	.00	.00	.00
JAN., 1971									
22...	1.0	.00	.00	.00	.00	.00	.00	.00	.00
FEB.									
03...	4.0	.00	.00	.00	.00	.00	.00	.00	.00
AUG.									
06...	>28.5	.00	.00	.00	.02	.01	.01	.00	.00
SEP.									
23...	16.5	.00	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	PARA-THION (UG/L)	METHYL PARA-THION (UG/L)	MALA-THION (UG/L)	DI-AZINON (UG/L)
OCT.									
15...	.00	.00	.04	.00	.00	.00	.00	.00	.00
NOV.									
24...	.00	.00	.00	.00	.00	.00	.00	.00	.00
DEC.									
29...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN., 1971									
22...	.00	.00	.06	.01	.00	.00	.00	.00	.00
FEB.									
03...	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG.									
06...	.00	.00	.18	.00	.00	.00	.00	.00	.00
SEP.									
23...	.00	.00	--	--	--	.00	.00	.00	.00

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	358	368	276	332	149	204	190	124	136	210	310	319
2	359	367	281	307	138	201	188	127	149	295	331	311
3	360	369	674	309	141	---	192	126	153	302	340	294
4	372	370	292	328	154	200	191	122	162	289	335	285
5	381	376	---	337	171	198	199	122	156	294	339	286
6	384	378	302	354	171	199	195	125	145	297	354	311
7	388	379	306	354	---	204	198	130	144	297	352	344
8	388	377	303	348	188	205	193	135	141	295	340	333
9	385	376	261	334	200	199	169	129	137	293	327	330
10	372	379	253	294	---	210	179	122	164	288	319	322
11	366	375	256	231	216	213	175	---	158	302	348	321
12	360	366	278	216	199	215	166	128	140	280	353	322
13	360	366	281	223	182	210	172	121	138	235	364	317
14	365	365	282	234	174	215	180	121	136	236	373	310
15	363	362	289	252	166	217	181	130	135	248	366	314
16	364	369	298	252	156	213	170	148	137	264	355	315
17	342	373	300	190	151	---	145	157	142	270	345	316
18	339	373	299	244	157	226	136	169	143	236	310	311
19	324	369	295	180	161	---	132	181	142	191	304	312
20	328	363	300	---	167	230	135	199	161	191	311	336
21	325	342	306	177	172	223	148	209	163	182	326	308
22	319	---	---	186	178	214	142	204	161	168	341	304
23	345	---	311	204	178	212	131	205	161	171	348	296
24	332	342	307	---	186	215	128	207	161	180	339	301
25	348	351	---	212	192	207	133	184	149	191	313	298
26	350	356	319	207	193	198	127	160	132	203	309	301
27	352	519	325	206	193	202	128	---	135	221	300	301
28	357	261	---	197	197	182	129	138	139	237	306	296
29	367	264	320	191	---	190	124	124	174	258	316	296
30	366	273	---	200	---	196	124	126	179	286	318	301
31	369	---	326	202	---	187	---	126	---	307	315	---
MONTH	358	362	309	252	174	207	160	148	149	249	332	310
YEAR	252											

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	8.0	4.5	3.0	4.5	3.0	8.0	14.0	11.5	18.0	28.0	16.0
2	14.5	8.5	4.5	1.5	4.5	3.5	9.0	11.5	12.0	20.0	25.0	15.0
3	14.5	9.0	4.5	1.0	4.5	---	9.5	13.0	13.5	20.0	24.5	14.5
4	15.0	8.0	3.5	0.5	4.0	4.0	10.0	13.0	14.0	20.0	24.0	20.0
5	14.5	8.0	3.5	0.5	3.5	3.0	10.0	13.0	14.5	18.5	24.0	20.0
6	13.0	8.0	3.5	0.5	3.0	3.5	12.0	---	15.0	17.0	24.0	19.0
7	11.0	9.0	6.0	1.0	---	3.5	11.5	11.5	15.0	18.0	24.5	19.5
8	14.5	9.5	5.0	2.0	2.0	4.0	11.5	13.0	14.5	19.0	24.5	16.5
9	11.5	10.0	5.0	4.0	2.0	4.5	8.5	13.5	14.0	19.5	25.0	18.0
10	12.0	8.5	4.0	4.0	---	5.5	11.5	13.0	15.5	18.0	24.5	19.5
11	11.0	8.5	4.0	3.0	5.0	5.0	14.0	---	14.0	18.0	24.0	20.0
12	12.0	9.0	3.5	1.5	6.0	5.0	14.5	18.5	14.5	18.5	24.0	18.0
13	13.0	8.5	1.5	1.0	5.0	5.5	9.5	13.5	14.5	18.5	24.0	16.5
14	11.5	7.0	1.5	0.5	6.5	6.5	9.0	11.5	14.5	20.0	23.0	18.0
15	10.5	8.0	3.0	0.5	6.5	6.0	14.0	11.5	14.5	21.0	22.0	15.0
16	10.0	9.0	3.5	1.0	6.0	6.0	---	11.0	14.5	22.0	21.5	15.0
17	10.0	6.5	3.5	4.0	5.5	---	8.5	10.5	14.5	22.0	21.0	15.5
18	10.5	8.0	1.0	4.0	6.0	6.0	8.5	11.5	14.5	25.5	21.5	15.5
19	10.5	8.0	2.0	4.5	6.0	7.0	9.0	13.5	15.0	25.5	22.0	14.5
20	11.0	7.0	2.0	---	5.5	8.0	10.0	13.5	16.5	25.5	23.0	14.0
21	10.0	1.5	3.0	3.5	4.5	8.0	10.0	13.5	20.0	24.5	23.5	15.0
22	9.0	5.5	9.0	3.5	4.5	8.5	9.5	15.0	18.5	25.5	20.5	13.5
23	9.5	5.5	3.0	4.5	4.5	9.0	9.5	16.5	18.5	25.5	20.0	13.5
24	10.0	5.5	1.0	---	6.5	8.5	8.5	18.5	20.0	25.5	19.0	15.5
25	9.5	4.5	5.5	4.5	4.5	8.0	9.0	17.0	15.0	23.5	21.0	16.0
26	9.5	4.5	1.0	5.0	4.0	6.5	9.0	16.0	14.5	24.0	19.5	15.5
27	9.5	4.5	3.0	4.5	3.5	7.0	10.5	---	18.5	23.5	20.0	11.0
28	8.5	4.0	3.5	4.5	3.0	8.5	10.5	15.5	14.5	24.0	20.5	11.5
29	8.0	4.0	8.5	4.5	---	9.0	10.5	13.0	15.5	24.0	23.0	11.5
30	8.0	4.0	3.5	4.5	---	10.0	10.5	13.5	16.5	24.5	20.5	11.5
31	11.5	---	4.0	4.0	---	---	---	11.5	---	27.0	19.0	---
MONTH	11.0	7.0	3.5	3.0	4.5	6.0	10.0	13.5	15.0	22.0	22.5	16.0

SNAKE RIVER MAIN STEM

13343500 SNAKE RIVER NEAR CLARKSTON, WASH.
(International hydrologic decade station)

LOCATION.--Lat 46°25'30", long 117°10'30", in SE¼SE¼ sec.21, T.11 N., R.45 E., Asotin County, at gaging station 7 miles downstream from Clarkston, and at mile 132.9.

DRAINAGE AREA.--103,200 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: November 1951 to February 1956, October 1966 to September 1971.

REMARKS.--Each analyses presented below represents a composit of four samples taken at cableway cross section.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
OCT.								
28...	0930	29500	18	28	11	28	3.5	146
DEC.								
09...	1020	50200	20	27	10	23	3.1	133
JAN.								
17...	1640	60800	22	25	9.2	19	3.3	114
MAR.								
03...	--	--	23	24	8.3	18	3.0	119
APR.								
28...	1315	101000	5.8	16	4.7	8.7	2.3	67
JUNE								
18...	1045	161000	12	10	2.5	6.0	1.5	47
AUG.								
11...	1200	26200	12	18	5.1	12	1.8	87

DATE	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRITE (N) (MG/L)	NITRATE (N) (MG/L)	NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT.									
28...	0	120	40	13	.4	--	.34	--	.030
DEC.									
09...	0	109	34	11	.5	--	.38	--	.060
JAN.									
17...	0	93	29	12	.4	--	.77	--	--
MAR.									
03...	0	98	24	10	.7	--	--	.50	.070
APR.									
28...	0	55	12	4.9	.3	--	--	.90	--
JUNE									
18...	0	39	8.0	2.4	.2	.000	.21	.21	.080
AUG.									
11...	0	71	16	4.8	.3	--	--	.05	--

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.								
28...	222	215	115	0	357	8.1	--	10
DEC.								
09...	195	195	109	0	323	7.9	5.0	5
JAN.								
17...	208	179	101	7	290	7.7	2.8	20
MAR.								
03...	--	170	94	0	262	7.3	--	--
APR.								
28...	--	92	59	4	149	7.5	9.0	--
JUNE								
18...	--	67	35	0	102	7.4	15.5	--
AUG.								
11...	--	113	66	0	178	7.4	--	--

13349210 PALOUSE RIVER BELOW SOUTH FORK, AT COLFAX, WASH.

LOCATION.--Lat 46°53'23", long 117°22'09", in NW¼SW¼ sec.11, T.16 N., R.43 E., Whitman County, at gaging station 750 ft downstream from South Fork, 0.3 mile upstream from bridge on U.S. Highway 295 and at mile 89.3.

DRAINAGE AREA.--796 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.								
09...	1000	152	.63	.030	.37	2.1	.130	.220
JAN.								
26...	1010	1520	.78	.020	--	4.5	.080	.090
FEB.								
09...	1000	338	.29	.000	.19	.32	.130	.160
23...	1020	478	.28	--	--	1.4	--	--
MAR.								
09...	1045	422	1.4	.010	.30	2.1	.080	.130
23...	0945	1070	.34	--	--	--	--	.180
APR.								
06...	1015	670	.25	.010	.16	1.4	--	.190
20...	0950	430	.19	.000	.06	.41	.110	.140
MAY								
04...	0930	915	.30	.000	.08	.07	.030	.090
18...	0955	338	.35	.010	.05	.23	.110	.140
JUNE								
02...	0945	321	.10	--	--	--	--	.070
15...	0920	900	.04	.010	.02	.27	.070	.080
JULY								
06...	0915	83	.09	.000	.02	.11	.060	.070
20...	0955	37	.26	.020	.26	.25	.130	.140
AUG.								
03...	1005	16	.14	.000	.11	.14	.060	.080
17...	1005	7.5	.31	.010	.27	.13	.090	.090
SEP.								
07...	1000	35	.16	.000	.16	.06	.020	.080
21...	0950	22	.19	.000	.05	.21	.030	.060

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.							
09...	--	7.6	1.5	--	40	12.8	2000
JAN.							
26...	115	7.0	3.1	--	200	12.0	30000
FEB.							
09...	57	7.1	.5	23	15	13.1	<1000
23...	78	7.4	2.9	93	30	12.5	700
MAR.							
09...	101	7.4	3.1	89	25	12.4	1500
23...	104	7.4	5.0	189	100	11.9	2000
APR.							
06...	58	7.3	8.8	82	20	10.8	4000
20...	56	7.5	8.3	66	15	11.3	1200
MAY							
04...	36	7.4	11.2	51	20	10.0	4000
18...	54	7.7	8.9	73	20	12.1	2000
JUNE							
02...	79	7.3	10.8	76	70	9.4	30000
15...	74	7.5	13.3	160	45	9.5	5000
JULY							
06...	75	7.6	15.4	37	4	10.0	1000
20...	143	8.2	25.0	44	2	8.5	1500
AUG.							
03...	150	8.5	24.8	40	4	8.5	4000
17...	132	8.3	18.8	43	3	10.0	2000
SEP.							
07...	100	8.0	14.6	44	3	10.0	1300
21...	135	7.9	10.5	52	2	10.8	1000

13349400 PINE CREEK AT PINE CITY, WASH.

LOCATION.--Lat 47°12'24", long 117°30'14", on line between NW¼ and NE¼ sec.27, T.20 N., R.42 E., Whitman County, temperature recorder at gaging station on right bank, 1.0 mile east of Pine City, and 2.3 miles west of Malden.

DRAINAGE AREA.--302 sq mi.

PERIOD OF RECORD.--Water temperatures: November 1969 to June 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures: Maximum, 23.0°C May 27-28; minimum, freezing point on several days during December to February.

Period of record:
Water temperatures: Maximum, 24.5°C June 23, 26, July 4, 1970; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	10.0	6.0	3.5	3.0	1.5	0.5	0	7.0	5.5	3.0	1.5
2	13.5	9.5	6.0	4.0	3.0	1.5	0.5	0	6.5	4.5	2.0	1.5
3	13.5	10.0	6.0	4.0	1.5	1.0	0.5	0	5.0	3.5	3.0	1.5
4	13.5	10.0	6.0	4.0	1.0	0.5	0.5	0	3.5	2.0	3.0	1.0
5	12.0	10.0	6.5	5.5	1.5	1.0	0.5	0	2.0	0.5	3.0	1.0
6	10.0	9.0	7.0	5.5	3.0	1.5	0.5	0.5	1.0	0.5	2.0	0.5
7	9.0	8.0	6.5	5.5	4.0	3.0	0.5	0.5	1.5	0.5	2.0	1.5
8	9.0	8.0	6.5	5.5	3.5	2.0	0.5	0	1.5	0	3.5	1.0
9	9.5	8.5	7.0	6.0	2.0	0.5	0	0	1.5	0.5	3.5	2.0
10	9.5	7.0	6.0	4.5	1.0	0.5	0	0	1.0	0.5	3.5	3.0
11	11.0	8.5	6.0	5.5	2.0	1.0	0	0	3.0	0.5	3.0	0.5
12	11.0	8.5	6.0	5.5	1.0	0.5	0	0	5.0	2.0	3.5	1.5
13	10.0	6.5	6.0	4.5	1.0	0.5	0	0	6.0	3.5	4.0	2.0
14	9.0	6.0	5.5	4.0	1.5	1.0	0	0	6.0	4.5	3.5	1.5
15	9.0	5.5	6.5	5.0	2.0	1.0	0	0	6.0	4.5	3.5	1.5
16	9.0	5.5	7.0	6.0	2.0	1.5	0.5	0	5.5	3.5	3.5	1.5
17	9.0	5.5	6.0	5.5	2.0	1.0	1.5	0.5	5.0	3.5	5.5	1.5
18	9.5	7.0	6.0	5.0	1.0	0.5	2.0	1.0	4.5	3.5	6.0	2.0
19	10.0	8.0	5.5	4.5	1.5	1.0	4.0	2.0	4.5	3.5	8.0	3.0
20	9.5	8.0	4.5	3.0	1.0	0.5	4.0	3.0	3.5	1.0	8.0	4.0
21	9.0	6.5	3.0	1.0	1.0	0.5	4.0	2.0	1.0	0	8.0	4.0
22	8.5	6.5	1.5	1.0	1.0	0	4.0	3.5	0.5	0	6.0	4.5
23	9.0	7.0	1.0	1.0	1.0	1.0	3.5	3.5	0.5	0	6.0	5.0
24	8.0	6.5	3.5	1.0	1.0	0.5	4.5	3.5	1.0	0.5	7.0	5.5
25	6.5	5.5	3.0	1.5	1.0	1.0	4.0	2.0	1.0	0.5	8.0	5.5
26	6.0	4.0	2.0	1.5	1.0	1.0	3.5	1.5	3.0	1.0	8.5	6.0
27	---	---	3.0	1.0	1.0	1.0	3.5	2.0	3.0	1.5	6.5	4.5
28	---	---	2.0	1.5	1.5	1.0	3.5	2.0	3.0	1.5	6.0	4.5
29	6.0	---	3.5	2.0	1.5	1.0	3.5	2.0	---	---	7.0	4.0
30	6.0	3.5	3.5	3.0	1.5	0	6.0	3.5	---	---	8.0	5.5
31	5.5	3.5	---	---	0.5	0	8.5	6.0	---	---	8.0	4.5
MONTH	13.5	3.5	7.0	1.0	4.0	0	8.5	0	7.0	0	8.5	0.5

13349400 PINE CREEK AT PINE CITY, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

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

13351000 PALOUSE RIVER AT HOOPER, WASH.

LOCATION.--Lat 46°45'30", long 118°08'50", in NE¼SE¼ sec.27, T.15 N., R.37 E., Whitman County, at State Highway 26 bridge at Hooper, 150 ft upstream from gaging station, 0.4 mile upstream from Cow Creek, and at mile 19.6.

DRAINAGE AREA.--2,500 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1969, December 1970 to September 1971 (discontinued).
Water temperatures: October 1961 to September 1971.
Sediment records: October 1961 to September 1971.

EXTREMES, 1970-71:
Water temperatures: Minimum, freezing point on several days during February.
Sediment concentrations: Maximum daily, 29,500 mg/l Jan. 17; minimum daily, 9 mg/l Oct. 31.
Sediment loads: Maximum daily, 599,000 tons Jan. 17; minimum daily, 1.70 tons Oct. 6.

Period of record:
Water temperatures: Maximum (1961-65, 66-68), 30.0°C July 12, 1964; minimum (1961-71), freezing point on several days in winter months during some years.
Sediment concentrations: Maximum daily, 46,000 mg/l Feb. 5, 1963; minimum daily, no flow Aug. 3-6, 10-16, Aug. 30 to Sept. 3, 1968.
Sediment loads: Maximum daily, 2,110,000 tons Feb. 5, 1963; minimum daily, no flow Aug. 3-6, 10-16, Aug. 30 to Sept. 3, 1968.

REMARKS.--Dissolved oxygen, Ph, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET: S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	METHOD OF ANALYSIS
JAN. 19.....	1515	5.0	3110	1740	14600	41	41	47	63	79	100	PWC

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
DEC.								
08...	1620	227	.62	.030	.16	1.6	.310	.420
JAN.								
25...	1610	1690	.82	.020	--	4.1	.160	.180
FEB.								
08...	1410	564	.41	.000	.31	1.6	.230	.290
22...	1410	822	.35	--	--	2.7	--	--
MAR.								
08...	1435	515	1.1	.030	.33	3.8	.190	.250
22...	1400	1340	.53	.020	.15	5.4	--	.200
APR.								
05...	1330	995	.37	.030	.29	2.8	--	.190
19...	1345	866	.21	.020	.02	1.8	.160	.170
MAY								
03...	1250	765	.17	.010	.05	1.0	.080	.150
17...	1410	479	.30	.010	.00	.66	.120	.130
JUNE								
01...	1500	328	.08	.000	.02	.93	.050	.080
14...	1500	1390	.07	.020	.02	1.1	.080	.100
JULY								
05...	1300	154	.08	.000	.03	.63	.100	.120
19...	1450	91	.18	.010	.07	.17	.110	.170
AUG.								
02...	1425	45	.21	.010	.08	.00	.130	.220
16...	1400	26	.70	.000	.44	.14	.120	.350
SEP.								
06...	1500	63	1.1	.130	.47	3.7	.180	.590
20...	1425	59	.50	.010	.12	2.8	.190	.380

13351000 PALOUSE RIVER AT HOOPER, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG. C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.							
08...	--	7.9	4.4	--	25	12.2	--
JAN.							
25...	216	7.5	4.5	35	80	12.3	20000
FEB.							
08...	190	7.7	2.4	20	30	13.4	1000
22...	175	7.7	4.0	100	40	12.5	1200
MAR.							
08...	226	7.7	5.2	70	30	12.5	1000
22...	210	7.8	7.0	195	170	11.5	4000
APR.							
05...	171	7.2	11.7	100	35	10.9	420
19...	150	7.8	10.9	70	20	11.2	1000
MAY							
03...	146	7.9	17.9	23	20	10.2	1000
17...	160	7.6	11.4	47	15	11.7	200
JUNE							
01...	204	8.3	15.2	45	9	10.6	300
14...	185	8.1	17.8	69	45	9.8	--
JULY							
05...	238	8.8	19.4	32	8	11.6	200
19...	315	8.3	29.5	44	15	9.2	100
AUG.							
02...	400	8.8	27.1	29	10	12.1	500
16...	345	8.9	24.3	50	20	9.5	500
SEP.							
06...	395	8.0	18.8	135	130	8.2	20000
20...	335	8.1	15.7	44	35	10.2	1300

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	---	---	5.0	0.5	6.0	---	---	---	---	---
2	13.0	---	3.0	---	5.0	---	6.5	---	13.5	18.0	27.0	---
3	---	---	---	0.5	---	1.5	---	13.5	13.5	---	---	---
4	---	---	---	0.5	3.5	---	6.5	---	12.0	23.0	---	16.0
5	---	---	1.5	1.0	---	3.5	---	12.0	13.0	---	23.5	---
6	10.5	6.5	---	---	0.0	---	10.5	---	---	18.0	---	18.5
7	---	---	5.5	0.5	1.0	3.5	---	12.0	16.5	---	---	20.0
8	---	---	---	1.0	---	---	9.0	---	---	---	---	14.5
9	10.0	8.5	---	2.0	0.0	3.0	9.0	---	16.5	20.5	23.5	15.0
10	---	---	3.0	2.0	---	---	7.0	15.0	---	---	---	15.5
11	---	---	---	3.0	4.0	---	5.5	---	16.0	---	24.0	16.5
12	11.0	8.0	---	1.5	6.5	5.5	8.5	18.0	---	16.5	21.5	---
13	---	---	0.5	1.0	8.0	5.0	8.0	---	19.0	---	---	15.0
14	11.5	---	---	1.0	5.5	5.0	---	14.0	15.5	19.0	---	---
15	---	7.0	---	2.0	---	2.0	8.5	---	15.5	---	---	11.5
16	---	---	3.0	1.5	4.0	1.5	---	---	15.5	22.0	21.0	---
17	---	---	---	3.0	4.0	3.0	8.5	13.5	---	---	---	---
18	11.5	6.0	---	4.0	6.0	3.5	---	---	---	30.0	---	9.0
19	15.0	---	1.5	6.0	5.0	4.5	5.5	13.5	18.0	---	19.0	---
20	---	5.0	---	4.0	2.0	4.5	---	---	---	24.5	---	13.5
21	9.0	---	1.5	3.0	3.0	5.0	5.0	13.0	19.5	---	---	---
22	11.0	---	---	1.5	---	5.5	---	---	---	---	---	10.5
23	9.5	---	---	1.5	3.0	5.5	9.5	18.0	21.5	23.0	14.5	---
24	---	6.0	1.0	4.0	---	6.0	---	---	---	---	---	---
25	10.0	---	---	3.0	1.0	6.0	8.0	19.0	20.0	---	17.0	14.0
26	---	---	---	4.5	---	7.0	8.5	---	---	25.0	---	---
27	---	3.0	0.5	4.0	1.0	6.0	10.5	20.5	---	---	---	---
28	5.0	---	---	3.5	---	6.0	---	---	16.5	---	20.5	11.0
29	---	---	1.5	4.0	---	6.0	---	20.0	---	---	---	---
30	9.0	3.0	---	7.0	---	6.5	10.0	---	17.0	21.0	---	---
31	5.0	---	3.0	8.5	---	6.5	---	14.0	---	---	---	---
MONTH	---	---	---	3.5	---	4.5	---	---	---	---	---	---

13351000 PALOUSE RIVER AT HOOPER, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	44	18	2.1	98	10	2.6	210	48	27
2	48	21	2.7	91	12	2.9	212	56	32
3	48	19	2.5	90	14	3.4	217	50	29
4	47	17	2.2	88	14	3.3	215	43	25
5	47	15	1.9	87	14	3.3	192	36	19
6	48	13	1.7	91	14	3.4	171	36	17
7	50	13	1.8	90	18	4.4	192	36	19
8	57	12	1.8	90	22	5.3	224	39	24
9	59	12	1.9	90	25	6.1	286	42	32
10	61	13	2.1	90	22	5.3	271	44	32
11	69	13	2.4	101	20	5.5	250	46	31
12	72	14	2.7	103	18	5.0	222	48	29
13	84	12	2.7	106	20	5.7	188	50	25
14	87	10	2.3	119	22	7.1	175	48	23
15	96	10	2.6	130	23	8.1	192	46	24
16	84	10	2.3	156	24	10	186	45	23
17	81	11	2.4	168	24	11	192	40	21
18	81	11	2.4	158	25	11	177	35	17
19	79	11	2.3	152	24	9.8	152	30	12
20	79	10	2.1	177	24	11	154	28	12
21	75	10	2.0	175	21	9.9	148	26	10
22	82	13	2.9	142	18	6.9	110	21	6.2
23	85	16	3.7	125	15	5.1	98	16	4.2
24	88	13	3.1	130	12	4.2	108	11	3.2
25	96	10	2.6	156	18	7.6	120	12	3.9
26	101	11	3.0	177	24	11	120	13	4.2
27	106	11	3.1	247	30	20	142	14	5.4
28	119	12	3.9	292	33	26	154	17	7.1
29	121	11	3.6	224	36	22	166	20	9.0
30	105	10	2.8	219	40	24	175	20	9.5
31	103	9	2.5	--	--	--	588	4610	7320
TOTAL	2402	--	78.1	4162	--	260.9	6007	--	7855.7

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	499	3400	4580	2080	606	3400	640	122	211
2	262	1800	1270	2090	460	2600	582	120	189
3	192	850	441	1710	240	1110	527	89	127
4	173	681	318	1350	156	569	531	80	115
5	158	478	204	1160	100	313	555	73	109
6	152	250	103	953	79	203	555	65	97
7	150	126	51	765	92	190	511	58	80
8	200	385	208	655	104	184	531	65	93
9	2720	24900	183000	636	103	177	604	85	139
10	2750	13300	98800	973	4870	12800	690	90	168
11	1310	3840	13600	2680	7090	51300	1820	3050	15000
12	947	1590	4070	2360	2710	17300	3180	4880	41900
13	675	600	1090	1900	1000	5130	3370	3100	28200
14	515	225	313	1720	541	2510	2520	1480	10100
15	2010	11800	63900	1630	340	1500	2060	840	4670
16	6300	13000	221000	1550	262	1100	1820	660	3240
17	7530	29500	599000	1410	219	834	1620	495	2170
18	4260	6600	75900	1210	157	513	1410	378	1440
19	3590	4600	44600	1080	110	321	1340	345	1250
20	5270	18100	258000	1070	93	269	1370	465	1720
21	3900	4000	42100	941	108	274	1430	610	2360
22	2250	1630	9900	839	120	272	1320	500	1780
23	1570	780	3310	795	112	240	1400	460	1740
24	1490	440	1770	765	130	269	1550	520	2180
25	1680	620	2810	888	1000	2400	1800	760	3690
26	1870	830	4190	911	1300	3200	2060	1980	11000
27	2270	1620	9930	760	760	1560	2620	4020	28400
28	3030	730	5970	695	750	1410	2290	1400	8660
29	1570	339	1440	--	--	--	1820	502	2470
30	1340	264	955	--	--	--	1590	337	1450
31	1270	246	844	--	--	--	1510	236	962
TOTAL	61903	--	1653667	35576	--	111948	45626	--	175710

13351000 PALOUSE RIVER AT HOOPER, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1410	200	761	860	66	153	--	--	--
2	1240	181	606	790	61	130	370	34	34
3	1150	170	528	780	56	118	1190	55	177
4	1060	125	358	850	62	142	1530	810	3350
5	1010	120	327	941	68	173	1410	315	1200
6	965	118	307	917	58	144	1280	190	657
7	1010	140	382	790	47	100	1000	182	491
8	1260	212	721	685	44	81	839	160	362
9	1500	280	1130	604	41	67	745	125	251
10	1380	185	689	586	38	60	655	110	195
11	1480	196	783	543	33	48	591	112	179
12	1370	164	607	499	28	38	627	140	237
13	1160	112	351	468	30	38	618	115	192
14	1010	95	259	475	31	40	1130	711	2170
15	905	82	200	519	25	35	1180	732	2330
16	861	110	256	472	19	24	872	310	730
17	872	112	264	475	13	17	720	160	311
18	872	85	200	487	20	26	622	120	202
19	861	53	123	472	28	36	555	120	180
20	765	65	134	483	36	47	523	120	169
21	715	81	156	568	44	67	491	87	115
22	705	70	133	586	40	63	426	75	86
23	735	55	109	523	36	51	384	69	72
24	760	40	82	468	36	45	343	65	60
25	983	87	231	430	35	41	325	66	58
26	1040	89	250	402	34	37	310	60	50
27	1070	110	318	380	34	35	292	55	43
28	983	100	265	352	32	30	301	44	36
29	923	80	199	322	30	26	250	40	27
30	900	71	173	295	26	21	237	37	24
31	--	--	--	313	22	19	--	--	--
TOTAL	30955	--	10902	17335	--	1952	19816	--	13988

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	224	38	23	45	39	4.7	95	70	18
2	203	38	21	44	36	4.3	72	48	9.3
3	190	32	16	45	38	4.6	77	55	11
4	173	26	12	37	40	4.0	69	58	11
5	162	29	13	37	42	4.2	65	60	11
6	158	32	14	37	44	4.4	63	134	23
7	142	30	12	40	47	5.1	98	414	110
8	138	28	10	43	50	5.8	87	475	112
9	125	26	8.8	48	52	6.7	74	370	74
10	132	30	11	37	42	4.2	63	256	44
11	146	34	13	34	33	3.0	56	180	27
12	162	38	17	29	52	4.1	57	160	25
13	190	38	19	27	51	3.7	55	153	23
14	168	38	17	23	50	3.1	51	130	18
15	132	40	14	23	50	3.1	51	100	14
16	123	42	14	23	49	3.0	55	95	14
17	110	37	11	20	51	2.8	50	90	12
18	98	32	8.5	20	53	2.9	49	84	11
19	93	32	8.0	18	55	2.7	51	77	11
20	87	32	7.5	17	58	2.7	59	70	11
21	88	32	7.6	18	62	3.0	63	76	13
22	69	32	6.0	16	65	2.8	60	82	13
23	63	32	5.4	13	68	2.4	59	77	12
24	58	33	5.2	15	60	2.4	57	72	11
25	60	33	5.3	18	52	2.5	55	68	10
26	63	34	5.8	21	51	2.9	56	59	8.9
27	57	36	5.5	23	51	3.2	57	50	7.7
28	58	38	6.0	21	50	2.8	58	40	6.3
29	54	40	5.8	23	48	3.0	59	40	6.4
30	44	42	5.0	29	46	3.6	60	40	6.5
31	--	--	--	31	44	3.7	--	--	--
TOTAL	3570	--	327.4	875	--	111.4	1881	--	684.1

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 230108
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 1977484.6

14015550 WALLA WALLA RIVER NEAR LOWDEN, WASH.

LOCATION.--Lat 46°02'53", long 118°33'14", in NW¼NW¼ sec.34, T.7 N., R.34 E., Walla Walla County, at bridge on McDonald Road 1.4 miles southeast of school in Lowden and at mile 29.0.

DRAINAGE AREA.--429 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
09...	1500	--	8.4	3.2	4.9	2.3	48	0	39
JAN.									
26...	1430	--	7.5	3.0	4.4	2.2	43	0	35
FEB.									
09...	1415	--	8.9	3.5	5.3	2.3	51	0	42
23...	1425	--	8.5	3.5	5.2	2.2	51	0	42
MAR.									
09...	1540	--	10	4.4	7.0	2.8	66	0	54
23...	1310	--	8.6	3.4	4.9	2.2	46	0	38
APR.									
06...	1425	--	8.2	3.4	5.8	3.0	52	0	43
20...	1430	--	9.0	3.1	5.6	3.1	49	0	40
MAY									
18...	1445	--	9.0	3.5	6.4	3.2	54	0	44
JUNE									
02...	1405	--	10	3.6	6.4	4.3	65	0	53
15...	1330	--	8.5	3.5	7.4	2.9	53	0	43
JULY									
06...	1415	45	25	10	32	6.9	130	0	107
20...	1440	30	32	12	70	14	160	0	131
AUG.									
03...	1410	25	26	11	24	6.8	147	0	121
17...	1440	60	25	10	22	6.6	149	0	122
SEP.									
07...	1400	170	18	7.5	14	5.0	113	0	93
21...	1350	180	18	7.1	13	4.5	114	0	94

140155550 WALLA WALLA RIVER NEAR LOWDEN, WASH.--Continued

CHEMICAL ANALYSES, DECEMBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
DEC.									
09...	2.6	2.4	.23	.020	.02	.34	.130	.140	34
JAN.									
26...	4.6	2.1	.29	.020	.16	.52	.110	.310	31
FEB.									
09...	3.4	2.6	.25	.000	.17	.61	.160	.180	37
23...	3.2	2.6	.18	.000	.02	.52	--	--	36
MAR.									
09...	4.5	3.7	1.7	.010	.16	1.0	.140	.150	43
23...	5.8	2.0	.17	.000	.09	.66	--	.250	35
APR.									
06...	5.0	2.9	.27	.010	.19	.66	--	.230	34
20...	2.3	2.4	.09	.010	.00	.38	.160	.180	35
MAY									
18...	3.3	4.2	.23	.010	.02	.38	.230	.240	37
JUNE									
02...	3.3	3.7	.05	.010	.02	.81	.030	.050	40
15...	1.0	6.2	.03	.000	.02	.25	.030	.050	36
JULY									
06...	8.3	49	.19	.040	.13	.20	.180	.280	100
20...	5.3	110	3.0	.070	2.8	.27	.310	--	130
AUG.									
03...	7.0	27	1.1	.120	.82	.29	.280	.520	110
17...	7.0	18	--	.100	.86	.28	.220	.290	100
SEP.									
07...	6.8	12	.38	.050	.12	5.0	.240	--	76
21...	6.0	9.2	.23	.040	.09	1.8	.210	.320	74

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
DEC.								
09...	0	--	8.0	5.5	--	5	12.1	2000
JAN.								
26...	0	87	7.2	8.8	52	25	11.0	4500
FEB.								
09...	0	99	7.3	3.4	5	8	12.5	>8000
23...	0	98	7.5	7.6	22	7	11.5	1100
MAR.								
09...	0	123	7.5	7.2	19	8	11.9	800
23...	0	88	7.6	9.0	39	15	11.8	2000
APR.								
06...	0	93	7.5	15.5	37	6	10.5	>4000
20...	0	95	7.9	12.7	27	5	11.2	600
MAY								
18...	0	105	8.5	17.5	34	8	11.7	500
JUNE								
02...	0	125	7.4	12.0	27	20	10.0	>4000
15...	0	115	8.2	18.0	24	10	11.1	4000
JULY								
06...	0	356	9.1	22.0	48	4	15.5	2000
20...	0	788	8.0	32.3	95	8	12.4	>16000
AUG.								
03...	0	425	8.8	28.5	51	8	12.9	60000
17...	0	310	8.5	28.3	53	7	15.9	2000
SEP.								
07...	0	222	8.3	20.7	24	7	10.7	4000
21...	0	215	8.6	16.9	34	9	12.9	4000

14017000 TOUCHET RIVER AT BOLLES, WASH.

LOCATION.--Lat 46°16'31", long 118°13'15", on line between secs.7 and 8, T.9 N., R.37 E., Walla Walla County, temperature recorder at gaging station on right bank just downstream from bridge on State Highway 124, 0.2 mile southeast of Bolles, 2.9 miles downstream from Coppei Creek and at mile 40.1.

DRAINAGE AREA.--361 sq mi.

PERIOD OF RECORD.--Water temperatures: November 1969 to May 1971 (discontinued).

EXTREMES.--October 1970 to May 1971:
Water temperatures: Maximum, 20.0°C May 11; minimum, freezing point on many days during November to March.

Period of record:
Water temperatures: Maximum, 31.0°C July 3, 4, 8, 9, 1970; minimum, freezing point on many days during winter months.

REMARKS.--Recorder stopped Jan. 31-Feb. 16, no range in temperature.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO MAY 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.0	11.0	8.0	4.5	4.0	1.5	1.5	0	---	---	3.5	0
2	17.0	11.0	7.0	4.0	4.5	3.5	0	0	---	---	3.0	0
3	18.0	11.5	7.0	4.0	3.5	1.5	0	0	---	---	3.5	2.0
4	17.0	11.5	7.0	4.5	3.0	1.0	0	0	---	---	3.0	0.5
5	14.0	10.5	8.0	6.0	5.0	1.5	0	0	---	---	4.0	0.5
6	10.5	8.5	9.0	6.0	7.0	5.0	0	0	---	---	4.0	1.0
7	11.0	8.0	8.5	6.5	7.0	4.5	0	0	---	---	5.0	3.5
8	10.0	8.0	9.0	5.5	4.5	3.0	3.5	0	---	---	4.5	1.5
9	12.0	10.0	8.5	7.0	4.0	2.0	4.0	2.0	---	---	5.0	3.5
10	13.0	9.0	7.0	4.5	3.5	0	4.0	3.0	---	---	5.5	4.0
11	15.0	10.5	8.0	6.0	4.0	2.0	4.0	1.5	---	---	5.5	3.5
12	14.0	10.5	8.0	6.5	2.0	0.5	2.0	0.5	---	---	5.5	4.0
13	12.0	7.0	6.5	4.5	1.5	1.0	1.5	0	---	---	5.0	3.0
14	11.5	6.5	6.0	3.5	3.0	1.5	1.5	0	---	---	4.5	2.0
15	11.0	6.0	8.0	5.0	4.5	2.0	4.5	1.5	---	---	5.5	3.0
16	11.0	6.0	9.5	7.0	4.5	3.5	5.0	4.0	---	---	5.5	2.0
17	11.5	6.5	8.0	6.0	3.5	1.5	6.0	4.5	5.5	---	6.0	2.0
18	11.0	9.0	7.0	5.5	2.0	0.5	7.0	5.0	5.5	3.5	6.5	2.0
19	12.0	9.0	7.0	5.5	1.0	0	8.5	5.0	5.0	3.5	7.0	3.0
20	11.0	9.0	5.5	3.0	1.5	0	5.0	3.5	5.5	3.0	8.0	3.5
21	10.0	7.0	3.0	0	1.5	0.5	4.0	3.0	4.5	2.0	8.0	4.5
22	10.0	7.0	0	0	0.5	0	3.0	2.0	4.5	4.0	7.0	5.0
23	11.0	8.5	0	0	0.5	0	4.0	3.0	5.0	4.0	8.0	5.5
24	10.0	7.0	7.0	0	1.5	0	4.0	4.0	6.5	5.0	8.0	5.5
25	8.0	6.0	5.5	2.0	1.5	0	5.5	4.0	5.0	2.0	8.0	4.0
26	8.0	5.0	4.0	3.0	1.0	0	6.5	5.0	3.5	0.5	7.0	5.5
27	7.0	3.5	5.0	4.0	1.5	0	6.0	3.0	2.0	0.5	6.0	4.0
28	8.0	4.0	5.0	4.0	4.0	1.5	6.0	3.5	3.0	0	6.5	3.5
29	7.0	3.5	4.0	3.5	4.0	1.5	6.5	3.5	---	---	8.5	5.5
30	7.0	3.5	4.5	3.0	5.5	1.5	9.5	6.5	---	---	8.5	6.0
31	8.0	4.5	---	---	5.5	1.5	---	---	---	---	7.0	4.0
MONTH	18.0	3.5	9.5	0	7.0	0	9.5	0	---	---	8.5	0

14017000 TOUCHET RIVER AT BOLLES, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO MAY 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	4.0	16.5	13.5	---	---	---	---	---	---	---	---
2	9.0	5.5	17.0	14.5	---	---	---	---	---	---	---	---
3	9.0	5.5	16.5	14.5	---	---	---	---	---	---	---	---
4	10.0	5.5	17.0	15.0	---	---	---	---	---	---	---	---
5	11.5	7.0	15.5	13.5	---	---	---	---	---	---	---	---
6	12.0	9.0	16.5	14.0	---	---	---	---	---	---	---	---
7	10.5	8.5	18.0	14.5	---	---	---	---	---	---	---	---
8	10.5	6.0	18.0	15.0	---	---	---	---	---	---	---	---
9	10.5	8.5	17.0	15.0	---	---	---	---	---	---	---	---
10	9.5	7.0	18.5	15.0	---	---	---	---	---	---	---	---
11	8.5	6.5	20.0	16.0	---	---	---	---	---	---	---	---
12	10.0	6.0	19.5	17.0	---	---	---	---	---	---	---	---
13	11.0	8.0	17.0	16.0	---	---	---	---	---	---	---	---
14	11.0	9.0	17.0	15.0	---	---	---	---	---	---	---	---
15	10.5	9.0	16.5	15.0	---	---	---	---	---	---	---	---
16	9.5	8.0	16.5	13.5	---	---	---	---	---	---	---	---
17	9.5	8.5	15.0	12.0	---	---	---	---	---	---	---	---
18	11.5	8.5	---	13.5	---	---	---	---	---	---	---	---
19	12.0	9.0	---	---	---	---	---	---	---	---	---	---
20	11.5	10.0	---	---	---	---	---	---	---	---	---	---
21	11.5	9.5	---	---	---	---	---	---	---	---	---	---
22	11.0	9.5	---	---	---	---	---	---	---	---	---	---
23	11.0	10.0	---	---	---	---	---	---	---	---	---	---
24	11.0	9.0	---	---	---	---	---	---	---	---	---	---
25	12.0	8.5	---	---	---	---	---	---	---	---	---	---
26	14.0	10.5	---	---	---	---	---	---	---	---	---	---
27	14.0	11.5	---	---	---	---	---	---	---	---	---	---
28	14.5	12.0	---	---	---	---	---	---	---	---	---	---
29	14.0	11.5	---	---	---	---	---	---	---	---	---	---
30	15.0	12.0	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	15.0	4.0	---	---	---	---	---	---	---	---	---	---

14018500 WALLA WALLA RIVER NEAR TOUCHET, WASH.

LOCATION.--Lat 46°02'15", long 118°45'55", in SE¼SE¼ sec.35, T.7 N., R.32 E., Walla Walla County, at county road bridge, 0.9 mile downstream from Warm Springs Canyon, 2.5 miles downstream from gaging station, 3.7 miles west of Touchet, and at mile 15.7.

DRAINAGE AREA.--1,657 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1971 (discontinued).
Water temperatures: July 1959 to June 1970.
Sediment records: October 1962 to June 1970.

REMARKS.--No appreciable inflow between gaging station and sampling point. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
DEC.									
09...	1545	554	10	3.7	6.2	2.4	55	0	45
JAN.									
26...	1510	1690	9.9	3.8	6.0	2.6	52	0	43
FEB.									
09...	1500	1440	12	4.6	7.8	2.4	64	0	52
23...	1500	890	13	4.5	7.8	2.4	65	0	53
MAR.									
09...	1620	590	14	6.0	9.9	3.1	87	0	71
23...	1400	1420	13	4.5	7.1	2.5	57	0	47
APR.									
06...	1450	993	12	4.6	7.2	3.0	68	0	56
20...	1500	789	13	4.4	10	3.6	67	0	55
MAY									
04...	1430	1190	8.8	3.3	5.2	2.8	55	--	45
18...	1530	531	12	4.8	9.1	3.0	70	0	57
JUNE									
02...	1445	610	13	4.3	9.4	3.0	79	0	65
15...	1415	890	11	4.7	9.0	3.1	67	0	55
JULY									
06...	1450	84	31	11	24	5.2	162	0	133
20...	1510	33	45	16	41	7.1	226	0	185
AUG.									
03...	1450	19	58	22	53	9.0	284	0	233
17...	1520	12	53	27	70	9.3	271	0	222
SEP.									
07...	1445	82	30	11	24	5.9	167	0	137
21...	1430	88	30	11	24	5.2	181	0	148

WALLA WALLA RIVER BASIN

14018500 WALLA WALLA RIVER NEAR TOUCHET, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)
DEC.									
09...	4.6	3.4	.25	.020	.05	.36	.150	.330	40
JAN.									
26...	5.0	2.9	.45	.010	.17	.88	.100	.100	40
FEB.									
09...	6.6	4.3	.21	.010	.15	.63	.180	.210	49
23...	8.2	4.9	.22	--	--	.59	--	--	51
MAR.									
09...	8.8	5.8	1.3	.010	.21	1.3	.130	.130	60
23...	6.5	6.6	.30	--	--	--	--	.220	51
APR.									
06...	4.3	4.1	.25	.010	.19	1.1	--	.300	49
20...	5.0	4.3	.23	.010	.02	.61	.150	.180	51
MAY									
04...	6.5	2.7	.16	.000	.11	.18	.070	.160	36
18...	7.3	6.0	.23	.010	.00	.66	.210	.240	50
JUNE									
02...	6.8	4.5	.06	.000	.02	.68	.040	.050	50
15...	4.8	6.0	.05	.010	.02	.54	.040	.060	47
JULY									
06...	28	20	.13	.010	.01	.61	.070	.080	120
20...	44	32	.33	.060	.19	.35	.070	.150	180
AUG.									
03...	64	44	.50	.010	.35	.01	.040	.160	240
17...	110	49	.54	.010	.41	.11	.030	.080	240
SEP.									
07...	23	18	.39	.030	.12	.85	.110	.250	120
21...	23	16	.18	.010	.04	1.1	.090	.160	120

DATE	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.								
09...	0	--	7.5	4.5	--	45	12.6	2000
JAN.								
26...	0	112	7.2	7.5	71	70	11.5	5000
FEB.								
09...	0	134	7.4	2.0	8	15	13.2	2000
23...	0	134	7.6	6.5	34	25	11.9	2300
MAR.								
09...	0	164	7.5	6.1	30	25	11.9	3000
23...	4	118	7.6	8.8	84	120	11.1	6000
APR.								
06...	0	121	7.5	14.1	64	30	10.1	4000
20...	0	135	7.6	12.2	44	25	10.4	2000
MAY								
04...	0	93	7.5	16.2	40	30	9.6	1000
18...	0	145	7.7	14.9	47	15	10.8	4000
JUNE								
02...	0	160	7.5	12.4	22	30	10.1	4000
15...	0	145	7.7	17.6	58	45	9.5	14000
JULY								
06...	0	347	8.3	19.0	28	7	10.2	<1000
20...	0	665	8.5	28.2	35	8	14.2	220
AUG.								
03...	2	880	8.6	25.5	38	20	13.9	1500
17...	21	745	8.4	26.7	54	9	16.5	2500
SEP.								
07...	0	335	7.9	--	27	20	8.0	2000
21...	0	352	8.3	15.9	26	7	11.4	1000

14218500 YALE RESERVOIR NEAR YALE, WASH.

LOCATION.--Lat 46°03'06", long 122°17'30", in NW¼SE¼ sec.34, T.7 N., R.4 E., Cowlitz County, temperature recorder 8.0 miles upstream from gaging station and 0.3 mile east of Cougar.

DRAINAGE AREA.--596 sq mi.

PERIOD OF RECORD.--Chemical analyses: February 1969 to June 1971 (discontinued).
Water temperature: June 1969 to June 1971 (discontinued).
Sediment records: February 1970 to September 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures:
Maximum (3 ft), 16.0°C Oct. 1; minimum recorded, 3.5°C Feb. 27 to Mar. 2.
Maximum (18 ft), 15.5°C Oct. 1; minimum recorded, 3.0°C Feb. 27, 28.
Maximum (bottom), 15.0°C Oct. 1, 2, 4, 5; minimum, 3.0°C Feb. 28.

Period of record:
Water temperatures:
Maximum (3 ft), 23.0°C July 14, 1970; minimum, 3.5°C Feb. 27 to Mar. 2, 1971.
Maximum (18 ft), 22.5°C June 26, 1970; minimum, 3.0°C Feb. 27, 28, 1971.
Maximum (bottom), 22.0°C July 21, 1970; minimum, 3.0°C Jan. 17, 1970, Feb. 28, 1971.

REMARKS.--Recorder has 3 probes, with 2 constant (3 ft and 18 ft below surface) and one adjustable (usually within 10 ft of reservoir bottom).

CHEMICAL ANALYSES, OCTOBER 1970 TO JUNE 1971

DATE	TIME	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAY								
11...	0920	8.1	16	3.7	1.1	2.6	.4	20

DATE	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
MAY								
11...	0	1.8	.0	.030	14	0	39	7.1

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded 3 feet below water surface)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	15.0	10.5	9.5	7.0	7.0	5.0	4.5	5.5	5.0	4.0	3.5
2	15.5	14.5	11.0	9.0	7.0	6.5	5.0	4.5	5.0	5.0	4.0	3.5
3	15.5	14.0	10.5	9.5	6.5	6.5	4.5	4.0	5.0	4.0	4.0	4.0
4	15.0	15.0	10.5	10.0	6.5	6.5	4.5	4.0	4.0	4.0	4.0	4.0
5	15.0	14.5	10.5	10.0	6.5	6.5	4.5	4.0	4.5	4.0	4.5	4.0
6	14.5	14.0	10.5	10.0	6.5	6.5	4.5	4.0	4.5	4.5	4.5	4.0
7	14.0	14.0	10.5	10.0	6.5	6.5	4.5	4.0	4.5	4.0	4.5	4.0
8	14.0	14.0	10.0	10.0	6.5	6.0	4.5	4.0	4.5	4.0	4.5	4.0
9	14.0	14.0	10.0	10.0	6.5	6.0	4.5	4.0	4.5	4.0	4.5	4.0
10	14.0	13.5	10.0	9.5	6.5	6.0	4.5	4.0	4.5	4.0	4.5	4.0
11	14.0	14.0	9.5	9.5	6.5	6.0	4.5	4.0	4.5	4.0	4.5	4.0
12	14.0	14.0	9.5	9.5	6.0	5.5	4.5	4.0	5.0	4.0	---	---
13	14.5	13.5	9.5	8.5	6.0	5.5	4.0	4.0	5.0	4.5	---	---
14	14.0	12.5	9.0	8.5	6.0	6.0	4.0	4.0	4.5	4.5	---	---
15	14.0	12.5	8.5	8.5	6.0	5.5	4.0	4.0	4.5	4.5	---	---
16	13.5	12.0	9.0	8.5	6.0	5.5	4.5	4.0	4.5	4.5	---	---
17	13.0	13.0	9.5	9.0	6.0	5.5	5.0	4.5	5.0	4.5	6.0	4.5
18	13.0	13.0	9.0	8.5	6.0	5.0	5.0	5.0	4.5	4.5	5.0	4.0
19	13.0	13.0	9.0	8.5	5.5	5.0	5.0	5.0	4.5	4.0	5.0	4.0
20	13.0	13.0	9.0	8.5	5.5	5.0	5.0	5.0	5.0	4.5	5.0	4.0
21	13.0	12.5	8.5	8.0	5.5	5.0	5.0	4.0	5.0	4.5	6.0	5.0
22	12.5	12.0	8.0	7.0	5.5	5.5	4.5	4.0	5.0	4.5	5.5	5.0
23	12.0	12.0	7.0	6.5	5.5	5.5	4.0	4.0	5.0	4.5	5.0	4.5
24	12.0	12.0	8.0	7.0	5.5	5.5	4.5	4.0	4.5	4.5	5.0	5.0
25	12.0	12.0	7.5	7.5	5.5	5.0	4.5	4.0	4.5	4.5	5.0	4.5
26	12.0	11.5	7.5	7.0	5.5	5.0	4.5	4.5	4.5	4.0	4.5	4.0
27	11.5	10.0	7.5	7.0	5.5	5.0	4.5	4.5	4.0	3.5	4.5	4.0
28	10.5	10.0	7.5	7.0	5.5	5.0	5.0	4.5	4.0	3.5	4.5	4.0
29	10.0	9.5	7.5	7.0	5.0	5.0	5.0	4.5	---	---	4.5	4.0
30	10.0	9.5	7.0	7.0	5.0	5.0	5.0	4.5	---	---	4.5	4.0
31	10.5	9.5	---	---	5.5	5.0	5.5	4.5	---	---	4.5	4.0
MONTH	16.0	9.5	11.0	6.5	7.0	5.0	5.5	4.0	5.5	3.5	6.0	3.5

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded 3 feet below water surface)

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

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded 18 feet below water surface)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	15.0	10.0	9.5	7.0	7.0	5.0	5.0	5.0	4.0	3.5	3.5
2	15.5	14.0	10.5	9.0	7.0	7.0	5.0	4.5	4.5	4.0	3.5	3.5
3	15.0	14.0	10.5	9.5	7.0	6.5	5.0	4.5	4.0	4.0	3.5	3.5
4	15.0	15.0	10.5	10.0	6.5	6.5	4.5	4.0	4.0	4.0	3.5	3.5
5	15.0	15.0	10.0	10.0	7.0	6.5	4.5	4.0	4.0	4.0	3.5	3.5
6	15.0	14.5	10.0	10.0	6.5	6.5	4.5	4.0	4.0	4.0	4.0	3.5
7	14.5	14.0	10.0	10.0	6.5	6.5	4.5	4.5	4.0	3.5	4.0	3.5
8	14.5	14.0	10.0	10.0	6.5	6.5	4.5	4.5	3.5	3.5	4.0	4.0
9	14.0	14.0	10.0	10.0	6.5	6.0	4.5	4.5	3.5	3.5	4.0	4.0
10	14.0	14.0	10.0	9.5	6.0	6.0	4.5	4.0	4.0	3.5	4.0	3.5
11	14.0	14.0	10.0	9.5	6.5	6.0	4.5	4.5	4.0	3.5	3.5	3.5
12	14.0	14.0	10.0	9.5	6.0	5.5	4.5	4.0	4.0	4.0	---	---
13	14.0	13.5	9.5	9.0	6.0	5.5	4.0	4.0	4.0	4.0	---	---
14	14.0	13.0	9.0	9.0	6.0	6.0	4.0	4.0	4.0	3.5	---	---
15	13.5	12.5	9.0	8.5	6.0	5.5	4.0	4.0	4.0	4.0	---	---
16	13.0	12.0	9.0	9.0	6.0	5.5	4.5	4.0	4.0	4.0	---	---
17	13.5	13.0	9.0	9.0	6.0	6.0	4.5	4.0	4.0	4.0	4.0	4.0
18	13.5	13.0	9.0	9.0	6.0	5.5	4.5	4.5	4.0	4.0	4.0	4.0
19	13.0	13.0	9.0	9.0	5.5	5.5	4.5	4.5	4.0	4.0	4.0	3.5
20	13.0	13.0	9.0	8.5	5.5	5.5	4.5	4.5	4.0	4.0	4.0	3.5
21	13.0	12.5	8.5	8.0	5.5	5.5	4.5	4.5	4.0	3.5	4.5	4.0
22	12.5	12.0	8.0	7.5	5.5	5.5	4.5	4.0	4.0	4.0	4.5	4.0
23	12.5	12.0	8.0	7.0	5.5	5.5	4.0	4.0	4.0	4.0	4.0	4.0
24	12.0	12.0	8.0	7.0	5.5	5.0	4.5	4.0	4.0	4.0	4.5	4.0
25	12.0	12.0	8.0	7.5	5.5	5.0	4.5	4.5	4.0	3.5	4.0	4.0
26	12.0	11.5	7.5	7.5	5.5	5.0	5.0	4.5	4.0	3.5	4.0	4.0
27	11.5	10.5	7.5	7.5	5.5	5.0	5.0	4.5	3.5	3.0	4.0	4.0
28	10.5	10.0	7.5	7.0	5.0	5.0	4.5	4.5	3.5	3.0	4.0	4.0
29	10.0	10.0	7.0	7.0	5.0	5.0	4.5	4.0	---	---	4.5	4.0
30	10.0	9.5	7.0	7.0	5.0	5.0	4.5	4.0	---	---	4.5	4.0
31	10.0	10.0	---	---	5.0	5.0	5.0	4.0	---	---	4.5	4.5
MONTH	15.5	9.5	10.5	7.0	7.0	5.0	5.0	4.0	5.0	3.0	4.5	3.5

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded 18 feet below water surface)

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

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded usually within 10 feet of bottom)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	14.0	10.0	9.5	7.0	7.0	5.0	4.5	4.5	4.0	3.5	3.5
2	15.0	13.5	9.5	9.0	7.0	6.5	4.5	4.5	4.5	4.0	3.5	3.5
3	14.5	14.0	9.5	9.0	6.5	6.5	4.5	4.5	4.0	4.0	4.0	3.5
4	15.0	14.5	9.5	9.0	6.5	6.5	4.5	4.0	4.0	3.5	4.0	3.5
5	15.0	14.5	9.5	9.0	6.5	6.5	4.5	4.0	4.0	3.5	4.0	3.5
6	14.5	14.0	9.5	9.0	6.5	6.5	4.5	4.0	3.5	3.5	4.0	3.5
7	14.0	14.0	9.5	9.0	6.5	6.5	4.5	4.0	3.5	3.5	3.5	3.5
8	14.0	14.0	9.5	9.0	6.5	6.0	4.5	4.5	3.5	3.5	4.0	3.5
9	14.0	13.5	9.5	9.0	6.5	6.0	4.5	4.5	4.0	3.5	3.5	3.5
10	14.0	13.5	9.5	9.0	6.5	6.0	4.5	4.5	4.0	4.0	3.5	3.5
11	14.0	14.0	9.5	9.5	6.5	6.0	4.5	4.5	4.0	4.0	---	---
12	14.0	13.5	9.5	8.5	6.0	6.0	4.5	4.0	4.0	4.0	---	---
13	14.0	13.0	9.5	9.0	6.0	5.5	4.0	4.0	4.0	4.0	---	---
14	13.5	12.0	9.5	9.0	6.0	5.5	4.0	4.0	4.0	4.0	---	---
15	13.0	12.0	9.0	8.5	6.0	6.0	4.5	4.0	4.0	4.0	---	---
16	12.5	12.0	9.0	8.5	6.0	6.0	4.5	4.0	4.0	4.0	---	---
17	13.0	12.0	9.0	8.5	6.0	5.5	4.5	4.0	4.0	4.0	4.5	4.0
18	13.5	13.0	9.0	8.5	5.5	5.5	4.5	4.5	4.0	4.0	4.0	4.0
19	13.5	12.0	9.0	9.0	5.5	5.0	4.5	4.5	4.0	3.5	4.0	4.0
20	13.0	13.0	9.0	8.5	5.5	4.5	4.5	4.5	4.0	3.5	4.0	3.5
21	13.0	12.0	8.5	8.0	5.5	5.0	4.5	4.0	4.0	3.5	4.5	4.0
22	12.5	12.0	8.0	7.5	5.5	5.0	4.5	4.0	4.0	4.0	4.5	4.0
23	12.0	11.5	8.0	7.0	5.5	5.0	4.5	4.0	4.0	3.5	4.0	4.0
24	12.0	11.5	8.0	7.0	5.5	5.0	4.5	4.0	4.0	4.0	4.5	4.0
25	11.5	11.0	8.0	7.5	5.5	5.0	4.5	4.0	4.0	3.5	4.0	4.0
26	11.5	11.0	7.5	7.0	5.5	5.0	5.0	4.5	3.5	3.5	4.0	4.0
27	11.5	10.5	7.5	7.0	5.5	5.0	5.0	4.5	3.5	3.5	4.0	4.0
28	10.5	10.5	8.0	7.0	5.5	5.0	4.5	4.5	3.5	3.0	4.0	4.0
29	10.5	9.5	7.0	7.0	5.5	4.5	4.5	4.0	---	---	4.5	4.0
30	9.5	9.0	7.0	7.0	5.5	4.5	4.5	4.5	---	---	4.5	4.0
31	10.0	9.0	---	---	5.5	5.0	4.5	4.5	---	---	4.5	4.0
MONTH	15.0	9.0	10.0	7.0	7.0	4.5	5.0	4.0	4.5	3.0	4.5	3.5

14218500 YALE RESERVOIR NEAR YALE, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971
(Recorded usually within 10 feet of bottom)

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

TURBIDITY AND SUSPENDED CONCENTRATION, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Sampling Depth	3 Feet Below Water Surface		18 Feet Below Water Surface		Usually Within 10 Feet of Bottom	
Date	Turbidity (JTU)	Sediment Concentration (mg/l)	Turbidity (JTU)	Sediment Concentration (mg/l)	Turbidity (JTU)	Sediment Concentration (mg/l)
Dec. 17, 1970.....	2	6	2	6	2	6
Mar. 16.....	2	2	2	1	2	0
June 8.....	--	6	--	6	--	3

14222500 EAST FORK LEWIS RIVER NEAR HEISSON, WASH.

LOCATION.--Lat 45°50'13", long 122°27'54", in NE¼NW¼ sec.17, T.4 N., R.3 E., Clark County, temperature recorder at gaging station on right bank, 60 ft downstream from Basket Creek, 1.5 miles northeast of Heisson, 3.4 miles southwest of Yacolt, and at mile 20.2.

DRAINAGE AREA.--125 sq mi.

PERIOD OF RECORD.--Water temperatures: June 1950 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 21.0°C Aug. 10; minimum, 2.0°C Jan. 5.

Period of record:
Water temperatures: Maximum, 23.5°C Aug. 1952, July 31, 1965; minimum, freezing point Jan. 24 to Feb. 1, 1957, Jan. 11-14, 1963.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14222500 EAST FORK LEWIS RIVER NEAR HEISSON, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14222950 DRY CREEK NEAR COUGAR, WASH.

LOCATION.--Lat 46°07'17", long 122°19'34", in SE¼NE¼ sec.5, T.7 N., R.4 E., Cowlitz County, temperature recorder at gaging station on right bank, 200 ft upstream from road bridge, 1.2 miles north of Lake Merrill, and 4.9 miles north of Cougar.

DRAINAGE AREA.--3.29 sq mi.

PERIOD OF RECORD.--Water temperature: April 1969 to June 1971 (discontinued).

EXTREMES.--October 1970-June 1971:
Water temperature: Maximum, 9.0°C Oct. 9; minimum, 1.0°C Dec. 3, Jan. 13-15, Mar. 6, 7, 10.

Period of record:
Water temperatures: Maximum, 25.5°C Aug. 31, 1969; minimum, 1.0°C Jan. 8, Dec. 3, 1970 and Jan. 13-15, Mar. 6, 7, 10, 1971.

REMARKS.--Temperature probe not in water Feb. 26-Mar. 4.

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

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

14222950 DRY CREEK NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	3.5	3.0	5.0	5.0	6.0	6.0	---	---	---	---	---	---
2	4.0	3.0	5.0	5.0	6.0	6.0	---	---	---	---	---	---
3	4.0	3.5	5.5	5.0	6.0	6.0	---	---	---	---	---	---
4	4.5	3.5	5.0	5.0	7.0	5.5	---	---	---	---	---	---
5	4.0	3.5	5.0	5.0	7.0	6.0	---	---	---	---	---	---
6	4.0	4.0	6.0	5.0	7.0	6.0	---	---	---	---	---	---
7	4.0	3.5	6.0	5.0	6.5	6.0	---	---	---	---	---	---
8	3.5	3.5	5.5	5.0	7.0	6.0	---	---	---	---	---	---
9	3.5	3.5	6.0	5.5	6.5	6.0	---	---	---	---	---	---
10	3.5	3.0	6.0	5.0	6.5	6.5	---	---	---	---	---	---
11	3.5	3.5	6.0	5.0	7.0	6.0	---	---	---	---	---	---
12	4.0	3.5	5.5	5.5	7.0	6.0	---	---	---	---	---	---
13	4.0	3.5	5.5	5.5	7.0	6.5	---	---	---	---	---	---
14	4.5	4.0	6.0	5.0	6.5	6.0	---	---	---	---	---	---
15	4.0	4.0	6.0	5.5	7.5	5.5	---	---	---	---	---	---
16	4.0	4.0	5.5	5.0	7.5	5.5	---	---	---	---	---	---
17	4.5	4.0	6.0	5.0	7.0	6.0	---	---	---	---	---	---
18	4.5	4.0	6.0	5.0	7.0	6.5	---	---	---	---	---	---
19	5.5	4.0	6.0	5.5	7.0	6.5	---	---	---	---	---	---
20	4.5	4.0	6.0	5.5	7.0	6.5	---	---	---	---	---	---
21	5.0	4.0	7.0	5.0	8.5	6.0	---	---	---	---	---	---
22	4.5	4.5	7.5	6.0	7.5	7.0	---	---	---	---	---	---
23	5.5	4.5	7.0	6.0	7.5	6.5	---	---	---	---	---	---
24	4.5	4.5	6.5	5.5	7.0	6.5	---	---	---	---	---	---
25	6.0	4.5	6.0	6.0	7.0	6.0	---	---	---	---	---	---
26	5.5	4.5	6.0	6.0	7.0	5.5	---	---	---	---	---	---
27	5.0	4.5	7.5	5.5	7.0	6.5	---	---	---	---	---	---
28	5.0	4.5	7.0	5.0	6.5	6.5	---	---	---	---	---	---
29	5.5	5.0	6.0	6.0	8.5	6.0	---	---	---	---	---	---
30	5.5	5.0	6.0	5.5	8.5	6.5	---	---	---	---	---	---
31	---	---	6.0	5.5	---	---	---	---	---	---	---	---
MONTH	6.0	3.0	7.5	5.0	8.5	5.5	---	---	---	---	---	---

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
DEC.				
15.....	1020	25	12	0.84
JAN.				
19.....	1310	300	51	41
JUNE				
04.....	1000	23	2	0.13

14222960 MERRILL LAKE NEAR COUGAR, WASH.

LOCATION.--Lat 46°05'06", long 121°19'02", in SW¼SE¼ sec.16, T.7 N., R.4 E., Cowlitz County, temperature recorder 1,000 ft south southwest of east shore nonrecording gage and 2.3 miles north of Cougar.

DRAINAGE AREA.--9.08 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1969 to October 1971 (discontinued).
Water temperatures: May 1969 to June 1971 (discontinued).
Sediment records: January 1970 to September 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures:
Maximum (3 ft), 16.0°C Oct. 1-3; minimum recorded, 1.0°C Jan. 2-7 but may have been lower during period Jan. 8 to Apr. 15 when lake was ice covered.
Maximum recorded (18 ft), 15.0°C June 30; minimum recorded, 3.0°C several days in December but may have been lower during period Dec. 27 to Apr. 15 when lake was ice covered.
Maximum recorded (bottom), 14.0°C June 26, 30; minimum recorded, 3.0°C several days in December but may have been lower during period Jan. 8 to Apr. 15.

REMARKS.--Recorder has 3 probes, with 2 constant (3 ft and 18 ft below surface) and one adjustable within 6 ft of bottom). Lower 2 probes in mud on bottom Oct. 1-23; no range in temperature. Lake surface frozen making gage inaccessible at time of recorder inspection, record lost without range in temperature January to April.

CHEMICAL ANALYSES, OCTOBER 1970 TO OCTOBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
14...	1420	3.0	--	4.7	--	--	--	--	14	0	.2	.7
14...	1425	17	--	4.7	--	--	--	--	13	0	.2	.7
14...	1430	32	--	4.6	--	--	--	--	14	0	.2	.7
MAY												
05...	1150	30	5.0	8.8	--	--	--	--	20	0	.5	--
11...	1310	18	6.2	9.1	2.6	.6	1.4	.1	15	0	2.3	1.0
JULY												
09...	1045	3.0	14.0	8.8	--	--	--	--	14	--	.0	--
09...	1050	48	8.0	--	--	--	--	--	--	--	--	--
OCT.												
04...	1530	3.0	14.2	7.8	--	--	--	--	--	--	3.3	--
04	1535	40	12.5	7.9	--	--	--	--	--	--	2.0	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.												
14...	.0	.00	.00	.05	.000	.000	20	--	--	24	7.0	0
14...	.0	.00	.00	.07	.000	.010	19	--	--	24	7.0	0
14...	.0	.01	.00	.1	.010	.010	19	--	--	25	7.0	0
MAY												
05...	--	.01	.01	.06	.010	.010	--	--	--	--	7.0	5
11...	.0	--	--	--	--	--	--	9	0	22	--	--
JULY												
09...	--	.00	.00	.02	.000	.010	--	--	--	23	7.4	5
09...	--	.00	.00	.02	.010	.010	--	--	--	22	7.4	--
OCT.												
04...	--	--	.05	.02	.010	.010	--	--	--	23	7.6	0
04...	--	--	.01	.02	.010	.010	--	--	--	24	7.6	0

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded 3 feet below water surface)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	14.5	9.0	8.5	3.5	3.5	1.5	1.5	---	---	---	---
2	16.0	15.0	9.0	8.5	3.5	3.0	1.5	1.0	---	---	---	---
3	16.0	15.0	9.0	8.5	3.5	3.0	1.5	1.0	---	---	---	---
4	---	---	8.5	8.0	3.0	2.5	1.5	1.0	---	---	---	---
5	---	---	8.5	8.0	---	---	1.0	1.0	---	---	---	---
6	14.5	14.0	9.0	8.0	---	---	1.0	1.0	---	---	---	---
7	14.5	13.5	8.5	8.0	3.5	3.0	1.0	1.0	---	---	---	---
8	14.0	13.5	8.5	8.0	3.5	3.0	---	---	---	---	---	---
9	13.5	13.5	8.5	8.0	3.0	3.0	---	---	---	---	---	---
10	14.0	13.5	8.0	8.0	3.5	3.0	---	---	---	---	---	---
11	13.5	13.5	8.0	8.0	3.5	3.5	---	---	---	---	---	---
12	13.5	13.0	8.0	8.0	3.5	3.5	---	---	---	---	---	---
13	14.0	12.5	8.0	7.5	3.5	3.0	---	---	---	---	---	---
14	13.5	12.5	8.0	7.5	3.5	3.0	---	---	---	---	---	---
15	13.0	12.0	7.5	7.5	3.5	3.0	---	---	---	---	---	---
16	13.0	11.5	7.5	7.5	3.5	3.0	---	---	---	---	---	---
17	12.5	12.0	7.5	7.5	3.5	3.0	---	---	---	---	---	---
18	12.5	12.0	7.5	7.0	3.0	2.5	---	---	---	---	---	---
19	12.0	12.0	7.5	7.0	3.0	2.5	---	---	---	---	---	---
20	12.0	11.5	7.5	6.5	2.5	2.5	---	---	---	---	---	---
21	11.5	11.0	---	---	2.5	2.5	---	---	---	---	---	---
22	11.0	10.0	---	---	2.5	2.5	---	---	---	---	---	---
23	10.0	9.5	---	---	2.5	2.5	---	---	---	---	---	---
24	9.5	9.5	5.5	5.0	2.5	2.5	---	---	---	---	---	---
25	9.5	9.0	5.0	5.0	2.5	2.5	---	---	---	---	---	---
26	9.5	8.5	5.0	4.0	2.5	2.0	---	---	---	---	---	---
27	9.0	8.5	4.5	4.0	2.5	2.0	---	---	---	---	---	---
28	9.0	8.5	4.5	4.0	2.5	2.0	---	---	---	---	---	---
29	9.0	8.5	4.0	4.0	2.0	2.0	---	---	---	---	---	---
30	9.0	8.0	4.0	3.5	2.0	1.5	---	---	---	---	---	---
31	9.0	8.0	---	---	1.5	1.5	---	---	---	---	---	---
MONTH	16.0	8.0	9.0	3.5	3.5	1.5	---	---	---	---	---	---

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded 3 feet below water surface)

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

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded 18 feet below water surface)

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

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded 18 feet below water surface)

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

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded within 6 feet of lake bottom)

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

14222960 MERRILL LAKE NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO JUNE 1971
(Recorded within 6 feet of lake bottom)

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

TURBIDITY AND SUSPENDED CONCENTRATION, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Sampling Depth	3 Feet Below Water Surface		18 Feet Below Water Surface		Usually Within 6 Feet of Bottom	
Date	Turbidity (JTU)	Sediment Concentration (mg/l)	Turbidity (JTU)	Sediment Concentration (mg/l)	Turbidity (JTU)	Sediment Concentration (mg/l)
Dec. 17, 1970.....	14	11	14	13	13	10
Apr. 15.....	--	2	--	4	--	2
June 8.....	--	1	--	1	--	1

14222970 SPRING CREEK NEAR COUGAR, WASH.

LOCATION.--Lat 46°06'37", long 122°21'23", in NW¼NE¼ sec.7, T.7 N., R.4 E., Cowlitz County, temperature recorder at gaging station on right bank 100 ft upstream from mouth, 400 ft southeast of Kalama Falls, and 4.7 miles northwest of Cougar.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water temperature: July 1970 to June 1971 (discontinued).

EXTREMES, July 1970 to June 1971:
Water temperatures: Maximum, 8.0°C Nov. 1-8, 1970

REMARKS.--Recorder stopped Mar. 6 to Apr. 13; no range in temperature available.

TEMPERATURE (°C) OF WATER, JULY TO SEPTEMBER 1970

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
2	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
3	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
4	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
5	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
6	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
7	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
8	---	---	---	---	---	---	---	---	7.0	7.0	7.0	7.0
9	---	---	---	---	---	---	---	---	7.0	7.0	7.5	7.0
10	---	---	---	---	---	---	---	---	7.5	7.0	7.0	7.0
11	---	---	---	---	---	---	---	---	7.5	7.0	7.0	7.0
12	---	---	---	---	---	---	---	---	7.5	7.0	7.0	7.0
13	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
14	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
15	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
16	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
17	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
18	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
19	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
20	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
21	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
22	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
23	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
24	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
25	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
26	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
27	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.5	7.0
28	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.5	7.0
29	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.5	7.0
30	---	---	---	---	---	---	7.0	7.0	7.5	7.0	7.5	7.0
31	---	---	---	---	---	---	7.0	7.0	7.0	7.0	---	---
MONTH	---	---	---	---	---	---	---	---	7.5	7.0	7.5	7.0

14222970 SPRING CREEK NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14222970 SPRING CREEK NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	4.5	4.5	5.5	5.5	---	---	---	---	---	---
2	---	---	4.5	4.5	5.5	5.5	---	---	---	---	---	---
3	---	---	5.0	4.5	6.0	5.5	---	---	---	---	---	---
4	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
5	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
6	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
7	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
8	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
9	---	---	5.0	4.5	6.0	6.0	---	---	---	---	---	---
10	---	---	5.0	4.5	6.0	6.0	---	---	---	---	---	---
11	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
12	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
13	---	---	5.0	5.0	6.0	6.0	---	---	---	---	---	---
14	4.5	4.0	5.0	5.0	6.0	6.0	---	---	---	---	---	---
15	4.5	4.5	5.0	5.0	6.0	6.0	---	---	---	---	---	---
16	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
17	4.5	4.5	5.0	5.0	6.0	6.0	---	---	---	---	---	---
18	4.5	4.5	5.0	5.0	6.0	6.0	---	---	---	---	---	---
19	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
20	4.5	4.5	5.0	5.0	6.0	6.0	---	---	---	---	---	---
21	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
22	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
23	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
24	4.5	4.5	5.0	5.0	6.0	6.0	---	---	---	---	---	---
25	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
26	4.5	4.5	5.0	5.0	6.5	6.0	---	---	---	---	---	---
27	4.5	4.5	5.5	5.0	6.5	6.0	---	---	---	---	---	---
28	4.5	4.5	5.5	5.5	6.5	6.0	---	---	---	---	---	---
29	4.5	4.5	5.5	5.5	6.5	6.0	---	---	---	---	---	---
30	4.5	4.5	5.5	5.5	6.5	6.5	---	---	---	---	---	---
31	---	---	5.5	5.5	---	---	---	---	---	---	---	---
MONTH	---	---	5.5	4.5	6.5	5.5	---	---	---	---	---	---

14222980 KALAMA RIVER BELOW FALLS, NEAR COUGAR, WASH.

LOCATION.--Lat 46°06'25", long 122°21'33", in SE¼NW¼ sec.7, T.7 N., R.4 E., Cowlitz County, temperature recorder at gaging station on left bank 50 ft downstream from bridge, 0.4 mile downstream from Falls, and 4.7 miles northwest of Cougar.

DRAINAGE AREA.--37.4 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1970 to June 1971 (discontinued).

EXTREMES.--July 1970-June 1971:
Water temperatures: Maximum, 8.5°C Sept. 7, 22; minimum, 4.5°C many days December through May.

TEMPERATURE (°C) OF WATER, JULY TO SEPTEMBER 1970

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	---	---	---	---	7.0	7.0	7.5	7.0
2	---	---	---	---	---	---	7.5	7.0	7.0	6.5	7.5	7.0
3	---	---	---	---	---	---	7.5	7.0	7.0	6.5	8.0	7.5
4	---	---	---	---	---	---	7.5	7.0	7.0	7.0	7.5	7.0
5	---	---	---	---	---	---	7.5	7.0	7.0	6.5	7.5	7.0
6	---	---	---	---	---	---	7.5	7.0	7.0	7.0	8.0	7.5
7	---	---	---	---	---	---	7.5	7.0	7.0	7.0	8.5	8.0
8	---	---	---	---	---	---	7.5	7.0	7.0	6.5	8.0	7.0
9	---	---	---	---	---	---	7.5	7.0	7.0	6.5	7.5	7.0
10	---	---	---	---	---	---	7.5	7.0	7.0	6.5	7.5	7.0
11	---	---	---	---	---	---	7.0	7.0	7.0	6.5	7.5	7.0
12	---	---	---	---	---	---	7.0	7.0	7.0	6.5	7.5	7.0
13	---	---	---	---	---	---	7.0	6.5	7.0	6.5	7.5	7.0
14	---	---	---	---	---	---	7.0	6.5	7.0	6.0	7.5	7.0
15	---	---	---	---	---	---	7.5	6.5	7.0	6.0	7.5	7.0
16	---	---	---	---	---	---	7.5	7.0	7.0	6.5	7.5	7.0
17	---	---	---	---	---	---	7.5	6.5	7.0	6.0	7.5	7.5
18	---	---	---	---	---	---	7.0	6.5	7.0	6.0	8.0	7.5
19	---	---	---	---	---	---	7.0	6.5	7.0	6.0	8.0	8.0
20	---	---	---	---	---	---	7.0	6.5	7.0	6.5	8.0	8.0
21	---	---	---	---	---	---	7.0	7.0	7.0	6.5	8.0	7.5
22	---	---	---	---	---	---	7.0	6.5	7.0	6.5	8.5	8.0
23	---	---	---	---	---	---	7.0	6.5	7.0	6.5	8.0	8.0
24	---	---	---	---	---	---	7.0	6.5	7.0	6.5	8.0	7.0
25	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.5	7.0
26	---	---	---	---	---	---	7.0	7.0	7.0	6.5	8.0	7.0
27	---	---	---	---	---	---	7.0	7.0	7.0	6.5	8.0	7.0
28	---	---	---	---	---	---	7.0	6.5	7.5	7.0	8.0	7.5
29	---	---	---	---	---	---	7.0	6.5	7.5	6.5	8.0	7.5
30	---	---	---	---	---	---	7.0	6.5	7.5	6.5	8.0	7.5
31	---	---	---	---	---	---	7.0	6.5	7.5	7.0	---	---
MONTH	---	---	---	---	---	---	7.5	6.5	7.5	6.0	8.5	7.0

14222980 KALAMA RIVER BELOW FALLS, NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

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

14222980 KALAMA RIVER BELOW FALLS, NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1970 TO JUNE 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	4.5	4.5	4.5	5.5	5.5	---	---	---	---	---	---
2	4.5	4.5	4.5	4.5	5.5	5.5	---	---	---	---	---	---
3	4.5	4.5	5.0	4.5	5.5	5.5	---	---	---	---	---	---
4	4.5	4.5	4.5	4.5	5.5	5.5	---	---	---	---	---	---
5	4.5	4.5	4.5	4.5	5.5	5.5	---	---	---	---	---	---
6	4.5	4.5	5.0	4.5	5.5	5.5	---	---	---	---	---	---
7	4.5	4.5	5.0	5.0	5.5	5.5	---	---	---	---	---	---
8	4.5	4.5	5.0	4.5	5.5	5.5	---	---	---	---	---	---
9	4.5	4.5	5.0	4.5	5.5	5.5	---	---	---	---	---	---
10	4.5	4.5	5.0	5.0	5.5	5.5	---	---	---	---	---	---
11	4.5	4.5	5.0	5.0	5.5	5.5	---	---	---	---	---	---
12	4.5	4.5	5.0	5.0	5.5	5.5	---	---	---	---	---	---
13	4.5	4.5	5.0	5.0	5.5	5.5	---	---	---	---	---	---
14	4.5	4.5	5.5	5.0	5.5	5.5	---	---	---	---	---	---
15	4.5	4.5	5.5	5.5	6.0	5.5	---	---	---	---	---	---
16	4.5	4.5	5.5	5.0	6.0	6.0	---	---	---	---	---	---
17	4.5	4.5	5.5	5.0	6.0	6.0	---	---	---	---	---	---
18	4.5	4.5	5.5	5.5	6.0	6.0	---	---	---	---	---	---
19	4.5	4.5	5.5	5.5	6.0	6.0	---	---	---	---	---	---
20	4.5	4.5	5.5	5.5	6.0	6.0	---	---	---	---	---	---
21	4.5	4.5	5.5	5.5	6.5	6.0	---	---	---	---	---	---
22	4.5	4.5	5.5	5.5	6.5	6.5	---	---	---	---	---	---
23	4.5	4.5	5.5	5.5	6.5	6.5	---	---	---	---	---	---
24	4.5	4.5	5.5	5.5	6.5	6.0	---	---	---	---	---	---
25	5.0	4.5	5.5	5.5	6.5	6.5	---	---	---	---	---	---
26	5.0	4.5	5.5	5.5	6.5	6.5	---	---	---	---	---	---
27	4.5	4.5	6.0	5.5	6.5	6.5	---	---	---	---	---	---
28	4.5	4.5	6.0	5.5	6.5	6.5	---	---	---	---	---	---
29	4.5	4.5	5.5	5.5	7.0	6.5	---	---	---	---	---	---
30	4.5	4.5	5.5	5.5	7.0	7.0	---	---	---	---	---	---
31	---	---	5.5	5.5	---	---	---	---	---	---	---	---
MONTH	5.0	4.5	6.0	4.5	7.0	5.5	---	---	---	---	---	---

14223500 KALAMA RIVER BELOW ITALIAN CREEK, NEAR KALAMA, WASH.

LOCATION.--Lat 46°02'42", long 122°48'51", in NE¼SW¼ sec.33, T.7 N., R.1 W., Cowlitz County, temperature recorder at gaging station on right bank 2.8 miles northeast of Kalama, 5.7 miles downstream from Italian Creek, and at mile 4.2.

DRAINAGE AREA.--198 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1970.
Water temperatures: October 1954 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 19.0°C July 29; minimum, 3.5°C on several days during November, January, and March.

Period of record:
Water temperatures: Maximum, 20.5°C July 28, 1958; minimum, freezing point Nov. 19, 20, 1958.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	10.0	6.5	6.0	5.0	4.0	5.5	5.0	6.0	6.0	4.5	3.5
2	10.5	9.5	6.5	6.0	4.5	4.0	5.0	4.5	6.0	5.5	4.0	3.5
3	10.5	9.5	7.0	6.5	4.5	4.5	4.5	4.0	5.5	5.0	4.5	4.0
4	10.0	10.0	8.0	7.0	5.0	4.5	4.0	3.5	5.0	4.5	4.5	4.5
5	10.0	9.5	7.0	7.0	5.5	5.0	3.5	3.5	4.5	4.5	5.0	4.5
6	9.5	9.0	7.0	7.0	6.0	5.5	4.0	3.5	4.5	4.0	5.0	5.0
7	9.0	8.0	8.0	7.0	6.0	5.5	4.5	4.0	4.0	4.0	5.0	5.0
8	8.5	8.0	8.0	8.0	6.0	6.0	5.0	4.5	4.0	4.0	5.5	5.0
9	8.5	8.0	8.0	7.0	6.0	6.0	5.0	4.5	5.0	4.0	5.5	5.0
10	9.0	8.5	7.0	6.5	6.0	6.0	5.0	5.0	5.5	5.0	5.5	5.0
11	9.0	9.0	7.0	6.5	6.0	6.0	5.0	4.5	5.5	5.5	5.5	5.5
12	9.0	8.5	7.0	7.0	6.0	5.5	4.5	4.0	6.0	5.5	6.0	5.5
13	8.5	8.0	7.0	6.0	5.5	5.5	4.0	3.5	6.0	5.5	6.0	5.5
14	8.0	7.0	6.0	6.0	5.5	5.5	4.0	3.5	6.5	6.0	5.5	5.5
15	8.0	7.0	6.5	6.0	6.0	5.5	5.0	4.0	6.5	6.0	5.5	5.5
16	8.0	7.0	8.0	6.5	6.0	6.0	5.5	5.0	6.0	6.0	5.5	5.0
17	8.0	7.0	7.0	6.5	6.0	6.0	5.5	5.5	6.0	6.0	5.5	5.0
18	8.5	8.0	6.5	6.5	6.0	5.5	6.0	5.5	6.0	6.0	5.5	5.0
19	9.0	8.5	6.5	6.5	5.5	5.0	6.0	5.5	6.0	5.5	5.5	5.0
20	9.0	8.5	6.5	6.0	5.0	4.5	5.5	5.5	6.0	5.5	5.5	5.5
21	8.5	8.0	6.0	4.5	5.0	4.5	5.5	5.0	6.0	5.5	6.0	5.5
22	8.0	7.0	4.5	3.5	5.0	4.5	5.0	5.0	6.0	6.0	6.0	6.0
23	7.0	7.0	4.5	3.5	5.0	5.0	5.5	5.0	6.0	6.0	6.5	6.0
24	7.0	7.0	6.0	4.5	5.0	5.0	5.5	5.5	6.0	6.0	6.0	5.5
25	7.0	6.5	6.0	5.0	5.0	5.0	6.0	5.5	6.0	5.0	5.5	5.0
26	6.5	6.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	4.5	5.5	5.5
27	6.0	5.5	5.0	5.0	5.0	4.5	6.0	5.5	4.5	4.0	5.5	5.5
28	5.5	5.5	5.0	5.0	5.0	4.5	6.0	5.5	4.5	4.0	5.5	5.0
29	5.5	5.5	5.0	4.5	5.0	5.0	5.5	5.5	---	---	5.5	5.5
30	5.5	5.5	5.0	4.5	6.0	5.0	6.0	5.5	---	---	5.5	5.0
31	6.5	5.5	---	---	5.5	5.5	6.0	6.0	---	---	5.0	5.0
MONTH	11.0	5.5	8.0	3.5	6.0	4.0	6.0	3.5	6.5	4.0	6.5	3.5

14223500 KALAMA RIVER BELOW ITALIAN CREEK, NEAR KALAMA, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	4.5	9.0	8.0	8.0	8.0	11.5	11.5	17.0	14.0	13.0	12.0
2	6.0	5.5	9.0	8.5	8.5	8.0	13.0	11.0	17.0	14.5	12.0	12.0
3	6.0	5.0	10.0	8.0	8.5	8.5	13.0	11.5	16.5	14.5	12.0	11.5
4	6.5	5.5	10.0	8.0	10.5	8.5	12.0	11.0	16.0	14.5	13.0	11.5
5	7.0	6.0	8.0	7.0	10.5	9.5	11.0	10.5	16.0	14.0	12.0	12.0
6	7.0	6.0	9.0	7.0	10.0	9.5	11.5	10.0	17.0	14.5	12.0	11.5
7	6.0	5.5	10.0	8.5	9.5	9.5	13.0	10.5	17.0	14.5	13.0	11.0
8	6.0	5.5	10.0	8.0	9.5	9.0	11.5	11.0	18.5	14.5	13.5	11.0
9	5.5	5.5	8.5	7.0	9.5	9.5	11.5	11.0	18.5	15.0	14.0	11.5
10	5.5	5.0	9.0	8.0	9.5	9.5	11.0	10.5	18.5	15.0	14.0	12.0
11	5.5	5.0	10.0	8.5	10.0	9.0	10.5	10.5	18.5	15.0	14.0	12.0
12	6.0	5.0	10.0	8.0	9.5	9.5	13.0	10.5	18.0	15.0	13.0	11.5
13	8.0	6.0	8.0	6.5	10.0	9.0	14.0	12.0	17.0	15.0	13.0	11.0
14	8.5	8.0	7.0	6.0	9.5	9.0	14.5	13.0	16.0	14.5	12.0	10.5
15	8.5	7.0	7.0	7.0	10.0	9.0	15.0	13.5	16.0	14.0	11.5	10.0
16	7.0	6.5	7.0	6.0	10.0	9.5	15.5	14.0	16.0	14.0	11.5	10.0
17	7.0	6.5	6.5	6.0	10.0	9.5	15.5	14.0	16.0	14.0	11.0	10.0
18	7.0	7.0	8.5	6.5	10.0	9.5	16.0	14.0	16.0	14.0	11.0	10.0
19	8.0	6.5	8.5	8.0	10.0	9.5	16.5	15.0	16.0	14.0	11.0	10.0
20	8.5	7.0	8.0	7.0	9.5	9.5	16.5	14.5	16.0	14.5	11.0	10.5
21	7.0	6.0	10.0	8.0	11.5	9.5	17.0	15.0	15.5	14.5	11.0	10.0
22	6.0	6.0	10.5	9.5	11.5	11.0	16.5	15.0	14.5	13.5	11.0	9.5
23	6.5	6.0	10.5	9.5	11.0	10.5	15.5	14.5	15.0	13.0	10.5	10.0
24	6.5	6.0	10.5	9.5	10.5	9.5	16.5	14.0	15.5	13.0	11.0	10.5
25	7.0	6.0	10.0	9.5	9.5	9.5	18.0	14.5	15.0	13.5	11.0	9.5
26	8.0	7.0	10.0	9.5	10.5	9.5	18.5	15.0	15.5	13.5	10.5	10.0
27	9.0	7.0	10.5	9.5	10.5	10.0	18.0	15.5	15.5	14.0	10.5	10.0
28	7.0	7.0	11.0	9.5	10.0	9.5	18.5	15.5	15.0	13.5	10.5	9.5
29	8.0	7.0	10.5	8.5	11.5	9.5	19.0	15.5	15.0	14.0	9.5	9.0
30	8.5	8.0	8.5	8.0	12.0	11.5	17.0	15.0	14.0	13.0	9.0	9.0
31	---	---	8.0	8.0	---	---	15.0	14.0	13.5	13.0	---	---
MONTH	9.0	4.5	11.0	6.0	12.0	8.0	19.0	10.0	18.5	13.0	14.0	9.0

14226500 COWLITZ RIVER AT PACKWOOD, WASH.

LOCATION.--Lat 46°36'47", long 121°40'41", in SE¼SE¼ sec.16, T.13 N., R.9 E., Lewis County, temperature recorder at gaging station on right bank 100 feet upstream from Forest Service bridge, 0.6 mile northwest of Packwood, 0.8 mile upstream from Skate Creek, and at mile 126.5.

DRAINAGE AREA.--287 sq mi.

PERIOD OF RECORD.--Water temperatures: November 1970 to April 1971 (discontinued).

TEMPERATURE (°C) OF WATER, NOVEMBER 1970 TO APRIL 1971

	NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		APRIL	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	4.0	3.5	4.0	3.0	5.0	4.5	3.0	1.0	5.5	3.5
2	---	---	4.5	3.5	3.5	3.0	4.5	4.0	1.5	1.0	---	4.0
3	---	---	4.0	2.0	3.5	3.0	4.0	3.5	1.5	1.0	---	---
4	6.0	5.0	4.0	2.0	3.5	3.0	4.0	3.0	2.0	1.0	---	---
5	6.0	5.5	3.5	3.0	3.5	3.0	4.0	3.5	4.0	1.5	---	---
6	7.0	5.5	3.5	3.0	3.5	3.0	3.5	3.0	2.0	2.0	---	---
7	7.0	6.0	4.5	3.5	4.0	3.5	4.0	3.0	3.0	2.0	---	---
8	6.5	6.0	4.5	4.0	4.0	3.5	4.5	3.5	4.0	2.0	---	---
9	7.0	5.0	4.0	3.5	4.0	3.0	4.5	4.0	4.0	3.5	---	---
10	5.5	5.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0	3.5	---	---
11	6.0	5.5	4.0	4.0	4.0	3.5	4.5	3.5	4.0	3.5	---	---
12	6.0	5.5	4.0	3.5	4.0	3.5	5.0	4.0	5.5	3.5	---	---
13	6.0	4.5	4.0	4.0	4.0	3.5	5.0	4.5	5.0	3.5	---	---
14	5.5	4.5	4.0	4.0	4.0	3.5	4.5	4.0	4.5	3.5	---	---
15	6.0	5.5	4.0	4.0	4.0	3.0	4.5	4.0	5.0	3.5	---	---
16	6.5	6.0	4.0	4.0	4.5	3.5	4.5	4.0	5.5	3.0	---	---
17	6.0	5.5	4.5	3.5	4.0	4.0	4.5	4.0	6.0	3.5	---	---
18	5.5	5.0	3.5	3.0	4.5	4.0	4.5	4.0	5.5	3.0	---	---
19	5.5	5.0	3.5	3.0	4.5	3.0	4.0	3.5	6.0	3.0	---	---
20	5.0	3.0	4.0	3.5	3.5	3.0	4.0	3.0	5.5	3.5	---	---
21	3.0	1.5	3.5	3.0	3.5	3.0	4.0	3.5	6.0	3.5	---	---
22	1.5	0.5	4.0	3.5	3.5	3.0	4.5	4.0	4.0	3.5	---	---
23	2.0	0.5	4.0	3.5	3.5	3.0	4.5	4.0	4.5	3.5	---	---
24	4.5	1.5	4.0	3.5	3.5	2.0	4.0	2.0	5.0	3.5	---	---
25	4.5	4.0	4.0	3.0	3.5	2.0	3.0	2.0	4.5	3.0	---	---
26	4.5	4.0	3.5	3.0	4.0	3.5	2.0	1.0	4.5	4.0	---	---
27	4.5	4.0	4.0	3.5	5.0	4.0	2.0	1.0	4.5	3.5	---	---
28	4.5	3.5	4.0	3.5	5.0	4.5	3.0	1.5	4.5	3.5	---	---
29	4.0	3.5	3.5	3.0	5.0	4.0	---	---	4.5	4.0	---	---
30	4.5	4.0	3.0	2.0	5.0	4.0	---	---	4.5	4.0	---	---
31	---	---	4.0	3.0	5.0	4.0	---	---	4.5	4.0	---	---
MONTH	7.0	0.5	4.5	2.0	5.0	2.0	5.0	1.0	6.0	1.0	---	---

14231670 WALUPT LAKE NEAR PACKWOOD, WASH.

LOCATION.--Lat 46°25'15", long 121°28'17", in NW¼SW¼ sec.20, T.11 N., R.11 E., Lewis County, 16 miles southeast of Packwood.

DRAINAGE AREA.--13.7 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1971 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake Body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
JULY												
08...	1400	50	6.0	8.0	4.3	.4	1.7	.3	17	0	.0	.3
AUG.												
18...	1300	3.0	17.5	--	--	--	--	--	--	--	--	--
18...	1305	200	4.0	--	--	--	--	--	--	--	--	--

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
JULY											
08...	.1	--	.06	.02	.000	.000	31	12	0	25	7.2
AUG.											
18...	--	.12	.05	.15	.000	.010	--	--	--	27	7.9
18...	--	.11	.02	.24	.000	.010	--	--	--	28	7.9

14232500 CISPUS RIVER NEAR RANDLE, WASH.

LOCATION.--Lat 46°26'50", long 121°51'46", in T.11 N., R.8 E. (unsurveyed), Lewis County, Gifford Pinchot National Forest, temperature recorder at gaging station on left bank, 60 ft upstream from bridge to Tower Rock ranger station, 4.1 miles downstream from North Fork, 8.0 miles southeast of Randle, and at mile 15.8.

DRAINAGE AREA.--321 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1950 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 14.0°C Aug. 12; minimum recorded, 1.0°C Jan. 2-5.

Period of record:
Water temperatures: Maximum, 16.5°C July 27-29, 1958; minimum, freezing point Jan. 20, 1954, and on several days during January and February in 1963.

REMARKS.--Recorder not operating Feb. 18 to Mar. 18; no range in temperature obtained.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14232500 CISPUS RIVER NEAR RANDLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.0	3.5	8.0	6.0	6.5	6.0	9.0	8.0	12.0	10.5	9.5	9.0
2	5.0	4.5	8.0	6.0	6.5	6.0	9.0	7.0	12.0	10.0	9.5	9.0
3	6.0	4.0	8.0	5.5	6.5	6.0	9.0	7.0	11.5	10.0	10.5	9.0
4	6.5	4.5	6.5	6.0	8.0	6.0	9.0	7.0	13.0	10.0	11.5	9.0
5	6.5	4.5	6.0	5.5	8.0	6.0	8.5	7.0	13.5	10.5	10.0	9.5
6	5.5	5.0	6.5	5.0	8.0	6.5	8.0	7.0	13.5	11.0	10.0	9.0
7	5.0	4.5	8.0	5.5	8.0	6.5	8.5	6.5	13.5	11.0	11.0	8.5
8	5.0	4.5	6.5	6.0	8.0	6.0	8.5	8.0	13.5	11.0	11.0	8.5
9	5.0	4.5	6.5	5.5	7.0	6.0	8.5	7.0	13.5	11.0	12.0	9.5
10	5.0	4.0	7.0	5.5	6.5	6.5	7.0	6.5	14.0	11.0	11.5	9.0
11	5.0	4.5	7.0	6.0	8.0	6.5	7.0	6.5	13.5	11.0	11.0	9.5
12	5.5	4.0	6.5	6.0	8.0	6.5	9.0	6.5	14.0	11.0	10.5	8.0
13	6.5	5.0	6.0	6.0	8.0	6.5	9.5	7.0	13.5	11.0	10.5	8.5
14	6.5	5.5	6.0	5.5	6.5	6.0	10.0	8.0	13.5	11.0	9.5	7.0
15	6.0	5.5	6.0	5.5	8.0	6.0	10.0	8.0	13.0	10.0	10.0	7.0
16	5.5	5.0	6.0	5.5	8.0	6.5	10.0	8.0	13.0	10.0	10.0	8.0
17	5.5	5.5	6.0	5.0	7.0	6.0	10.0	8.0	12.0	10.0	10.0	8.0
18	6.0	5.5	7.0	5.5	7.0	6.5	10.5	8.5	13.0	10.0	10.0	7.0
19	8.0	5.0	7.0	6.0	8.0	6.5	10.0	9.0	13.5	10.0	10.0	8.0
20	6.5	6.0	6.0	5.5	8.0	6.5	11.0	9.0	12.0	10.5	10.0	8.0
21	6.5	5.5	8.5	5.5	9.0	6.5	11.0	9.0	11.0	10.5	10.0	7.0
22	6.0	5.0	8.5	6.0	8.5	7.0	11.0	9.0	11.0	10.0	10.0	7.0
23	7.0	5.5	8.5	6.5	8.0	7.0	11.0	9.5	12.0	9.5	10.0	8.0
24	6.0	5.5	8.0	6.5	7.0	6.5	11.0	9.5	13.0	9.5	9.0	8.5
25	8.5	5.5	7.0	6.5	6.5	6.5	11.5	9.5	13.0	10.0	8.5	8.5
26	8.5	5.5	7.0	6.5	7.0	6.0	11.5	10.0	13.5	10.5	9.0	8.0
27	7.0	6.0	8.0	6.5	7.0	6.5	12.0	10.0	11.5	10.0	8.5	8.0
28	6.5	6.0	8.0	6.5	6.5	6.5	12.0	10.0	13.0	10.0	8.5	8.0
29	6.5	6.0	7.0	6.5	9.0	6.5	13.0	10.5	12.0	10.5	8.0	7.0
30	7.0	5.5	6.5	6.0	9.0	7.0	12.0	10.5	12.0	10.5	7.0	6.5
31	---	---	6.0	6.0	---	---	12.0	10.5	10.5	9.5	---	---
MONTH	8.5	3.5	8.5	5.0	9.0	6.0	13.0	6.5	14.0	9.5	12.0	6.5

14233400 COWLITZ RIVER NEAR RANDLE, WASH.

LOCATION.--Lat 46°28'13", long 122°05'51", in NE¼ sec.6, T.11 N., R.6 E., Lewis County, temperature recorder at gaging station 0.5 mile downstream from Cispus River, 8.1 mile southwest of Randle, and at mile 89.3.

DRAINAGE AREA.--1,030 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970.
Water temperatures: November 1952 to August 1968, April 1969 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 16.0°C Aug. 26; minimum, 1.0°C Nov. 22, 23, Jan. 3-5.

Period of record:
Water temperatures: Maximum, 18.5°C July 11, 12, 1958; minimum (1952-68, 1969-71), freezing point Jan. 20, 1962.

REMARKS.--Prior to October 1968 data collected at site 1.0 miles downstream and published as "near Kosmos."

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14233400 COWLITZ RIVER NEAR RANDLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14234810 COWLITZ RIVER BELOW MOSSYROCK DAM, WASH.

LOCATION.--Lat 46°32'10", long 122°25'45", SE¼SE¼ sec.9, T.12 N., R.3 E., Lewis County, temperature recorder on left bank 0.2 mile downstream from Mossyrock Dam and 2.6 miles east from town of Mossyrock.

DRAINAGE AREA.--1,154 sq mi (at Mossyrock Dam).

PERIOD OF RECORD.--Water temperatures: July 1970 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 12.0°C Nov. 3, 4, but may have been higher Oct. 7-21; minimum, 4.0°C Jan. 28, Feb. 10, 11, but may have been lower during period Feb. 19-Apr. 1.

REMARKS.--Recorder stopped Oct. 7-21, Dec. 3-8, and Feb. 19-Apr. 1; no range in temperature available.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14234810 COWLITZ RIVER BELOW MOSSYROCK DAM, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	6.5	6.0	7.0	7.0	8.5	8.0	9.0	8.5	9.0	8.5
2	5.5	5.5	6.5	6.0	8.0	7.0	8.5	8.0	9.0	8.5	9.0	8.5
3	5.5	5.5	6.0	6.0	7.0	7.0	8.5	8.0	9.0	8.5	9.0	8.5
4	5.5	5.5	6.0	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	8.5
5	5.5	5.5	6.0	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	8.5
6	5.5	5.5	6.0	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	8.5
7	5.5	5.5	6.5	6.0	7.0	7.0	8.5	8.0	9.0	8.5	9.0	8.5
8	6.0	5.5	6.0	5.5	8.0	7.0	8.5	8.5	9.0	8.5	9.0	8.5
9	6.0	6.0	6.0	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	9.0
10	6.0	5.5	6.0	6.0	7.0	7.0	8.5	8.5	9.0	8.5	9.0	9.0
11	6.0	5.5	6.5	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	9.0
12	6.0	6.0	6.0	6.0	8.0	7.0	8.5	8.5	9.0	8.5	9.0	9.0
13	6.5	6.0	6.0	6.0	7.0	7.0	8.5	8.5	8.5	8.5	9.5	9.0
14	6.5	6.0	6.5	6.0	8.0	7.0	9.0	8.5	8.5	8.5	9.5	9.0
15	6.5	6.0	6.5	6.5	7.0	7.0	9.0	9.0	8.5	8.5	9.5	9.0
16	6.0	6.0	6.5	6.0	8.0	7.0	9.5	9.0	8.5	8.5	9.5	9.0
17	6.0	6.0	6.5	6.0	8.0	6.5	9.5	9.0	11.5	8.5	9.5	9.0
18	6.0	6.0	7.0	6.5	7.0	6.5	9.5	9.0	8.5	8.5	9.5	9.0
19	6.0	6.0	6.5	6.0	7.0	6.5	9.5	9.0	8.5	8.5	9.5	9.5
20	6.0	6.0	6.5	6.0	7.0	6.5	9.5	9.0	8.5	8.5	9.5	9.0
21	6.0	5.5	7.0	6.5	7.0	6.5	9.5	9.0	8.5	8.5	9.5	9.0
22	6.0	6.0	6.5	6.0	7.0	6.5	9.0	9.0	8.5	8.5	9.5	9.0
23	6.0	5.5	6.5	6.0	7.0	7.0	9.5	9.0	8.5	8.5	9.5	9.0
24	6.0	5.5	6.5	6.0	8.0	7.0	9.0	9.0	8.5	8.5	9.5	9.5
25	6.0	6.0	6.5	6.0	7.0	7.0	9.0	9.0	8.5	8.5	9.5	9.0
26	6.0	6.0	6.0	6.0	8.0	7.0	9.5	9.0	9.0	8.5	9.5	9.0
27	6.5	6.0	7.0	6.0	8.0	7.0	9.5	9.0	9.0	8.5	9.5	9.5
28	6.0	5.5	7.0	7.0	8.0	7.0	9.5	9.0	8.5	8.5	9.5	9.5
29	6.0	5.5	7.0	6.5	8.0	7.0	9.5	9.0	8.5	8.5	9.5	9.5
30	6.5	6.0	8.0	7.0	8.0	7.0	9.5	9.0	8.5	8.5	9.5	9.5
31	---	---	8.0	7.0	---	---	9.5	9.0	9.0	8.5	---	---
MONTH	6.5	5.5	8.0	5.5	8.0	6.5	9.5	8.0	11.5	8.5	9.5	8.5

14235500 WEST FORK TILTON RIVER NEAR MORTON, WASH.

LOCATION.--Lat 46°36'40", long 122°14'36", in NE¼SE¼ sec.13, T.13 N., R.4 E., Lewis County, temperature recorder at gaging station on left bank, 0.9 mile upstream from mouth, and 3.8 miles northeast of Morton.

DRAINAGE AREA.--16.4 sq mi.

PERIOD OF RECORD.--Water temperatures: August 1950 to May 1956, July 1957 to September 1959, October 1960 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum recorded, 24.5°C July 27; minimum, 1.5°C Dec. 3, Jan. 5, Mar. 1.

Period of record:
Water temperatures: Maximum, 24.5°C July 15, 1970, July 27, 1971; minimum, freezing point on several days during February and March 1962, Jan. 27 to Feb. 1, 1963.

REMARKS.--Recorder not operating July 28 to Aug. 11; no range in temperature obtained.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14235500 WEST FORK TILTON RIVER NEAR MORTON, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14236200 TILTON RIVER ABOVE BEAR CANYON CREEK, NEAR CINEBAR, WASH.

LOCATION.--Lat 46°35'44", long 122°27'30", in NE¼SW¼ sec.20, T.13 N., R.3 E., Lewis County, temperature recorder at gaging station on right bank, 0.9 mile upstream from Bear Canyon Creek, 3.5 miles southeast of Cinebar, and at mile 7.1.

DRAINAGE AREA.--141 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1965 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 22.0°C Aug. 8-12; minimum, 3.0°C Jan. 5, 6.

Period of record:
Water temperatures: Maximum, 24.5°C July 30, 1965; minimum, 2.0°C Jan. 28, 29, 1968, Dec. 30, 1968 to Jan. 1, 1969, Jan. 31 to Feb. 3, 1969.

REMARKS.--Recorder stopped Oct. 9-22; range in temperature 9.0°C to 12.0°C. Recorder stopped Feb. 23-Mar. 15; range in temperature 2.0°C to 5.5°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14236200 TILTON RIVER ABOVE BEAR CANYON CREEK, NEAR CINEBAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14238000 COWLITZ RIVER BELOW MAYFIELD DAM, WASH.

LOCATION.--Lat 46°30'38", long 122°36'54", in SE¼NE¼ sec.24, T.12 N., R.1 E., Lewis County, temperature recorder at gaging station on right bank, 1.4 miles downstream from Mayfield Dam, 1.5 miles upstream from Mill Creek, 2.1 miles downstream from Winston Creek, and at mile 50.6.

DRAINAGE AREA.--1,400 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1950 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 13.5°C Aug. 9-11, 23, Sept. 1; minimum, 4.5°C Jan. 15-20.

Period of record:
Water temperatures: Maximum, 21.0°C July 28, 29, 1958; minimum, 0.5°C Jan. 28 to Feb. 2, 1956.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14238000 COWLITZ RIVER BELOW MAYFIELD DAM, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14241200 COLDSPRING CREEK NEAR COUGAR, WASH.

LOCATION.--Lat 46°10'38", long 122°17'25", in NE¼SE¼ sec.15, T.8 N., R.4 E., Cowlitz County, Gifford Pinchot National Forest, temperature recorder at gaging station on right bank, 800 ft downstream from unnamed tributary, 1.0 mile north of Goat Mountain, and 8.5 miles north of Cougar.

DRAINAGE AREA.--5.47 sq mi.

PERIOD OF RECORD.--Water temperature: June 1969 to June 1971 (discontinued).

EXTREMES.--October 1970 to June 1971:
Water temperatures: Maximum, 7.5°C Oct. 1-5; minimum, 1.0°C Nov. 29, 30, May 8-18.

Period of record:
Water temperatures: Maximum, 14.0°C July 1, 9, 1969, June 2, July 3-5, 1970; minimum, 0.5°C several days during December 1969 and January 1970.

REMARKS.--Recorder stopped January 1-3; range in temperature 1.5°C to 2.0°C

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14241200 COLDSPRING CREEK NEAR COUGAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2.0	2.0	2.0	1.5	3.0	3.0	---	---	---	---	---	---
2	2.0	2.0	1.5	1.5	3.0	3.0	---	---	---	---	---	---
3	2.0	2.0	2.0	1.5	3.0	3.0	---	---	---	---	---	---
4	2.0	2.0	1.5	1.5	4.5	3.0	---	---	---	---	---	---
5	2.0	2.0	1.5	1.5	5.0	3.5	---	---	---	---	---	---
6	2.0	2.0	1.5	1.5	4.5	4.0	---	---	---	---	---	---
7	2.0	2.0	1.5	1.5	4.0	4.0	---	---	---	---	---	---
8	2.0	1.5	1.5	1.0	4.5	4.0	---	---	---	---	---	---
9	2.0	1.5	1.5	1.0	4.0	4.0	---	---	---	---	---	---
10	2.0	1.5	1.5	1.0	4.0	4.0	---	---	---	---	---	---
11	2.0	1.5	1.5	1.0	5.0	4.0	---	---	---	---	---	---
12	2.0	2.0	1.5	1.0	5.0	4.0	---	---	---	---	---	---
13	2.0	1.5	1.0	1.0	5.0	4.0	---	---	---	---	---	---
14	2.0	1.5	1.5	1.0	4.5	4.0	---	---	---	---	---	---
15	2.0	1.5	1.0	1.0	7.0	4.0	---	---	---	---	---	---
16	2.0	2.0	1.0	1.0	6.5	5.0	---	---	---	---	---	---
17	2.0	2.0	1.5	1.0	6.0	5.0	---	---	---	---	---	---
18	2.0	2.0	2.0	1.0	---	---	---	---	---	---	---	---
19	2.0	2.0	1.5	1.5	---	---	---	---	---	---	---	---
20	2.0	2.0	2.0	1.5	---	---	---	---	---	---	---	---
21	2.0	2.0	2.5	1.5	---	---	---	---	---	---	---	---
22	2.0	2.0	2.5	2.0	---	---	---	---	---	---	---	---
23	2.0	2.0	2.5	2.0	---	---	---	---	---	---	---	---
24	2.0	2.0	2.5	2.0	---	---	---	---	---	---	---	---
25	2.0	2.0	2.5	2.0	---	---	---	---	---	---	---	---
26	2.0	2.0	2.5	2.0	---	---	---	---	---	---	---	---
27	2.0	2.0	3.0	2.0	---	---	---	---	---	---	---	---
28	2.0	2.0	4.0	2.0	---	---	---	---	---	---	---	---
29	2.0	1.5	3.5	3.0	---	---	---	---	---	---	---	---
30	2.0	1.5	3.0	3.0	---	---	---	---	---	---	---	---
31	---	---	3.0	3.0	---	---	---	---	---	---	---	---
MONTH	2.0	1.5	4.0	1.0	---	---	---	---	---	---	---	---

14242500 TOUTLE RIVER NEAR SILVER LAKE, WASH.

LOCATION.--Lat 46°20'11", long 122°43'27", in NW¼SE¼ sec.19, T.10 N., R.1 E., Cowlitz County, temperature recorder at gaging station on right bank just downstream from bridge on State Highway 504, 0.8 mile downstream from confluence of North and South Forks, 4.9 miles northeast of Silver Lake, and at mile 16.4.

DRAINAGE AREA.--474 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1950 to September 1962, October 1963 to September 1971

EXTREMES.--1970-71:
Water temperatures: Maximum, 19.0°C Aug. 8; minimum, 2.0°C Jan. 4-6, Mar. 1.

Period of record:
Water temperatures: Maximum, 22.0°C Aug. 4, 1952, Aug. 15, 1967; minimum (1950-60, 1961-62, 1963-71), freezing point Jan. 4, 5, 1959.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14242500 TOUTLE RIVER NEAR SILVER LAKE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	5.0	10.5	8.5	8.0	7.0	13.5	11.0	17.0	15.0	13.5	11.5
2	7.0	6.0	10.5	8.5	8.0	8.0	14.0	10.5	16.5	14.5	13.5	11.5
3	7.0	5.5	10.5	8.0	9.5	8.0	14.0	10.5	16.5	14.5	13.5	12.0
4	8.5	6.0	10.5	8.0	10.5	8.0	14.0	11.5	16.5	15.5	14.0	11.5
5	9.0	6.5	8.0	7.0	11.0	9.0	11.5	10.5	18.0	15.0	14.0	13.0
6	9.0	7.0	10.0	6.5	11.0	9.0	11.0	10.5	18.0	16.0	13.5	12.0
7	7.0	6.5	10.5	8.0	10.0	9.5	13.0	10.0	18.0	15.0	14.0	11.5
8	6.5	6.5	10.5	8.0	10.0	8.5	13.0	11.5	19.0	15.5	14.0	12.0
9	6.5	6.5	9.5	7.0	10.0	9.0	11.5	11.5	18.5	15.5	14.5	13.5
10	6.5	6.0	10.5	7.0	9.5	9.0	11.5	10.5	18.5	15.5	14.5	13.0
11	6.5	6.0	11.5	8.5	10.0	9.0	10.5	10.5	18.5	15.5	14.5	13.5
12	8.0	6.0	11.0	8.5	10.0	9.0	14.0	10.5	18.5	15.5	14.0	12.0
13	8.5	6.5	8.5	7.0	10.0	9.5	14.5	11.5	17.0	15.0	14.0	11.5
14	8.5	7.0	8.5	6.5	9.5	9.0	15.0	13.0	16.0	15.0	13.0	10.5
15	8.0	7.0	8.5	7.0	10.0	9.0	15.0	13.0	16.5	14.0	13.0	10.5
16	7.0	6.0	8.5	6.5	11.0	9.0	15.0	11.5	16.5	14.0	13.0	10.5
17	6.5	6.0	8.5	6.5	11.0	9.0	15.0	12.0	16.5	14.0	12.0	10.0
18	7.0	6.0	9.5	7.0	10.5	9.0	15.5	13.0	16.5	14.0	12.0	9.5
19	9.0	6.0	9.0	8.5	11.0	9.5	15.5	13.5	17.0	14.5	13.0	10.5
20	9.0	6.5	8.5	7.0	11.0	10.0	16.0	13.5	16.5	15.0	13.0	10.5
21	8.0	6.0	10.5	6.5	13.5	10.0	16.0	13.5	16.0	15.0	13.0	10.5
22	7.0	6.0	10.5	8.5	13.5	10.0	15.5	13.5	15.0	14.0	13.0	10.0
23	8.0	6.5	11.0	8.5	11.5	10.0	15.5	13.5	15.5	13.0	12.0	10.5
24	7.0	6.5	10.5	8.5	10.0	9.0	15.5	13.0	16.0	13.5	11.5	11.5
25	10.0	6.0	10.0	9.0	10.0	9.0	16.5	13.5	16.0	14.0	11.5	11.0
26	10.5	8.5	10.0	9.0	11.5	9.5	17.0	14.5	16.0	13.5	11.0	10.5
27	10.0	8.0	11.0	8.5	11.5	9.5	17.0	14.5	15.5	13.5	11.0	10.5
28	8.0	7.0	11.0	8.5	10.5	9.5	17.0	15.0	16.5	13.5	11.0	9.5
29	8.5	8.0	10.5	8.0	13.0	9.5	18.0	15.5	16.0	14.0	9.5	9.0
30	9.5	8.0	8.0	7.0	13.5	10.5	18.0	15.5	14.5	14.0	9.5	9.0
31	---	---	7.0	7.0	---	---	15.5	14.5	14.5	13.0	---	---
MONTH	10.5	5.0	11.5	6.5	13.5	7.0	18.0	10.0	19.0	13.0	14.5	9.0

14243000 COWLITZ RIVER AT CASTLE ROCK, WASH.
(International hydrologic decade station)

LOCATION.--Lat 46°16'30", long 122°54'48", in SW¼SE¼ sec.10, T.9 N., R.2 W., Cowlitz County, at gaging station 40 ft downstream from Arkansas Valley Road bridge in Castle Rock, 2.7 miles downstream from Toutle River, and at mile 17.3.

DRAINAGE AREA.--2,238 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1959, August 1966 to September 1971.
Water temperatures: August 1950 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 17.0°C Aug. 16; minimum, 4.0°C Jan. 14, Feb. 28, and Mar. 1, 2, 4-6.

Period of record:
Water temperatures: Maximum (1950-62, 1963-71), 24.0°C July 28-30, 1958; minimum, freezing point Jan. 29, 30, 1951.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)
OCT. 20...	1000	3520	12	6.4	1.2	4.2	.4	28	0	23	1.2
DEC. 04...	1315	14000	12	5.2	1.1	3.2	6.0	23	0	19	2.4
FEB. 02...	1115	16900	13	4.8	1.1	2.8	.3	23	0	19	1.0
MAR. 11...	--	19400	13	4.7	1.1	2.8	.4	27	0	22	1.2
APR. 12...	1145	14700	15	4.9	1.2	3.1	.7	24	0	20	2.0
JUNE 04...	0830	6920	14	7.3	1.2	1.3	.4	32	0	26	3.0
JULY 21...	1400	12000	12	5.9	1.0	3.7	.5	27	0	22	1.5
AUG. 30...	1110	2880	14	7.7	1.3	8.1	.6	33	0	27	2.5

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRITE (N) (MG/L)	NITRATE (N) (MG/L)	NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
OCT. 20...	4.0	.1	--	.00	--	.010	49	44	21	0	--
DEC. 04...	3.0	.0	--	.02	--	.020	40	39	18	0	--
FEB. 02...	2.1	.1	--	.02	--	.050	45	37	17	0	48
MAR. 11...	2.0	.0	--	--	--	.070	--	38	16	0	45
APR. 12...	2.2	.1	--	.1	--	.040	--	41	17	0	48
JUNE 04...	6.0	.0	--	.00	--	.020	--	49	23	0	72
JULY 21...	4.3	.1	--	--	.03	.010	46	42	19	0	52
AUG. 30...	15	.0	.000	.15	.15	.060	68	66	25	0	97

14243000 COWLITZ RIVER AT CASTLE ROCK, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT. 20...	--	10.0	--	--	--	--	--	--	--	--
DEC. 04...	--	7.0	--	--	--	--	--	--	--	--
FEB. 02...	7.3	6.0	5	--	--	--	--	--	--	--
MAR. 11...	7.1	--	--	--	--	--	--	--	--	--
APR. 12...	7.9	6.0	--	--	--	--	--	--	--	--
JUNE 04...	8.3	9.0	--	1	17	0	0	--	110	20
JULY 21...	6.8	12.8	4	--	--	--	--	--	--	--
AUG. 30...	7.0	13.9	7	0	6	5	10	.1	10	40

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14243000 COWLITZ RIVER AT CASTLE ROCK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	6.0	9.0	8.0	9.0	9.0	12.0	10.0	13.5	12.0	13.5	13.0
2	7.0	6.0	9.5	8.5	9.0	9.0	13.0	10.0	13.5	11.5	14.0	13.0
3	8.0	6.0	10.0	9.0	9.0	9.0	13.0	10.5	13.5	11.0	13.0	12.0
4	8.0	6.5	10.0	7.0	10.0	9.0	13.0	10.5	14.0	13.5	14.0	13.0
5	8.5	8.0	8.0	6.5	11.0	9.5	11.0	10.5	14.5	14.0	14.5	13.0
6	8.0	7.0	9.0	6.5	11.0	10.5	11.0	10.0	15.0	14.5	13.5	13.0
7	7.0	6.5	10.0	8.5	10.5	9.5	13.0	10.0	15.0	14.5	14.0	13.5
8	7.0	6.5	10.5	9.0	10.0	9.0	13.0	11.0	16.5	15.0	14.0	13.5
9	6.5	6.0	9.5	8.0	10.0	10.0	12.0	11.0	16.0	14.0	14.5	13.5
10	6.5	5.5	10.5	8.5	10.0	9.5	12.0	10.5	16.0	15.5	14.0	13.0
11	6.0	5.5	11.0	9.0	9.5	9.0	11.0	10.5	16.5	14.5	13.5	11.0
12	6.5	5.0	11.0	9.5	10.0	9.0	13.0	10.5	16.5	15.5	13.0	11.5
13	6.5	5.5	9.5	8.5	10.0	9.0	13.0	10.5	15.5	14.5	13.0	11.0
14	6.5	5.5	9.0	7.0	9.0	8.5	13.5	10.5	15.0	14.5	13.0	11.0
15	6.5	5.5	9.5	9.0	9.0	8.5	14.0	11.0	16.0	14.5	13.0	11.0
16	6.0	5.0	9.5	8.0	9.0	9.0	14.0	11.0	17.0	15.5	13.0	11.5
17	6.0	5.5	9.0	7.0	9.0	8.5	14.0	11.0	16.0	15.0	13.0	12.0
18	6.5	5.5	9.5	8.0	9.5	9.0	14.0	11.0	15.5	14.5	14.0	13.0
19	7.0	5.5	9.5	8.5	10.0	9.5	14.0	11.0	16.5	15.5	14.5	13.0
20	7.0	6.5	9.0	8.0	10.0	9.5	13.5	11.5	16.0	14.5	14.0	13.0
21	6.5	6.0	10.0	8.0	11.0	9.0	13.5	11.0	15.0	14.0	13.0	12.0
22	6.5	5.5	10.5	8.5	11.0	9.5	13.5	10.5	14.5	14.0	13.5	12.0
23	6.5	6.0	10.5	10.5	10.0	9.0	12.0	10.5	15.0	14.0	13.0	12.0
24	6.5	6.0	11.0	9.0	10.0	9.0	13.0	11.0	16.5	14.5	13.0	12.0
25	8.5	6.0	10.0	9.0	10.5	9.0	13.5	10.5	15.5	14.5	12.0	11.5
26	8.5	6.5	10.5	9.5	11.0	9.5	14.0	11.0	15.0	14.0	12.0	11.5
27	8.5	7.0	10.0	9.0	10.5	9.5	14.0	12.0	16.0	14.5	12.0	11.5
28	7.0	6.0	11.5	9.5	10.0	9.5	13.5	11.0	16.5	15.0	11.5	11.0
29	7.0	6.0	11.5	9.5	12.0	9.5	14.5	12.0	16.0	14.5	11.0	10.5
30	8.0	6.5	9.5	9.0	12.0	10.0	14.5	12.0	14.5	14.0	11.0	10.5
31	---	---	9.0	9.0	---	---	13.0	12.0	14.5	13.5	---	---
MONTH	8.5	5.0	11.5	6.5	12.0	8.5	14.5	10.0	17.0	11.0	14.5	10.5

14244600 COWEMAN RIVER ABOVE SAM SMITH CREEK NEAR KELSO, WASH.

LOCATION.--Lat 46°10'23", long 122°43'46", in SW¼SE¼ sec.18, T.8 N., R.1 E., Cowlitz County, at county road bridge 0.1 mile upstream from Sam Smith Creek, 4.1 miles northeast of Rose Valley, and at mile 17.3.

DRAINAGE AREA.--68.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1970 to September 1971 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, NOVEMBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	1430	--	.08	.000	.00	.38	.000	.000
JAN.								
04...	1415	--	.07	.000	.00	.32	.020	.020
18...	1445	--	.08	.000	.00	.34	.030	.060
FEB.								
01...	1400	--	.02	.000	.00		.030	.14
16...	1330	--	.09	.000	.06	.45	.040	.050
MAR.								
01...	1330	--	1.1	.000	.15	.45	.000	.010
15...	1350	--	.12	.010	.03	.41	.040	.13
APR.								
05...	1340	--	.13	.010	.15	.81	--	.050
19...	1425	--	.19	.000	.06	.25	.050	.070
MAY								
03...	1530	--	.21	.000	.06	.11	.040	.11
17...	1410	--	.09	.010	.00	.18	.050	.090
JUNE								
01...	1320	--	.01	.000	.00	.20	.000	.010
14...	1335	--	.01	.000	.00	.22	.000	.010
JULY								
06...	1500	104	.06	.000	.00	.18	.030	.030
19...	1345	80	.30	.010	.13	.19	.030	.030
AUG.								
02...	1410	54	.04	.000	.03	.14	.010	.020
16...	1600	34	.07	.000	.02	.09	.010	.030
SEP.								
06...	1415	103	.21	.000	.09	.43	.000	.010
21...	1345	42	.23	.000	.11	.18	.000	.020

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
NOV.							
23...	56	7.1	5.3	24	4	12.5	500
JAN.							
04...	43	7.2	3.5	22	4	13.2	210
18...	34	6.9	8.1	31	9	11.8	280
FEB.							
01...	36	7.0	7.8	41	9	11.8	100
16...	56	7.0	7.3	32	4	12.0	90
MAR.							
01...	43	6.8	3.5	20	2	13.7	110
15...	37	6.9	6.2	25	4	12.3	60
APR.							
05...	39	7.3	10.5	27	2	11.2	100
19...	45	6.9	10.5	15	4	11.5	110
MAY							
03...	44	7.1	14.8	16	2	10.5	200
17...	43	7.3	9.1	33	4	11.9	240
JUNE							
01...	--	--	9.6	--	--	--	--
14...	--	--	11.1	--	--	--	--
JULY							
06...	52	7.0	13.5	17	1	10.8	200
19...	86	7.2	22.3	18	2	8.9	400
AUG.							
02...	86	7.2	20.1	20	1	9.4	400
16...	74	7.5	21.2	21	1	9.0	400
SEP.							
06...	74	7.3	14.4	26	1	10.6	900
21...	81	7.1	12.6	23	2	10.9	300

14245000 COWEMAN RIVER NEAR KELSO, WASH.

LOCATION.--Lat 46°08'15", long 122°53'45", in NW¼NE¼ sec.35, T.8 N., R.2 W., Cowlitz County, at bridge on U.S. Highway 99, 0.3 mile east of Kelso, 2.6 miles upstream from mouth, and 4.6 miles downstream from gaging station.

DRAINAGE AREA.--119 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1971.
Water temperatures: July 1950 to September 1971.

EXTREMES.--1969-71:
Water temperatures: Maximum, 25.0°C Aug. 10, 11; minimum, 2.0°C Jan. 5-7.

Period of record:
Water temperatures: Maximum, 28.0°C July 27, 28, 1958; minimum, freezing point on several days during some winter months.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology. Temperature recorder at gaging station 4.6 miles upstream from sampling site. Some inflow between gaging station and sampling point.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
NOV.								
23...	1500	262	.08	.000	.00	.50	.000	.010
DEC.								
21...	1425	565	.16	.000	.01	.68	.010	.030
JAN.								
04...	1445	595	.27	.000	.01	.52	.020	.060
18...	1520	1910	.16	.000	.00	.47	.040	.050
FEB.								
01...	1430	787	.04	.000	.00		.030	.080
16...	1400	893	.04	.000	.02	.45	.050	.070
MAR.								
01...	1400	492	1.1	.000	.05	.66	.000	.010
15...	1430	1150	.12	.010	.03	.59	.040	.15
APR.								
05...	1415	520	.13	.000	.15	.93	--	.050
19...	1455	348	.32	.000	.04	.34	.050	.070
MAY								
03...	1600	290	.24	.000	.07	.14	.040	.11
17...	1450	327	.11	.010	.02	.23	.060	.10
JUNE								
01...	1400	192	.02	.000	.01	.18	.010	.010
14...	1400	195	.02	.000	.01	.18	.010	.020
JULY								
06...	1535	128	.05	.000	.03	.23	.030	.030
19...	1415	86	.44	.020	.34	.27	.090	.090
AUG.								
02...	1445	59	--	--	--	--	--	--
16...	1630	42	--	--	--		--	--
SEP.								
06...	1445	159	.35	.000	.25	.67	.000	.030
21...	1415	47	.25	.000	.12	.15	.010	.020

14245000 COWEMAN RIVER NEAR KELSO, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.							
23...	64	7.0	3.7	20	1	13.1	1100
DEC.							
21...	48	7.2	4.7	24	4	12.6	320
JAN.							
04...	47	7.1	3.1	20	4	13.8	400
18...	38	6.9	8.2	34	8	11.8	220
FEB.							
01...	40	6.9	7.9	30	5	11.8	130
16...	41	7.0	7.2	47	7	12.1	200
MAR.							
01...	47	6.7	3.1	28	4	13.7	200
15...	41	6.9	6.2	32	6	12.4	200
APR.							
05...	43	7.1	10.0	30	4	11.7	200
19...	50	6.9	9.0	18	4	12.1	>800
MAY							
03...	51	7.1	14.6	21	3	10.5	120
17...	48	7.2	10.5	57	5	10.7	750
JUNE							
01...	55	7.2	10.9	32	4	9.9	>16000
14...	57	7.0	12.4	24	4	9.3	--
JULY							
06...	60	6.9	15.5	27	3	9.8	150
19...	91	6.9	24.1	42	2	7.4	700
AUG.							
02...	95	7.2	--	26	3	8.7	600
16...	82	7.3	--	31	5	8.2	1600
SEP.							
06...	78	7.2	15.8	47	6	9.6	3000
21...	103	7.2	16.0	31	6	9.5	400

14245000 COWEMAN RIVER NEAR KELSO, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14245000 COWEMAN RIVER NEAR KELSO, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14247500 ELOCHOMAN RIVER NEAR CATHLAMET, WASH.

LOCATION.--Lat 46°13'17", long 123°20'28", in NE¼SE¼ sec.31, T.9 N., R.5 W., Wahkiakum County, temperature recorder at gaging station on right bank, 125 ft upstream from railroad bridge, 2.4 miles northeast of Cathlamet, and at mile 5.0.

DRAINAGE AREA.--65.8 sq mi.

PERIOD OF RECORD.--Water temperatures: June 1950 to October 1971 (discontinued).

EXTREMES.--1970-71:
Water temperatures: Maximum, 21.0°C Aug. 10, 11, Sept. 20; minimum, 3.5°C several days January through March.

Period of record:
Water temperatures: Maximum, 24.0°C July 11, 12, 1961; minimum, freezing point Feb. 17, 1956.

REMARKS.--Temperature recorder stopped Mar. 17 to Apr. 7 and Sept. 21, 22; no range in temperature available.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

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

14247500 ELOCHOMAN RIVER NEAR CATHLAMET, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	11.0	9.0	9.5	9.5	12.0	11.5	18.0	15.5	14.0	13.5
2	---	---	12.0	10.5	10.0	9.5	13.0	10.0	18.0	16.0	13.5	13.0
3	---	---	12.0	11.0	10.5	9.5	14.0	11.0	18.0	16.0	13.5	13.0
4	---	---	12.0	10.5	13.0	10.0	13.0	12.0	18.0	16.5	13.5	12.0
5	---	---	10.5	9.5	12.0	11.0	12.0	11.5	18.0	16.0	13.5	13.5
6	---	---	11.5	9.0	12.0	11.5	13.5	11.0	18.0	16.0	13.5	12.0
7	---	---	13.5	10.5	11.5	11.0	14.0	11.0	18.5	15.0	13.0	11.0
8	8.0	7.0	13.0	11.0	12.0	11.0	13.5	13.0	20.0	15.0	13.0	11.5
9	7.0	6.5	12.0	10.0	11.5	11.0	13.0	13.0	20.5	16.0	14.5	12.0
10	6.5	6.0	13.0	10.0	11.5	11.0	13.0	12.0	21.0	17.0	14.0	13.0
11	6.5	6.0	14.5	11.0	12.0	11.0	13.0	11.5	21.0	16.5	14.0	13.0
12	8.0	5.5	14.0	12.0	12.0	11.0	15.0	11.5	18.0	15.0	14.0	12.0
13	8.5	7.0	12.0	10.0	11.0	11.0	15.5	13.0	15.0	14.5	14.0	11.5
14	8.5	7.0	10.5	9.5	11.0	10.5	16.5	14.0	16.0	13.5	13.5	11.0
15	8.0	7.0	10.5	10.0	11.0	10.5	17.0	14.5	17.0	13.5	14.5	10.0
16	8.0	6.5	10.0	8.5	11.5	10.0	17.0	14.5	18.0	13.0	16.0	10.5
17	7.0	6.5	9.5	8.5	11.0	10.0	18.0	15.0	18.0	13.0	18.5	9.5
18	8.5	7.0	9.5	8.5	11.0	11.0	18.5	15.5	18.5	12.0	19.5	9.0
19	8.5	6.5	9.0	9.0	12.0	11.0	19.0	16.0	18.5	14.5	18.5	9.5
20	8.5	8.0	9.0	8.5	12.0	11.5	19.0	16.5	18.5	15.0	21.0	10.5
21	8.0	6.5	11.0	9.0	15.0	11.5	19.0	16.5	17.0	15.5	---	---
22	8.0	7.0	10.5	10.0	15.0	14.0	18.0	16.0	16.0	15.0	---	---
23	8.5	7.0	12.0	10.5	14.5	13.0	16.0	15.0	18.0	14.0	19.0	11.5
24	8.5	7.0	12.0	11.5	14.0	11.0	16.5	14.5	20.0	13.0	12.0	12.0
25	10.0	7.0	11.5	11.0	11.5	10.5	18.5	15.5	19.0	13.5	12.0	11.5
26	11.0	9.5	11.5	11.0	11.5	10.0	18.5	16.0	19.0	12.0	11.5	11.0
27	11.0	9.5	13.0	10.5	11.5	10.0	18.0	16.0	19.0	11.5	11.0	10.5
28	9.5	9.0	12.0	11.5	10.5	10.0	17.0	15.5	19.0	13.5	10.5	10.0
29	9.5	9.0	11.5	11.0	12.0	10.0	16.5	16.0	15.5	14.5	10.5	10.0
30	9.5	9.0	11.0	10.0	13.0	10.5	16.5	15.5	15.0	13.0	10.0	9.0
31	---	---	10.0	9.5	---	---	16.0	15.5	14.5	13.5	---	---
MONTH	---	---	14.5	8.5	15.0	9.5	19.0	10.0	21.0	11.5	21.0	9.0

TEMPERATURE (°C) OF WATER, OCTOBER 1971

DAY	MAX	MIN	DAY	MIN	MIN	DAY	MAX	MIN
1	9.5	9.0	6	12.0	12.0	11	13.0	12.0
2	10.5	9.5	7	12.0	11.0	12	----	----
3	10.5	10.0	8	13.5	11.0	13	----	----
4	11.5	10.0	9	12.0	11.0	14	----	----
5	12.0	11.0	10	13.0	12.0	15	----	----

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