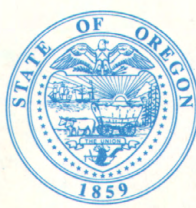
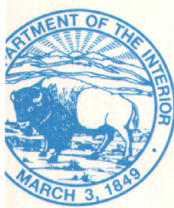
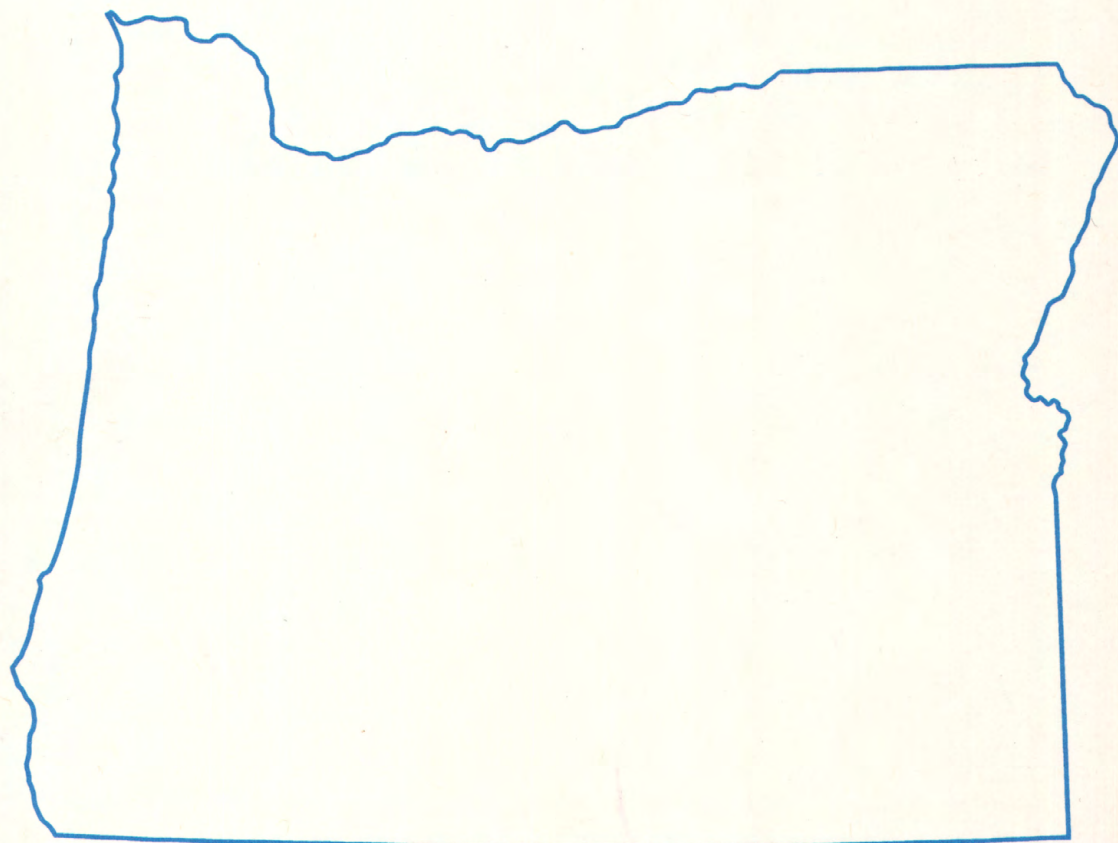


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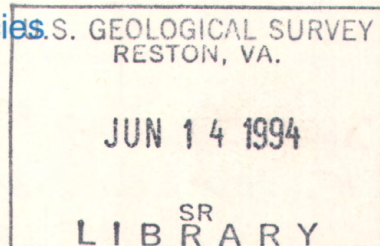


Water Resources Data Oregon Water Year 1993



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-93-1

Prepared in cooperation with other agencies



CALENDAR FOR WATER YEAR 1993

1992

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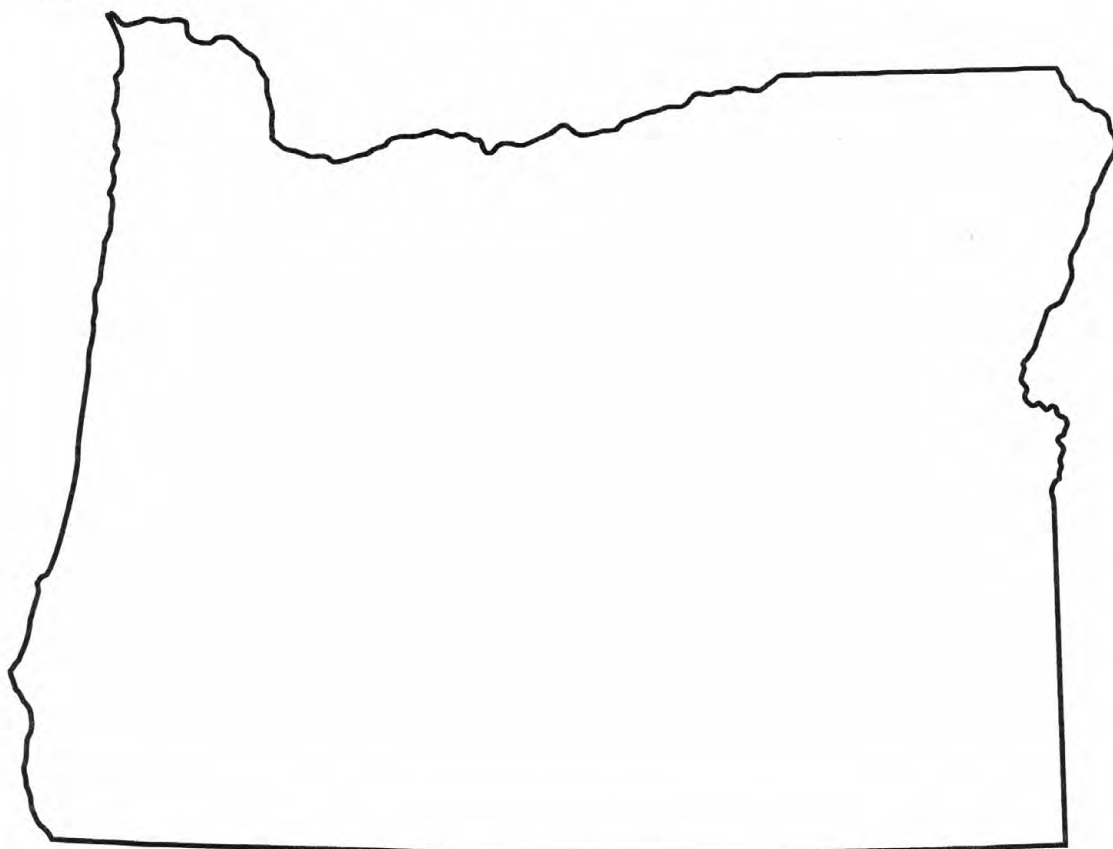
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Water Resources Data Oregon Water Year 1993

by L.E. Hubbard, T.A. Herrett, R.L. Kraus, G.P. Ruppert, and
M.L. Courts



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-93-1
Prepared in cooperation with other agencies

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

For additional information write to:

**District Chief, Water Resources Division
U.S. Geological Survey
10615 S.E. Cherry Blossom Drive
Portland, Oregon 97216**

1994

PREFACE

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

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who edited and assembled the reports. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

Rodger M. Adkins	Howard E. Harrison	Jeanette F. O'Neil
Chauncey W. Anderson	Richard A. Hollway	James K. Parham
David M. Carlson	Jon G. House	James E. Poole
Jeanette M. Center	Matt W. Johnston	Ines M. Ruiz
Douglas O. Cushman	Dennis J. Kent	Michael J. Sarantou
Victor M. DeVolder	Richard L. Kittelson	Kenneth A. Skach
John E. Dick	Carl G. Kroll	Margaret L. Smith
Jack D. Doyle	Karl K. Lee	John L. Thornton
George W. Eisele	James L. Moffet	Roger S. Tippet
Gary L. Gallino	Melanie A. North	Roy E. Wellman
Michael A. Gentile	Gregory W. Olsen	Nancy J. Young
David L. George	Jacqueline C. Olson	Daniel K. Zimmerman
Janice M. Gordon		

This report was prepared in cooperation with other agencies under the general supervision of Dennis D. Lynch, District Chief, Marvin O. Fretwell, Area Regional Hydrologist, Pacific Northwest Area, and T. John Conomos, Regional Hydrologist, Western Region.

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16. Abstract (Limit: 200 words) Water Resources Data for the 1993 water year for Oregon consist of records of stage, discharge, and water quality of streams; and stage, contents, and water quality of lakes and reservoirs. This report contains discharge records for 199 gaging stations; stage only records for 5 gaging stations; stage and contents for 31 lakes and reservoirs; water quality for 53 stations, and water quality for 2 precipitation stations. Also included is 1 crest-stage, partial-record station. Additional water data were collected at various sites, not part of the systematic data collection program. Miscellaneous data were collected at 242 streamflow measuring sites and 217 water-quality sampling sites. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Oregon.			
17. Document Analysis a. Descriptors *Oregon, *Hydrologic Data, *Surface water, *Water quality, *Gaging stations, Flow rate Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Turbidity, Sampling sites, Water analyses. b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
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NOTE.--Data for chemical quality of precipitation and miscellaneous sites are published in separate sections of the data report. See references at the end of this list of page numbers for these sections.

Letter after station name designates type of data: (d) discharge; (e) elevation; (g) gage height; (v) contents; (c) chemical, including periodic biological, microbiological, sediment, pesticide, and radio-chemical where applicable; (s) daily suspended sediment; (t) water temperature; (tb) turbidity; and (k) specific conductance.

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Tualatin River near Dilley (d).....	14203500	302
Gales Creek near Glenwood (d,t).....	14203750	303
Fanno Creek at 56th Avenue, Portland (d).....	14206900	305
Tualatin River at West Linn (d,c).....	14207500	306
Willamette River above Falls, at Oregon City (g).....	14207740	308
Willamette River below Falls, at Oregon City (g).....	14207770	309
Clackamas River:		
Timothy Lake near Government Camp (e,v).....	14208600	311
Oak Grove Fork near Government Camp (d).....	14208700	312
Oak Grove Fork above Powerplant Intake (d).....	14209000	313
Clackamas River above Three Lynx Creek (d).....	14209500	314
Fish Creek near Three Lynx (d).....	14209700	315
Clackamas River at Estacada (d).....	14210000	316
Clackamas River near Clackamas (c).....	14211000	317
Johnson Creek at Sycamore (d).....	14211500	318
Johnson Creek at Milwaukie (d).....	14211550	319
Willamette River at Portland (d,c).....	14211720	320
Fairview Creek at Glisan Street, near Gresham (d).....	14211814	323
Columbia Slough at Portland (d).....	14211820	324
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PACIFIC SLOPE BASINS IN OREGON		
NEHALEM RIVER BASIN		
Nehalem River near Foss (d,c).....	14301000	329
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Wilson River near Tillamook (d).....	14301500	331
NESTUCCA RIVER BASIN		
McGuire Lake near Fairdale (e,v).....	14302800	332
Nestucca River near Fairdale (d).....	14302900	333
Tucca Creek near Blaine (d).....	14303200	334
SILETZ RIVER BASIN		
Siletz River at Siletz (d).....	14305500	335
ALSEA RIVER BASIN		
Five Rivers:		
Lobster Creek:		
East Fork Lobster Creek near Alsea (d).....	14306340	336
Alsea River near Tidewater (d).....	14306500	337
SIUSLAW RIVER BASIN		
Siuslaw River near Mapleton (d).....	14307620	338
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South Umpqua River (Head of Umpqua River) at Tiller (d)....	14308000	340
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Cow Creek above Galesville Reservoir, near Azalea (d)....	14308990	342
Galesville Reservoir near Azalea (e).....	14308995	343
Cow Creek near Azalea (d,do).....	14309000	344
West Fork Cow Creek near Glendale (d).....	14309500	347
Cow Creek near Riddle (d).....	14310000	348
Lookingglass Creek at Brockway (d).....	14311500	349

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UMPQUA RIVER BASIN--Continued		
South Umpqua River near Brockway (d).....	14312000	350
Deer Creek:		
South Fork Deer Creek near Dixonville (d).....	14312170	351
South Umpqua River near Roseburg (c,k,ph,t,do).....	14312260	352
North Umpqua River:		
Lemolo Lake near Toketee Falls (e,v).....	14313000	362
North Umpqua River below Lemolo Lake, near Toketee Falls (d).....	14313500	363
Clearwater River above Trap Creek, near Toketee Falls (d).....	14314500	364
Fish Creek at Big Camas Ranger Station, near Toketee Falls (d).....	14316000	365
North Umpqua River above Copeland Creek, near Toketee Falls (d).....	14316500	366
Steamboat Creek near Glide (d).....	14316700	367
North Umpqua River below Steamboat Creek, near Glide (c)...	14316800	368
North Umpqua River above Rock Creek, near Glide (c,do,k,ph,t).....	14317500	369
North Umpqua River at Winchester (d).....	14319500	376
Calapooya Creek:		
Gassy Creek near Nonpareil (d).....	14319850	377
Calapooya Creek near Oakland (d).....	14320700	378
Umpqua River near Elkton (d).....	14321000	379
Elk Creek near Elkhead (d).....	14321400	380
COOS RIVER BASIN		
Pony Creek at Coos Bay (d).....	14324580	384
COQUILLE RIVER BASIN		
South Fork Coquille River at Powers (d).....	14325000	386
ROGUE RIVER BASIN		
Rogue River above Prospect (d).....	14328000	389
Rogue River below Prospect (d,t).....	14330000	390
South Fork Rogue River near Prospect (d).....	14332000	393
Lost Creek Lake near McLeod (e).....	14335040	394
Rogue River at McLeod (t).....	14335075	395
Big Butte Creek near McLeod (d,t).....	14337500	397
Rogue River near McLeod (d,t).....	14337600	400
Elk Creek near Cascade Gorge (d,t).....	14337800	403
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West Branch Elk Creek near Trail (d,t).....	14337870	409
Elk Creek near Trail (d,t).....	14338000	412
Rogue River at Trail (t).....	14338100	415
Rogue River at Dodge Bridge, near Eagle Point (d,t).....	14339000	417
Bear Creek below Ashland Creek, at Ashland (d).....	14354200	420
Bear Creek at Medford (d).....	14357500	421
Rogue River at Raygold, near Central Point (d,t).....	14359000	422
Rogue River at Grants Pass (d).....	14361500	425
Applegate River:		
Applegate Lake near Copper (e).....	14361900	426
Applegate River near Copper (d,t).....	14362000	427
Star Gulch near Ruch (d).....	14362250	430
Applegate River near Applegate (d,t).....	14366000	431
Applegate River near Wilderville (d,t).....	14369500	434
Rogue River near Agness (d,c).....	14372300	437
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Chetco River near Brookings (d).....	14400000	441

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Oregon have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

[Letters after station name designate type of data collected: (d) discharge, (g) gage height, (e) elevation]

Station name	Station number	Drainage area (mi ²)	Period of record
WARNER LAKES BASIN			
Twentymile Creek near Adel (d)	10366000	194.	1910-16;1918-19;1921-22; 1941-44;1945-91
Deep Creek above Dismal Creek, near Warner Lake (d)	10366500	13.0	1918-19
Dismal Creek above Big Valley, near Warner Lake (d)	10367000	12.5	1913
Dismal Creek near Warner Lake (d)	10367500	14.0	1919
Deep Creek below Dismal Creek, near Warner Lake (d)	10368000	27	1913;1918-19
Deep Creek at Big Valley, near Lakeview (d)	10368500	76	1912-15
Camas Creek near Plush (d)	10369000	32.0	1912
Mud Creek near Plush (d)	10369500	18.0	1912;1915;1928-30
Camas Creek near Lakeview (d)	10370000	63.0	1913-15;1951-73
Crane Creek near Lakeview (d)	10370500	7.00	1914
Drake Creek near Adel (d)	10371000	67.0	1915;1923;1951-64;1966-73
Deep Creek above Adel (d)	10371500	249	1923;1930-91
Givan Canal near Adel (d)	10373000	--	1915
Deep Creek at Adel (d)	10374500	274	1910-16;1918-19;1921-22
Mud Creek Ditch at Adel (d)	10375000	--	1915
Fish Creek near Plush (d)	10376500	38.0	1914
Honey Creek at Chalstrand's ranch, near Plush (d)	10377000	56.0	1911
Snyder Creek near Plush (d)	10377500	--	1911
Twelvemile Creek near Plush (d)	10378000	37.0	1911
Honey Creek near Plush (d)	10378500	170	1911-14;1915;1921;1922; 1930-91
ABERT LAKE BASIN			
Chewaucan River at damsite, near Paisley (d)	10382500	158	1913-16
Chewaucan River near Buck Mountain, near Paisley (d)	10382550	157	1983-86
Chewaucan River below Coffeepot Creek, near Paisley (d)	10382600	216	1983-86
Conn Ditch near Paisley (d)	10383500	--	1915-20
Chewaucan River near Paisley (d)	10384000	275	1912-21;1924-91
Chewaucan River at Paisley (d)	10384100	278	1905-07;1909-12
Smalls Canal at Paisley (d)	10384500	--	1914-21
Jones-Innis-2X Ditch near Paisley (d)	10385500	--	1915-20
Chewaucan River at narrows, near Paisley (d)	10386000	380	1914-21
Chewaucan River at Hotchkiss Ford, near Paisley (d)	10386500	430	1914-20
Crooked Creek near Valley Falls (d)	10387000	--	1912-13
Ana River plus Summer Lake Canal, near Summer Lake (d)	10388001	--	1930-39;1940-42;1951-91
SUMMER LAKE BASIN			
West Fork Silver Creek near Silver Lake (d)	10389000	27	1919-23;1925-32
Silver Creek plus Silver Lake Ir Canal, near Silver Lake (d)	10390001	180	1905-07;1909-27;1928;1929-91
Bridge Creek near Silver Lake (d)	10390500	30	1922-23
Buck Creek above Timothy Creek, near Silver Lake (d)	10390800	250	1922-23
Buck Creek near Silver Lake (d)	10391000	290	1905-06;1909-10;1919-21
Duncan Creek near Silver Lake (d)	10392000	58	1922-23
Silvies River near Burns (d)	10393500	934	1903-06;1909-12;1913-17; 1918-20;1921-22;1923-91
MALHEUR AND HARNEY LAKES BASIN			
Silvies River near Silvies (d)	10392500	510	1904;1909-11;1916; 1921-23
Emigrant Creek near Burns (d)	10393000	240	1921
Poison Creek near Burns (d)	10394000	81	1921
Prater Creek near Burns (d)	10394500	20	1921-23
East Fork Silvies River near Lawen (d)	10395000	--	1916;1973-77
West Fork Silvies River near Lawen (d)	10395500	--	1916-17;1919;1922; 1973-77
Flood Bypass Silvies River near Burns (d)	10395505	--	1976
Rock Creek near Burns (d)	10395600	--	1976
Mud Creek near Diamond (d)	10396500	30	1911-16;1930
Bridge Creek near Frenchglen (d)	10397000	30.0	1911-16;1930;1938-70
Krumbo Creek near Diamond (d)	10397500	37	1911;1930
Donner und Blitzen River near Narrows (d)	10398500	420	1915-20
Kiger Creek near Diamond (d)	10399000	75	1911-13;1916-21;1930; 1941
Cucamonga Creek near Diamond (d)	10399500	15	1916;1930
McCoy Creek near Diamond (d)	10400000	45	1910-11;1914;1916-21; 1930;1941
Riddle Creek near Smith (d)	10405000	60	1911
Riddle Creek near Diamond (d)	10401000	120	1917-21
Donner Und Blitzen River near Voltage (d)	10401500	760	1938-46;1973-77
Malheur Lake near Voltage (e)	10401800	2,150	1976-80;1983-89
Malheur Lake on west side Cole Island dike, at Voltage (e)	10401810	--	1983-84
Malheur Lake at break in Cole Island dike, near Voltage (e)	10401830	2,150	1972-79
Malheur Lake Outlet at Narrows (d)	10402000	2,150	1916;1973-77
Mud Lake Outlet near Narrows (d)	10402500	2,160	1916-18;1921-22
Silver Creek near Riley (d)	10403000	228	1952-80
Silver Creek above Suintex (d)	10403500	260	1904-06;1909-12;1914-23; 1925-26
Chickahominy Creek near Suintex (d)	10404000	90	1917;1922
Rock Quarry Creek near Suintex (d)	10404500	--	1921;1922
Silver Creek below Suintex (d)	10405000	550	1912-13;1921-23
Silver Creek near Narrows (d)	10406000	630	1917;1919-23
ALVORD LAKE BASIN			
Trout Creek near Denio, NV (d)	10406500	88	1911-12;1922-23;1925-31; 1932-91
CATLOW VALLEY BASIN			
Home Creek near Beckley (Narrows) (d)	10406300	38	1911-12;1915-17;1930
ALVORD LAKE BASIN			
Little Cottonwood Creek near Denio, NV (d)	10407000	8	1911-12

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
GOOSE LAKE (CLOSED BASIN)			
Dog Creek near Lakeview (d)	11338000	27	1912-13
North Drews Canal near Lakeview (d)	11339000	--	1976-81
Drews Creek near Lakeview (d)	11339500	212	1909-81
Cottonwood Creek near Lakeview (d)	11340500	32.9	1909-19; 1924-81
Thomas Creek near Lakeview (d)	11341000	30	1912-17; 1919; 1927-31
LOST RIVER BASIN			
Miller Creek at Gerber Reservoir, near Lorella (d)	11483500	220	1905-08; 1925-50
Miller Creek near Lorella (d)	11484000	270	1909-20
Lost River above Olene (d)	11484500	1,410	1915-17
Lost River at Olene (d)	11485000	1,590	1904; 1907-12
Lost River Diversion Canal near Olene (d)	11486000	--	1961-68
Lost River at Wilson Bridge, near Olene (d)	11487000	1,620	1912-20
Lost River near Merrill (d)	11487500	1,670	1904-07
Lost River at Merrill (d)	11488000	1,680	1916
KLAMATH RIVER BASIN			
Williamson River below Sheep Creek, near Lenz (d)	11491400	205	1974-91
Williamson River near Silver Lake (d)	11491500	220	1917-18; 1920-21
Miller Creek near Crescent (d)	11492000	23.7	1912; 1914
Sand Creek near Fort Klamath (d)	11492500	35	1917-22
Scott Creek near Fort Klamath (d)	11493000	10	1917-20
Williamson River above Spring Creek, near Klamath Agency (d)	11494000	1,330	1912-13; 1918-25
Williamson River at Chiloquin (d)	11494500	1,400	1911-16; 1917
South Fork Sprague River near Bly (d)	11495500	110	1925-26
North Fork Sprague River near Bly (d)	11496500	45	1917-18; 1925-26
Fivemile Creek near Bly (d)	11497000	40	1917-20
Sprague River near Beatty (d)	11497500	513	1912-26; 1953-91
Sycan River near Silver Lake (d)	11498000	100	1918-20
Sycan River at Sycan Marsh, near Silver Lake (d)	11498100	220	1905
Long Creek near Silver Lake (d)	11498500	40	1918-24; 1927-29
Sycan River near Beatty (d)	11499000	540	1912-25
Sycan River below Snake Creek, near Beatty (d)	11499100	568	1974-91
Sprague River near Yainax (d)	11500000	1,270	1904
Sprague River at Chiloquin (d)	11502000	1,600	1911-19; 1923; 1925
Anna Creek near Fort Klamath (d)	11503500	40	1923-27
Wood River at Fort Klamath (d)	11504000	90.0	1911-36
Wood River near Fort Klamath (d)	11504100	87.7	1965-67
Crooked Creek near Fort Klamath (d)	11504200	5.68	1965-67
Fourmile Creek near Odessa (d)	11505500	10.6	1912-17
Fourmile Creek near Rocky Point (d)	11505600	105	1965-67
Varney Creek near Rocky Point (d)	11505700	7.43	1965-67
"A" Canal at Klamath Falls (d)	11507200	--	1911-50; 1961-81
Keno Canal at Klamath Falls (d)	11507400	--	1967-83
Diversion from Klamath River to Lost River, near Olene (d)	11508500	--	1931-68
Spencer Creek near Keno (d)	11510000	90	1929-32
Klamath River at Spencer Bridge, near Keno (d)	11510500	4,050	1914-31
Howard Prairie Lake Outlet near Pinehurst (d)	11512920	--	1961-65
Keene Creek near Ashland (d)	11514500	12.1	1917-22; 1949-65
Green Springs Powerplant Diversion near Ashland (d)	11516100	--	1961-65
OWYHEE RIVER BASIN			
Crooked Creek near Rome (d)	13181500	1,700	1950
Owyhee River above Owyhee Reservoir (d)	13182000	10,400	1929-51
Owyhee River at Owyhee (d)	13184000	11,300	1890-96; 1904-16; 1920-29; 1980-86
MALHEUR RIVER BASIN			
Malheur River at Jone's Ranch, near Drewsey (d)	13213500	530	1914
Warm Springs Reservoir near Riverside (e)	13214500	1,100	1920-91
South Fork Malheur River at Riverside (d)	13215500	630	1910-14; 1919-20; 1927-29; 1938
Malheur River at Riverside (d)	13216000	1,750	1909-15
North Fork Malheur River at Foley's Ranch, near Beulah (d)	13218000	470	1909-12; 1914
North Fork Malheur River at Juntura (d)	13218500	530	1919-22; 1926-32; 1935-40
Malheur River near Namorf (d)	13219000	2,590	1913-23; 1926-31
Malheur River near Westfall (d)	13219500	2,970	1904-05
Malheur River at Little Valley, near Hope (d)	13220000	3,010	1949-79
Malheur River near Hope (d)	13220500	3,030	1919-49
Malheur River near Little Valley (d)	13221500	3,030	1914
Malheur River at McLaughlin Bridge, near Vale (d)	13223500	3,060	1905-06
Bully Creek near Westfall (d)	13225500	160	1912-13; 1923
Cottonwood Creek near Westfall (d)	13226000	82	1922-23
Bully Creek at Warm Springs, near Vale (d)	13226500	539	1903-07; 1910-17; 1922-23; 1964-86
Bully Creek near Vale (d)	13227000	570	1934-62
Bully Creek at Vale (d)	13227500	620	1904
Malheur River at Vale (d)	13228000	3,880	1890-91; 1895-97; 1903-14; 1919
Willow Creek near Malheur (d)	13229500	250	1912-15; 1921-29
Willow Creek below reservoir, near Malheur (d)	13230500	290	1905-06; 1911; 1921-29
Cow Creek near Brogan (d)	13231000	75	1912-14
Willow Creek near Brogan (d)	13231500	420	1912-14
Willow Creek at Cole's Ranch, near Brogan (d)	13232000	455	1904-06
Pole Creek near Brogan (d)	13232500	14	1912
Pole Creek below Black Creek feed canal, near Brogan (d)	13233000	14	1913
Malheur River below Nevada Dam, near Vale (d)	13233300	3,880	1926-34; 1951-54
Malheur River at Halliday Bridge, near Ontario (d)	13233500	4,620	1905
Malheur River near Ontario (d)	13234000	4,680	1904
BURNT RIVER BASIN			
North Fork Burnt River near Whitney (d)	13269300	110	1965-80
North Fork Burnt River at Audrey (d)	13269500	139	1915-16
Middle Fork Burnt River near Audrey (d)	13270000	9.54	1915-16
South Fork Burnt River near Unity (d)	13270500	30.9	1915-16
South Fork Burnt River above Barney Creek, near Unity (d)	13270800	38.5	1963-81
South Fork Burnt River at Hardman Ranch, near Unity (d)	13271000	44.4	1916-20; 1938-41
Fleetwood Ditch near Unity (d)	13271500	--	1918-20
Sawmill Creek near Unity (d)	13272000	--	1915
Burnt River at Bridgeport (d)	13274000	600	1915-16; 1931-36
Burnt River near Bridgeport (d)	13274200	650	1957-80
Burnt River near Durkee (d)	13274500	700	1931-38
Burnt River at Huntington (d)	13275000	1,093	1929-32; 1957-59; 1962-80

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
POWDER RIVER BASIN			
Powder River near Baker (d)	13275500	219	1904-14;1929-68
Old Settlers Slough at Baker (d)	13276000	--	1913-14
Baldock Slough at Baker (d)	13276500	--	1913-14
Pine Creek near Baker (d)	13277500	8.8	1913-14;1929-30
Goodrich Creek near Baker (d)	13278000	3.1	1913
Mill Creek near Baker (d)	13279000	3.9	1913-14;1929-30
Marble Creek near Baker (d)	13279500	3.9	1913-14;1929-30
Salmon Creek near Baker (d)	13280000	4.4	1913-14;1929
Willow Creek near Haines (d)	13280500	2.4	1913
Powder River at Haines (d)	13281000	539	1914
Powder River near Haines (d)	13281500	572	1947-53
North Powder River near North Powder (d)	13282000	47.7	1912
Anthony Fork near North Powder (d)	13282500	37	1912
North Powder River at North Powder (d)	13283000	129	1912-14
Wolf Creek at Bauer's Ranch, near North Powder (d)	13283500	30	1913-14
Wolf Creek near North Powder (d)	13284000	32.9	1947-53
Powder River near North Powder (d)	13284500	860	1913-16;1920-25
Big Creek near Medical Springs (d)	13286000	35.5	1913-14
Goose Creek near Keating (d)	13286500	41.9	1913-14
Eagle Creek above West Fork, near Baker (d)	13287000	18	1911
West Fork Eagle Creek near Baker (d)	13287500	15	1911
Eagle Creek near Baker (d)	13288000	42	1909-10
Eagle Creek near Newbridge (d)	13288500	170	1910-11;1914
Daly Creek near Richland (d)	13289000	40.5	1913
Powder River near Robinette (d)	13289500	1,660	1929-57
IMNAHA RIVER BASIN			
Imnaha River above Gumboot Creek (d)	13291000	99.6	1945-53
Big Sheep Creek near Joseph (d)	13291500	12.5	1920
GRANDE RONDE RIVER BASIN			
Meadow Creek near Starkey (d)	13318000	140	1932-35
Meadow Creek below Smith Creek, near Starkey (d)	13318050	33.2	1978-79
Meadow Creek above Bear Creek, near Starkey (d)	13318060	48.2	1978-79
Grande Ronde River near Hilgard (d)	13318500	505	1938-56
Grande Ronde River at Hilgard (d)	13318800	555	1967-81
Grande Ronde River at La Grande (d)	13319000	678	1904-15;1918-23;1926-89
Little Creek near Union (d)	13321000	30.4	1918
Ladd Creek near Hot Lake (d)	13321500	40	1918
Mill Creek near Cove (d)	13322000	11.6	1918;1920-21
Mill Creek near Summerville (d)	13322500	--	1914-15
Grande Ronde River near Elgin (d)	13323500	1,250	1956-81
Indian Creek near Imbler (d)	13323600	22.0	1938-50
Grande Ronde River at Elgin (d)	13324000	1,400	1903-12;1918-19
Wallowa Falls powerplant tailrace near Joseph (d)	13324500	--	1925-52;1967-83
East Fork Wallowa River near Joseph (d)	13325000	10.3	1925-52;1967-82
Wallowa River above Wallowa Lake, near Joseph (d)	13325500	43.0	1924-33;1937-38;1940-41
Wallowa Lake near Joseph (g)	13326000	50.8	1904-06;1912-15;1926-91
Joseph powerplant tailrace at Joseph (d)	13326500	--	1951-56
Wallowa River at Joseph (d)	13327500	50.9	1904-07;1908-14;1915;1927-91
Hurricane Creek near Joseph (d)	13329500	29.6	1915;1924-78
Wallowa River at Wallowa (d)	13329900	--	1976-77
Lostine River near Lostine (d)	13330000	70.9	1912-14;1915;1925-91
Bear Creek near Wallowa (d)	13330500	68.0	1915;1924-85
Wallowa River near Wallowa (d)	13331000	520	1904-07
Wallowa River at Minam (d)	13332000	880	1904-14
Grande Ronde River at Rondowa (d)	13332500	2,550	1927-91
Joseph Creek at Chico (d)	13333500	280	1931-33
WALLA WALLA RIVER BASIN			
South Fork Walla Walla River near Milton-Freewater (d)	14010000	63.0	1903;1906-17;1931-91
South Fork Walla Walla River blw PP&L plant, near Milton (d)	14010500	80.0	1904-06;1931-45
North Fork Walla Walla River near Milton-Freewater (d)	14010800	34.4	1970-91
North Fork Walla Walla River near Milton (d)	14011000	43.8	1930-69
Walla Walla River near Milton (d)	14011500	130	1905-06;1918-29
Walla Walla River at Milton (d)	14012000	155	1903-05
Walla Walla River below Freewater (d)	14012500	160	1941-48
COLUMBIA RIVER MAIN STEM			
Columbia River at McNary Dam, near Umatilla (d)	14019200	214,000	1951-81
UMATILLA RIVER BASIN			
North Fork Umatilla River near Gibbon (d)	14019500	31	1912-15;1940-43
Umatilla River at Gibbon (d)	14020500	310	1896-99;1900-01;1902-12
Umatilla River near Cayuse (d)	14020700	384	1969-75
Umatilla River at Pendleton (d)	14021000	637	1891-92;1904-05;1935-89
Umatilla River above McKay Creek, near Pendleton (d)	14022000	700	1921-34
McKay Creek near Pilot Rock (d)	14022500	180	1921;1927-89
McKay Reservoir near Pendleton (g)	14023000	186	1927-92
McKay Creek near Pendleton (d)	14023500	186	1919-23;1925-91
McKay Creek at mouth, near Pendleton (d)	14024000	190	1903-04;1922-24
East Birch Creek near Pilot Rock (d)	14024200	69.7	1968-73
Birch Creek near Pilot Rock (d)	14024500	240	1920-26
Birch Creek at Rieth (d)	14025000	291	1921-23;1927-76
Umatilla River near Yoakum (d)	14025500	1,260	1915-36
Umatilla River at Yakum (d)	14026000	1,280	1903-91
Butter Creek near Pine City (d)	14032000	291	1928-88
WILLOW CREEK BASIN			
Rhea Creek near Heppner (d)	14034800	120	1960-91
Willow Creek near Morgan (d)	14035000	630	1921;1929-31
Willow Creek above Eightmile Canyon, near Arlington (d)	14035500	680	1905
Willow Creek near Arlington (d)	14036000	850	1906;1961-79
JOHN DAY RIVER BASIN			
Strawberry Creek above Slide Creek, near Prairie City (d)	14037500	7.00	1931-91
Strawberry Creek near Prairie City (d)	14038000	15	1916-17;1925-30
John Day River at Prairie City (d)	14038500	231	1916-17;1925-68
John Day River near Dayville (d)	14039000	960	1909-14;1920-21;1925-26

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
JOHN DAY RIVER BASIN--Continued			
South Fork John Day River near Dayville (d)	14039500	590	1952-56
South Fork John Day at Dayville (d)	14040000	600	1909-14;1920-21;1925-26
John Day River at Picture Gorge, near Dayville (d)	14040500	1,680	1986-91
Mountain Creek near Mitchell (d)	14040600	20.0	1986-89
Desolation Creek near Dale (d)	14041000	108	1915-17;1949-58
North Fork John Day River near Dale (d)	14041500	525	1930-58
Camas Creek near Lehman (d)	14042000	60.7	1951-70
Camas Creek near Ukiah (d)	14042500	121	1914-17;1920-24;1932-91
Cable Creek near Ukiah (d)	14043000	39	1914-17;1919-24;1932-37
Snipe Creek near Ukiah (d)	14043560	37.0	1939
Fox Creek at gorge, near Fox (d)	14044500	90.2	1968-73
Cottonwood Creek near Monument (d)	14045000	210	1931-58
Cottonwood Creek at Monument (d)	14045500	232	1926-31
John Day River at Clarno (d)	14047000	5,940	1925
Lone Rock Creek near Lonerock (d)	14047380	69	1914-15;1920-21
Rock Creek above Whyte Park near Condon (d)	14047390	297	1966-74;1976-91
Rock Creek at Rock Creek (d)	14047500	500	1976-89
			1905;1911
DESCHUTES RIVER BASIN			
Deschutes River above Snow Creek, near La Pine (d)	14049000	109	1922-25
Snow Creek above Crane Prairie, near La Pine (d)	14049500	23.0	1922-25
Deschutes River below Snow Creek, near La Pine (d)	14050000	132	1938-91
Cultus River above Cultus Creek, near La Pine (d)	14050500	16.5	1923-25;1938-91
Cultus Creek abv Crane Creek Prairie Reservoir, nr La Pine(d)	14051000	33.2	1924;1938-91
Cultus River below Cultus Creek, near La Pine (d)	14051500	52.8	1922
Deer Creek above Crane Prairie Reservoir, near La Pine (d)	14052000	21.5	1924;1938-91
Quinn River near La Pine (d)	14052500	--	1922-25;1938-91
Charlton Creek above Crane Prairie Reservoir, near La Pine(d)	14053000	15.6	1923-24;1938-79
Crane Prairie Reservoir near La Pine (e)	14053500	254	1923-91
Deschutes River below Crane Prairie Reservoir, nr La Pine (d)	14054000	254	1907-08;1912-17;1922-91
Brown Creek near La Pine (d)	14054500	21.0	1922-25;1938-91
Deschutes River above Davis Creek, near La Pine (d)	14055000	290	1925-32
Odell Creek near Crescent (d)	14055500	39.0	1912-14;1924;1933-76
Deschutes River below Wickiup Reservoir, near La Pine (d)	14056500	483	1938-91
Deschutes River at Pringle Falls, near La Pine (d)	14057000	507	1916-17;1922-60
Fall River near La Pine (d)	14057500	45.1	1938-91
Deschutes River near La Pine (d)	14058000	600	1910-17;1920;1922
Deschutes River near Lava (d)	14058500	659	1905-07;1909-12
Little Deschutes River at Crescent (d)	14059000	109	1905-08;1911-14
Crescent lake near Crescent (e)	14059500	60.7	1922-91
Crescent Creek at Crescent lake, near Crescent (d)	14060000	60.7	1911;1912-15;1927;1928-91
Crescent Creek below Cold Creek, near Crescent (d)	14060500	77.0	1922-26;1931-32
Big Marsh Creek at Hoey Ranch, near Crescent (d)	14061000	51.5	1912-14;1924;1928-58
Crescent Creek near Crescent (d)	14061500	137	1912-14
Little Deschutes R above Walker Basin intake, near La Pine(d)	14062000	307	1914-17;1919-26;1931-22
Little Deschutes River at Allen's Ranch, near La Pine (d)	14063500	1,020	1905-12;1913-15;1931-32
			1943-44
Deschutes River at Benham Falls, near Bend (d)	14064500	1,759	1906-14;1921;1924-91
Deschutes River above Lava Island, near Bend (d)	14065000	1,790	1915-16;1943-50
Arnold Canal near Bend (d)	14065500	--	1913-90
Deschutes River below Lava Island, near Bend (d)	14066000	1,829	1926-65
Central Oregon Canal above Pilot Butte Canal (d)	14066500	--	1933-90
Deschutes County Municipal Improvement Dist Canal at Bend (d)	14068500	--	1923-90
North Unit Main Canal near Bend (d)	14069000	--	1946-90
North Canal near Bend (d)	14069500	--	1913-90
Swalley Canal near Bend (d)	14070000	--	1913-90
Deschutes River below Bend (d)	14070500	1,899	1915-91
Bridge Creek near Bend (d)	14070700	6.58	1981-85
Tumalo Creek near Tumalo (d)	14071500	30.9	1906-14
Tumalo Creek near Bend (d)	14073000	47.3	1913-21;1922;1923-87
Deschutes River at Tumalo (d)	14074000	1,983	1910-12;1914-15
Deschutes River at Cline Falls, near Redmond (d)	14074500	2,080	1910-13;1928-46
Snow Creek near Sisters (d)	14074900	1.65	1986-91
South Fork Beaver Creek near Paulina (d)	14077000	95	1944-53
North Fork Beaver Creek near Paulina (d)	14077500	64.4	1942-54
Beaver Creek near Paulina (d)	14078000	450	1943-75
North Fork Crooked River above Deep Creek (d)	14078500	159	1942-54
North Fork Crooked River below Deep Creek (d)	14079000	264	1947-53
Crooked River near Post (d)	14079500	2,160	1909-11;1940-62;1969-73
Crooked River above Prineville Reservoir, near Post (d)	14079800	2,400	1961-68
Bear Creek at Rickman Ranch, near Roberts (d)	14080000	44	1920-23
Bear Creek near Prineville (d)	14080250	205	1976-81
Prineville Reservoir near Prineville (e)	14080400	2,700	1961-91
Crooked River near Prineville (d)	14080500	2,700	1909-14;1941-91
Crooked River at Prineville (d)	14081500	2,820	1914
Marks Creek near Prineville (d)	14082500	61.0	1916
Ochoco Creek above Mill Creek, near Prineville (d)	14083000	200	1918-22;1924-33
Mill Creek near Prineville (d)	14083500	78.8	1916-18;1920-22;1924-33
Ochoco Creek at Elliott Ranch, near Prineville (d)	14085000	300	1909-10;1915-17
Ochoco Creek at Prineville (d)	14085500	358	1912;1914-15
McKay Creek near Prineville (d)	14086000	76.6	1925-32
McKay Creek above Old Dry Creek, near Prineville (d)	14086500	86.2	1918-19;1920
McKay Creek below Old Dry Creek, near Prineville (d)	14087000	103	1915
Crooked River near Terrebonne (d)	14087300	4,240	1968-73
Crooked River near Culver (d)	14087500	4,330	1918-63
Lake Creek near Sisters (d)	14088000	22.2	1912-13;1915-91
Metolius River at Allingham ranger station, near Sisters (d)	14088500	81.5	1911-13;1915-17
First Creek near Sisters (d)	14089000	12.2	1915-17;1924-28
Jack Creek near Sisters (d)	14089500	16.0	1915-16
Canyon Creek near Sisters (d)	14090000	32.5	1915-16
Whitewater River near Grandview (d)	14090500	30.6	1911-13
Metolius River at Riggs Ranch, near Sisters (d)	14092000	347	1909-12
Shitike Creek at Warm Springs (d)	14093000	105	1911-16;1923-28;1973-74
Deschutes River at Mecca (d)	14093500	7,940	1911-27
Trout Creek near Antelope (d)	14094000	220	1915-17
Trout Creek near Gateway (d)	14094500	--	1915-16
Hay Creek near Hay Creek (d)	14095000	78	1915-16
Mill Creek at outlet of Olallie Lake (d)	14096000	5.6	1915-16
Mill Creek near Warm Springs (d)	14096500	28.8	1915
Warm Springs River near Warm Springs (d)	14097000	517	1911-19
White River near Government Camp (d)	14097200	40.7	1970-1980
Clear Creek below Clear Lake, near Govt Camp (d)	14097400	8.32	1969-73

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
DESCHUTES RIVER BASIN--Continued			
Clear Creek near Government Camp (d)	14097500	9.94	1941-41;1947-53
Clear Creek above intake, near Wapinitia (d)	14098000	17.7	1918-21;1934-35
Clear Creek Ditch near Government Camp (d)	14098100	--	1969-73
Clear Creek near Pine Grove (d)	14098600	38.3	1968-73
Gate Creek at Purcell Ranch, near Wamic (d)	14099500	23.9	1921-23
Gate Creek near Wamic (d)	14100000	28.3	1918
White River near Tygh Valley (d)	14100500	221	1911-18
White River below Tygh Valley (d)	14101500	417	1918-90
Deschutes River at Sherars Bridge (d)	14102000	10,200	1923-32
FIFTEENMILE CREEK BASIN			
Fifteenmile Creek near Dufur (d)	14104000	19.6	1918-19
Fifteenmile Creek near Wrentham (d)	14104500	171	1947-53
Eightmile Creek near Boyd (d)	14105000	56	1947-53
Fivemile Creek near The Dalles (d)	14105500	32.4	1926;1928;1930-31;1949-50
MILL CREEK BASIN			
South Fork Mill Creek near The Dalles (d)	14105850	28.0	1961-75
MOSIER CREEK BASIN			
Mosier Creek near Mosier (d)	14113200	41.5	1964-81
HOOD RIVER BASIN			
Dog River near Parkdale (d)	14113400	4.50	1961-71
East Fork Hood River above intake, near Mount Hood (d)	14113500	77.2	1915-22
East Fork Hood River near Mount Hood (d)	14115000	78.8	1913-14
East Fork Hood River near Dee (d)	14115500	108	1917
Hood River at Dee (d)	14116000	155	1913-17
Green Point Creek near Dee (d)	14116500	10.0	1919-21
North Fork Green Point Creek near Dee (d)	14117500	7.6	1919;1921
Green Point below North Fork, near Dee (d)	14118000	20.0	1950-54
West Fork Hood River near Dee (d)	14118500	95.6	1914-16;1932-91
Hood River at Winans (d)	14119000	259	1906-07;1910-12;1913
Hood River near Hood River (d)	14121000	329	1913-64
COLUMBIA RIVER MAIN STEM			
Columbia River at Warrendale (g)	14128910	240,000	1972-87
SANDY RIVER BASIN			
Lost Creek near Brightwood (d)	14130000	11.2	1913-18
Little Zigzag River at Twin Bridges, near Rhododendron (d)	14131000	3.70	1926-36
Zigzag River at Rhododendron (d)	14131500	31.0	1920-21;1926-30
Sandy River above Salmon River, at Brightwood (d)	14133500	117	1910-14;1926-31
Salmon River near Government Camp (d)	14134000	8.00	1910-12;1926-91
Salmon River below Linney Creek (d)	14134500	54.0	1928-50
Salmon River at Welches (d)	14135000	100	1913-14;1920-21;1925-36
Salmon River above Boulder Creek, near Brightwood (d)	14135500	106	1936-52
Bull Run River below Lake Ben Morrow (d)	14139500	74.0	1930-54
Little Sandy River near Marmot (d)	14140500	17.9	1913-19
WILLAMETTE RIVER BASIN			
Hills Creek above Hills Creek Reservoir, near Oakridge (d);	14144900	52.7	1959-81
Hills Creek near Oakridge (d)	14145000	59.0	1935-43
Salt Creek near Oakridge (d)	14146000	113	1913-14;1934-51
Gray Creek near Oakridge (d)	14146700	5.06	1979-86
Waldo Lake Outlet near Oakridge (d)	14147000	30.5	1937-53;1970-82;1984
Fall Creek above Winberry Creek, near Lowell (d)	14150500	127	1936-43
Winberry Creek near Lowell (d)	14150800	43.9	1964-81
Little Fall Creek near Fall Creek (d)	14151500	52.5	1936-48
Coast Fork Willamette River at London (d)	14152500	72.1	1936-87
Mosby Creek near Cottage Grove (d)	14156000	85.0	1936-46
Mosby Creek at Mouth, near Cottage Grove (d)	14156500	95.3	1947-68;1970-81
Coast Fork Willamette River at Saginaw (d)	14157000	529	1924-26;1928-51
Willamette River at Springfield (d)	14158000	2,030	1912-13;1920-57
McKenzie River near Belknap Springs (d)	14158700	146	1958-62
Budworm Creek near Belknap Springs (d)	14158930	3.00	1979-83;1984-86
McKenzie River above Boulder Creek, near Belknap Springs (d)	14158955	--	1983
Horse Creek near McKenzie Bridge (d)	14159100	149	1963-69
South Fork McKenzie River above Cougar Lake, nr Rainbow (d)	14159200	160	1958-87
Blue River above Quentin Creek (d)	14161000	11.5	1948-55
Blue River near Blue River (d)	14162000	75.0	1936-64
Gate Creek at Vida (d)	14163000	47.6	1952-57;1967-90
McKenzie River near Springfield (d)	14164000	1,066	1906-15
McKenzie River near Coburg (d)	14165500	1,337	1945-72
Coyote Creek near Crow (d)	14167000	95.1	1941-87
Amazon Creek at Eugene (d)	14169300	3.35	1963-75
Amazon Creek near Eugene (d)	14169500	21.3	1955-68;1980-82
Rock Creek near Philomath (d)	14170500	14.6	1946-52;1975-79
Marys River near Philomath (d)	14171000	159	1941-85
Muddy Creek near Corvallis (d)	14171500	107	1964-68
Calapooia River at Holley (d)	14172000	105	1936-90
Calapooia River at Albany (d)	14173500	372	1941-81
Breitenbush River above French Creek, near Detroit (d)	14179000	106	1933-87
Packers Gulch near Cascadia (d)	14185880	7.45	1984-86;1988
Middle Santiam River near Foster (d)	14186000	271	1932-47
Middle Santiam River at Mouth, near Foster (d)	14186500	287	1951-66
South Santiam River at Foster (d)	14186700	493	1967-73
Wiley Creek at Foster (d)	14187100	62.3	1974-88
Crabtree Creek near Crabtree (d)	14188700	111	1964-70
Thomas Creek near Scio (d)	14188800	109	1963-87
Luckiamute River near Hoskins (d)	14189500	34.3	1935-78
Luckiamute River at Pedee (d)	14190000	115	1940-70
Little Luckiamute River at Falls City (d)	14190100	22.7	1965-71
Rickreall Creek near Dallas (d)	14190700	27.4	1957-78
Mill Creek at Penitentiary Annex, near Salem (d)	14191500	104	1940-56
Mill Creek at Salem (d)	14192000	110	1940-78
Willamina Creek near Willamina (d)	14193000	64.7	1934-91
Mill Creek near Willamina (d)	14193300	27.4	1958-73

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
WILLAMETTE RIVER BASIN--Continued			
South Yamhill River near Whiteson (d)	14194000	502	1940-91
North Yamhill River near Fairdale (d)	14194300	9.03	1959-66;1968-91
Haskins Creek near McMinnville (d)	14195000	6.48	1928-51
North Yamhill River near Pike (d)	14196500	47.8	1940-51
North Yamhill River at Pike (d)	14197000	66.8	1948-73
Willamette River at Wilsonville (d)	14198000	8,400	1948-73
Molalla River near Molalla (d)	14199000	201	1906-09;1947-51
Molalla River near Canby (d)	14200000	323	1929-59;1964-78
Silver Creek at Silvertown (d)	14200300	47.9	1964-68;1971-79
Pudding River near Mount Angel (d)	14201000	204	1940-66
Butte Creek at Monitor (d)	14201500	58.7	1936;1941-52;1967-85
Pudding River at Aurora (d)	14202000	479	1929-64
Tualatin River near Gaston (d)	14202500	48.5	1941-56;1973-76;1979-84
Scoggins Creek above Henry Hagg Lake, near Gaston (d)	14202850	15.9	1973-76
Sain Creek near Gaston (d)	14202920	10.3	1973-76
Scoggin Creek near Gaston (d)	14203000	43.3	1941-74
Gales Creek near Gales Creek (d)	14204000	33.2	1936-45;1964-70
Gales Creek near Forest Grove (d)	14204500	66.1	1941-56;1971-81
East Fork Dairy Creek at Mountindale (d)	14205500	43.0	1941-51
Dairy Creek near Cornelius (d)	14205800	147	1974-76
McKay Creek near North Plains (d)	14206000	27.6	1941-43;1949-56
McKay Creek near Hillsboro (d)	14206180	61.0	1973-76
Tualatin River at Farmington (d)	14206500	568	1940-58;1973-76
Oswego Canal near Lake Oswego (d)	14207000	--	1929-91
Clackamas River at Big Bottom (d)	14208000	136	1920-70
Collawash River near Breitenbush (d)	14208300	142	1966-68
Oak Grove Fork at Timothy Meadows (d)	14208500	54.0	1913-14;1916-29
Roaring River near Estacada (d)	14209600	42.4	1966-68
Clackamas River near Clackamas (d)	14211000	930	1963-83;1986;1988-89
COLUMBIA RIVER MAIN STEM			
Columbia River at Columbia City (g)	14222880	254,000	1971-81
Columbia River at Longview, WA (g)	14245300	256,700	1984-90
Bear Creek near Svensen (d)	14248700	3.33	1966-75
Youngs River near Astoria (d)	14251500	40.1	1928-58
NESTUCCA RIVER BASIN			
Trask River near Tillamook (d)	14302500	145	1932-55;1962-72
Nestucca River near McMinnville (d)	14303000	12.0	1929-44
Nestucca River near Beaver (d)	14303600	180	1965-91
SILETZ RIVER BASIN			
Sunshine Creek near Valsetz (d)	14304350	6.70	1973-91
Big Rock Creek near Valsetz (d)	14304850	6.90	1986-89
YAQUINA RIVER BASIN			
Yaquina River near Chitwood (d)	14306030	71.0	1973-91
Mill Creek near Toledo (d)	14306036	4.18	1961-73
ALSEA RIVER BASIN			
North Fork Beaver Creek near Seal Rock (d)	14306040	10.0	1966-67
North Fork Alsea River at Alsea (d)	14306100	63.0	1958-89
South Fork Alsea River near Alsea (d)	14306200	49.5	1961-63
Fall Creek near Alsea (d)	14306300	29.4	1961-63
Five Rivers near Fisher (d)	14306400	114	1961-63;1968-90
Drift Creek near Salado (d)	14306600	20.5	1959-63;1966-70
Needle Branch near Salado (d)	14306700	.27	1959-73
Flynn Creek near Salado (d)	14306800	.78	1959-73
Deer Creek near Salado (d)	14306810	1.17	1959-73
BIG CREEK BASIN			
Big Creek near Roosevelt Beach (d)	14306900	11.9	1973-91
SIUSLAW RIVER BASIN			
Siuslaw River above Wildcat Creek, at Austa (d)	14307000	267	1932-40
Lake Creek at Triangle Lake (d)	14307500	52.5	1932-55
Lake Creek near Deadwood (d)	14307580	174	1968-89
North Fork Siuslaw River near Minerva (d)	14307645	41.2	1968-85
UMPQUA RIVER BASIN			
Jackson Creek near Tiller (d)	14307700	152	1956-86
South Umpqua River at Days Creek (d)	14308600	641	1975-90
Days Creek at Days Creek (d)	14308700	55.3	1956-72
South Myrtle Creek near Myrtle Creek (d)	14310700	43.9	1956-72
North Myrtle Creek near Myrtle Creek (d)	14311000	54.2	1956-86
Olalla Creek near Tenmile (d)	14311200	61.3	1957-73
Tenmile Creek at Tenmile (d)	14311300	29.6	1968-73
Deer Creek near Roseburg (d)	14312200	53.2	1956-73
Silent Creek near Diamond Lake (d)	14312400	8.24	1972-77
Lake Creek near Diamond Lake (d)	14312500	54.9	1923-29;1930;1931-53
North Umpqua River at Toketee Falls (d)	14315500	339	1926-45;1947-48
North Umpqua River above Rock Creek, near Glide (d)	14317500	886	1925-45
Rock Creek near Glide (d)	14317600	97.4	1958-73
Little River at Peel (d)	14318000	177	1955-89
North Umpqua River near Glide (d)	14318500	1,210	1916-18;1928-38
Sutherlin Creek at Sutherlin (d)	14319200	16.4	1956-67
Calapooya Creek at Nonpareil (d)	14319900	88.6	1977-88
Elk Creek near Drain (d)	14322000	104	1956-73;1978-79
Umpqua River near Scottsburg (d)	14322900	4,095	1967-69
Smith River near Gardiner (d)	14323100	206	1966-73
Tenmile Creek near Lakeside (d)	14323200	87.0	1958-76
COOS RIVER BASIN			
West Fork Millicoma River near Allegany (d)	14324500	46.9	1955-81

WATER RESOURCES DATA FOR OREGON, 1993

XIX

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
COQUILLE RIVER BASIN			
South Fork Coquille River above Panther Creek, nr Illahe (d)	14324600	31.2	1957-70
South Fork Coquille River near Illahe (d)	14324700	40.6	1957-74
South Fork Coquille River near Powers (d)	14324900	93.2	1957-70
Middle Fork Coquille River near Myrtle Point (d)	14326500	305	1931-46
North Fork Coquille River near Fairview (d)	14326800	73.9	1964-81
North Fork Coquille River near Myrtle Point (d)	14327000	282	1929-46; 1964-68
SIXES RIVER BASIN			
Sixes River at Sixes (d)	14327150	116	1968-70
Elk River near Sixes (d)	14327300	86.1	1968-70
ROGUE RIVER BASIN			
Rogue River above Bybee Creek, near Union Creek (d)	14327500	156	1930-52
Mill Creek near Prospect (d)	14329500	32.0	1926-35
South Fork Rogue River above Imnaha Creek, near Prospect (d)	14330500	52.0	1932-49
Imnaha Creek near Prospect (d)	14331000	26.0	1932-49
Middle Fork Rogue River near Prospect (d)	14333000	56.5	1926-55
Red Blanket Creek near Prospect (d)	14333500	45.5	1926-32; 1934-81
South Fork Rogue River south of Prospect (d)	14334700	246	1969-92
Rogue River below South Fork Rogue River, near Prospect (d)	14335000	650	1929-65
Rogue River at McLeod (d)	14335075	697	1978-81
South Fk Big Butte Creek, abv Willow Cr, nr Butte Falls (d)	14335200	67.6	1986-91
South Fork Big Butte Creek near Butte Falls (d)	14335500	138	1911; 1915; 1918-22; 1925-91
South Fork Little Butte Collect Canal near Pinehurst (d)	14339400	--	1961-65
South Fork Little Butte Creek at Big Elk Ranger Station (d)	14339500	16.6	1927-50
Dead Indian Collect Canal near Pinehurst (d)	14340400	--	1961-65
South Fork Little Butte Creek near Lakecreek (d)	14341500	138	1922-57; 1961-82
North Fork Little Butte Creek at Fish Lake, near Lakecreek (d)	14342500	20.8	1915; 1917-89
North Fork Little Butte Creek near Lakecreek (d)	14343000	43.8	1912-13; 1917; 1923-27; 1929-64; 1966-85
N F Little Butte Creek abv Intake Canal, near Lakecreek (d)	14344500	60.4	1918-19; 1922-50
Little Butte Creek above Eagle Point (d)	14347000	269	1917-26; 1929
Little Butte Creek below Eagle Point (d)	14348000	293	1908-16; 1924-26; 1946-50
Emigrant Creek near Ashland (d)	14350000	64.3	1920-86
West Fork Ashland Creek near Ashland (d)	14353000	10.5	1925-33; 1975-82
East Fork Ashland Creek near Ashland (d)	14353500	8.14	1925-33; 1975-82
Evans Creek near Bybee Springs, near Rogue River (d)	14359500	116	1925-27; 1951-53
Middle Fork Applegate River near Copper (d)	14361590	50.7	1980-87
Elliott Creek near Copper (d)	14361600	51.8	1978-87
Carberry Creek near Copper (d)	14361700	68.9	1978-87
Applegate River near Ruch (d)	14363000	302	1912-14; 1926-53
Powell Creek near Williams (d)	14368500	8.17	1947-58
Slate Creek at Wonder (d)	14370000	31.4	1944-57
Grave Creek at Pease Bridge, near Placer (d)	14371500	22.1	1941-89
Grave Creek near Placer (d)	14372000	45.6	1914; 1941-50
East Fork Illinois River near Takilma (d)	14372500	42.3	1926; 1927-32; 1941-91
Althouse Creek near Holland (d)	14373500	24.3	1947-53
Sucker Creek near Holland (d)	14375000	76.2	1942-65
Sucker Creek below Little Grayback Creek, near Holland (d)	14375100	83.9	1966-91
Elk Creek near O'Brien (d)	14375400	26.6	1986-91
West Fork Illinois River below Rock Creek, near O'Brien (d)	14375500	42.4	1955-85
West Fork Illinois River near O'Brien (d)	14376500	49.7	1947-54
Illinois River at Kerby (d)	14377000	364	1926-61
Deer Creek near Dryden (d)	14377500	22.0	1942-56
Illinois River near Selma (d)	14378000	665	1957-68
Illinois River near Agness (d)	14378200	988	1961-81

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WATER RESOURCES DATA FOR OREGON, 1993

DISCONTINUED SURFACE-WATER QUALITY STATIONS

The following continuous-record water-quality stations in Oregon have been discontinued. Continuous water-quality data were collected and published for the period of record shown for each station. For each station entry, a period of record, expressed in water years, is provided for each type of record listed. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page.

[Type of record: sc (specific conductance), ph (pH), t (temperature), do (dissolved oxygen)
tb (turbidity), sed (sediment)]

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record
MALHEUR AND HARNEY LAKES BASIN				
Donner und Blitzen River near Frenchglen	10396000	200	t, sc	1976-81
OWYHEE RIVER BASIN				
Owyhee River near Rome	13181000	8,000	t	1973-77
Owyhee River at Owyhee	13184000	11,300	t, sc	1980-82
Bully Creek near Vale	13227000	570	t, sed	1959-62
POWDER RIVER BASIN				
Powder River at Baker	13277000	351	sed	1961
Powder River near Richland	13286700	1,310	t	1960-61
Eagle Creek above Smith Creek near New Bridge	13288200	156	t	1960-61
GRANDE RONDE RIVER BASIN				
Imnaha River at Imnaha	13292000	622	t	1966-68;1977
Meadow Creek below Smith Creek near Starkey	13318050	33.2	t	1978-79
Meadow Creek above Bear Creek near Starkey	13318060	48.2	t	1978-79
Grande Ronde River at La Grande	13319000	678	t	1960-61
Wallowa River at Wallowa	13329900	--	t	1977
Lostine River near Lostine	13330000	70.9	t	1958
Lostine River at Lostine	13330200	--	t	1976-77
Minam River at Minam	13331500	240	t	1966-85
Grande Ronde River at Rondowa	13332500	2,555	t	1960-61
WALLA WALLA RIVER BASIN				
South Fork Walla Walla River near Milton-Freewater	14010000	63	t	1960-61
COLUMBIA RIVER MAIN STEM				
Columbia River at McNary Dam	14019200	214,000	t	1962
Columbia River at Umatilla	14019250	214,000	sed	1966
			t	1975-79
UMATILLA RIVER BASIN				
Umatilla River above Meacham Creek near Gibbon	14020000	131	t	1960-80
Umatilla River near Umatilla	14033500	2,290	t	1963-69
WILLOW CREEK RIVER BASIN				
Willow Creek at Heppner	14034500	96.8	t	1963-68;1972-73
Willow Creek near Arlington	14036000	850	sed	1963-68
			t	1963-68
			sed	1963-70
JOHN DAY RIVER BASIN				
South Fork John Day River near Dayville	14039500	590	t	1952-56
Desolation Creek near Dale	14041000	108	t	1958
Middle Fork John Day River at Ritter	14044000	515	t	1967-68
North Fork John Day River at Monument	14046000	2,520	t	1967-68
John Day River at McDonald Ferry	14048000	7,580	t	1967-68;1976-81
			sc	1976-81
			sed	1963-70
Columbia River at Biggs Junction	14048330	226,400	t	1975-76
DESCHUTES RIVER BASIN				
Deschutes River at Benham Falls	14064500	1,759	t	1968-80
Deschutes River near Culver	14076500	2,705	t	1955-57;1959-74
Crooked River at Post	14079500	2,160	t, sed	1960-62
Bear Creek in Prineville	14080250	205	t	1976
			sed	1976-80
Crooked River near Prineville	14080500	2,700	t, sed	1959
Crooked River below Opal Springs, near Culver	14087400	4,300	t	1964-74
Crooked River near Culver	14087500	4,330	t	1955-63
Metolius River near Grandview	14091500	316	t	1955-74
Deschutes River near Madras	14092500	7,820	t	1953-56;1958;1972-88
White River below Tygh Valley	14101500	417	t, sed	1982
			tb	1982-83
Deschutes River at Moody	14103000	10,500	t	1955-58;1962-81
COLUMBIA RIVER MAIN STEM				
Columbia River at The Dalles	14105700	237,000	t	1956-70;1974-76
			sc	1965-85
Columbia River at Warrendale	14128910	240,000	t, sc	1976-92
Columbia River at Vancouver	14144700	241,000	t	1968-70;1973-79
			sed	1964-69

WATER RESOURCES DATA FOR OREGON, 1993
DISCONTINUED SURFACE-WATER QUALITY STATIONS

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Station name	Station number	Drainage area (mi ²)	Type of record	Period of record
WILLAMETTE RIVER BASIN				
Middle Fork Willamette River near Oakridge	14144800	258	t	1957-87
Hills Creek above Hills Creek Reservoir, near Oakridge	14144900	52.7	t	1959-81
Middle Fork Willamette River below North Fork, near Oakridge	14148000	924	t	1951-87
Fall Creek near Lowell	14150300	118	t	1964-87
Winberry Creek near Lowell	14150800	43.9	t	1964-81
Middle Fork Willamette River at Jasper	14152000	1,340	t	1954-87
Coast Fork Willamette River at London	14152500	72.1	t	1961-65;1968-87
Coast Fork Willamette River near Goshen	14157500	642	t	1962-75
McKenzie River below Trail Bridge Dam, near Belknap Springs	14158850	184	t, sc	1977-85
McKenzie River at McKenzie Bridge	14159000	348	t, sc	1977-85
Horse Creek near McKenzie Bridge	14159100	149	t	1963-69;1984
South Fork McKenzie River above Cougar Lake, near Rainbow	14159200	160	t	1958-87
Blue River below Tidbits Creek, near Blue River	14161100	45.8	t	1964-87
Lookout Creek near Blue River	14161500	24.1	t	1952-55;1964-81
Blue River near Blue River	14162000	75	t	1962-64
McKenzie River at Finn Rock	14162400	--	t	1984
McKenzie River near Vida	14162500	930	t	1962-85
Gate Creek at Vida	14163000	47.6	sc	1977-85
McKenzie River at Leaburg Dam	14163100	--	t	1984
McKenzie River near Springfield	14164000	1,066	t	1984
Walterville Canal near Walterville	14164200	--	t	1984
McKenzie River above Hayden Bridge, at Springfield	14164900	--	t	1984
Mohawk River near Springfield	14165000	177	t	1964-69;1984
McKenzie River near Coburg	14165500	1,337	t	1964-75;1984
Willamette River at Harrisburg	14166000	3,420	t	1962-87
Willamette River above Calapooia River at Albany	14171750	4,460	sc, do ph	1970-76 1970-75
North Santiam River below Boulder Creek, near Detroit	14178000	216	t	1964-87
Breitenbush River above French Creek, near Detroit	14179000	108	t	1952-87
North Santiam River at Fisherman's Bend, near Mill City	14181800	--	t	1951;1954-87
Little North Santiam River near Mehama	14182500	112	t	1986
North Santiam River at Mehama	14183000	655	t	1986
North Santiam River near Jefferson	14184100	736	t	1985-86
South Santiam River below Cascadia	14185000	174	t	1963-66;1967;1970-87
Middle Santiam River near Cascadia	14185800	104	t	1964-79;1981-82
Quartzville Creek near Cascadia	14185900	99.2	t	1964-87
Middle Santiam River at mouth, near Foster	14186500	287	t	1954-64;1966
South Santiam River at Foster	14186700	493	t	1968;1970-73;1985
South Santiam River at Waterloo	14187500	640	t	1964-87
Crabtree Creek near Scio	14188750	--	t	1985
Thomas Creek near Scio	14188800	109	t	1963-75
Thomas Creek near Crabtree	14188850	--	t	1986
South Santiam River below Thomas Creek, near Jefferson	14188900	--	t	1986
Santiam River at Jefferson	14189000	1,790	t	1964-65;1967-87
Luckiamute River at Pedee	14190000	115	t	1965-70
Willamette River at Salem	14191000	7,280	t	1964-87
Willamina Creek near Willamina	14193000	64.7	sc	1952-60;1965-72;1976-84
South Yamhill River near Whiteson	14194000	502	t	1964-68
North Yamhill River at Pike	14197000	66.8	t	1964-68
Molalla River above Pine Creek, near Wilhoit	14198500	97	t	1964-69
Molalla River near Canby	14200000	323	t	1964-69
Silver Creek at Silverton	14200300	47.9	t	1964-68
Tualatin River near Gaston	14202500	48.5	t	1979-84
Tualatin River near Dilley	14203500	125	t	1964-68
Gales Creek near Gales Creek	14204000	33.2	t	1964-69
Tualatin River at West Linn	14207500	706	t	1964-68;1976-81
Willamette River at Oregon City	14207700	10,000	sc	1976-81
Clackamas River near Clackamas	14211000	930	t	1963-67
Willamette River at Portland	14211720	11,100	t, sc	1964-76
Willamette River above St. Johns Bridge, at Portland	14211805	11,450	t	1976-81 1972-75
COLUMBIA RIVER MAIN STEM				
Columbia River at Columbia City	14222880	254,000	t	1971
Columbia River near Columbia City	14222890	253,900	t	1969-72
Columbia River at Kalama	14222910	254,000	t	1969-79
Columbia River at Prescott	14223780	254,200	t	1968-69
Columbia River at Rainier	14245295	256,700	t	1972-79
Columbia River at Longview, WA	14245300	256,700	t	1968-72
Columbia River at Beaver Army Terminal, near Quincy	14246900	256,900	t	1968-70
Columbia River at Wauna	14247295	256,900	t	1972-76
Columbia River at Bradwood	14247400	257,100	t	1977-81
Columbia River at Altoona, WA	14248600	258,000	t	1972-79
Bear Creek near Svenson	14248700	3.33	t	1966-75
PACIFIC SLOPE BASINS IN OREGON				
NEHALEM RIVER BASIN				
Nehalem River near Foss	14301000	667	t sc	1975-81 1981
NESTUCCA RIVER BASIN				
Trask River near Tillamook	14302500	145	t	1962-71
Nestucca River near Beaver	14303600	180	t	1965-87
SILETZ RIVER BASIN				
Big Rock Creek near Valsetz	14304850	6.90	t	1979-85
Siletz River at Siletz	14305500	202	t	1979-85
YAQUINA RIVER BASIN				
Yaquina River near Chitwood	14306030	71	sed	1973-74

WATER RESOURCES DATA FOR OREGON, 1993
DISCONTINUED SURFACE-WATER QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record
ALSEA RIVER BASIN				
North Fork Beaver Creek near Seal Rock	14306040	10	t	1966-67
North Fork Alsea River at Alsea	14306100	63	t	1958-66
South Fork Alsea River near Alsea	14306200	49.5	t	1958-63
Fall Creek near Alsea	14306300	29.4	t	1959
Five Rivers near Fisher	14306400	114	t	1959
Alsea River near Tidewater	14306500	334	t, sc sed	1980-81 1973-74
Drift Creek near Salado	14306600	20.5	t	1959-63; 1969-70
Needle branch near Salado	14306700	0.27	t, sed	1959-73
Flynn Creek near Salado	14306800	0.78	t, sed	1959-73
Deer Creek near Salado	14306810	1.17	t, sed	1959-73
SIUSLAW RIVER BASIN				
Siusslaw River near Mapleton	14307620	588	t sc sed	1968-75; 1978-81 1978-81 1968-75
UMPQUA RIVER BASIN				
South Umpqua River at Days Creek	14308600	641	t tb sc, ph, do	1971-82; 1991-92 1973-82 1991-92
North Umpqua River at Winchester	14319500	1,344	t	1971-91
Umpqua River near Elkton	14321000	3,683	t	1971-92
COOS RIVER BASIN				
West Fork Millicoma River near Allegany	14324500	46.9	t	1973-76
COQUILLE RIVER BASIN				
South Fork Coquille River near Illahe	14324700	40.6	t	1971-74
Rock Creek near Illahe	14324800	—	t	1958
South Fork Coquille River near Powers	14324900	93.2	t	1957-70
SIXES RIVER BASIN				
Sixes River at Sixes	14327150	116	t sed	1968 1968-70
ROGUE RIVER BASIN				
South Fork Rogue River south of Prospect	14334700	246	t sed	1969-92 1977-81
Rogue River at Grants Pass	14361500	2,459	t	1956-58; 1974-87
Middle Fork Applegate River near Copper	14361590	50.7	t	1980-87
Elliott Creek near Copper	14361600	51.8	t	1978-87
Carberry Creek near Copper	14361700	68.9	sed t sed	1978-80 1978-87 1981
Rogue River near Merlin	14370400	3,268	t	1975-87
Rogue River at Marial	14372250	3,812	t	1975-87
Rogue River near Agness	14372300	3,939	t	1961-87
Illinois River near Selma	14378000	665	t	1962-68

WATER RESOURCES DATA FOR OREGON 1993

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with state agencies, obtains a large amount of data pertaining to the water resources of Oregon each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Oregon."

This report includes records on surface water in the State. Specifically, it contains: (1) Discharge records for 199 stream-gaging stations, stage only records for 5 gaging stations, 242 partial-record or miscellaneous streamflow stations, and 1 crest-stage, partial-record streamflow station; (2) stage and content records for 31 lakes and reservoirs; and (3) water-quality records for 53 streamflow-gaging stations and 217 ungaged streamsites.

This series of annual reports for Oregon began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one or two volumes, data on quantities of surface water, quality of surface and ground water, and ground-water levels. In 1981, the annual report was divided into two volumes: Volume 1 described the activities for Eastern Oregon, while Volume 2 described the activities for Western Oregon. Beginning with the 1985 water year, presentation of ground-water levels in this report was discontinued. In 1991, the annual report returned to a single volume report.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Oregon were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10, 11, 13, and 14." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in the libraries of the principal cities of the United States, or if not out of print, may be purchased from the U.S. Geological Survey, Books and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, CO 80225. For further ordering information, telephone (303) 236-7476.

Publications similar to this report are published annually by the Geological Survey for all states. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OR-93-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. For further ordering information, the Customer Inquiries telephone number is (703) 487-4650. Beginning with the 1990 water year, all water-data reports are available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, are reproduced on a single CD-ROM disc.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on back of title page or by telephone (503) 251-3201. A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

COOPERATION

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

State of Oregon Water Resources Department, Martha O. Pagel, Director.
State of Oregon Department of Fish and Wildlife, Rodney Ingram, Acting Director.
State of Oregon Department of Environmental Quality, Fred Hansen, Director.
Coos Bay-North Bend Water Board, P. A. Matson, General Manager.
Eugene Water and Electric Board, R. L. Berggren, General Manager.
Coos County, Board of Commissioners, Jack L. Beebe, Chair.
Douglas County, Natural Resources Division of Public Works, Frank M. Nielsen, Division Manager.
City of Albany, Steve Bryant, City Manager.
City of Ashland, Department of Public Works, S. M. Hall, Director.
City of Gresham, Department of Environmental Services, Gregory E. DiLoreto, City Engineer.
City of McMinnville, J. L. Harshman, General Manager.
City of Portland, Bureau of Environmental Services, Noam Stampfer, Director.
City of Portland, Bureau of Water Works, Michael F. Rosenberger, Administrator.
The Confederated Tribes of the Umatilla Indian Reservation, E. H. Patawa, Chair, Board of Trustees.
The Confederated Tribes of the Warm Springs Indian Reservation, Zane Jackson, Chair of Tribal Council.

Assistance in the form of funds or services was provided by the Forest Service, U.S. Department of Agriculture; Corps of Engineers, U.S. Army; Bonneville Power Administration, U.S. Department of Energy; Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, National Park Service, U.S. Department of the Interior in collection of records for stage and discharge stations and water-quality stations published in this report.

The following organizations aided in collecting records for stations under Federal Energy Regulatory Commission licenses: Eugene Water & Electric Board; Grayco Resources, Inc.; Idaho Power Co.; Middle Fork Irrigation District; Pacific Power Co.; Portland General Electric Co.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

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

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

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

Surface-water Conditions

The 1993 water year can be referred to as the year of recovery. After seven consecutive years of extremely dry weather, Oregon finally received abundant snow and precipitation resulting in above-average streamflow. The March snowpack set record high levels in Lake County of south-central Oregon. The remainder of the State ranged from 100 to 200 percent of average. Precipitation for the first six months of the water year was near average while the second half was considerably above-average. As can be expected with an above-average snowpack and excessive precipitation, streamflows were higher than normal during the spring and summer. A dramatic increase in reservoir storage during the water year can be attributed to the above-average streamflows.

Precipitation totals were normal in the northern half of the State during the first half of the water year, ranging from 84 to 103 percent of average. Precipitation totals were above-average in the southern half of the State during the same time period ranging from 104 to 121 percent of average. For the period April through August, precipitation totals were well above average throughout the State. September was the only dry month during the water year with precipitation amounts ranging from 5 to 40 percent of average.

Streamflow for the water year was about average across the State, ranging from a low of 75 percent for the northern coastal basins to a high of 167 percent in the Malheur Basin of southeastern Oregon. Streamflow for the first 5 months of the water year were below-average, reaching a low of 56 percent of average for February. Beginning in March with the melting of the snowpack coupled with above-average precipitation, flows increased to well above-average. Flows remained above-average through August and returned to normal by September.

Peak discharges for the 1993 water year at selected Oregon sites are shown in Table 1. On March 18th, the gaging station on the Owyhee River near the town of Rome (13181000) recorded a peak flow of 55,700 ft³/s, a 100-year flood event. This exceeded the previous peak flow of 41,400 ft³/s which occurred in February 1986. The high flows in the Owyhee River Basin on March 18th were a result of the melting of a record snowpack combined with a rainstorm.

Table 1.--Comparison of peak discharge for the 1993 water year with peak discharge for the period of record at long-term stations

Station number	Station name	Drainage area (mi ²)	Peak discharge 1993 water year Date	ft ³ /s	Exceedance probability	Peak discharge period of record Date	ft ³ /s
10396000	Donner und Blitzen near Frenchglen	a200	Mar. 17	3,520	0.04	Apr. 26, 1978	4,270
11502500	Williamson River below Sprague River, near Chiloquin	a3,000	Mar. 28	5,960	.12	Dec. 26, 1964	16,100
13181000	Owyhee River near Rome	a8,000	Mar. 18	55,700	>.01	Mar. 18, 1993	55,700
13214000	Malheur River near Drewsey	a910	Mar. 24	6,090	.07	Dec. 23, 1964	12,000
13331500	Minam River at Minam	a240	May 14	3,370	.42	June 16, 1974	6,260
14048000	John Day River at McDonald Ferry	a7,580	Mar. 25	26,800	.07	Dec. 24, 1964	42,800
14137000	Sandy River near Marmot	262	Nov. 21	12,500	<.50	Dec. 22, 1964	61,400
14178000	North Santiam River below Boulder Creek, near Detroit	216	Mar. 18	6,470	<.50	Dec. 22, 1964	26,700
14301000	Nehalem River near Foss	667	Nov. 21	9,200	<.50	Jan. 9, 1990	53,400
14321000	Umpqua River near Elkton	3,683	Jan. 21	70,600	<.50	Dec. 23, 1964	265,000
14325000	South Fork Coquille River at Powers	169	Jan. 20	17,600	.35	Dec. 22, 1964	48,900

a Approximately.
> More than indicated value.
< Less than indicated value.

NOTE.--Exceedance probability refers to the probability that an event will exceed a specific magnitude in a given time period. A flow of 200 ft³/s with an exceedance probability of 0.5 means that there is a 50 percent chance that the flow will exceed 200 ft³/s in any one year.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of more than 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

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

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

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1993 water year that began October 1, 1992, and ended September 30, 1993. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The two systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations where only miscellaneous measurements are made. Basin designation is based on the Hydrologic Unit Map for Oregon prepared in cooperation with the U.S. Water Resources Council (1974).

Downstream Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 14105700, which appears just to the left of the station name, includes the two-digit Part number "14" plus the six-digit downstream-order number "105700." The Part number designates the major river basin; for example, part "14" refers to the Pacific slope basins in Oregon and lower Columbia River basin.

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

Data Collection and Computation

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

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

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

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

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations an acoustic velocity meter (AVM) is used instead of the slope method. The AVM measures both water-surface elevation and velocity from which discharge can be computed directly.

In computing records of lake or reservoir contents, it is necessary to have information available from surveys, curves, or tables that define the relation of stage to content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Discharges over lake or reservoir spillways are computed from stage-discharge relations much as other stream discharges are computed.

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

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharges for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration. Summary statistics were not included for certain sites where these data would be misleading. Contact the District Office for further information concerning summary statistics for these sites.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages are based on information developed by the Hydraulics and Hydrology Committee of the Pacific Northwest River Basins Commission.

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

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

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

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see "DEFINITION OF TERMS"), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

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

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic average of the water-year mean discharges. Average discharge is computed only for stations having at least 5 water years of complete record; water years with incomplete record are not included in the computation. The mean-discharge value that uses all published data may differ from that given in the summary statistics data, which is based only on computer-stored data. The summary data does not include values of monthly or yearly data that were determined by various methods for the series of Water-Supply Papers entitled "Compilation of Records of Surface Water of the United States". The average-discharge value is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water projects that significantly alter flow at a station are put into use after the station has been in operation for a period of years, the new average is computed as soon as 5 water years of record have accumulated after the project began.

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

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

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

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

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

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

Data table of daily mean values

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

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEAR _____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly and daily flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS _____ - _____", will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using computerized data for complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes. At least 5 complete years of record must be available before this statistic is published for the designated period.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

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

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

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that is exceeded by 10 percent of the flow for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded by 50 percent of the flow for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded by 90 percent of the flow for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

The accuracy attributed to the records is indicated under the "REMARKS" paragraph. "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record. Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; the nearest tenth between 1.0 and 10 ft³/s; whole numbers between 10 and 1,000 ft³/s; and 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff because of the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation, or other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, changes in contents of reservoirs, or other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Monthly records for several ungaged sites are given in a separate section following the gaged sites. The accuracy of records for ungaged sites is generally lower than that for gaged sites, depending on the precision of the computation method and the accuracy of data used in the computations. For most gaging stations, unpublished, detailed information, on file in the Oregon office, includes discharge measurements, gage-height records, and rating tables. Many gaging-station records in Oregon through 1987 have been analyzed to determine several statistical summaries: (1) The number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

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

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

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

On-site Measurements and Sample Collection

In obtaining water-quality data, it is important that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, treating the samples to prevent changes in quality pending analysis, and shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," (TWRI), Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" in this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey Oregon office.

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

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

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

Water Temperature

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

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

Sediment

Suspended-sediment concentrations are determined from samples collected by one of the standard sampling techniques discussed in TWRI, Book 3, Chapter C2, "Field methods for measurement of fluvial sediment." Samples are obtained using standard depth- or point-integrating samplers, or by means of an approved pumping sampler. Mean concentrations for the sampled cross section are in turn determined from these samples.

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

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

In addition to the records of suspended-sediment discharge, periodic measurements of particle-size distributions for the suspended-sediment, bed-load, and bed-material samples are included for stations where samples were obtained to measure this parameter.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for identification of biological populations, samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)

ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National WATER Data STORage and RETrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia and consists of related files and data bases.

- * Station Header File - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
- * Daily Values File - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- * Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- * Water Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.
- * Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports are available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, are reproduced on a single CD-ROM disc. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District offices. (See address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

Base flow. See Base runoff.

Base runoff refers to sustained or fair weather runoff. In most streams, base runoff is composed largely of ground-water effluent. The term base flow is often used in the same sense as base runoff. However, the distinction is the same as that between streamflow and runoff. When the concept in the terms base flow and base runoff is that of the natural flow in a stream, base runoff is the logical term.

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

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

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

Cubic foot per second-day [$(\text{ft}^3/\text{s})/\text{d}$] 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, about 646,000 gallons, or 2,445 cubic meters.

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

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

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

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

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

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

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

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of more than 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

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

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

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

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

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

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

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

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

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

NTU (Nephelometric Turbidity Unit) is a method of quantitative analysis in which the concentration or particle size of suspended matter in a liquid is determined by measurement of light absorption.

Organism is any living entity.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Milligrams of oxygen per area or volume per unit time [$\text{mg } \text{O}_2 / (\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg } \text{O}_2 / (\text{m}^3 \cdot \text{time})$] for phytoplankton are units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

Sea level, in this report, refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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

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

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

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

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

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

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

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

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

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

Seven-day 10-year low flow (7 Q10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficken, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
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- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
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- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
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- 3-A19. *Levels of streamflow gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.
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- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

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- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
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- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
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- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.
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- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water problems, Part 3: Design philosophy and programming details*, by L. J. Torak: USGS--TWRI Book 6, Chapter A5, 1993. 243 pages.
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- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

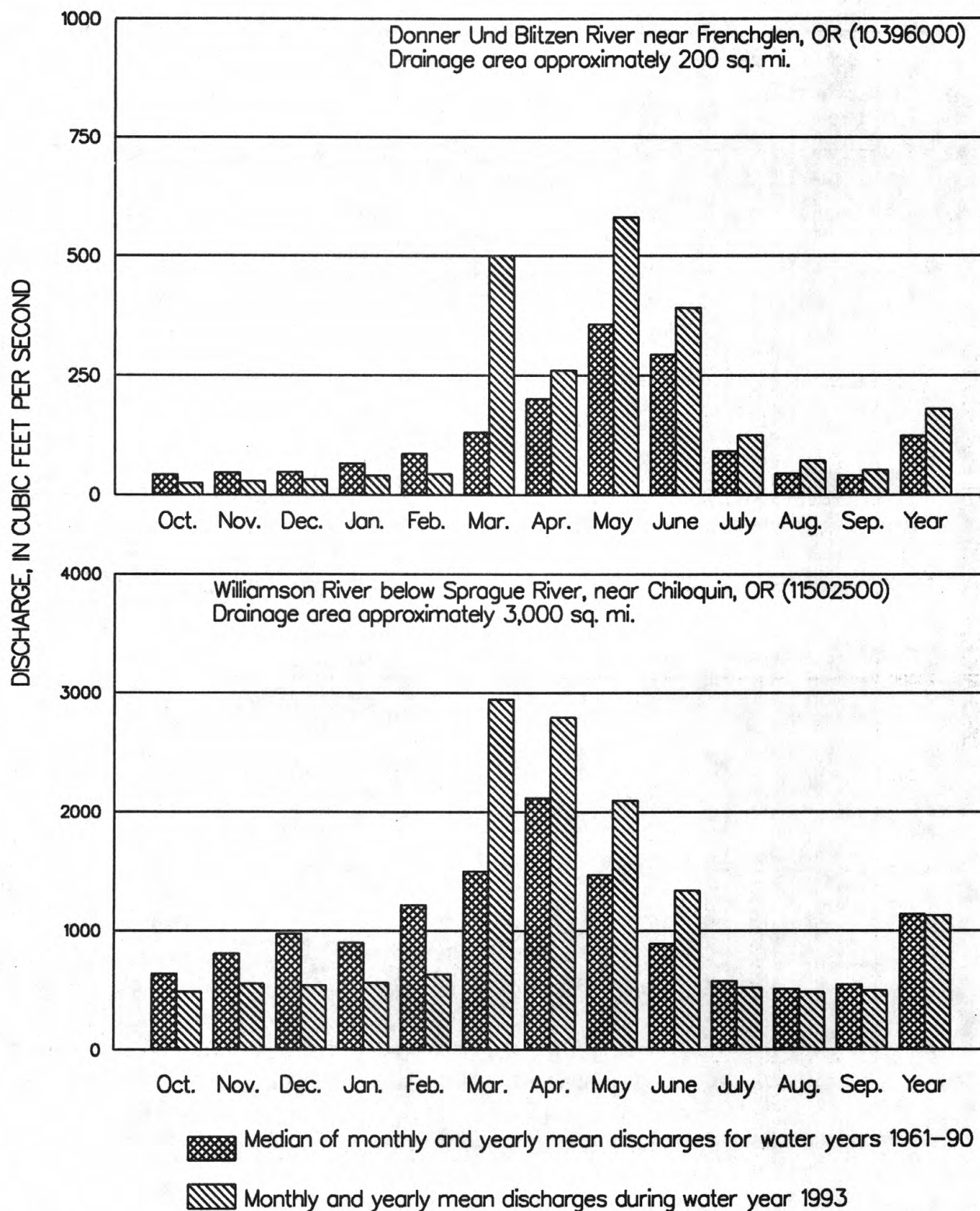


Figure 1a--Discharge during 1993 water year compared with median discharge for period 1961-90 for two representative gaging stations in Eastern Oregon.

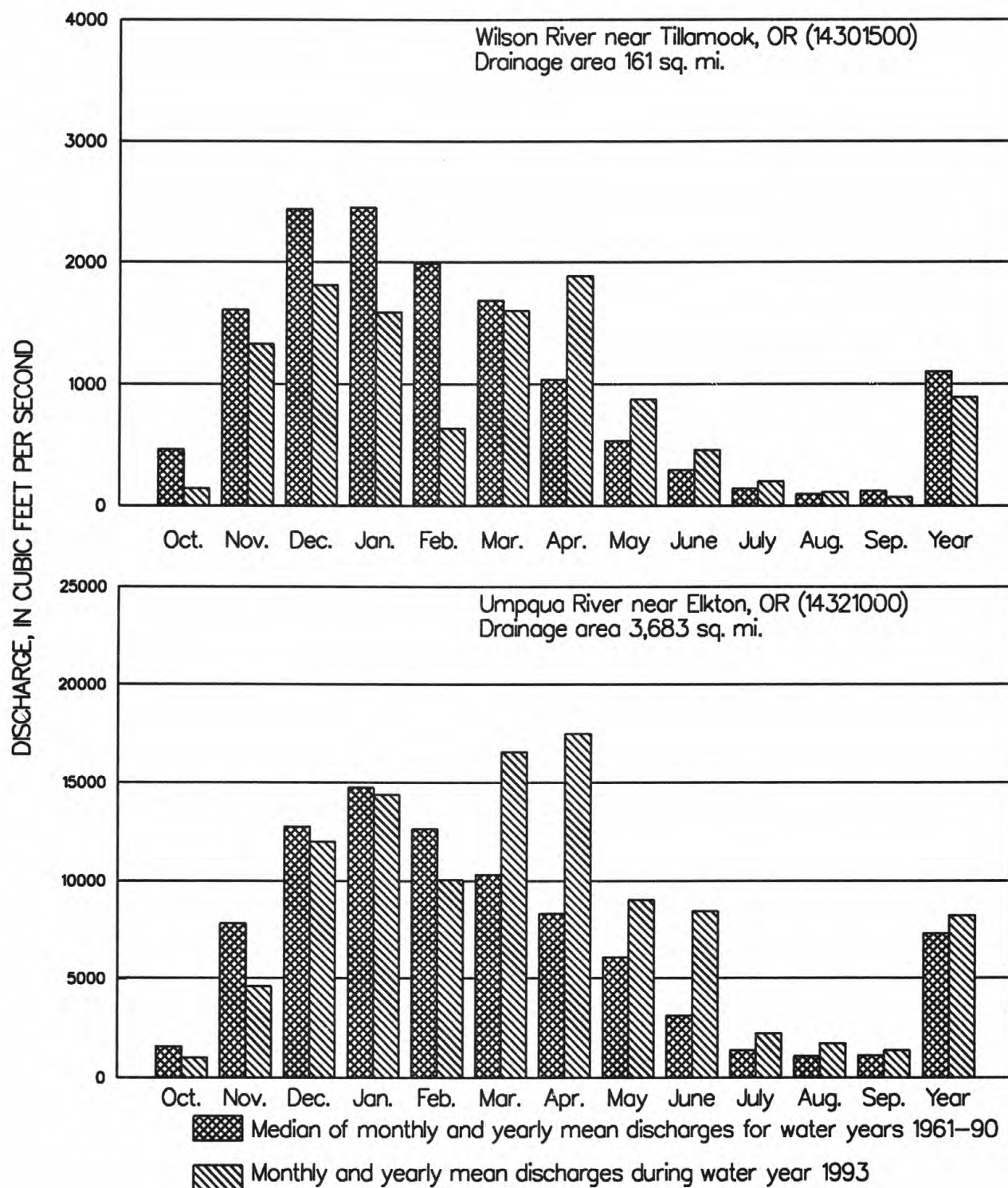


Figure 1b--Discharge during 1993 water year compared with median discharge for period 1961-90 for two representative gaging stations in Western Oregon.

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SURFACE-WATER RECORDS

Remark Codes

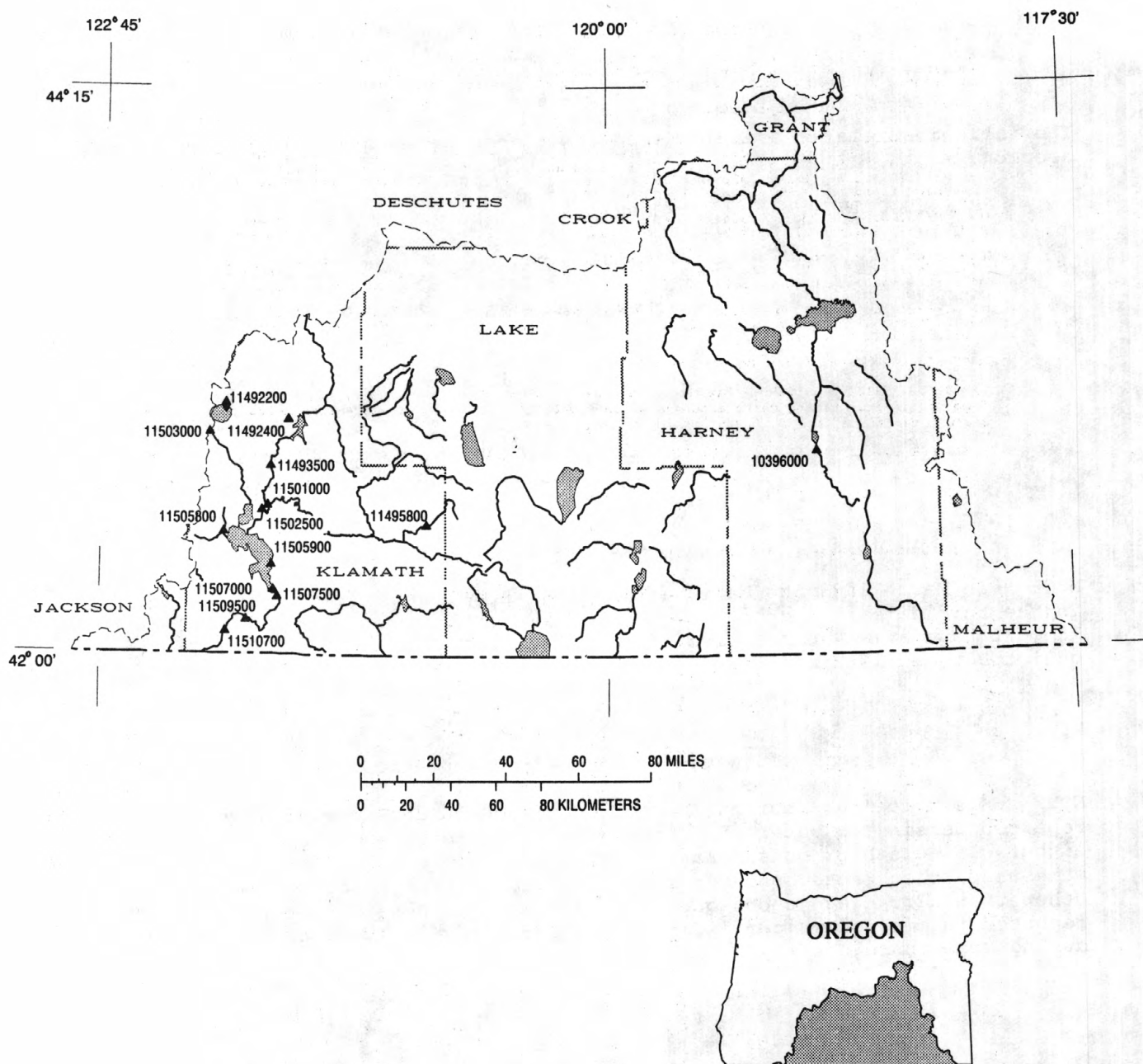
The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Estimated value
<	Actual value is known to be less than the value shown
>	Actual value is known to be greater than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
ND	Materials specifically analyzed for but not detected

NOTE: In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

Dissolved Trace-Element Concentrations

NOTE: Historical and current dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.



EXPLANATION

- 10371500 ▲ Stream-gaging station
 11492200 ◆ Stream-gaging station and water-quality data collection site

Figure 2--Location of surface-water and water-quality stations in the Great Basin and the Klamath River Basin.

THE GREAT BASIN

MALHEUR AND HARNEY LAKES BASIN

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR

LOCATION.--Lat 42°47'28", long 118°52'00", in NW 1/4 NW 1/4 sec.20, T.32 S., R.32-1/2 E., Harney County, Hydrologic Unit 17120003, Bureau of Land Management land, on left bank 1.5 mi upstream from upper diversions for Malheur National Wildlife Refuge, 2.0 mi downstream from Fish Creek, and 3.5 mi southeast of Frenchglen.

DRAINAGE AREA.--200 mi², approximately.

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

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,254 ft above sea level (levels by Fish and Wildlife Service). Prior to December 1937, nonrecording gage at several sites within 2 mi downstream at different datums. Dec. 6, 1937, to Feb. 14, 1938, nonrecording gage at present site and datum.

REMARKS.--Records good. No regulation or diversion upstream from station. Periodic water-quality records for the period March 1975 to September 1986 and continuous water-quality records for the period October 1975 to September 1981 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--63 years (water years 1912-13, 1915-16, 1918-21, 1939-93), 126 ft³/s, 91,290 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 17	0815	*3,520	*6.63	May 19	2330	993	4.24

Minimum discharge, 4.3 ft³/s Dec. 5, result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	33	30	28	31	e26	322	297	476	189	82	53
2	24	58	56	26	33	42	277	374	415	194	80	52
3	35	37	44	28	34	62	262	463	375	169	78	52
4	31	30	18	34	36	75	388	481	345	160	81	52
5	25	30	13	41	34	167	450	387	338	154	82	52
6	24	28	21	43	35	237	314	562	580	153	78	51
7	23	29	37	69	36	260	280	483	1210	146	75	51
8	23	29	36	69	36	344	250	404	501	141	84	50
9	23	29	37	63	40	358	293	366	442	140	73	49
10	23	17	37	42	52	599	293	405	445	142	69	48
11	23	25	33	e29	55	624	245	540	444	131	77	48
12	22	32	31	e33	50	471	221	718	358	132	70	48
13	22	28	21	36	44	370	198	813	332	124	67	49
14	23	27	23	64	34	750	221	783	342	117	66	49
15	23	27	37	48	e38	823	199	727	382	114	74	48
16	23	27	30	45	e40	1190	198	710	373	108	98	49
17	23	27	31	30	43	2700	189	756	343	103	86	81
18	23	26	31	26	55	1400	425	807	367	100	72	61
19	23	26	e20	43	76	699	368	822	382	101	69	55
20	22	24	45	40	89	530	242	795	416	104	68	53
21	23	21	50	44	62	402	212	694	461	102	66	52
22	23	31	33	57	51	353	224	596	363	111	64	51
23	23	26	26	37	48	361	210	584	280	158	62	51
24	23	13	22	47	44	400	198	613	232	121	61	50
25	23	15	21	36	28	347	192	731	230	107	59	49
26	23	19	29	30	e18	317	230	620	264	100	59	49
27	23	30	34	29	e20	317	210	590	328	94	57	48
28	23	34	30	36	e23	462	201	516	302	93	56	48
29	28	23	27	33	---	304	233	437	225	96	55	47
30	31	27	27	25	---	265	283	434	194	90	55	47
31	28	---	29	27	---	248	---	497	---	84	54	---
TOTAL	750	828	959	1238	1185	15503	7828	18005	11745	3878	2177	1543
MEAN	24.2	27.6	30.9	39.9	42.3	500	261	581	391	125	70.2	51.4
MAX	35	58	56	69	89	2700	450	822	1210	194	98	81
MIN	21	13	13	25	18	26	189	297	194	84	54	47
AC-FT	1490	1640	1900	2460	2350	30750	15530	35710	23300	7690	4320	3060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1993, BY WATER YEAR (WY)

	43.6	47.9	55.3	64.0	91.2	152	224	373	287	97.7	47.7	42.3
MEAN	43.6	47.9	55.3	64.0	91.2	152	224	373	287	97.7	47.7	42.3
MAX	86.4	94.3	181	239	310	500	666	812	802	320	113	87.3
(WY)	1985	1985	1965	1971	1921	1993	1952	1984	1917	1984	1984	1984
MIN	24.2	25.3	25.2	25.0	27.8	40.5	61.2	105	44.7	28.9	21.1	22.2
(WY)	1993	1962	1960	1916	1964	1977	1968	1992	1992	1968	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1911 - 1993

ANNUAL TOTAL	16370	65639	
ANNUAL MEAN	44.7	180	126
HIGHEST ANNUAL MEAN			273
LOWEST ANNUAL MEAN			49.1
HIGHEST DAILY MEAN	179	2700	2700
LOWEST DAILY MEAN	13	13	11
ANNUAL SEVEN-DAY MINIMUM	21	21	14
ANNUAL RUNOFF (AC-FT)	32470	130200	91190
10 PERCENT EXCEEDS	94	466	325
50 PERCENT EXCEEDS	36	61	58
90 PERCENT EXCEEDS	21	23	32

e Estimated

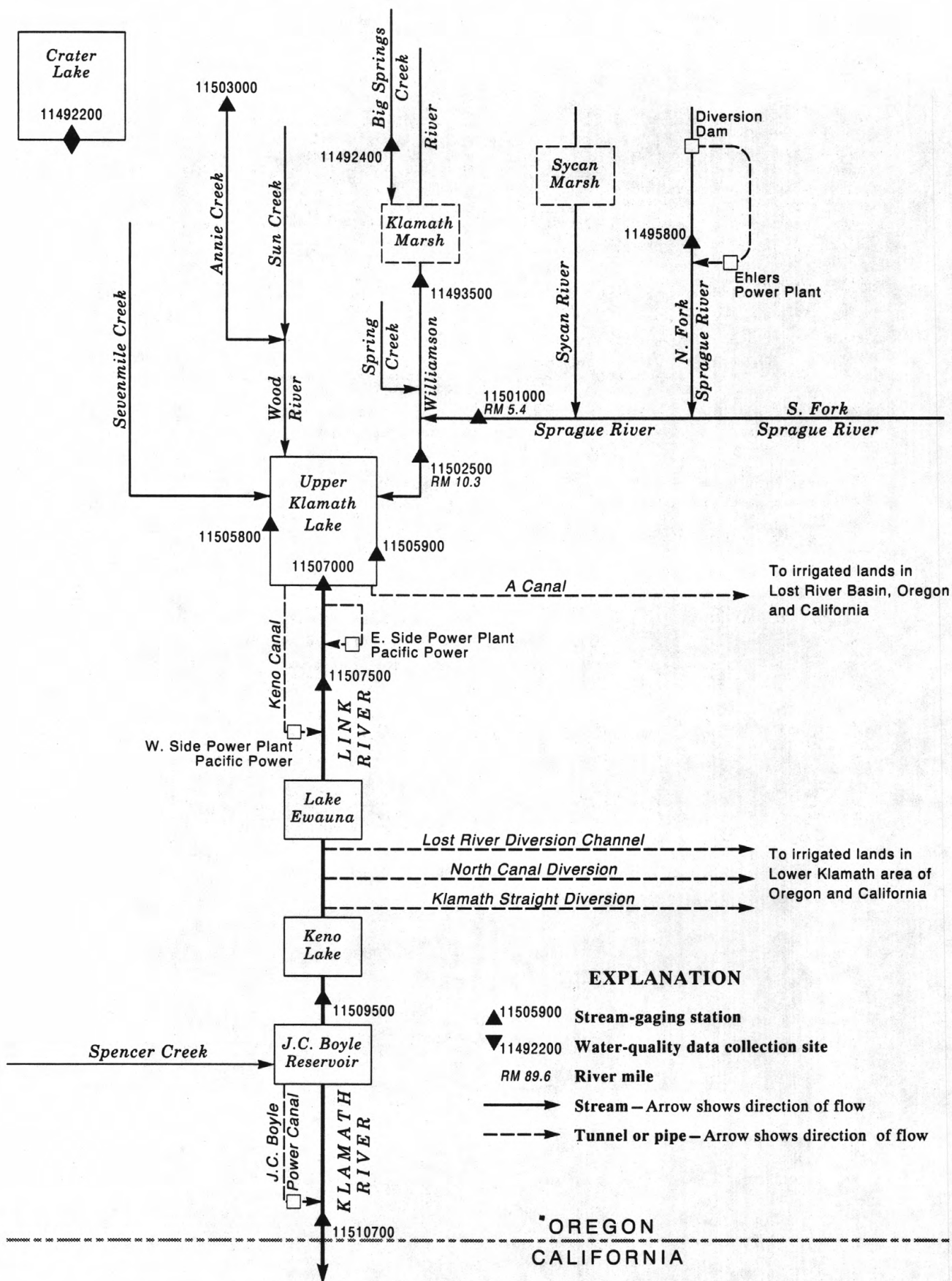


Figure 3--Schematic diagram showing gaging stations and major diversions in the Klamath Basin in Oregon.

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1963 to current year.

INSTRUMENTATION.--Temperature recorder from October 1963 to current year. Elevation of probe is approximately 6,157 ft above sea level.

REMARKS.--Samples were collected at boat harbor at end of trail in Cleetwood Cove and 6 mi northeast of Crater Lake post office. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 18.5°C Aug. 9, 10, 1978; minimum recorded, 0.5°C on several days in 1969, but may have been as low or lower during period of missing record Oct. 29, 1985 to July 1, 1986.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.5°C Sept. 10-13; minimum, 2.5°C Feb. 23 to Mar. 6.

WATER-QUALITY DATA

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	HARD- NESS, TOTAL (MG/L AS CACO3)	CALCIUM, DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
OCT 1992 07...	1130	118	7.5	12.0	0.1	27	6.8	2.5	10	42	0.8
JUL 1993 12...	1300	107	7.3	11.5	0.1	28	6.9	2.6	11	44	0.9
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY, DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	
OCT 1992 07...	1.9	31	38	0	9.8	10	0.1	17	80	77	
JUL 1993 12...	1.7	28	34	0	9.7	9.3	<0.1	18	73	76	
DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	
OCT 1992 07...	0.11	0.01	0.01	<0.01	<0.01	<0.2	<0.05	<0.05	<0.01	0.01	
JUL 1993 12...	0.10	0.02	--	--	<0.01	<0.2	--	<0.05	0.02	<0.01	
DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO TOTAL (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	
OCT 1992 07...	<0.01	<0.01	<10	6	<3	4	47	<1	<10	<1	
JUL 1993 12...	0.01	--	20	6	<3	4	47	<1	<10	<1	
DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	ALPHA, 2 SIGMA SED, SUSP, TOT DRY (UG/L AS U-NAT)	
OCT 1992 07...	<1	<1	57	--	--	<6	--	--	--	--	
JUL 1993 12...	<1	<1	58	<0.01	<0.01	<6	<0.01	0.31	<0.01	<0.01	
DATE	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	BETA, 2 SIGMA SED, SUSP, TOT DRY (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	BETA- 2 SIGMA SED, SUSP, TOT DRY (PCI/L YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)	
OCT 1992 07...	--	--	--	--	--	--	--	--	--	--	
JUL 1993 12...	2.6	0.72	2.3	0.64	0.02	0.47	0.02	0.45	0.26	0.05	

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.5	3.5	3.5	3.0	2.5	2.5	3.5	3.5	3.5	4.0	3.5	3.5
2	3.5	3.5	3.5	3.0	2.5	3.0	3.5	3.5	3.5	4.0	3.5	4.0
3	3.5	3.5	3.5	2.5	2.5	2.5	3.5	3.5	3.5	4.0	3.5	3.5
4	3.5	3.5	3.5	2.5	2.5	2.5	3.5	3.5	3.5	4.0	3.5	3.5
5	3.5	3.5	3.5	3.0	2.5	2.5	3.5	3.5	3.5	4.0	3.5	4.0
6	3.5	3.5	3.5	3.0	2.5	3.0	3.5	3.5	3.5	4.0	3.5	4.0
7	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	3.5	3.5
8	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	3.5	3.5
9	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	3.5	4.0
10	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	3.5	4.0
11	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	3.5	4.0
12	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
13	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
14	3.5	3.5	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
15	3.5	3.0	3.5	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
16	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.0
17	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.0
18	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
19	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	3.5	4.0	4.0	4.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
21	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.0	4.0	4.0
22	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.0
23	3.0	2.5	2.5	3.5	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.5
24	3.0	2.5	3.0	3.5	3.0	3.0	3.5	3.5	3.5	4.5	4.5	4.5
25	3.0	2.5	2.5	3.0	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.5
26	2.5	2.5	2.5	3.0	3.0	3.0	3.5	3.5	3.5	4.5	4.0	4.0
27	2.5	2.5	2.5	3.5	3.0	3.5	3.5	3.5	3.5	4.5	4.0	4.0
28	2.5	2.5	2.5	3.5	3.0	3.5	3.5	3.5	3.5	4.0	4.0	4.0
29	---	---	---	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.0	4.5
30	---	---	---	3.5	3.5	3.5	4.0	3.5	3.5	4.5	4.5	4.5
31	---	---	---	3.5	3.5	3.5	---	---	---	4.5	4.5	4.5
MONTH	3.5	2.5	3.0	3.5	2.5	3.0	4.0	3.0	3.5	4.5	3.5	4.0

KLAMATH RIVER BASIN

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

KLAMATH RIVER BASIN

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11492400 BIG SPRINGS CREEK BELOW LENZ RANCH, NEAR LENZ, OR

LOCATION.--Lat 42°55'26", long 121°44'21", in SE 1/4 SW 1/4 sec.35, T.30 S., R.8 E., Klamath County, Hydrologic Unit 18010201, on right bank 1.8 mi upstream from Klamath Marsh, 2.7 mi southeast of Lenz Ranch, and 4.1 mi east of Lenz.

DRAINAGE AREA.--Indeterminate, normal flow is from Big Springs and other springs or wells in area.

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder and parshall flume. Elevation of gage is 4,516 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; maximum gage height, 4.66 ft Mar. 16, probably caused by backwater from ice; minimum discharge, no flow many days December to March.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	3.5	2.9	e.00	e.00	e.00	e50	5.6	6.7	1.4	.59	1.3
2	.77	3.2	e2.5	e.00	e.00	e.00	e60	5.3	7.1	1.2	.79	1.4
3	.98	2.8	e2.0	e.00	e.00	e.00	e65	6.5	7.1	1.3	.85	1.7
4	.96	2.8	e1.5	e.00	e.00	e.00	e70	7.5	6.5	1.3	.73	2.0
5	.96	2.7	e.00	e.00	e.00	e.00	e65	6.4	7.8	1.2	.69	2.1
6	.95	2.7	e.00	e.00	e.00	e.00	e60	5.7	6.7	1.2	.65	2.3
7	.93	2.7	e.00	e.00	e.00	e.00	e55	5.3	5.5	1.1	.72	2.1
8	.97	2.6	e.00	e.00	e.00	e.00	e50	5.2	5.2	1.1	.76	1.8
9	1.0	2.6	e.00	e.00	e.00	e.00	e42	4.8	4.9	1.2	.71	1.7
10	1.0	2.5	e.00	e.00	e.00	e.00	e38	5.4	4.5	1.2	.60	1.6
11	.98	2.5	e.00	e.00	e.00	e.00	e34	4.6	3.9	1.0	.63	1.6
12	.95	2.5	e.00	e.00	e.00	e.00	32	4.2	3.7	.96	1.0	1.5
13	.94	2.5	e.00	e.00	e.00	e.00	27	4.4	3.6	.86	1.2	1.6
14	.94	2.5	e.00	e.00	e.00	e1.1	22	4.2	3.4	.83	1.2	1.4
15	.96	2.5	e.00	e.00	e.00	e2.5	20	3.9	3.1	.95	1.7	1.4
16	1.0	2.5	e.00	e.00	e.00	e5.8	16	3.8	2.9	.98	2.1	1.7
17	1.0	2.5	e.00	e.00	e.00	e16	20	3.9	2.8	.91	2.2	2.7
18	1.0	2.5	e.00	e.00	e.00	e55	26	3.9	2.8	.81	2.4	2.2
19	1.0	2.6	e.00	e.00	e.00	e90	18	3.8	2.7	.83	2.5	1.8
20	1.1	2.5	e.00	e.00	e.00	e95	12	3.6	2.5	.82	2.5	1.5
21	1.4	2.6	e.00	e.00	e.00	e95	10	3.6	2.3	.79	2.4	1.2
22	1.2	3.4	e.00	e.00	e.00	e90	8.1	3.4	2.2	1.1	2.3	1.2
23	1.2	2.9	e.00	e.00	e.00	e80	8.4	3.1	2.2	1.2	2.1	1.1
24	1.2	2.6	e.00	e.00	e.00	e70	7.6	2.8	2.1	1.1	1.9	1.0
25	1.2	2.7	e.00	e.00	e.00	e65	4.7	4.4	2.0	1.0	1.9	1.0
26	1.2	2.8	e.00	e.00	e.00	e55	4.5	4.6	1.9	.98	1.9	1.0
27	1.2	2.8	e.00	e.00	e.00	e50	4.4	4.6	1.7	.93	1.9	.95
28	1.4	3.0	e.00	e.00	e.00	e44	4.0	4.1	1.6	.82	1.9	.92
29	1.7	2.9	e.00	e.00	---	e42	4.2	3.9	1.5	.71	1.7	.93
30	2.2	2.7	e.00	e.00	---	e46	9.6	3.7	1.5	.64	1.7	.80
31	2.4	---	e.00	e.00	---	e48	---	5.0	---	.61	1.5	---
TOTAL	35.37	81.6	8.90	0.00	0.00	950.40	847.5	141.2	112.4	31.03	45.72	45.50
MEAN	1.14	2.72	.29	.000	.000	30.7	28.2	4.55	3.75	1.00	1.47	1.52
MAX	2.4	3.5	2.9	.00	.00	95	70	7.5	7.8	1.4	2.5	2.7
MIN	.68	2.5	.00	.00	.00	.00	4.0	2.8	1.5	.61	.59	.80
AC-FT	70	162	18	.00	.00	1890	1680	280	223	62	91	90

WTR YR 1993 TOTAL 2299.62 MEAN 6.30 MAX 95 MIN .00 AC-FT 4560

e Estimated

KLAMATH RIVER BASIN

11493500 WILLIAMSON RIVER NEAR KLAMATH AGENCY, OR

LOCATION.--Lat 42°44'25", long 121°50'00", in NW 1/4 SW 1/4 sec.1, T.33 S., R.7 E., Klamath County, Hydrologic Unit 18010201, on right bank 250 ft downstream from highway bridge, 0.6 mi southwest of railroad station at Kirk, 10 mi upstream from Spring Creek, and 10 mi northeast of Klamath Agency.

DRAINAGE AREA.--1,290 mi², approximately.

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

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

GAGE.--Water-stage recorder. Datum of gage is 4,483.16 ft above sea level. Mar. 25, 1908, to June 30, 1910, nonrecording gage or water-stage recorder at two sites about 0.5 mi upstream at different datums. Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site at datum 2.05 ft higher.

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

AVERAGE DISCHARGE.--39 years (water years 1955-93), 192 ft³/s, 139,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,590 ft³/s Mar. 13, 1910, gage height, 3.7 ft, site and datum then in use, from rating curve extended above 800 ft³/s; maximum gage height, 5.75 ft (corrected) Mar. 3, 1958; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 804 ft³/s Apr. 4, gage height, 5.11 ft; no flow Oct. 1 to Mar. 25, July 20 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	739	378	127	26	.00	.00
2	.00	.00	.00	.00	.00	.00	724	363	124	25	.00	.00
3	.00	.00	.00	.00	.00	.00	757	343	121	22	.00	.00
4	.00	.00	.00	.00	.00	.00	774	344	116	21	.00	.00
5	.00	.00	.00	.00	.00	.00	759	330	119	18	.00	.00
6	.00	.00	.00	.00	.00	.00	750	308	115	15	.00	.00
7	.00	.00	.00	.00	.00	.00	742	294	110	11	.00	.00
8	.00	.00	.00	.00	.00	.00	721	287	107	7.9	.00	.00
9	.00	.00	.00	.00	.00	.00	700	280	101	5.8	.00	.00
10	.00	.00	.00	.00	.00	.00	698	253	98	4.7	.00	.00
11	.00	.00	.00	.00	.00	.00	698	244	91	3.1	.00	.00
12	.00	.00	.00	.00	.00	.00	698	236	91	2.5	.00	.00
13	.00	.00	.00	.00	.00	.00	690	227	88	1.7	.00	.00
14	.00	.00	.00	.00	.00	.00	679	219	83	1.1	.00	.00
15	.00	.00	.00	.00	.00	.00	656	218	79	.80	.00	.00
16	.00	.00	.00	.00	.00	.00	625	212	81	.47	.00	.00
17	.00	.00	.00	.00	.00	.00	605	204	78	.21	.00	.00
18	.00	.00	.00	.00	.00	.00	588	187	73	.13	.00	.00
19	.00	.00	.00	.00	.00	.00	579	176	69	.01	.00	.00
20	.00	.00	.00	.00	.00	.00	563	172	64	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	533	168	58	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	508	167	55	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	492	163	53	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	479	154	49	.00	.00	.00
25	.00	.00	.00	.00	.00	218	455	154	46	.00	.00	.00
26	.00	.00	.00	.00	.00	365	444	150	41	.00	.00	.00
27	.00	.00	.00	.00	.00	479	445	143	38	.00	.00	.00
28	.00	.00	.00	.00	.00	665	427	136	38	.00	.00	.00
29	.00	.00	.00	.00	.00	734	403	129	34	.00	.00	.00
30	.00	.00	.00	.00	.00	741	396	124	31	.00	.00	.00
31	.00	.00	.00	.00	.00	754	---	125	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	3956.00	18327	6888	2378	166.42	0.00	0.00
MEAN	.000	.000	.000	.000	.000	128	611	222	79.3	5.37	.000	.000
MAX	.00	.00	.00	.00	.00	754	774	378	127	26	.00	.00
MIN	.00	.00	.00	.00	.00	.00	396	124	31	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	7850	36350	13660	4720	330	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1993, BY WATER YEAR (WY)

	44.1	124	228	233	308	450	459	267	126	46.5	15.5	12.4
MEAN	44.1	124	228	233	308	450	459	267	126	46.5	15.5	12.4
MAX	255	391	580	730	799	1039	1081	952	531	332	146	95.8
(WY)	1958	1957	1956	1956	1965	1986	1956	1956	1956	1958	1958	1958
MIN	.000	.000	.000	.000	.000	60.0	22.3	7.35	.000	.000	.000	.000
(WY)	1962	1965	1991	1992	1993	1992	1992	1992	1992	1981	1961	1960

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1955 - 1993

ANNUAL TOTAL	2869.69	31715.42	192
ANNUAL MEAN	7.84	86.9	468
HIGHEST ANNUAL MEAN			7.84
LOWEST ANNUAL MEAN			1956
HIGHEST DAILY MEAN	78	774	1250
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
ANNUAL RUNOFF (AC-FT)	5690	62910	139100
10 PERCENT EXCEEDS	27	370	491
50 PERCENT EXCEEDS	.00	.00	119
90 PERCENT EXCEEDS	.00	.00	.00

KLAMATH RIVER BASIN

43

11495800 NORTH FORK SPRAGUE RIVER AT POWERPLANT, NEAR BLY, OR

LOCATION.--Lat 42°30'06", long 120°59'13", in SW 1/4 SE 1/4 sec.30, T.35 S., R.15 E., Klamath County, Hydrologic Unit 18010202, at powerplant 0.1 mi upstream from Yaden Creek, and 7.6 mi northeast of Bly.

DRAINAGE AREA.--77.7 mi².

PERIOD OF RECORD.--May to September 1993.

GAGE.--Water-stage record. Elevation of gage is 4,750 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. All records given herein do not include flow diverted through powerplant.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1993.--Maximum discharge, 640 ft³/s May 12, gage height, 7.00 ft; minimum discharge, 19 ft³/s Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	MAY	JUN	JUL	AUG	SEP
1	e250	395	33	27	24
2	e300	369	27	27	25
3	e330	312	26	27	25
4	e350	342	29	27	25
5	e400	323	32	27	25
6	582	425	30	28	25
7	440	368	29	28	25
8	381	342	29	28	25
9	396	324	29	27	25
10	447	298	29	27	25
11	520	239	28	27	25
12	570	197	28	29	25
13	537	164	28	28	25
14	495	125	28	27	26
15	482	114	28	44	26
16	470	106	30	48	26
17	446	99	29	27	26
18	403	90	28	25	24
19	388	82	40	27	33
20	377	81	44	26	30
21	369	74	28	27	25
22	370	68	34	25	26
23	287	55	38	25	26
24	269	56	28	25	26
25	328	44	27	25	26
26	307	40	27	25	25
27	387	37	27	25	25
28	290	44	28	24	25
29	225	44	29	24	24
30	234	46	29	24	24
31	343	---	28	24	---
TOTAL	11973	5303	927	854	767
MEAN	386	177	29.9	27.5	25.6
MAX	582	425	44	48	33
MIN	225	37	26	24	24
AC-FT	23750	10520	1840	1690	1520

e Estimated

11501000 SPRAGUE RIVER NEAR CHILOQUIN, OR

LOCATION.--Lat 42°35'05", long 121°50'55", in NE 1/4 NW 1/4 sec.35, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.0 mi northeast of Chiloquin, 4.6 mi upstream from Modoc Point Canal intake, and at mile 5.4.

DRAINAGE AREA.--1,580 mi², approximately.

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

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

GAGE.--Water-stage recorder. Datum of gage is 4,202.43 ft above sea level. Prior to Oct. 1, 1931, nonrecording gage at site 12 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Minor regulation from irrigation diversions upstream from station.

AVERAGE DISCHARGE.--72 years (water years 1922-93), 575 ft³/s, 416,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,510 ft³/s Mar. 22, gage height, 7.08 ft; minimum discharge, 127 ft³/s Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	292	252	e305	e305	294	2680	1540	1390	349	185	159
2	139	314	254	e285	e290	312	2440	1560	1380	317	181	174
3	162	315	256	e330	e285	310	2280	1660	1440	289	193	179
4	170	327	e250	e340	e290	325	2300	1740	1550	290	201	187
5	178	337	e160	e330	e285	397	2310	1820	1660	298	187	195
6	182	311	e225	e325	293	514	2340	1950	1680	303	178	209
7	187	283	e240	e310	308	618	2540	2090	1650	300	169	206
8	180	265	e235	e330	318	748	2730	2140	1640	292	167	222
9	176	257	e230	e330	336	916	2630	2120	1650	282	151	215
10	177	254	e270	e290	384	1100	2340	2130	1680	261	141	197
11	185	248	e340	e340	462	1310	2170	2110	1620	249	154	174
12	193	242	e315	e315	519	1500	2110	1980	1460	236	168	170
13	189	235	e270	e345	521	1640	2050	1840	1250	216	158	170
14	175	233	e225	e350	484	1830	2020	1790	1080	214	172	185
15	157	239	e255	e330	421	2010	1760	1810	947	224	179	195
16	160	242	e255	e340	386	2230	1620	1820	853	213	179	207
17	175	235	e275	e340	270	2740	1560	1800	785	213	212	207
18	193	234	e300	e350	192	3410	1620	1750	729	212	290	222
19	197	242	e285	e345	341	4110	1650	1680	655	211	332	226
20	205	246	e315	e360	476	4690	1780	1610	601	200	322	262
21	220	246	e330	e355	355	5160	1970	1520	571	192	297	274
22	222	256	e315	e370	478	5470	1950	1430	524	223	260	269
23	224	252	e310	e325	399	5150	1770	1380	514	275	243	249
24	227	250	e295	e385	358	4720	1640	1340	510	269	226	232
25	229	252	e270	e355	337	4450	1590	1300	493	284	219	228
26	224	244	e290	e350	324	4680	1590	1250	467	303	210	223
27	223	232	e335	e355	320	5260	1600	1230	427	283	196	222
28	228	241	342	e345	289	5180	1580	1260	398	257	199	200
29	231	245	e350	e320	---	4480	1590	1310	394	232	194	201
30	249	252	e325	e325	---	3730	1570	1370	374	201	181	213
31	261	---	335	e315	---	3040	---	1410	---	191	161	---
TOTAL	6048	7821	8704	10390	10026	82324	59680	51740	30372	7882	6305	6272
MEAN	195	261	281	335	358	2656	1989	1669	1012	254	203	209
MAX	261	337	350	385	521	5470	2730	2140	1680	349	332	274
MIN	130	232	160	285	192	294	1560	1230	374	191	141	159
AC-FT	12000	15510	17260	20610	19890	163300	118400	102600	60240	15630	12510	12440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1993, BY WATER YEAR (WY)

	MEAN	296	345	469	503	657	925	1267	1130	607	280	221	238
MAX	848	789	2853	1961	2764	2904	4250	3211	1762	560	405	374	
(WY)	1963	1974	1965	1965	1982	1972	1956	1956	1983	1983	1956	1956	
MIN	183	219	215	196	223	286	263	119	93.8	107	76.9	125	
(WY)	1934	1933	1933	1937	1933	1992	1977	1992	1992	1992	1992	1992	

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1921 - 1993

ANNUAL TOTAL	72891	287564	
ANNUAL MEAN	199	788	
HIGHEST ANNUAL MEAN			575
LOWEST ANNUAL MEAN			1395
HIGHEST DAILY MEAN	413	Apr 13	5470
LOWEST DAILY MEAN	61	Aug 10	130
ANNUAL SEVEN-DAY MINIMUM	65	Aug 5	158
ANNUAL RUNOFF (AC-FT)	144600		570400
10 PERCENT EXCEEDS	300		1970
50 PERCENT EXCEEDS	224		312
90 PERCENT EXCEEDS	88		185

e Estimated

11502500 WILLIAMSON RIVER BELOW SPRAGUE RIVER, NEAR CHILOQUIN, OR

LOCATION.--Lat 42°33'54", long 121°52'42", in NE 1/4 SE 1/4 sec.4, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 0.8 mi downstream from Sprague River and 1.2 mi southwest of Chiloquin, and at mile 10.3.

DRAINAGE AREA.--3,000 mi², approximately.

PERIOD OF RECORD.--June 1917 to current year. Monthly discharge only for October 1922 to August 1923 published in WSP 1315-B.

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

GAGE.--Water-stage recorder. Datum of gage is 4,148.50 ft above sea level. September 1, 1923 to July 12, 1991 at site 0.6 mi upstream at datum 7.05 ft higher. Prior to Sept. 1, 1923, at different datum.

REMARKS.--No estimated daily discharges. Records excellent. Some regulation by diversion dams and logpond operations on Sprague River. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--76 years, 1,040 ft³/s, 753,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s Dec. 26, 1964, gage height, 10.56 ft, at site and datum then in use; minimum discharge, 297 ft³/s Aug. 11, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,960 ft³/s Mar. 28, gage height, 8.12 ft; minimum discharge, 392 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	590	550	537	571	579	3620	2120	1780	620	457	444
2	406	598	559	505	563	596	3350	2130	1750	588	454	458
3	423	592	552	550	573	596	3220	2200	1790	562	459	464
4	439	599	541	555	579	604	3260	2270	1880	562	474	476
5	460	606	471	546	580	654	3250	2330	1990	566	462	482
6	464	593	530	544	583	769	3260	2430	2010	568	457	491
7	475	570	557	532	598	868	3440	2550	1980	563	447	486
8	481	560	553	554	608	986	3630	2590	1960	555	448	499
9	476	553	543	555	619	1150	3550	2560	1960	545	430	502
10	474	548	544	514	646	1350	3250	2570	1980	528	418	483
11	480	544	604	564	715	1540	3050	2530	1940	517	424	461
12	489	540	589	532	771	1700	2980	2420	1800	511	451	451
13	488	538	564	569	782	1810	2910	2280	1620	492	437	451
14	478	534	513	571	755	1990	2770	2210	1470	487	445	467
15	463	536	523	557	698	2170	2600	2220	1330	498	466	483
16	458	538	524	574	642	2410	2450	2240	1210	490	466	497
17	472	538	532	571	554	2910	2360	2200	1130	488	482	494
18	489	537	560	576	496	3540	2410	2130	1070	490	545	505
19	495	545	527	570	618	4160	2420	2070	974	485	588	511
20	504	543	566	584	759	4760	2510	2000	913	478	594	533
21	521	550	571	582	617	5330	2670	1900	877	465	578	550
22	517	563	552	598	746	5620	2660	1810	815	486	552	548
23	520	550	543	553	698	5380	2480	1760	795	527	538	542
24	520	547	535	622	646	4930	2340	1720	791	529	523	534
25	523	548	505	595	625	4590	2270	1700	773	532	517	527
26	523	545	524	592	613	4830	2240	1650	743	550	510	523
27	522	540	549	599	599	5700	2240	1620	699	540	491	524
28	528	540	561	594	582	5870	2210	1650	661	522	492	509
29	532	541	565	580	---	5340	2200	1670	658	502	488	503
30	546	545	540	584	---	4560	2170	1720	648	473	481	512
31	555	---	556	583	---	3980	---	1780	---	458	454	---
TOTAL	15121	16671	16903	17542	17836	91272	83770	65030	39997	16177	15028	14910
MEAN	488	556	545	566	637	2944	2792	2098	1333	522	485	497
MAX	555	606	604	622	782	5870	3630	2590	2010	620	594	550
MIN	400	534	471	505	496	579	2170	1620	648	458	418	444
AC-FT	29990	33070	33530	34790	35380	181000	166200	129000	79330	32090	29810	29570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 1993, BY WATER YEAR (WY)

	MEAN	657	765	949	979	1211	1604	1987	1654	1005	614	544	568
MAX	1237	1345	3682	3075	3846	4256	5488	4376	2658	1278	934	871	
(WY)	1963	1974	1965	1965	1958	1972	1952	1956	1953	1958	1958	1958	
MIN	488	556	545	524	547	619	583	391	338	362	317	405	
(WY)	1993	1993	1993	1937	1933	1992	1992	1992	1992	1992	1992	1992	

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1918 - 1993
ANNUAL TOTAL	175283	410257	
ANNUAL MEAN	479	1124	
HIGHEST ANNUAL MEAN			1043
LOWEST ANNUAL MEAN			2187
HIGHEST DAILY MEAN	661	5870	16000
LOWEST DAILY MEAN	306	400	306
ANNUAL SEVEN-DAY MINIMUM	307	436	307
ANNUAL RUNOFF (AC-FT)	347700	813700	755600
10 PERCENT EXCEEDS	611	2540	1960
50 PERCENT EXCEEDS	520	565	750
90 PERCENT EXCEEDS	326	474	509

KLAMATH RIVER BASIN

11503000 ANNIE SPRING NEAR CRATER LAKE, OR

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

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

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

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 5,982.65 ft above sea level (National Park Service bench mark).

REMARKS.--Records good except for estimated daily discharges, which are poor. Fluctuations caused by pumps 0.1 mi upstream. Diversion for domestic use by National Park Service 0.1 mi upstream.

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

AVERAGE DISCHARGE.--16 years, 2.81 ft³/s, 2,040 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18 ft³/s July 6, 1984, gage height, 1.56 ft; minimum daily discharge, 0.28 ft³/s Mar. 2-5, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft³/s June 23, 24, gage height, 1.46 ft; minimum daily discharge, 0.28 ft³/s Mar. 2-5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	.58	.44	e.31	.49	e.29	e1.2	.93	9.0	11	6.2	3.8
2	.59	.50	.41	e.30	.48	e.28	e1.2	1.0	9.3	10	6.1	3.8
3	.60	.46	.41	e.30	.45	e.28	e1.2	1.2	9.5	10	6.1	3.8
4	.59	.45	.41	e.31	.43	e.28	e1.2	1.3	9.8	10	6.0	3.8
5	.59	.43	.41	e.33	.41	e.28	e1.2	1.5	9.8	9.8	5.8	3.7
6	.61	.43	.41	e.35	.41	e.30	e1.2	1.6	9.8	9.5	5.7	3.7
7	.50	.42	.41	e.37	.41	e.35	e1.1	1.7	9.8	9.4	5.5	3.6
8	.58	.41	.41	e.38	.39	e.40	e1.0	1.8	9.4	9.4	5.4	3.6
9	.56	.41	.41	e.39	.39	e.40	e.94	1.8	9.4	9.0	5.3	3.6
10	.58	.42	.41	e.39	.39	e.39	e.88	1.9	9.4	9.0	5.2	3.4
11	.54	.43	.41	e.39	.43	e.45	e.82	2.0	9.4	8.8	5.2	3.2
12	.53	.44	.41	e.40	.47	e.50	e.76	2.3	9.7	8.7	5.1	3.3
13	.54	.44	.41	.39	.48	e.49	e.72	2.9	9.8	8.5	5.1	3.2
14	.55	.44	.41	.39	.45	e.49	e.70	3.4	9.8	8.3	5.0	3.4
15	.52	.44	.42	.43	.44	e.60	e.68	3.6	9.8	8.3	4.9	3.3
16	.52	.43	.44	.49	e.42	e.80	e.68	3.9	10	8.1	4.8	3.0
17	.49	.41	.44	.49	e.41	e1.0	e.66	4.1	10	7.8	4.7	3.1
18	.50	.41	.44	.49	e.40	e1.3	e.64	4.1	10	7.7	4.6	3.0
19	.51	.43	.44	.49	e.40	e1.4	e.66	4.4	10	7.6	4.5	2.9
20	.49	.44	.44	.49	e.40	e1.5	.66	4.9	11	7.4	4.5	2.9
21	.49	.48	.41	.49	e.39	e1.5	.70	5.3	10	7.3	4.5	2.8
22	.51	.47	.38	.46	e.37	e1.4	.72	5.6	9.9	7.2	4.4	2.8
23	.51	.46	.37	.44	e.36	e1.4	.75	5.9	11	7.1	4.3	2.8
24	.51	.46	.37	.44	e.34	e1.5	.77	7.7	11	6.9	4.2	2.7
25	.51	.46	.37	.44	e.32	e1.5	.79	8.1	11	6.9	4.1	2.7
26	.50	.46	.37	.44	e.31	e1.4	.76	8.1	11	6.8	4.1	2.7
27	.49	.46	.36	.44	e.30	e1.4	.77	8.2	11	6.8	4.1	2.7
28	.49	.46	.34	.44	e.29	e1.4	.83	8.3	11	6.6	4.0	2.7
29	.49	.46	.36	.44	---	e1.3	.85	8.4	11	6.5	4.0	2.6
30	.49	.46	.32	.44	---	e1.3	.87	8.5	11	6.5	3.9	2.6
31	.49	---	.32	.44	---	e1.3	---	8.6	---	6.4	3.9	---
TOTAL	16.48	13.45	12.36	12.79	11.23	27.18	25.91	133.03	302.6	253.3	151.2	95.2
MEAN	.53	.45	.40	.41	.40	.88	.86	4.29	10.1	8.17	4.88	3.17
MAX	.61	.58	.44	.49	.49	1.5	1.2	8.6	11	11	6.2	3.8
MIN	.49	.41	.32	.30	.29	.28	.64	.93	9.0	6.4	3.9	2.6
AC-FT	33	27	25	25	22	54	51	264	600	502	300	189
MEAN†	0.60	0.49	0.43	0.43	0.45	0.91	0.89	4.32	10.1	8.28	4.97	3.24
AC-FT†	37.04	28.92	26.14	26.42	24.76	55.79	52.75	265.40	603.00	509.15	305.88	192.81

CAL YR 1992 TOTAL 403.45 MEAN 1.10 MAX 4.0 MIN .32 AC-FT 800 MEAN† 1.16 AC-FT† 841.69
WTR YR 1993 TOTAL 1054.73 MEAN 2.89 MAX 11 MIN .28 AC-FT 2090 MEAN† 2.94 AC-FT† 2128.06

e Estimated

† Adjusted for diversion by pumping.

11507001 UPPER KLAMATH LAKE NEAR KLAMATH FALLS, OR

LOCATION.--Lat 42°15'00", long 121°48'55", in NW 1/4 SW 1/4 sec.19, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010203, at southeast end of lake, 1.4 mi upstream from outlet and 2.5 mi northwest of Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi², approximately, including 26.2 mi² in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to September 1922 (gage heights only), October 1922 to current year. Monthend contents only October 1923 to September 1927, published in WSP 1315-B.

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

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

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

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

EXTREMES FOR CURRENT YEAR.--Maximum daily elevation, 4,143.38 ft June 2; minimum daily, 4,137.36 ft Oct. 1.

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

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

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4137.36	4137.67	4138.34	4139.30	4140.02	4140.90	4142.62	4143.03	4143.32	4142.64	4141.49	4140.40
2	4137.37	4137.77	4138.39	4139.32	4140.03	4140.92	4142.62	4143.01	4143.38	4142.62	4141.44	4140.37
3	4137.39	4137.82	4138.52	4139.33	4140.04	4140.94	4142.65	4143.01	4143.32	4142.54	4141.39	4140.32
4	4137.41	4137.83	4138.47	4139.36	4140.06	4140.97	4142.70	4143.04	4143.25	4142.50	4141.29	4140.28
5	4137.39	4137.87	4138.45	4139.38	4140.09	4141.00	4142.70	4143.03	4143.23	4142.46	4141.26	4140.24
6	4137.41	4137.89	4138.47	4139.40	4140.12	4141.03	4142.69	4143.02	4143.20	4142.42	4141.20	4140.19
7	4137.38	4137.91	4138.50	4139.45	4140.14	4141.07	4142.70	4143.00	4143.10	4142.38	4141.15	4140.16
8	4137.36	4137.93	4138.54	4139.47	4140.18	4141.12	4142.67	4143.00	4143.03	4142.34	4141.05	4140.13
9	4137.37	4137.91	4138.62	4139.50	4140.22	4141.16	4142.73	4142.99	4143.01	4142.31	4141.01	4140.10
10	4137.37	4137.93	4138.67	4139.53	4140.25	4141.23	4142.78	4142.92	4143.05	4142.25	4141.00	4140.06
11	4137.37	4137.94	4138.74	4139.54	4140.30	4141.29	4142.80	4142.94	4143.08	4142.22	4140.97	4140.04
12	4137.37	4137.96	4138.78	4139.55	4140.33	4141.36	4142.78	4142.95	4143.08	4142.17	4140.94	4140.02
13	4137.40	4137.97	4138.80	4139.57	4140.37	4141.42	4142.76	4142.90	4143.08	4142.15	4140.88	4139.92
14	4137.40	4137.99	4138.82	4139.63	4140.41	4141.51	4142.72	4142.88	4143.10	4142.08	4140.84	4139.88
15	4137.39	4138.01	4138.83	4139.65	4140.45	4141.61	4142.72	4142.94	4143.12	4142.02	4140.83	4139.84
16	4137.38	4138.02	4138.85	4139.68	4140.48	4141.72	4142.66	4142.92	4143.10	4141.96	4140.79	4139.86
17	4137.39	4138.04	4138.90	4139.69	4140.51	4141.87	4142.63	4142.90	4143.05	4141.92	4140.78	4139.81
18	4137.38	4138.04	4138.93	4139.69	4140.55	4142.00	4142.68	4142.86	4143.05	4141.90	4140.78	4139.77
19	4137.37	4138.08	4138.95	4139.69	4140.58	4142.09	4142.67	4142.83	4143.04	4141.87	4140.77	4139.76
20	4137.37	4138.09	4138.99	4139.75	4140.63	4142.17	4142.66	4142.87	4143.03	4141.83	4140.76	4139.74
21	4137.41	4138.08	4139.01	4139.79	4140.67	4142.23	4142.70	4142.94	4143.01	4141.78	4140.76	4139.63
22	4137.44	4138.16	4139.04	4139.88	4140.71	4142.30	4142.76	4142.97	4142.96	4141.76	4140.74	4139.65
23	4137.46	4138.20	4139.06	4139.91	4140.76	4142.38	4142.76	4142.99	4142.92	4141.74	4140.75	4139.62
24	4137.47	4138.23	4139.07	4139.93	4140.79	4142.44	4142.85	4142.98	4142.88	4141.72	4140.74	4139.61
25	4137.48	4138.24	4139.10	4139.94	4140.81	4142.46	4142.87	4142.99	4142.86	4141.70	4140.68	4139.60
26	4137.49	4138.24	4139.11	4139.95	4140.83	4142.47	4142.94	4143.04	4142.83	4141.65	4140.64	4139.59
27	4137.51	4138.25	4139.13	4139.96	4140.85	4142.51	4142.97	4143.03	4142.81	4141.62	4140.60	4139.57
28	4137.50	4138.29	4139.17	4139.98	4140.87	4142.58	4143.00	4143.08	4142.78	4141.57	4140.58	4139.56
29	4137.49	4138.31	4139.20	4139.99	---	4142.62	4143.03	4143.08	4142.74	4141.55	4140.54	4139.50
30	4137.50	4138.30	4139.23	4140.00	---	4142.64	4143.04	4143.10	4142.68	4141.53	4140.51	4139.49
31	4137.55	---	4139.27	4140.01	---	4142.61	---	4143.24	---	4141.50	4140.47	---
MEAN	4137.42	4138.03	4138.84	4139.67	4140.43	4141.76	4142.76	4142.98	4143.04	4142.02	4140.89	4139.89
MAX	4137.55	4138.31	4139.27	4140.01	4140.87	4142.64	4143.04	4143.24	4143.38	4142.64	4141.49	4140.40
MIN	4137.36	4137.67	4138.34	4139.30	4140.02	4140.90	4142.62	4142.83	4142.68	4141.50	4140.47	4139.49
(†)	107900	147600	213400	264000	326400	469500	501600	522900	469500	373300	292600	225700
(‡)	+21800	+39700	+65800	+50600	+62400	+143100	+32100	+21300	-53400	-96200	-80700	-66900

CAL YR 1992 MEAN 4139.52 MAX 4141.83 MIN 4137.36 AC-FT† -27500
WTR YR 1993 MEAN 4140.64 MAX 4143.38 MIN 4137.36 AC-FT† +139600

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

‡ Change in contents, in acre-feet.

KLAMATH RIVER BASIN

11507500 LINK RIVER AT KLAMATH FALLS, OR

LOCATION.--Lat 42°13'25", long 121°47'35", in SW 1/4 NW 1/4 sec.32, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010204, on right bank 600 ft upstream from outlet of Keno Canal and 0.4 mi upstream from Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi², approximately, including 26.2 mi² in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to current year. Records since October 1983 equivalent to earlier records if flow in Keno Canal is added to flow past station.

GAGE.--Water-stage recorder. Datum of gage is 4,083.71 ft above sea level, or 4,085.50 ft above Bureau of Reclamation datum. Prior to Sept. 14, 1912, water-stage recorder or nonrecording gages at several sites within 0.5 mi of present site at various datums. Sept. 14, 1912, to Nov. 23, 1923, at site 600 ft downstream at datum 5.42 ft lower. Nov. 24, 1923, to Nov. 15, 1961, at site on left bank at present datum.

REMARKS.--Records good. Flow regulated since 1919 by Upper Klamath Lake (station 11507001). Large diurnal fluctuation caused by powerplant upstream from station. Water diverted upstream from station by main or "A" Canal of Klamath project. Many other diversions upstream from lake. All records presented herein do not include flow in Keno Canal which, since September 1908, has diverted from Upper Klamath Lake at Link River Dam for power generation, and returns flow to Link River downstream from station.

AVERAGE DISCHARGE.--79 years (water years 1905-83), 1,593 ft³/s, 1,154,000 acre-ft/yr, not adjusted for "A" Canal.

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

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 6,990 ft³/s Mar. 31; minimum, 92 ft³/s Oct. 23, Dec. 17, result of regulation from Upper Klamath Lake, minimum daily, 112 ft³/s Mar. 12-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	460	486	649	501	782	437	6150	3350	1520	1120	653	1050
2	701	480	564	645	782	445	5290	3330	2660	1120	1120	1270
3	828	294	518	890	783	525	5090	3340	5130	1010	1120	1410
4	811	201	551	890	606	513	5180	3370	6250	949	1110	1360
5	746	512	646	858	517	415	5160	3360	6250	950	896	1060
6	693	833	648	892	334	261	5090	3370	6360	875	819	1000
7	691	835	646	889	309	193	4830	3350	4900	788	973	950
8	690	836	619	868	314	148	4490	3360	3120	789	1080	898
9	691	681	503	847	306	116	4570	3350	1950	785	1030	959
10	628	681	348	799	209	116	4640	3250	1120	837	937	981
11	624	632	189	809	253	115	4670	3280	803	908	966	1050
12	626	590	289	866	192	112	4630	3030	806	899	1090	1050
13	629	566	533	870	186	112	4910	2790	825	980	1110	1050
14	629	517	703	880	185	112	5040	2800	971	1040	1100	1030
15	626	517	877	923	187	114	5120	2850	1090	1100	927	984
16	625	645	668	923	211	e260	4790	2870	965	1020	569	893
17	623	648	296	969	486	e410	4550	2300	915	812	565	794
18	667	646	284	1050	552	e1300	4650	1580	924	793	484	885
19	689	647	418	965	590	2590	4100	1570	927	789	509	837
20	688	647	457	788	593	4460	3050	1290	940	778	507	729
21	660	643	456	454	586	4830	1880	1130	1110	542	530	589
22	610	651	457	275	529	5300	1390	1130	962	622	636	649
23	593	648	477	275	512	6230	1600	1120	893	774	636	745
24	603	647	542	679	437	6630	1610	1110	796	781	857	937
25	633	647	543	811	417	6730	1610	1070	804	693	1040	926
26	675	647	465	710	427	6150	1620	852	831	558	1030	842
27	674	647	476	698	437	5740	1620	532	908	592	728	787
28	672	649	543	694	437	5820	1830	520	996	728	659	788
29	668	649	544	701	---	5880	2140	639	1130	564	782	934
30	672	648	606	780	---	6400	2740	809	1130	535	846	962
31	641	---	665	780	---	6630	---	1220	---	533	931	---
TOTAL	20466	18370	16180	23979	12159	79094	114040	67922	57986	25264	26240	28399
MEAN	660	612	522	774	434	2551	3801	2191	1933	815	846	947
MAX	828	836	877	1050	783	6730	6150	3370	6360	1120	1120	1410
MIN	460	201	189	275	185	112	1390	520	796	533	484	589
AC-FT	40590	36440	32090	47560	24120	156900	226200	134700	115000	50110	52050	56330

CAL YR 1992 TOTAL 203070 MEAN 555 MAX 1140 MIN 95 AC-FT 402800
WTR YR 1993 TOTAL 490099 MEAN 1343 MAX 6730 MIN 112 AC-FT 972100

e Estimated

49

LOCATION.--Lat 42°08'00", long 121°57'40", in NW 1/4 SE 1/4 sec.35, T.39 S., R.7 E., Klamath County, Hydrologic Unit 18010206, on left bank 1.7 mi northwest of Keno and 4.5 mi upstream from Spencer Creek, and at mile 231.9.

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

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1919 by Upper Klamath Lake (station 11507001). Fluctuation by Keno powerplant 0.9 mi upstream. Diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft³/s Feb. 28, 1986, gage height, 12.82 ft, caused by regulation from Keno powerplant 0.9 mi upstream; minimum discharge, 26 ft³/s Sept. 23, 1956; minimum daily, 60 ft³/s May 19, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,920 ft³/s Mar. 23, gage height, 12.08 ft; minimum discharge, 233 ft³/s July 6; minimum daily, 243 ft³/s July 9.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	596	651	649	601	487	544	6860	3620	1890	646	561	832
2	598	647	650	596	487	545	5980	3590	3070	649	702	905
3	601	456	648	594	488	549	6090	3590	560	601	669	1080
4	602	292	645	616	489	529	6230	3600	6640	458	647	1070
5	602	494	645	648	359	500	6270	3630	6450	339	645	1070
6	628	647	645	649	258	971	6250	3860	6570	286	641	1060
7	646	652	645	651	259	1240	6010	3670	5610	245	647	1050
8	646	655	606	629	259	1230	5490	3480	3400	245	650	1050
9	645	655	547	616	314	1480	5370	3470	2160	243	687	1030
10	645	654	521	614	250	1640	5500	3460	1340	351	719	1030
11	644	655	505	613	252	1810	5570	3310	1080	431	743	1030
12	644	654	486	610	252	2120	5560	2820	1130	431	769	1030
13	644	653	556	609	249	2000	5490	2530	1120	432	757	1030
14	644	652	715	609	247	1750	5620	2350	1120	468	756	1060
15	649	649	755	612	245	1840	5630	2220	861	483	763	1090
16	650	649	519	611	361	2210	5520	2320	660	474	799	1090
17	649	649	521	611	478	3040	5250	2060	657	455	919	1090
18	649	649	513	611	512	4560	5270	1280	655	453	1190	1080
19	649	648	511	611	546	5730	4800	1270	655	451	1020	1080
20	651	649	510	445	548	6010	3730	968	654	402	865	1070
21	652	650	511	254	549	5950	2450	590	539	296	890	840
22	652	650	513	253	550	6520	1880	679	453	486	902	1010
23	649	650	512	251	553	7490	2140	802	451	474	893	1090
24	648	650	527	654	552	7970	2130	797	444	437	763	1090
25	647	650	562	682	550	8580	2050	734	442	437	813	1070
26	647	650	561	559	548	7850	1950	652	442	393	838	1050
27	647	650	557	489	548	7090	1840	657	445	386	830	1080
28	649	648	559	487	546	6890	2000	672	523	453	824	1170
29	648	647	610	486	---	6860	2390	665	643	455	831	1190
30	651	649	643	487	---	7280	2930	818	644	452	836	1200
31	651	---	629	487	---	7700	---	1270	---	452	844	---
TOTAL	19823	18804	17976	17245	11736	120478	134240	65434	56108	13264	24413	31617
MEAN	639	627	580	556	419	3886	4475	2111	1870	428	788	1054
MAX	652	655	755	682	553	8580	6860	3860	6640	649	1190	1200
MIN	596	292	486	251	245	500	1840	590	442	243	561	832
AC-FY	39320	37300	35660	34210	23280	239000	266300	129800	111300	26310	48420	62710

MEAN	1431	1688	1931	1967	2119	2548	2301	1722	1173	866	973	1200
MAX	3055	4673	5732	7702	7564	8197	6594	5258	7075	4177	2513	2214
(WY)	1957	1985	1984	1965	1965	1972	1956	1956	1904	1904	1904	1943
MIN	564	290	391	542	254	215	166	109	97.6	114	146	246
(WY)	1982	1935	1935	1935	1992	1992	1931	1931	1931	1931	1992	1992

ANNUAL TOTAL	130215		531138						
ANNUAL MEAN	356		1455				1645		
HIGHEST ANNUAL MEAN							3582		1956
LOWEST ANNUAL MEAN							340		1992
HIGHEST DAILY MEAN	755	Dec 15	8580	Mar 25			9780	Mar 5	1972
LOWEST DAILY MEAN	131	Jul 25	243	Jul 9			60	May 19	1934
ANNUAL SEVEN-DAY MINIMUM	140	Jul 21	258	Feb 9			78	Jun 4	1931
ANNUAL RUNOFF (AC-FT)	258300		1054000				1192000		
10 PERCENT EXCEEDS	649		4980				3170		
50 PERCENT EXCEEDS	206		650				1280		
90 PERCENT EXCEEDS	145		449				414		

KLAMATH RIVER BASIN

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

LOCATION.--Lat 42°05'05", long 122°04'20", in SE 1/4 SE 1/4 sec.14, T.40 S., R.6 E., Klamath County, Hydrologic Unit 18010206, on right bank 0.7 mi downstream from John C. Boyle powerplant, 8 mi downstream from Spencer Creek, and 8.5 mi southwest of Keno, and at mile 219.7.

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

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

REVISED RECORDS.--WDR OR-87-1: 1967.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,274.82 ft above sea level (levels by Pacific Power & Light Co.).

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Upper Klamath Lake (station 11507001). Large diurnal fluctuation caused by Keno and John C. Boyle powerplants. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--34 years, 1,801 ft³/s, 1,305,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s Mar. 5, 1972, gage height, 9.33 ft; minimum discharge, 283 ft³/s Feb. 17, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,820 ft³/s Mar. 25, gage height, 8.94 ft; minimum discharge, 309 ft³/s Oct. 6, 11, Nov. 4, Dec. 21, 22, July 31, Aug. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	789	905	895	764	714	949	7330	3860	2480	896	933	1080
2	853	944	895	763	714	722	6230	3860	3460	895	985	1020
3	801	893	900	764	713	695	6100	3990	5240	803	930	1370
4	795	415	900	768	715	751	6550	3990	6740	701	938	1380
5	801	761	845	1080	780	752	6580	3990	6570	746	965	1390
6	797	891	845	760	319	1130	6360	4210	6610	775	898	1390
7	817	842	868	1080	390	1710	6320	4130	6060	522	853	1390
8	923	843	799	761	862	1470	5840	3940	3950	318	840	1020
9	845	845	846	764	321	1910	5560	3860	2580	324	968	1330
10	799	881	864	768	656	2140	5710	3770	1560	606	987	1060
11	797	894	750	767	321	2190	5720	3670	1550	607	1040	1590
12	842	901	605	1080	599	2680	5710	3390	1500	658	995	1150
13	849	897	808	764	316	2540	5510	2940	1500	555	1010	1260
14	854	893	1040	767	639	2360	5710	2750	1420	745	948	1280
15	842	899	907	917	333	2250	5760	2740	1050	749	1000	1320
16	839	900	719	782	717	2670	5760	2740	953	753	1050	1260
17	837	887	653	778	720	3480	5440	2590	955	658	1150	1420
18	852	855	781	980	746	5260	5440	1570	956	672	1230	1310
19	845	842	759	779	751	6120	5010	1620	911	714	1520	1360
20	1090	844	709	533	722	6580	4320	1310	916	700	1130	1350
21	943	844	786	550	722	6380	2870	1080	809	708	1130	1040
22	643	849	650	511	923	6920	2200	999	655	594	1130	1300
23	930	902	755	655	727	7760	2550	1040	851	662	1130	1400
24	841	889	772	722	723	8550	2680	1150	754	650	1130	1260
25	840	892	777	723	724	9120	2570	1110	806	704	895	1290
26	902	845	783	721	734	8580	2380	882	655	598	1070	1220
27	896	884	775	719	762	7180	2320	951	686	697	1080	1470
28	896	888	767	718	774	7250	2320	1040	854	701	1080	1400
29	843	857	998	715	---	7070	2740	1000	917	703	1010	1460
30	898	843	769	717	---	7650	3360	1270	856	699	1080	1420
31	893	---	1090	719	---	8000	---	1420	---	596	1070	---
TOTAL	26392	25725	25310	23889	18137	132819	142950	76862	64804	20709	32175	38990
MEAN	851	857	816	771	648	4284	4765	2479	2160	668	1038	1300
MAX	1090	944	1090	1080	923	9120	7330	4210	6740	896	1520	1590
MIN	643	415	605	511	316	695	2200	882	655	318	840	1020
AC-FT	52350	51030	50200	47380	35970	263400	283500	152500	128500	41080	63820	77340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1993, BY WATER YEAR (WY)

	1959	2007	2447	2429	2448	2960	2440	1635	885	664	899	1229
MEAN	1590	4506	5733	7905	7780	8755	5645	3935	2327	1424	1198	1898
MAX (WY)	1985	1985	1984	1965	1965	1972	1974	1971	1983	1959	1959	1959
MIN	786	735	796	771	489	450	553	418	391	349	349	457
(WY)	1982	1992	1992	1993	1992	1992	1991	1992	1992	1992	1992	1992

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1959 - 1993

	211431	628762	1801
ANNUAL TOTAL	578	1723	3024
ANNUAL MEAN			564
HIGHEST ANNUAL MEAN			10800
LOWEST ANNUAL MEAN	1090	9120	Mar 5 1972
HIGHEST DAILY MEAN	306	316	Aug 25 1992
LOWEST DAILY MEAN	338	455	Aug 30 1992
ANNUAL SEVEN-DAY MINIMUM	419400	1247000	1305000
ANNUAL RUNOFF (AC-FT)	887	5250	3250
10 PERCENT EXCEEDS	532	902	1320
50 PERCENT EXCEEDS	317	696	609

KLAMATH RIVER BASIN

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11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA

LOCATION.--Lat 41°55'41", long 122°26'35", in SE 1/4 NE 1/4 sec.17, T.47 N., R.5 W., Siskiyou County, Hydrologic Unit 18010206, on left bank 0.1 mi downstream from Bogus Creek, 0.6 mi downstream from Iron Gate Dam, and 5.9 mi northeast of Hornbrook.

DRAINAGE AREA.--4,630 mi², approximately (not including Lost River, Butte Creek, or Lower Klamath Lake basins).

PERIOD OF RECORD.--October 1960 to current year. Chemical data available October 1961 to September 1981. Water temperature data available October 1962 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 2,162.44 ft above sea level (levels by Pacific Corp., formerly Pacific Power and Light Co.).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Upper Klamath Lake (station 11507001), capacity, 523,700 acre-ft, Iron Gate Reservoir, other smaller reservoirs, and diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s Dec. 22, 1964, gage height, 13.63 ft, from rating curve extended above 15,000 ft³/s, on basis of slope-area measurement of peak flow; minimum daily discharge, 389 ft³/s Aug. 25-28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,100 ft³/s Mar. 24, gage height, 9.58 ft; minimum daily discharge, 672 ft³/s July 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	867	911	913	915	900	910	8430	4210	2170	743	985	1350
2	870	911	913	911	900	917	6990	4000	3780	743	971	1350
3	869	912	910	909	900	928	6280	4180	5160	744	964	1350
4	867	915	909	908	900	922	7250	4350	7090	742	1000	1340
5	865	914	916	906	903	922	7450	4310	7710	743	1040	1340
6	887	914	910	906	907	922	6980	4410	7270	741	1040	1340
7	909	914	911	909	906	1220	6700	4410	6900	708	1040	1340
8	907	914	939	910	908	1730	6690	4300	4770	678	1040	1340
9	911	915	932	909	915	1880	6300	4160	3260	677	1040	1340
10	911	914	955	910	917	2760	6050	4110	1870	676	1040	1340
11	909	916	927	909	918	2960	6200	3840	1750	677	1050	1340
12	909	916	919	909	915	3000	6130	3470	1740	676	1050	1410
13	909	917	914	910	911	3270	5980	3250	1730	675	1050	1440
14	910	916	914	913	910	3450	5880	2930	1690	677	1050	1400
15	910	916	913	896	907	3510	5980	2590	1350	678	1060	1340
16	912	916	912	900	904	3740	6030	2580	1080	684	1060	1340
17	912	917	911	898	904	5030	6080	2620	1080	691	1060	1350
18	916	917	911	896	907	7140	6270	1800	1070	694	1060	1340
19	914	940	910	897	909	7570	5570	1720	1070	680	1060	1340
20	915	908	909	1450	908	8280	4300	1730	1070	676	1050	1360
21	920	924	908	1960	908	7540	3780	1730	1060	675	1050	1350
22	915	918	909	1920	909	7890	2480	1560	1060	676	1050	1360
23	913	916	909	1600	925	8940	2340	1120	1060	676	1040	1370
24	911	913	908	896	927	10800	2900	1120	894	674	1040	1370
25	910	913	908	893	918	10100	2730	1120	767	674	1040	1370
26	907	913	907	900	914	10100	2800	1120	779	674	1040	1370
27	911	915	905	909	911	7990	2630	1120	779	673	1040	1370
28	915	912	907	905	910	7980	2470	1120	759	673	1040	1370
29	915	911	907	901	---	7810	2720	1110	736	672	1040	1370
30	914	911	907	900	---	7840	3340	1250	742	674	1040	1370
31	911	---	913	900	---	8640	---	1640	---	708	1080	---
TOTAL	28021	27459	28336	31355	25471	156691	155730	82980	72246	21452	32210	40760
MEAN	904	915	914	1011	910	5055	5191	2677	2408	692	1039	1359
MAX	920	940	955	1960	927	10800	8430	4410	7710	744	1080	1440
MIN	865	908	905	893	900	910	2340	1110	736	672	964	1340
AC-FT	55580	54460	56200	62190	50520	310800	308900	164600	143300	42550	63890	80850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1705	2226	2872	2894	2989	3623	3023	2012	1045	756	975	1313
MAX	3353	5254	6735	9489	9150	10780	6922	4973	2591	1429	1208	2052
(WY)	1985	1985	1984	1965	1965	1972	1971	1971	1983	1982	1965	1965
MIN	852	873	889	888	525	511	740	512	506	428	398	538
(WY)	1982	1992	1992	1992	1992	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1961 - 1993
ANNUAL TOTAL	237451	702711	2115
ANNUAL MEAN	649	1925	3657
HIGHEST ANNUAL MEAN			641
LOWEST ANNUAL MEAN			25000
HIGHEST DAILY MEAN	955	Dec 10	Dec 22 1964
LOWEST DAILY MEAN	389	Aug 25	Aug 25 1992
ANNUAL SEVEN-DAY MINIMUM	390	Aug 24	Aug 24 1992
INSTANTANEOUS PEAK FLOW		11100	Dec 22 1964
INSTANTANEOUS PEAK STAGE		9.58	Dec 22 1964
INSTANTANEOUS LOW FLOW		672	Aug 25 1992
ANNUAL RUNOFF (AC-FT)	471000	1394000	1532000
10 PERCENT EXCEEDS	913	5690	4030
50 PERCENT EXCEEDS	528	924	1490
90 PERCENT EXCEEDS	409	779	731

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WA

LOCATION.--Lat 46°37'44", long 119°51'49", in SE 1/4 NW 1/4 sec.7, T.13 N., R.24 E., Grant County, Hydrologic Unit 17020016, on left bank 2.6 mi downstream from Priest Rapids Dam, 14.7 mi south of Beverly, and at mile 394.5.

DRAINAGE AREA.--96,000 mi², approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1933: Drainage area. WDR WA-82-2: 1965(m), 1971(m).

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct. 1, 1930, nonrecording gages at site 3.4 mi downstream at datum 388.7 ft above sea level. Oct. 1, 1930, to July 27, 1959, water-stage recorder at site 46.5 mi upstream at datum 499.3 ft above sea level (river-profile survey).

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Diversions for irrigation of about 600,000 acres upstream from station. Flow regulated by 10 major reservoirs and numerous smaller reservoirs and powerplants. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--76 years, 118,900 ft³/s, 86,143,000 acre-ft/yr.

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

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 261,000 ft³/s May 16, elevation, 415.13 ft; minimum discharge, 35,300 ft³/s Oct. 25, elevation, 396.21 ft; minimum daily discharge, 41,000 ft³/s Sept 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81000	54300	93400	112000	94800	95000	55800	61000	141000	150000	75900	93300
2	84800	73500	119000	118000	94600	84800	56900	57500	157000	139000	90500	85600
3	64600	87100	121000	120000	102000	70600	55900	73100	166000	112000	97800	76000
4	49800	81500	131000	130000	96600	68300	56200	82900	157000	87000	109000	56800
5	83400	77400	139000	150000	76600	61900	55700	83600	143000	105000	84300	45200
6	75300	79400	126000	161000	66200	56900	55800	105000	119000	142000	102000	55500
7	78300	70300	134000	169000	67700	56800	56300	105000	123000	108000	72100	93000
8	66400	58100	142000	153000	84200	57100	55400	121000	134000	118000	44600	104000
9	77200	74100	122000	132000	78800	56200	53500	95600	133000	106000	66000	97500
10	79700	85300	125000	144000	78500	61200	54100	139000	122000	97100	106000	83000
11	59100	85000	127000	119000	88200	61100	53800	135000	137000	103000	79500	57200
12	78100	89400	96000	136000	84400	57300	53800	149000	123000	113000	81800	41000
13	84900	84800	96300	144000	66200	56400	53300	137000	85200	103000	104000	68700
14	85300	86800	116000	137000	67700	57600	54200	139000	91200	110000	80600	73900
15	71100	84900	127000	109000	93500	59100	53200	140000	70500	121000	72800	80600
16	74900	70800	139000	88000	129000	66400	53600	199000	91900	118000	93800	79700
17	70300	88600	134000	86000	129000	59000	54500	189000	103000	109000	84200	79000
18	53200	84200	138000	108000	118000	56500	55400	200000	100000	102000	73500	48000
19	58400	80400	133000	109000	124000	56600	55500	195000	94300	124000	82500	49000
20	68300	81100	107000	78600	94800	58300	55700	194000	79500	97200	71200	78600
21	75000	104000	101000	88000	82200	56900	55500	201000	101000	111000	51300	95700
22	78100	99000	110000	99100	101000	56000	55800	190000	108000	115000	57300	91000
23	69300	132000	98600	98000	114000	57100	55300	197000	111000	116000	78900	87000
24	54500	108000	67200	74600	114000	56700	55500	193000	113000	88900	88900	83000
25	56100	117000	62200	67500	109000	61900	55300	188000	93300	78200	88300	55600
26	71900	90100	69500	69200	121000	56600	55300	184000	94800	99700	94200	45800
27	75300	85400	89600	89100	92300	56400	55300	164000	88800	99800	89000	73200
28	70700	92800	122000	86100	70800	56400	55300	142000	106000	116000	60000	87900
29	88300	101000	126000	77500	---	57900	68600	145000	113000	118000	50900	84900
30	82600	105000	131000	67300	---	62100	127000	147000	133000	107000	77000	88800
31	60300	---	129000	68800	---	57000	---	141000	---	86000	89000	---
TOTAL	2226200	2611300	3571800	3388800	2639100	1892100	1737500	4492700	3432500	3399900	2496900	2238500
MEAN	71810	87040	115200	109300	94250	61040	57920	144900	114400	109700	80550	74620
MAX	88300	132000	142000	169000	129000	95000	127000	201000	166000	150000	109000	104000
MIN	49800	54300	62200	67300	66200	56000	53200	57500	70500	78200	44600	41000
AC-FT	4416000	5180000	7085000	6722000	5235000	3753000	3446000	8911000	6808000	6744000	4953000	4440000
CAL YR 1992	TOTAL 37133800		MEAN 101500	MAX 187000		MIN 41000	AC-FT 73650000					
WTR YR 1993	TOTAL 34127300		MEAN 93500	MAX 201000		MIN 41000	AC-FT 67690000					

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1980 to April 1993 (discontinued). Temperature records for site "at Vernita Bridge, near Priest Rapids Dam" (station 12472900) for period July 1974 to September 1980 are equivalent.

INSTRUMENTATION.--Temperature recorder since December 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 21.5°C Aug. 4, 1985, Aug. 7, 1989; minimum, 0.5°C several days in February and March, 1993.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

October 1992 to April 1993: Maximum, 18.0°C Oct. 1, 2; minimum, 0.5°C several days in February and March.

WATER TEMPERATURE, DEGREES CELSIUS, OCTOBER 1992 TO APRIL 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.0	17.0	17.5	14.0	13.5	13.5	9.0	8.5	9.0	3.5	3.5	3.5
2	18.0	17.5	17.5	13.5	13.0	13.5	9.0	8.5	8.5	3.5	3.0	3.0
3	17.5	16.5	17.0	13.5	12.5	13.0	8.5	8.5	8.5	3.0	2.5	3.0
4	17.5	16.0	16.5	13.5	13.0	13.0	8.5	8.0	8.5	2.5	2.5	2.5
5	17.0	16.0	16.5	13.0	13.0	13.0	8.0	8.0	8.0	2.5	2.5	2.5
6	17.0	16.0	16.5	13.0	13.0	13.0	8.0	8.0	8.0	2.5	2.0	2.0
7	17.0	16.0	16.5	13.5	12.5	13.0	8.0	8.0	8.0	2.0	2.0	2.0
8	17.0	16.0	16.5	13.0	12.5	12.5	8.0	7.5	8.0	2.0	2.0	2.0
9	16.5	15.5	16.0	12.5	12.0	12.0	8.0	7.5	8.0	2.0	2.0	2.0
10	16.5	15.5	16.0	12.0	11.5	12.0	7.5	7.5	7.5	2.0	1.5	2.0
11	17.0	15.5	16.0	12.0	11.5	12.0	7.5	7.5	7.5	2.5	1.5	2.0
12	16.5	16.0	16.5	12.0	11.5	12.0	7.5	7.5	7.5	1.5	1.5	1.5
13	16.5	16.0	16.5	12.0	12.0	12.0	7.5	7.5	7.5	1.5	1.5	1.5
14	16.0	15.0	15.5	12.0	12.0	12.0	7.5	7.5	7.5	1.5	1.5	1.5
15	16.0	15.0	15.5	12.0	11.5	12.0	7.5	7.0	7.0	2.5	1.5	1.5
16	15.5	15.0	15.5	12.0	11.5	12.0	7.0	6.5	7.0	2.0	1.5	1.5
17	15.5	15.0	15.0	12.0	11.5	12.0	7.0	6.5	7.0	2.0	1.5	1.5
18	15.5	15.0	15.0	12.0	11.5	12.0	7.0	6.5	6.5	1.5	1.5	1.5
19	16.0	15.0	15.5	12.0	11.0	11.5	6.5	6.0	6.5	2.0	1.5	1.5
20	15.5	15.0	15.0	11.5	11.0	11.5	6.5	6.0	6.0	2.0	1.5	2.0
21	15.5	15.0	15.0	11.0	11.0	11.0	6.5	6.0	6.0	2.0	2.0	2.0
22	15.5	14.5	15.0	11.5	10.5	11.0	6.0	6.0	6.0	2.0	2.0	2.0
23	15.5	14.5	15.0	11.0	10.5	11.0	6.0	5.5	6.0	2.0	1.5	2.0
24	15.5	14.5	15.0	11.0	10.5	10.5	6.0	5.5	6.0	2.0	1.5	2.0
25	15.5	14.5	15.0	10.5	10.0	10.5	5.5	5.5	5.5	2.5	1.5	2.0
26	15.0	14.5	14.5	10.0	9.5	10.0	5.5	5.0	5.5	2.0	2.0	2.0
27	15.0	14.0	14.5	9.5	9.5	9.5	5.0	5.0	5.0	2.0	2.0	2.0
28	14.5	14.0	14.0	9.5	9.0	9.5	5.0	4.5	4.5	2.0	2.0	2.0
29	14.0	13.5	14.0	9.5	9.0	9.5	4.5	4.0	4.5	2.0	2.0	2.0
30	14.0	13.5	14.0	9.5	9.0	9.0	4.5	4.0	4.0	2.0	2.0	2.0
31	14.0	13.5	13.5	---	---	---	4.0	3.5	4.0	2.0	2.0	2.0
MONTH	18.0	13.5	15.5	14.0	9.0	11.6	9.0	3.5	6.7	3.5	1.5	2.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	2.0	2.0	2.0	1.0	.5	.5	6.0	5.0	5.5	---	---	---
2	2.0	2.0	2.0	1.0	.5	.5	6.0	5.0	5.5	---	---	---
3	2.0	2.0	2.0	1.5	.5	1.0	6.0	5.5	5.5	---	---	---
4	2.0	1.5	2.0	1.5	.5	1.0	7.0	5.5	6.0	---	---	---
5	2.0	2.0	2.0	2.0	1.0	1.5	7.0	5.5	6.0	---	---	---
6	2.5	2.0	2.5	2.0	1.5	1.5	6.5	5.5	5.5	---	---	---
7	2.5	2.0	2.5	2.0	1.5	1.5	---	---	---	---	---	---
8	2.5	2.0	2.5	2.5	1.5	2.0	---	---	---	---	---	---
9	2.5	2.0	2.5	3.0	2.0	2.0	---	---	---	---	---	---
10	2.5	2.0	2.5	3.0	2.0	2.0	---	---	---	---	---	---
11	2.5	2.0	2.5	3.0	2.0	2.5	---	---	---	---	---	---
12	2.5	2.0	2.5	3.0	2.0	2.5	---	---	---	---	---	---
13	2.5	2.0	2.5	3.0	2.5	2.5	---	---	---	---	---	---
14	2.5	2.0	2.5	3.0	2.5	2.5	---	---	---	---	---	---
15	2.0	2.0	2.0	4.0	2.5	3.0	---	---	---	---	---	---
16	2.0	1.5	1.5	3.5	2.5	3.0	---	---	---	---	---	---
17	1.5	1.0	1.5	3.5	3.0	3.0	---	---	---	---	---	---
18	1.5	1.0	1.0	4.5	3.0	3.5	---	---	---	---	---	---
19	1.0	1.0	1.0	4.5	3.0	3.5	---	---	---	---	---	---
20	1.5	1.0	1.0	4.5	3.5	4.0	---	---	---	---	---	---
21	1.5	1.0	1.0	5.0	4.0	4.5	---	---	---	---	---	---
22	1.5	1.0	1.0	4.5	4.0	4.5	---	---	---	---	---	---
23	1.0	.5	1.0	5.0	4.0	4.5	---	---	---	---	---	---
24	1.0	.5	1.0	5.0	4.0	4.5	---	---	---	---	---	---
25	1.0	1.0	1.0	5.5	4.0	4.5	---	---	---	---	---	---
26	1.0	.5	1.0	5.5	4.0	4.5	---	---	---	---	---	---
27	1.5	.5	1.0	5.5	4.5	5.0	---	---	---	---	---	---
28	1.5	1.0	1.0	6.0	4.5	5.0	---	---	---	---	---	---
29	---	---	---	6.0	4.5	5.0	---	---	---	---	---	---
30	---	---	---	5.5	5.0	5.0	---	---	---	---	---	---
31	---	---	---	6.0	5.0	5.5	---	---	---	---	---	---
MONTH	2.5	.5	1.7	6.0	.5	3.1	---	---	---	---	---	---

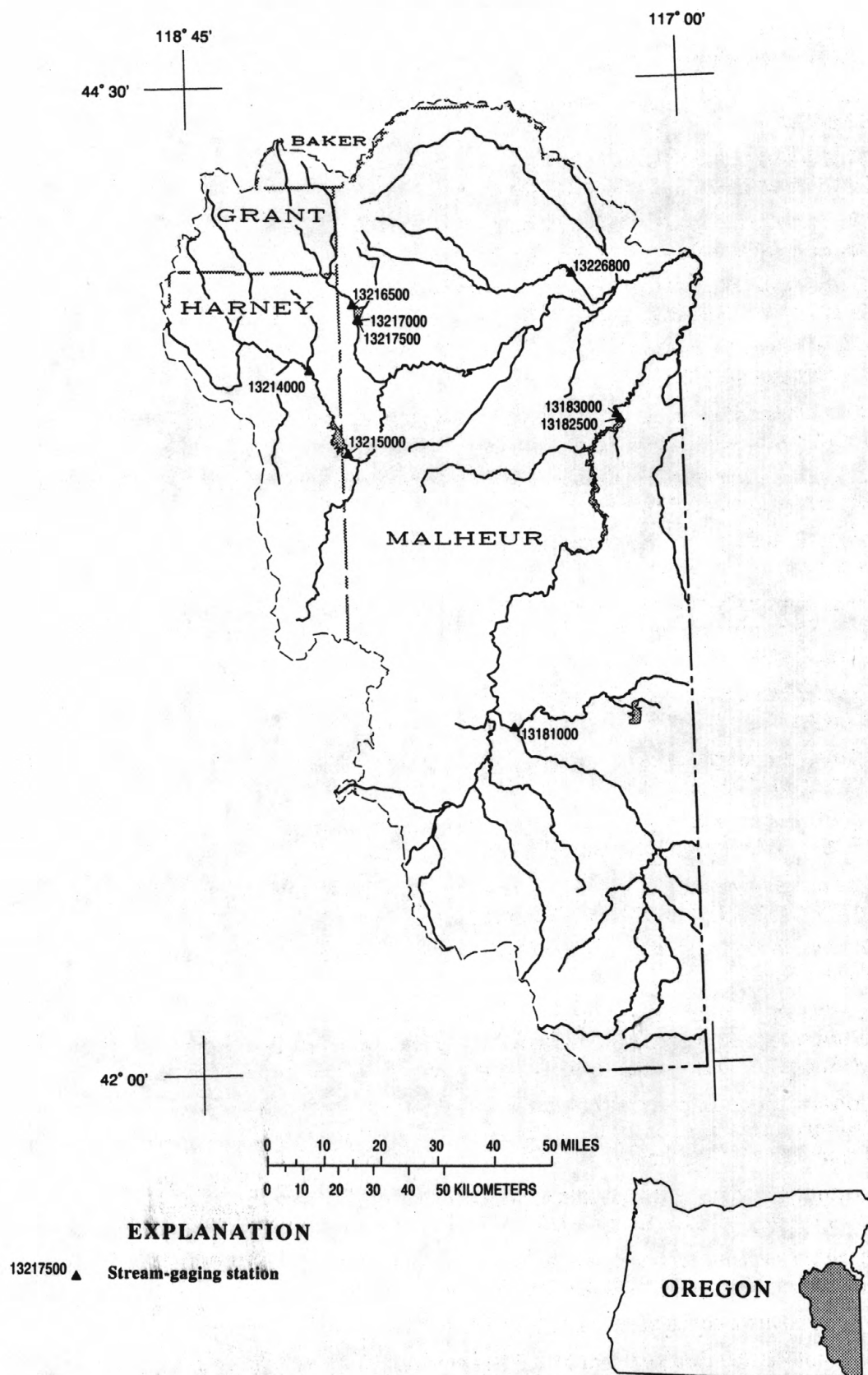


Figure 4--Location of surface-water and water-quality stations in the Owyhee River, and Malheur River Basins.

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LOCATION.--Lat 42°52'02", long 117°38'52", in SE 1/4 NE 1/4 sec.14, T.31 S., R.41 E., Malheur County, Hydrologic Unit 17050107, on right bank 0.5 mi downstream from Jordan Creek, 2.6 mi north of Rome, and at mile 122.4.

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

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Antelope Reservoir, capacity, 70,000 acre-ft, increased in 1970, and Wild Horse Reservoir, capacity, 32,690 acre-ft, and numerous small reservoirs. Diversions upstream from station for irrigation. Continuous water-quality records for the period October 1972 to June 1977 have been collected at this location.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,700 ft³/s Mar. 18, 1993, gage height, 20.11 ft; minimum, 42 ft³/s Aug. 12, 1954, July 28, Aug. 5, 1961, July 31, 1968.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	113	131	157	198	236	5500	2040	864	250	167	122
2	81	116	133	163	188	246	7070	2070	850	235	162	116
3	83	203	134	159	186	269	7190	2130	830	223	160	116
4	91	171	141	136	180	274	5570	2480	723	219	162	117
5	90	140	134	e104	180	284	5340	2950	731	218	162	118
6	88	128	e97	e119	181	344	4840	3040	794	223	156	118
7	88	142	e107	e134	184	449	4350	3710	883	231	148	118
8	88	140	e129	e145	186	605	3940	4050	1350	225	145	e116
9	90	136	139	170	207	842	3700	3790	1510	216	153	114
10	90	132	151	172	274	1270	3960	3390	1380	197	167	113
11	91	126	147	166	329	2100	3990	3070	1080	172	164	112
12	91	121	155	163	342	2480	3950	2950	869	161	160	108
13	91	117	162	149	338	2210	3710	3070	742	156	159	109
14	91	126	155	173	328	2030	3440	3140	646	152	154	109
15	91	124	162	169	317	4080	3110	3190	564	163	152	106
16	91	120	171	163	300	8300	2910	3180	489	170	154	103
17	91	120	154	168	282	21200	2810	3070	422	168	151	106
18	91	122	159	174	264	e46900	2700	2870	372	171	148	108
19	91	122	155	173	286	29400	2960	2670	340	171	148	106
20	91	122	126	186	349	21400	2910	2420	322	169	152	111
21	91	122	149	195	372	18000	2710	2220	316	169	152	115
22	91	124	149	236	373	14700	2580	2120	323	170	151	119
23	92	125	149	e234	396	13400	2540	1930	304	181	153	119
24	93	128	150	e220	366	12700	2570	1770	291	186	151	118
25	93	123	150	e200	327	12500	2540	1640	274	190	146	120
26	93	108	e136	e220	284	12800	2510	1450	275	210	143	124
27	93	e91	e140	213	272	13300	2420	1260	284	242	140	122
28	95	e113	150	e210	247	11900	2280	1100	280	239	139	122
29	98	117	158	211	---	9480	2100	999	270	221	138	127
30	104	131	160	215	---	7470	2000	1000	261	186	136	138
31	105	---	156	206	---	6110	---	925	---	170	131	---
TOTAL	2826	3823	4489	5503	7736	277279	108200	75694	18639	6054	4704	3470
MEAN	91.2	127	145	178	276	8944	3607	2442	621	195	152	116
MAX	105	203	171	236	396	46900	7190	4050	1510	250	167	138
MIN	79	91	97	104	180	236	2000	925	261	152	131	103
AC-FT	5610	7580	8900	10920	15340	550000	214600	150100	36970	12010	9330	6880

MEAN	164	221	404	660	1249	2526	3039	1956	916	263	156	140
MAX	442	593	2898	4461	8820	9404	16960	10470	4870	1035	452	361
(WY)	1976	1971	1965	1971	1986	1972	1952	1984	1984	1984	1984	1984
MIN	85.3	107	104	114	129	233	144	86.5	89.6	61.2	56.0	62.5
(WY)	1955	1955	1955	1955	1955	1977	1992	1992	1992	1968	1992	1955

ANNUAL TOTAL	53353		518417					
ANNUAL MEAN	146		1420			971		
HIGHEST ANNUAL MEAN						3400		1984
LOWEST ANNUAL MEAN						162		1992
HIGHEST DAILY MEAN	1190	Feb 22	46900	Mar 18	46900		Mar 18	1993
LOWEST DAILY MEAN	50	Aug 14	79	Oct 1	44		Aug 1	1968
ANNUAL SEVEN-DAY MINIMUM	54	Aug 4	86	Oct 1	47		Jul 26	1968
ANNUAL RUNOFF (AC-FT)	105800		1028000			703700		
10 PERCENT EXCEEDS	245		3180			2550		
50 PERCENT EXCEEDS	109		173			236		
90 PERCENT EXCEEDS	60		106			108		

e Estimated

OWYHEE RIVER BASIN

13182500 LAKE OWYHEE NEAR NYSSA, OR

LOCATION.--Lat 43°38'30", long 117°14'30", in NW 1/4 SE 1/4 sec.20, T.22 S., R.45 E., Malheur County, Hydrologic Unit 17050110, near left abutment on Owyhee Dam on Owyhee River, 21 mi southwest of Nyssa, and at mile 28.5.

DRAINAGE AREA.--11,160 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1965, nonrecording gage at same site and datum. U.S. Bureau of Reclamation satellite telemeter at station.

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

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,140,000 acre-ft Apr. 15, 1952, elevation, 2,671.50 ft, furnished by Owyhee Irrigation District; minimum contents observed since full capacity was attained on May 7, 1936, 397,700 acre-ft Aug. 25, 1992, elevation, 2,588.56 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,132,000 acre-ft Apr. 8, elevation, 2,670.82 ft; minimum contents, 401,000 acre-ft Oct. 2, elevation, 2,589.16 ft.

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

2,580	353,000	2,640	787,300
2,590	405,700	2,650	888,300
2,600	466,300	2,660	999,700
2,610	535,400	2,670	1,122,000
2,620	611,900	2,671	1,135,000
2,630	695,800		

ELEVATION (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2589.22	2590.76	2593.52	2596.64	2600.10	2604.00	2665.89	2670.09	2669.50	2665.97	2658.17	2650.59
2	2589.26	2590.77	2593.65	2596.71	2600.22	2604.11	2666.92	2670.18	2669.45	2665.77	2657.90	2650.34
3	2589.28	2590.85	2593.75	2596.83	2600.34	2604.26	2668.03	2670.25	2669.32	2665.27	2657.63	2650.03
4	2589.29	2590.95	2593.79	2596.88	2600.41	2604.37	2668.86	2670.23	2669.23	2665.03	2657.34	2649.78
5	2589.32	2591.08	2593.86	2596.99	2600.51	2604.49	2669.56	2670.32	2669.20	2664.79	2657.13	2649.50
6	2589.35	2591.18	2593.95	2597.06	2600.56	2604.62	2670.20	2670.37	2669.22	2664.56	2656.84	2649.23
7	2589.36	2591.28	2594.07	2597.15	2600.68	2604.83	2670.71	2670.36	2669.19	2664.31	2656.59	2648.98
8	2589.39	2591.38	2594.20	2597.25	2600.87	2605.06	2670.78	2670.43	2669.14	2664.06	2656.36	2648.71
9	2589.43	2591.49	2594.29	2597.39	2600.90	2605.32	2670.72	2670.40	2669.22	2663.80	2656.10	2648.43
10	2589.46	2591.58	2594.42	2597.44	2601.02	2605.70	2670.64	2670.28	2669.25	2663.58	2655.86	2648.12
11	2589.50	2591.67	2594.51	2597.57	2601.25	2606.24	2670.64	2670.15	2669.28	2663.30	2655.58	2647.86
12	2589.54	2591.78	2594.60	2597.65	2601.36	2607.04	2670.63	2669.94	2669.26	2663.03	2655.37	2647.51
13	2589.56	2591.86	2594.70	2597.72	2601.58	2607.39	2670.54	2669.91	2669.24	2662.72	2655.11	2647.31
14	2589.56	2591.98	2594.84	2597.89	2601.75	2608.58	2670.48	2670.06	2669.19	2662.47	2654.85	2647.02
15	2589.60	2592.07	2594.92	2597.93	2601.92	2609.40	2670.52	2670.18	2669.09	2662.23	2654.68	2646.80
16	2589.63	2592.19	2595.00	2598.03	2602.02	2611.25	2670.60	2670.28	2668.95	2661.97	2654.44	2646.53
17	2589.65	2592.26	2595.12	2598.11	2602.21	2615.08	2670.64	2670.33	2668.86	2661.71	2654.23	2646.29
18	2589.70	2592.36	2595.23	2598.24	2602.37	2625.93	2670.60	2670.28	2668.71	2661.48	2653.98	2646.12
19	2589.75	2592.45	2595.31	2598.30	2602.51	2635.89	2670.58	2670.28	2668.53	2661.22	2653.77	2645.85
20	2589.76	2592.52	2595.41	2598.39	2602.67	2641.99	2670.62	2670.22	2668.33	2660.95	2653.54	2645.57
21	2589.82	2592.65	2595.54	2598.72	2602.83	2646.11	2670.57	2670.11	2668.18	2660.72	2653.36	2645.37
22	2589.87	2592.72	2595.62	2598.92	2602.95	2649.27	2670.51	2670.06	2667.96	2660.50	2653.15	2645.15
23	2589.90	2592.82	2595.74	2599.07	2603.14	2651.85	2670.50	2670.04	2667.75	2660.29	2652.86	2644.95
24	2590.00	2592.89	2595.82	2599.19	2603.33	2654.32	2670.51	2670.04	2667.56	2660.04	2652.63	2644.73
25	2590.07	2592.99	2595.93	2599.33	2603.49	2656.62	2670.53	2670.03	2667.43	2659.83	2652.40	2644.52
26	2590.16	2593.06	2595.99	2599.43	2603.62	2658.78	2670.11	2670.02	2667.42	2659.61	2652.15	2644.35
27	2590.25	2593.17	2596.10	2599.57	2603.72	2660.68	2670.10	2670.00	2666.88	2659.39	2651.90	2644.15
28	2590.35	2593.26	2596.24	2599.69	2603.86	2662.27	2670.09	2669.91	2666.64	2659.17	2651.59	2643.97
29	2590.43	2593.34	2596.40	2599.77	---	2663.36	2670.13	2669.82	2666.43	2658.92	2651.37	2643.79
30	2590.55	2593.42	2596.42	2599.90	---	2664.60	2670.07	2669.73	2666.17	2658.65	2651.09	2643.59
31	2590.60	---	2596.53	2600.05	---	2665.26	---	2669.66	---	2658.41	2650.84	---
MAX	2590.60	2593.42	2596.53	2600.05	2603.86	2665.26	2670.78	2670.43	2669.50	2665.97	2658.17	2650.59
MIN	2589.22	2590.76	2593.52	2596.64	2600.10	2604.00	2665.89	2669.66	2666.17	2658.41	2650.84	2643.59
(†)	409100	425400	444200	466600	492100	1063000	1123000	1117000	1074000	981300	897300	822400
(‡)	+8000	+16300	+18800	+22400	+25500	+570900	+60000	-6000	-43000	-92700	-84000	-74900
CAL YR 1992	MAX	---	MIN	---	AC-FT‡	-56200						
WTR YR 1993	MAX	2670.78	MIN	2589.22	AC-FT‡	+421300						

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

‡ Change in contents, in acre-feet.

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LOCATION.--Lat 43°39'17", long 117°15'16", in SE 1/4 sec.18, T.22 S., R.45 E., Malheur County, Hydrologic Unit 17050110, on left bank 0.8 mi downstream from Owyhee Dam, 20 mi southwest of Nyssa, and at mile 27.3.

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

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

GAGE.--Water-stage recorder. Datum of gage is 2,343.67 ft above sea level (levels by Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1932 by Lake Owyhee (station 13182500), and by many smaller reservoirs. Diversion of up to 457,000 acre-ft from Lake Owyhee during the year for irrigation of lands downstream from station and outside the basin. Many smaller diversions upstream from Lake Owyhee for irrigation upstream from station. Computation of monthly and annual adjusted flows discontinued in 1991.

AVERAGE DISCHARGE.--61 years (water years 1933-93), 422 ft³/s, 305,700 acre-ft/yr, not adjusted for storage or diversion.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,180 ft³/s Mar. 28, gage height, 8.27 ft; minimum discharge, 1.0 ft³/s several days in February.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	1.4	1.5	1.1	1.1	1.1	1830	1130	211	211	211	204
2	116	1.3	1.5	1.1	1.1	1.1	975	1010	211	211	196	204
3	94	1.3	1.5	1.1	1.1	1.2	676	1150	211	211	208	204
4	114	1.4	1.4	1.1	1.1	1.3	673	1440	211	211	210	198
5	114	1.5	1.4	1.2	1.0	1.2	668	1660	213	211	211	206
6	114	1.5	1.4	1.2	1.0	1.1	668	2350	213	211	211	206
7	114	1.5	1.4	1.2	1.1	1.2	669	2750	198	211	211	210
8	116	1.5	1.4	1.2	1.1	1.2	2830	3270	211	211	211	242
9	116	1.5	1.4	1.3	1.1	1.5	4160	3760	211	211	211	224
10	116	1.5	1.5	1.3	1.1	1.7	4360	3680	212	211	202	206
11	112	1.5	1.5	1.2	1.1	1.8	4110	3620	197	211	201	206
12	117	1.5	1.5	1.1	1.2	1.9	4030	3590	213	211	201	206
13	116	1.5	1.5	1.1	1.1	2.3	4300	2470	212	211	198	206
14	116	1.5	1.5	1.1	1.1	2.4	3950	1090	211	211	202	206
15	116	1.5	1.4	1.1	1.1	2.5	3190	1210	211	211	205	206
16	116	1.4	1.4	1.1	1.1	2.5	2150	1320	211	211	201	206
17	116	1.3	1.4	1.1	1.1	2.8	2300	1420	211	211	201	202
18	117	1.3	1.4	1.1	1.2	2.9	2590	1550	211	211	191	206
19	118	1.4	1.3	1.1	1.2	2.9	2510	1660	211	211	199	206
20	118	1.5	1.2	1.2	1.2	3.1	2520	1550	211	211	204	206
21	118	1.5	1.2	1.3	1.1	3.1	2680	1310	211	211	206	206
22	101	1.5	1.1	1.4	1.3	3.1	2690	1040	213	211	206	206
23	29	1.5	1.1	1.3	1.4	80	2370	402	212	213	206	208
24	3.0	1.5	1.1	1.4	1.3	224	2070	322	211	213	206	208
25	2.4	1.5	1.1	1.2	1.1	196	1880	209	211	213	206	208
26	2.3	1.5	1.1	1.1	1.0	912	2000	205	211	212	206	208
27	2.1	1.5	1.1	1.1	1.1	2450	2070	218	211	213	206	208
28	2.0	1.5	1.1	1.1	1.1	4300	1880	216	213	213	206	208
29	1.7	1.5	1.1	1.1	---	4630	1740	198	211	212	149	209
30	1.6	1.5	1.1	1.1	---	4600	1500	211	211	211	204	211
31	1.4	---	1.1	1.1	---	3400	---	211	---	211	204	---
TOTAL	2556.5	43.8	40.7	36.2	31.6	20835.9	70039	46222	6316	6553	6290	6240
MEAN	82.5	1.46	1.31	1.17	1.13	672	2335	1491	211	211	203	208
MAX	118	1.5	1.5	1.4	1.4	4630	4360	3760	213	213	211	242
MIN	1.4	1.3	1.1	1.1	1.0	1.1	668	198	197	211	149	198
AC-FT	5070	87	81	72	63	41330	138900	91680	12530	13000	12480	12380
CAL YR 1992	TOTAL	23463.2	MEAN	64.1	MAX	170	MIN	1.1	AC-FT	46540		</

MALHEUR RIVER BASIN

13214000 MALHEUR RIVER NEAR DREWSEY, OR

LOCATION.--Lat 43°47'05", long 118°19'50", in NE 1/4 SE 1/4 sec.31, T.20 S., R.36 E., Harney County, Hydrologic Unit 17050116, on left bank 300 ft downstream from bridge on U.S. Highway 20, 0.5 mi downstream from Cottonwood Creek, 3.0 mi southeast of Drewsey, and at mile 129.0.

DRAINAGE AREA.--910 mi², approximately.

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

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

GAGE.--Water-stage recorder. Datum of gage is 3,479.13 ft above sea level. Prior to Apr. 27, 1923, water-stage recorder or nonrecording gage at site 0.5 mi downstream at different datum. Apr. 27, 1923, to June 6, 1939, water-stage recorder at site 7 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Slight regulation by small reservoirs upstream from station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--67 years (water years 1927-93), 189 ft³/s, 136,900 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	2400	*6,090	*10.43	May 4	1000	1,470	6.35
Minimum discharge, 5.0 ft ³ /s Aug. 8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	53	55	56	e65	e60	2830	1020	287	93	28	20
2	16	59	60	e58	e65	e65	2640	997	294	79	20	23
3	18	63	56	e38	e69	79	2380	1020	327	12	12	24
4	19	51	e30	e40	e60	80	3840	1370	272	68	7.4	18
5	32	56	e20	e39	e70	76	2930	1160	414	60	8.7	12
6	17	56	e30	e50	79	76	2180	1030	368	57	11	7.8
7	14	55	e45	79	72	78	1990	1080	355	50	11	12
8	17	56	e70	e80	74	80	1800	1040	317	51	9.4	9.5
9	17	60	e80	e72	74	86	1710	921	271	50	7.8	8.8
10	16	51	e70	e67	74	94	1630	778	245	45	5.8	8.6
11	20	37	e80	e63	77	107	1430	695	233	42	6.5	9.0
12	21	53	70	e58	77	118	1180	697	218	41	12	9.5
13	21	59	63	e64	78	122	1060	765	198	45	16	9.0
14	22	58	e60	e72	83	124	990	800	168	44	16	13
15	29	55	e55	e80	84	155	961	740	154	50	16	13
16	35	52	65	e85	78	523	1080	685	150	53	24	15
17	35	51	e55	e79	e55	1400	1020	645	143	53	32	18
18	37	53	e40	e80	e60	2070	1330	575	114	60	33	21
19	34	53	e45	e79	68	2860	1070	531	108	54	31	24
20	33	52	e55	e78	75	3060	927	490	125	58	26	23
21	33	49	e50	76	82	3170	872	483	165	60	22	23
22	32	41	65	75	e78	2550	881	455	186	60	21	24
23	34	51	59	e70	e75	2800	888	373	168	66	22	25
24	36	41	59	e60	80	4470	901	327	139	66	22	25
25	33	e28	e50	66	e70	4510	906	280	122	56	14	27
26	35	e30	e62	74	e64	3300	920	308	108	54	15	23
27	36	34	59	e70	e50	3330	918	285	101	58	23	21
28	36	41	61	70	e55	3160	863	287	98	54	22	22
29	41	67	59	74	---	2750	846	300	93	45	16	23
30	52	56	58	81	---	2260	1020	265	95	25	19	23
31	56	---	57	e70	---	2030	---	253	---	27	22	---
TOTAL	894	1521	1743	2103	1991	45643	43993	20655	6036	1684	547.6	534.2
MEAN	28.8	50.7	56.2	67.8	71.1	1472	1466	666	201	54.3	17.7	17.8
MAX	56	67	80	85	84	4510	3840	1370	414	93	33	27
MIN	14	28	20	38	50	60	846	253	93	25	5.4	7.8
AC-FT	1770	3020	3460	4170	3950	90530	87260	40970	11970	3340	1090	1066

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1993, BY WATER YEAR (WY)

MEAN	41.8	69.5	102	141	256	476	652	348	137	29.3	10.1	14.6
MAX	103	178	739	817	1124	1472	2290	1136	501	158	60.2	68.6
(WY)	1985	1971	1965	1970	1982	1993	1952	1958	1984	1982	1976	1984
MIN	5.32	5.11	8.95	20.0	20.0	55.0	44.1	17.5	7.96	1.87	.000	.000
(WY)	1933	1933	1933	1933	1933	1977	1934	1934	1934	1934	1934	1934

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1927 - 1993
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ANNUAL TOTAL	20146.43		127344.8				
ANNUAL MEAN	55.0		349			189	
HIGHEST ANNUAL MEAN						474	1984
LOWEST ANNUAL MEAN						34.3	1934
HIGHEST DAILY MEAN	407	Feb 22	4510	Mar 25	6910		Dec 23 1964
LOWEST DAILY MEAN	.56	Aug 13	5.4	Aug 8	.00		Jul 27 1934
ANNUAL SEVEN-DAY MINIMUM	.64	Aug 9	8.0	Aug 5	.00		Jul 27 1934
ANNUAL RUNOFF (AC-FT)	39960		252600			136900	
10 PERCENT EXCEEDS	134		1020			502	
50 PERCENT EXCEEDS	41		62			67	
90 PERCENT EXCEEDS	2.6		18			6.0	

e Estimated

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LOCATION.--Lat 43°34'29", long 118°12'31", on line between NW 1/4 SW 1/4 and SW 1/4 NW 1/4 sec.17, T.23 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 0.9 mi downstream from Warm Springs Dam, 3.0 mi upstream from South Fork, 4.0 mi northwest of Riverside, and at mile 113.

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

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

AVERAGE DISCHARGE.--74 years (water years 1920-93), 188 ft³/s, 136,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,200 ft³/s Mar. 1, 1910, gage height, 10.7 ft, site and datum then in use, from rating curve extended above 820 ft³/s; maximum discharge since storage began November 1919, 3,150 ft³/s Mar. 22, 1984, gage height, 9.70 ft, from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft³/s Apr. 11, gage height, 7.50 ft; no flow for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	e.03	e.00	e.00	e.00	e.00	3.6	521	309	512	465	416
2	7.4	e.02	e.00	e.00	e.00	e.00	3.1	523	289	512	479	418
3	7.5	e.02	e.00	e.00	e.00	e.00	3.3	593	258	512	514	416
4	7.7	e.02	e.00	e.00	e.00	e.00	3.6	731	228	512	529	414
5	5.2	e.02	e.00	e.00	e.00	e.00	3.1	1130	189	511	529	410
6	2.2	e.02	e.00	e.00	e.01	e.01	3.3	1140	169	510	543	408
7	2.0	e.01	e.00	e.00	e.01	e.01	3.1	880	70	510	553	426
8	e.20	e.01	e.01	e.00	e.01	e.01	2.9	876	6.3	508	551	434
9	e.10	e.01	e.01	e.00	e.01	e.01	11	923	6.3	508	518	432
10	e.10	e.01	e.01	e.00	e.01	e.01	660	857	6.3	507	499	432
11	e.10	e.01	e.01	e.00	e.01	e.01	1430	633	12	505	496	421
12	e.09	e.01	e.00	e.00	e.01	e.01	1590	400	110	504	490	413
13	e.09	e.01	e.00	e.00	e.01	e.01	1500	327	170	504	486	407
14	e.09	e.01	e.00	e.00	e.01	e.01	1460	613	234	495	485	403
15	e.08	e.01	e.00	e.00	e.00	3.0	1300	816	275	489	485	404
16	e.08	e.01	e.00	e.00	e.00	3.8	1150	810	276	484	480	399
17	e.08	e.01	e.00	e.00	e.00	3.4	891	682	275	472	449	391
18	e.07	e.01	e.00	e.00	e.00	3.2	727	599	316	465	432	388
19	e.07	e.01	e.01	e.00	e.01	3.1	730	473	378	431	404	389
20	e.07	e.01	e.01	e.01	e.01	3.0	605	347	399	411	384	358
21	e.06	e.01	e.01	e.01	e.01	3.0	526	323	430	411	383	339
22	e.06	e.01	e.01	e.01	e.00	2.9	528	323	449	391	383	321
23	e.06	e.01	e.01	e.00	e.00	2.8	529	323	449	379	383	299
24	e.05	e.00	e.00	e.00	e.00	2.9	532	323	449	346	379	280
25	e.05	e.00	e.00	e.00	e.00	2.9	534	323	467	327	379	253
26	e.05	e.00	e.00	e.00	e.00	2.8	531	323	478	298	379	239
27	e.04	e.00	e.01	e.00	e.00	2.8	661	323	478	332	380	232
28	e.04	e.00	e.01	e.00	e.00	2.8	987	323	499	363	378	228
29	e.04	e.00	e.01	e.00	---	3.0	1090	323	513	380	379	212
30	e.03	e.00	e.01	e.00	---	3.6	718	322	512	406	394	202
31	e.03	---	e.01	e.00	---	4.0	---	323	---	449	413	---
TOTAL	40.43	0.30	0.14	0.03	0.12	53.09	18716.0	17426	8699.9	13944	14001	10784
MEAN	1.30	.010	.005	.001	.004	1.71	624	562	290	450	452	359
MAX	7.7	.03	.01	.01	.01	4.0	1590	1140	513	512	553	434
MIN	.03	.00	.00	.00	.00	.00	2.9	322	6.3	298	378	202
AC-FT	80	.6	.3	.06	.2	105	37120	34560	17260	27660	27770	21390

MEAN	33.6	.87	8.00	16.8	35.4	81.9	319	436	340	428	351	199
MAX	138	19.8	323	452	763	1440	1603	1162	557	677	575	394
(WY)	1953	1920	1984	1971	1983	1983	1984	1958	1953	1945	1946	1928
MIN	.000	.000	.000	.000	.000	.000	.000	31.4	92.0	30.3	.041	.000
(WY)	1934	1933	1933	1933	1933	1933	1935	1932	1942	1992	1988	1988

ANNUAL TOTAL		19877.47			83665.01				
ANNUAL MEAN		54.3			229			188	
HIGHEST ANNUAL MEAN								566	1983
LOWEST ANNUAL MEAN								46.8	1930
HIGHEST DAILY MEAN	330		Apr 25	1590	Apr 12	3030			Mar 22 1984
LOWEST DAILY MEAN	.00		Jan 1	.00	Nov 24	.00			Oct 5 1932
ANNUAL SEVEN-DAY MINIMUM	.00		Aug 19	.00	Nov 24	.00			Oct 5 1932
ANNUAL RUNOFF (AC-FT)	39430			165900		136500			
10 PERCENT EXCEEDS	305			529		497			
50 PERCENT EXCEEDS	.20			3.6		3.0			
90 PERCENT EXCEEDS	.00			.00		.00			

e Estimated

MALHEUR RIVER BASIN

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13217000 BEULAH RESERVOIR AT BEULAH, OR

LOCATION.--Lat 43°54'41", long 118°09'25", in SW 1/4 SE 1/4 sec.15, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on top of dam near right end of dam on North Fork Malheur River, 0.2 mi northwest of Beulah, and at mile 15.0.

DRAINAGE AREA.--440 mi², approximately.

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

REVISED RECORDS.--WSP 1397: Drainage area.

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

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began December 1935. Capacity, 59,920 acre-ft between gage heights 3,263.21 ft, bottom of outlet tunnel, and 3,340.0 ft, top of spillway gates; with gates open the capacity is 32,220 acre-ft. No dead storage. Storage below 3,268 ft unusable due to restriction at the trashrack structure. Water is used for irrigation of lands below Juntura, on Vale project, Bureau of Reclamation. U.S. Bureau of Reclamation satellite telemeter at station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 62,770 acre-ft May 3, 1941, gage height, 3,341.50 ft; no contents Sept. 17 to Oct. 13, 1950, Aug. 28 to Oct. 4, 1955, Aug. 13 to Oct. 1, 1961, Sept. 21 to Oct. 5, 1968, Aug. 31 to Oct. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 60,760 acre-ft May 14, gage height, 3,340.44 ft; minimum contents, 196 acre-ft Oct. 4-8, gage height, 3,273.01 ft.

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

3,263	0	3,290	3,750	3,320	28,250
3,265	3	3,295	6,090	3,325	35,025
3,270	70	3,300	8,980	3,330	42,530
3,275	310	3,305	12,520	3,335	50,820
3,280	925	3,310	16,950	3,340	59,925
3,285	2,020	3,315	22,220	3,341	61,840

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3273.02	3281.72	3291.03	---	---	---	3337.23	3340.18	3339.63	3335.97	3326.94	3320.15
2	3273.02	3282.27	3291.32	---	---	---	3338.13	3340.16	3339.45	3335.60	3326.72	3319.97
3	3273.01	3282.77	---	---	---	---	3339.32	3340.18	3339.30	3335.34	3326.49	3319.78
4	3273.01	3283.23	---	---	---	3307.00	3340.19	3340.26	3339.19	3335.03	3326.22	3319.55
5	3273.02	3283.66	---	---	---	3307.16	3340.23	3340.16	3339.21	3334.72	3325.92	3319.31
6	3273.01	3284.06	3291.54	---	3303.02	3307.29	3340.12	3340.08	3339.20	3334.39	3325.57	3319.07
7	3273.01	3284.48	3291.96	---	---	3307.44	3340.18	3340.15	3339.20	3334.06	3325.30	3318.83
8	3273.03	3284.89	3292.24	---	3303.38	3307.60	3340.20	3340.20	3339.24	3333.74	3325.03	3318.58
9	3273.02	3285.26	3292.53	---	3303.55	3307.78	3340.23	3340.19	3339.26	3333.39	3324.72	3318.31
10	3273.02	3285.53	3292.78	---	3303.73	3307.96	3340.21	3340.13	3339.29	3333.05	3324.40	3318.06
11	3273.03	3285.83	3293.01	---	3303.91	3308.13	3340.15	3340.10	3339.29	3332.67	3324.12	3317.78
12	3273.03	3286.24	3293.23	---	3304.10	3308.29	3340.15	3340.18	3339.34	3332.31	3323.86	3317.50
13	3273.03	3286.59	3293.41	---	3304.27	3308.49	3340.10	3340.34	3339.34	3331.94	3323.61	3317.28
14	3273.02	3286.91	3293.64	3299.29	3304.40	3308.72	3340.13	3340.37	3339.33	3331.58	3323.33	3317.11
15	3273.02	3287.22	3293.84	---	---	3309.03	3340.15	3340.29	3339.26	3331.23	3323.08	3316.96
16	3273.02	3287.52	3294.08	3299.64	---	3309.65	3340.14	3340.17	3339.19	3330.87	3322.86	3316.86
17	3273.02	3287.80	3294.26	3299.82	---	3310.95	3340.12	3340.16	3339.13	3330.54	3322.69	3316.78
18	3273.02	3288.07	---	---	---	3313.06	3340.16	3340.12	3339.06	3330.25	3322.54	3316.71
19	3273.02	3288.35	3294.60	3300.17	3305.18	3314.79	3340.14	3340.22	3338.94	3329.90	3322.40	3316.64
20	3273.02	3288.61	3294.83	3300.39	---	3317.38	3340.04	3340.23	3338.79	3329.62	3322.25	3316.54
21	3273.47	3288.87	3295.06	3300.60	3305.49	3319.27	3340.03	3340.22	3338.63	3329.35	3322.10	3316.47
22	3274.63	3289.11	3295.28	---	---	---	3340.04	3340.21	3338.40	3329.09	3321.96	3316.41
23	3275.59	3289.35	3295.46	---	---	---	3340.10	3340.13	3338.18	3328.86	3321.80	3316.37
24	3276.42	3289.48	---	3301.05	---	---	3340.14	3340.06	3337.96	3328.62	3321.62	3316.32
25	3277.19	3289.59	---	---	---	---	3340.11	3339.99	3337.71	3328.38	3321.48	3316.27
26	3277.92	3289.71	3295.95	---	---	3330.13	3340.08	3340.01	3337.45	3328.18	3321.32	3316.21
27	3278.56	3289.95	3296.18	---	---	3331.68	3340.07	3339.99	3337.15	3327.99	3321.14	3316.15
28	3279.17	3290.22	3296.42	---	---	3333.05	3340.04	3339.95	3336.81	3327.81	3320.92	3316.07
29	3279.82	3290.49	3296.62	---	---	3334.23	3340.03	3339.93	3336.53	3327.59	3320.73	3316.00
30	3280.53	3290.74	3296.79	---	---	3335.01	3340.11	3339.85	3336.26	3327.37	3320.55	3315.91
31	3281.14	---	3297.03	---	---	3335.95	---	3339.72	---	3327.16	3320.35	---
MAX	3281.14	3290.74	---	---	---	---	3340.23	3340.37	3339.63	3335.97	3326.94	3320.15
MIN	3273.01	3281.72	---	---	---	---	3337.23	3339.72	3336.26	3327.16	3320.35	3315.91
(†)	1132	4068	7163	a10380	a13820	52480	60130	59400	53050	38200	28700	23270
(‡)	+1113	+2936	+3095	+3217	+3440	+39020	+7650	-730	-6350	-14850	-9500	-5430

CAL YR 1992 AC-FT† -1347
WTR YR 1993 AC-FT† +23251

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

MALHEUR RIVER BASIN

13217500 NORTH FORK MALHEUR RIVER AT BEULAH, OR

LOCATION.--Lat 43°54'28", long 118°09'08", in NW 1/4 NE 1/4 sec.22, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank at Beulah, 0.3 mi downstream from Agency Valley Dam, 12 mi northwest of Juntura, and at mile 14.5.

DRAINAGE AREA.--440 mi², approximately.

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

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

GAGE.--Water-stage recorder. Datum of gage is 3,261.20 ft above sea level. Prior to Apr. 25, 1926, water-stage recorder at site 1 mi downstream at different datum. Apr. 25, 1936, to Sept. 30, 1949, nonrecording gage at site 20 ft downstream at datum 1.0 ft higher. Oct. 1, 1949, to June 30, 1964, at present site at datum 1.0 ft higher.

REMARKS.--Records good except those below 20 ft³/s and estimated daily discharges, which are poor. Flow regulated since 1935 by Beulah Reservoir (station 13217000). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--58 years (water years 1936-93), 144 ft³/s, 104,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s May 7, 1942, gage height, 9.4 ft, present datum, from floodmark, caused by failure of gates at Agency Valley Dam, from rating curve extended above 1,100 ft³/s on basis of computation of peak flow over dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s Apr. 5, gage height, 5.22 ft; minimum discharge, no flow many days during winter.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	e.08	e.08	e.08	e.00	e.08	178	512	470	356	229	165
2	37	e.08	e.07	e.08	e.00	e.09	216	600	473	362	233	160
3	45	e.08	e.07	e.07	e.00	e.09	293	601	469	361	234	160
4	43	e.08	e.06	e.06	e.00	e.10	787	660	452	362	246	179
5	41	e.08	e.06	e.05	e.00	e.20	1180	732	385	361	274	190
6	42	e.08	e.05	e.04	e.00	e.30	1060	656	358	362	285	188
7	42	e.08	e.04	e.04	e.00	e.40	802	557	322	360	273	187
8	42	e.08	e.05	e.03	e.00	e.50	779	559	278	361	264	194
9	42	e.08	e.06	e.03	e.00	e.60	779	554	248	362	265	198
10	42	e.08	e.07	e.02	e.00	e.70	779	553	227	364	268	198
11	42	e.08	e.08	e.01	e.00	e.80	706	522	226	366	265	189
12	43	e.08	e.08	e.00	e.00	e.90	588	508	225	364	246	185
13	43	e.08	e.08	e.00	e.00	e.1.0	587	581	227	359	239	166
14	43	e.08	e.08	e.00	e.00	e.1.0	502	714	227	361	243	142
15	45	e.08	e.08	e.00	e.00	1.1	468	803	240	362	241	122
16	47	e.08	e.08	e.00	e.00	1.2	558	772	246	363	234	101
17	46	e.08	e.08	e.00	e.00	1.3	558	708	246	335	201	86
18	46	e.08	e.08	e.00	e.00	1.5	559	675	246	318	168	81
19	31	e.08	e.08	e.00	e.00	1.5	558	573	270	315	157	82
20	1.6	e.08	e.08	e.00	e.00	1.7	558	597	285	299	149	82
21	e.1.0	e.08	e.08	e.00	e.00	1.8	486	597	321	277	146	74
22	e.08	e.08	e.08	e.00	e.00	1.9	416	597	362	274	146	70
23	e.08	e.08	e.08	e.00	e.02	2.1	415	596	369	267	145	73
24	e.08	e.08	e.08	e.00	e.05	2.4	456	547	369	259	143	75
25	e.08	e.08	e.08	e.00	e.05	3.0	513	482	370	258	143	77
26	e.08	e.08	e.08	e.00	e.05	3.2	513	486	372	241	156	79
27	e.08	e.08	e.08	e.00	e.05	3.3	513	455	369	242	162	92
28	e.08	e.08	e.08	e.00	e.08	3.5	509	447	369	221	162	99
29	e.08	e.08	e.08	e.00	---	3.6	494	446	367	219	162	99
30	e.08	e.08	e.08	e.00	---	11	491	441	352	232	161	96
31	e.08	---	e.08	e.00	---	77	---	441	---	231	170	---
TOTAL	798.40	2.40	2.29	0.51	0.30	127.86	17301	17972	9740	9774	6410	3889
MEAN	25.8	.080	.074	.016	.011	4.12	577	580	325	315	207	130
MAX	47	.08	.08	.08	.08	.77	1180	803	473	366	285	198
MIN	.08	.08	.04	.00	.00	.08	178	441	225	219	143	70
AC-FT	1580	4.8	4.5	1.0	.6	254	34320	35650	19320	19390	12710	7710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1936	36.6	134	1954	.086	1974
1937	1.09	35.5	1936	.000	1938
1938	1.86	62.7	1943	.000	1938
1939	7.31	287	1943	.000	1936
1940	23.0	478	1965	.000	1938
1941	81.1	936	1983	.000	1938
1942	295	856	1958	2.29	1981
1943	354	810	1983	120	1977
1944	281	510	1974	53.7	1939
1945	276	402	1979	39.5	1992
1946	219	399	1980	30.4	1992
1947	140	341	1945	31.9	1961

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1936 - 1993

ANNUAL TOTAL	23464.53	66017.76	
ANNUAL MEAN	64.1	181	143
HIGHEST ANNUAL MEAN			335
LOWEST ANNUAL MEAN			54.6
HIGHEST DAILY MEAN	483	1180	3700
LOWEST DAILY MEAN	.02	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.02	.00	.00
ANNUAL RUNOFF (AC-FT)	46540	130900	103800
10 PERCENT EXCEEDS	317	532	365
50 PERCENT EXCEEDS	29	73	41
90 PERCENT EXCEEDS	.08	.00	.10

e Estimated

MALHEUR RIVER BASIN

63

13226800 BULLY CREEK RESERVOIR NEAR VALE, OR

LOCATION.--Lat 44°00'55", long 117°23'45", in SE 1/4 SW 1/4 sec.12, T.18 S., R.43 E., Malheur County, Hydrologic Unit 17050118, U.S. Bureau of Reclamation land, on top of dam over outlet works near right end of dam on Bully Creek, 8.0 mi northwest of Vale, and at mile 12.5.

DRAINAGE AREA.--547 mi².

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

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

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Feb. 1, 1963. Capacity, 29,980 acre-ft between elevations 2,456.58 ft, outlet works, and 2,516.00 ft, spillway crest. Dead storage, 1,650 acre-ft below elevation 2,456.58 ft. Figures given herein do not include dead storage. Water used for irrigation lands of Vale-Oregon Irrigation District. Bully Creek Reservoir feed canal diverts from Malheur River by way of Vale Oregon canal. U.S. Bureau of Reclamation satellite telemeter at station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents not determined, occurred during period Apr. 4 to May 2, 1969, elevation above 2,516.00 ft, spillway crest; no usable contents at times in 1973, 1977, 1978, 1988, 1989, 1991, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 31,706 acre-ft Apr. 25, elevation, 2,517.73 ft; no storage at times during October. Minimum elevation not determined as water surface dropped below minimum recording limit of instrument.

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

2,456.5	0	2,480	5,430	2,505	20,130
2,460	465	2,485	7,430	2,510	24,370
2,465	1,310	2,490	9,930	2,515	29,000
2,470	2,401	2,495	12,900	2,520	34,040
2,475	3,770	2,500	16,290		

ELEVATION (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2459.22	2466.96	2469.91	2473.41	2476.82	2513.51	2516.92	2514.10	2512.89	2507.22	2501.15
2	---	2459.58	2467.19	2469.90	2473.47	2477.00	2513.39	2516.84	2514.03	2512.66	2507.07	2500.96
3	---	2459.95	2467.33	2469.92	2473.54	2477.18	2513.98	2516.75	2513.99	2512.46	2506.90	2500.76
4	---	2460.32	2467.48	2469.94	2473.60	2477.36	2514.16	2516.71	2513.94	2512.28	2506.72	2500.57
5	---	2460.67	2467.56	2469.96	2473.68	2477.52	2514.25	2516.69	2513.98	2512.06	2506.53	2500.35
6	---	2461.02	2467.67	2470.11	2473.78	2477.68	2514.46	2516.63	2514.00	2511.87	2506.31	2500.14
7	---	2461.36	2467.80	2470.34	2473.87	2477.85	2514.87	2516.53	2514.02	2511.67	2506.08	2500.91
8	---	2461.69	2467.95	2470.55	2473.97	2478.02	2515.13	2516.49	2514.02	2511.44	2505.90	2500.69
9	---	2461.98	2468.05	2470.68	2474.08	2478.19	2515.29	2516.44	2514.10	2511.19	2505.69	2500.46
10	---	2462.24	2468.19	2470.81	2474.19	2478.42	2515.31	2516.42	2514.20	2510.98	2505.45	2500.21
11	---	2462.51	2468.33	2470.92	2474.33	2478.69	2515.15	2516.38	2514.28	2510.75	2505.25	2500.98
12	---	2462.81	2468.52	2471.04	2474.45	2479.00	2515.30	2516.33	2514.39	2510.52	2505.04	2500.66
13	---	2463.08	2468.73	2471.23	2474.58	2479.29	2515.63	2516.26	2514.50	---	2504.83	2500.40
14	---	2463.36	2468.94	2471.38	2474.71	2479.64	2515.96	2516.17	2514.55	---	2504.60	2500.17
15	---	2463.63	2469.14	2471.52	2474.86	2480.42	2516.47	2516.13	2514.56	2509.88	2504.37	2500.91
16	---	2463.88	2469.37	2471.66	2474.95	2485.52	2516.87	2516.07	2514.68	2509.68	2504.20	2500.67
17	---	2464.12	2469.55	2471.80	2475.05	2491.80	2517.16	2516.03	2514.70	2509.52	2504.07	2500.43
18	---	2464.34	2469.67	2471.95	2475.19	2502.79	2517.29	2515.90	2514.80	2509.38	2503.92	2500.20
19	---	2464.61	2469.76	2472.12	2475.36	2507.66	2517.32	2515.79	2514.76	2509.20	2503.77	2500.98
20	---	2464.79	2469.80	2472.29	2475.52	---	---	2515.61	2514.70	2509.03	2503.58	2500.77
21	---	2465.05	2469.82	2472.45	2475.70	---	---	2515.44	2514.51	2508.88	2503.39	2500.62
22	---	2465.29	2469.84	2472.61	2475.84	---	2516.65	2515.27	2514.42	2508.71	2503.22	2500.48
23	---	2465.52	2469.80	2472.73	2476.05	---	2516.97	2515.12	2514.29	2508.55	2503.03	2500.38
24	---	2465.73	2469.79	2472.82	2476.21	---	2516.91	2514.98	2514.17	2508.39	2502.78	2500.31
25	---	2465.87	2469.80	2472.89	2476.33	---	2517.16	2514.82	2514.07	2508.23	2502.57	2500.25
26	---	2466.02	2469.80	2472.98	2476.46	---	2516.78	2514.74	2513.96	2508.06	2502.37	2500.22
27	---	2466.19	2469.81	2473.06	2476.56	---	2517.07	2514.63	2513.67	2507.94	2502.18	2500.16
28	---	2466.33	2469.84	2473.13	2476.67	---	---	2514.51	2513.47	2507.83	2501.97	2500.11
29	---	2466.52	2469.85	2473.19	---	---	---	2514.39	2513.33	2507.65	2501.76	2500.05
30	---	2466.73	2469.85	2473.28	---	2514.18	2516.98	2514.29	2513.15	2507.51	2501.56	2500.99
31	2458.81	---	2469.89	2473.35	---	2513.83	---	2514.17	---	2507.37	2501.37	---
MAX	---	2466.73	2469.89	2473.35	2476.67	---	---	2516.92	2514.80	---	2507.22	2500.91
MIN	---	2459.22	2466.96	2469.90	2473.41	---	---	2514.17	2513.15	---	2501.37	2500.14
(†)	298	1663	2375	3281	4295	27879	30951	28202	27237	22093	17299	13536
(‡)	+298	+1365	+712	+906	+1014	+23584	+3072	-2749	-965	-5144	-4794	-3763

CAL YR 1992 AC-FT† -2235
WTR YR 1993 AC-FT‡ +13536

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

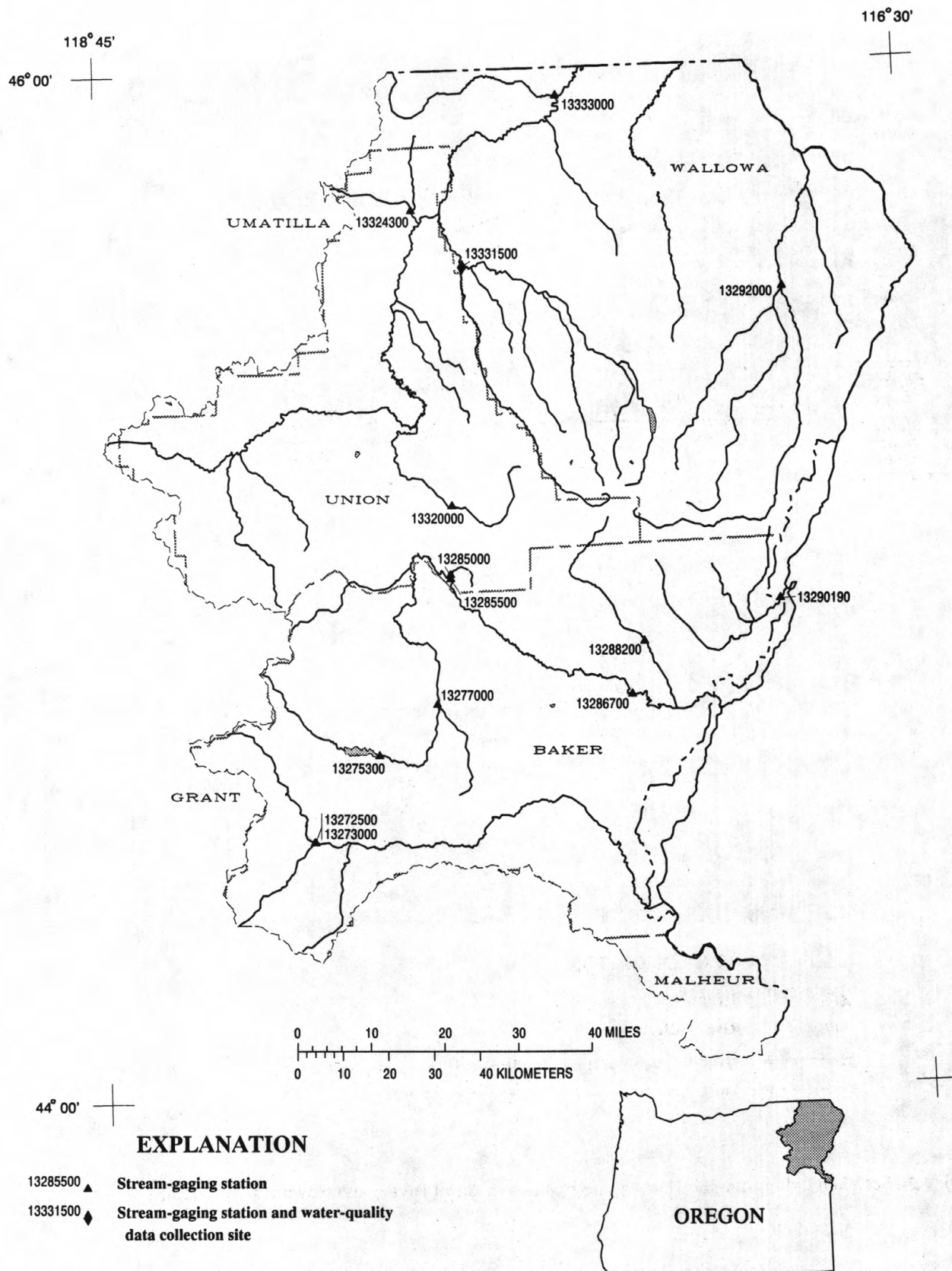


Figure 5--Location of surface-water and water-quality stations in the Burnt River, Powder River, Pine Creek, Imnaha River, and Grande Ronde River Basins.

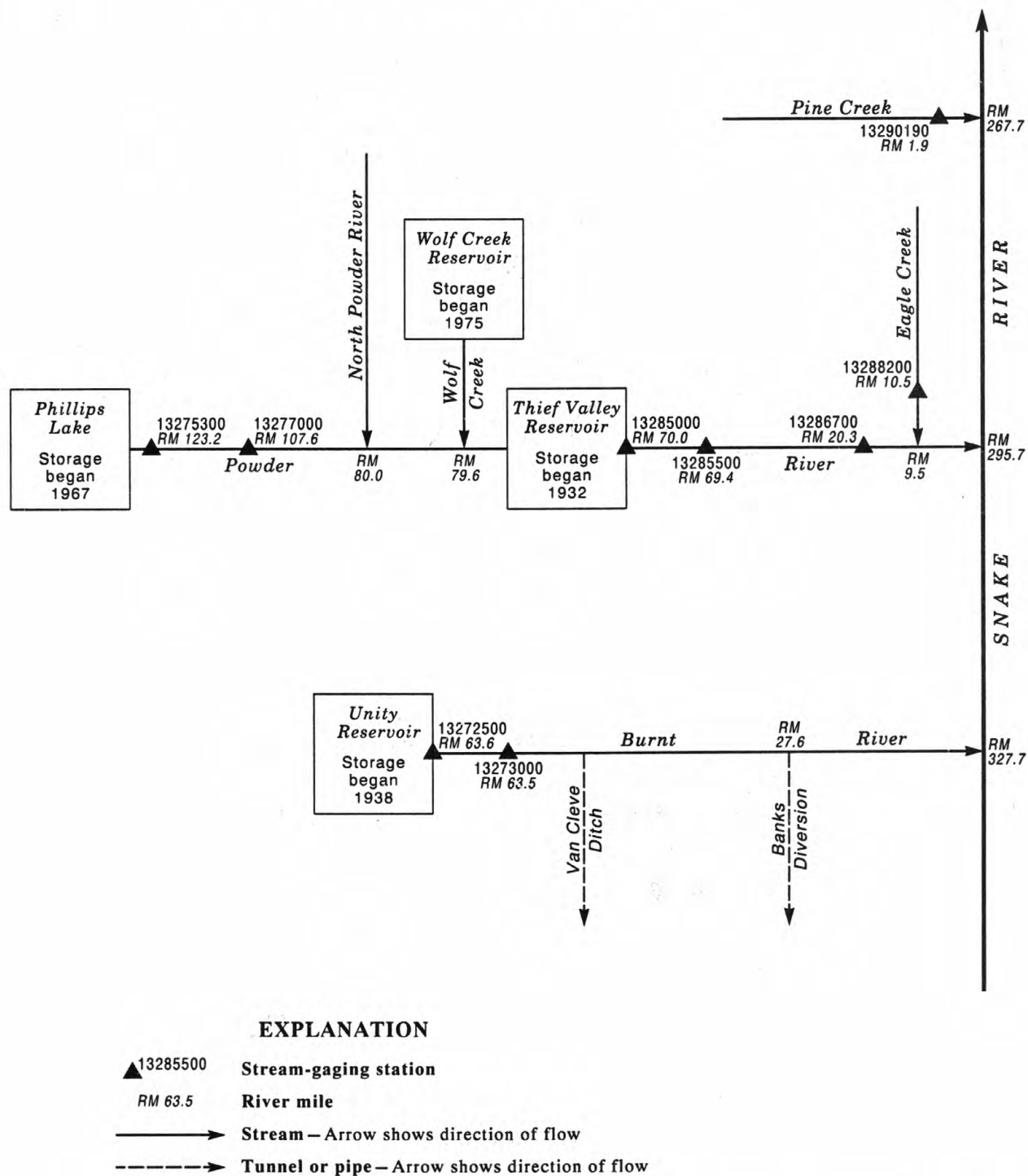


Figure 6--Schematic diagram showing gaging stations in Burnt River, and Powder River Basins.

13272500 UNITY RESERVOIR NEAR UNITY, OR

LOCATION.--Lat 44°30'13", long 118°10'45", in SE 1/4 SW 1/4 sec.21, T.12 S., R.37 E., Baker County, Hydrologic Unit 17050202, at spillway near right end of dam on Burnt River, 4.4 mi north of Unity, and at mile 63.6.

DRAINAGE AREA.--309 mi².

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

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

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway and outlet works, completed by Bureau of Reclamation in 1937; storage began Feb. 19, 1938. Capacity, 25,200 acre-ft between elevations 3,776.5 ft, bottom of outlet gates, and 3,820.0 ft, top of radial gates on spillway when closed. Dead storage, 600 acre-ft below elevation 3,776.5 ft. Records given herein represent usable contents. Water used for irrigation in the Burnt River Irrigation District near Hereford and Bridgeport. U.S. Bureau of Reclamation satellite telemeter at station.

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

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

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,710 acre-ft June 6, 7, elevation, 3,820.53 ft; minimum contents, 41 acre-ft Oct. 1, elevation, 3,776.8, provided by U.S. Bureau of Reclamation.

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

3,780	590	3,805	12,960
3,785	1,960	3,810	16,680
3,790	4,020	3,815	20,770
3,795	6,610	3,820	25,220
3,800	9,600	3,821	26,150

RESERVOIR ELEVATION SURFACE WATER (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	3788.26	3793.32	3797.30	3800.92	3814.35	3819.31	3820.33	3818.62	3812.14	3804.30
2	---	---	3788.52	3793.46	3797.40	3801.06	3814.56	3819.43	3820.36	3818.43	3811.86	3804.04
3	---	---	3788.63	3793.58	3797.54	3801.20	3815.10	3819.74	3820.39	3818.31	3811.61	3803.79
4	---	---	3788.71	3793.69	3797.70	3801.33	3815.82	3819.89	3820.44	3818.16	3811.37	3803.54
5	---	---	3788.80	3793.81	3797.85	3801.46	3815.89	3819.75	3820.49	3818.01	3811.15	3803.28
6	---	---	3788.86	3793.98	3798.01	3801.58	3816.23	3819.56	3820.52	3817.86	3810.91	3803.05
7	---	---	3788.99	3794.09	3798.13	3801.69	3816.54	3819.40	3820.47	3817.71	3810.69	3802.78
8	---	---	3789.17	3794.21	3798.28	3801.82	3816.96	3819.23	3820.46	3817.60	3810.49	---
9	---	3784.34	3789.37	3794.33	3798.42	3801.95	3817.16	3819.09	3820.44	3817.44	3810.25	---
10	---	---	3789.55	3794.46	3798.55	3802.07	3817.31	3819.13	3820.41	3817.27	3809.99	---
11	---	3784.68	3789.69	3794.59	3798.70	3802.20	3817.47	3819.31	3820.37	3817.10	3809.71	---
12	---	3784.90	3789.83	3794.72	3798.83	3802.32	3817.65	3819.55	3820.41	3816.93	3809.45	---
13	---	3785.11	3789.99	3794.86	3798.97	3802.46	3817.88	3819.69	3820.36	3816.77	3809.20	---
14	---	3785.32	3790.14	3794.98	3799.12	3802.61	3818.18	3819.74	3820.31	3816.58	3808.92	---
15	---	3785.52	3790.19	3795.11	3799.22	3802.81	3818.64	3819.77	3820.23	3816.39	3808.66	---
16	---	3785.69	3790.30	3795.26	3799.31	3803.04	3818.99	3819.91	3820.16	3816.17	3808.46	---
17	---	3785.89	3790.41	3795.41	3799.40	3803.33	3819.19	3819.98	3820.10	3815.99	3808.24	---
18	---	3786.06	3790.66	3795.55	3799.56	3803.84	3819.60	3819.89	3820.03	3815.82	3807.99	---
19	---	3786.27	3790.91	3795.69	3799.74	3804.96	3819.66	3819.78	3819.90	3815.58	3807.77	---
20	---	3786.43	3791.57	3795.83	3799.88	3806.77	3819.54	3819.73	3819.83	3815.37	3807.50	---
21	---	3786.62	3791.76	3795.98	3800.04	3808.56	3819.58	3819.79	3819.74	3815.16	3807.23	---
22	---	3786.78	3791.92	3796.11	3800.17	3809.85	3819.62	3819.92	3819.64	3814.90	3806.98	---
23	---	3786.91	3792.01	3796.22	3800.31	3810.71	3819.77	3820.06	3819.56	3814.66	3806.70	---
24	---	3787.03	3792.13	3796.36	3800.42	3811.97	3819.84	3820.14	3819.51	3814.40	3806.42	---
25	---	3787.13	3792.26	3796.48	3800.54	3812.02	3819.82	3820.18	3819.43	3814.11	3806.17	---
26	---	3787.23	3792.43	3796.61	3800.62	3811.42	3819.81	3820.20	3819.31	3813.89	3805.91	---
27	---	3787.39	3792.56	3796.73	3800.72	3811.69	3819.76	3820.20	3819.15	3813.60	3805.65	3797.75
28	---	3787.50	3792.70	3796.86	3800.83	3812.11	3819.64	3820.20	3818.99	3813.32	3805.36	3797.52
29	---	3787.77	3792.83	3796.98	---	3812.35	3819.55	3820.24	3818.87	3812.98	3805.10	3797.27
30	---	3788.01	3792.99	3797.10	---	3812.67	3819.52	3820.25	3818.76	3812.69	3804.83	3797.10
31	---	---	3793.15	3797.21	---	3813.50	---	3820.22	---	3812.42	3804.57	---
MAX	---	---	3793.15	3797.21	3800.83	3813.50	3819.84	3820.25	3820.52	3818.62	3812.14	---
MIN	---	---	3788.26	3793.32	3797.30	3800.92	3814.35	3819.09	3818.76	3812.42	3804.57	---
(†)	a1300	3120	5600	7880	10120	19500	24780	25420	24090	18610	12660	7810
(‡)	+1259	+1820	+2480	+2280	+2240	+9380	+5280	+640	-1330	-4480	-5950	-4850

CAL YR 1992 MAX 3818.87 MIN --- AC-FT† -6740
WTR YR 1993 MAX 3820.52 MIN --- AC-FT† +7769

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

BURNT RIVER BASIN

67

13273000 BURNT RIVER NEAR HEREFORD, OR

LOCATION.--Lat 44°30'14", long 118°10'35", in SE 1/4 sec.21, T.12 S., R.37 E., Baker County, Hydrologic Unit 17050202, on left bank 800 ft downstream from Unity Dam, 0.4 mi upstream from Van Cleve ditch, 7 mi west of Hereford, and at mile 63.5.

DRAINAGE AREA.--309 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is 3,758.19 ft above sea level. Oct. 1, 1943, to Oct. 31, 1966, water-stage recorder at site 450 ft downstream at datum 1.44 ft lower. See WSP 1317 or 1737 for history of changes prior to Oct. 1, 1943.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1938 by Unity Reservoir (station 13272500). Diversions for irrigation upstream from station. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--65 years (water years 1929-93), 85.4 ft³/s, 61,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,220 ft³/s Apr. 17, 1943, gage height, 5.91 ft, present datum, from rating curve extended above 1,300 ft³/s; maximum gage height, 9.07 ft Apr. 8, 1971; no flow at times; minimum discharge before construction of Unity Dam, 1.6 ft³/s Aug. 31, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s Apr. 4, gage height, 8.64 ft; minimum discharge, 1.1 ft³/s Oct. 3, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.3	3.8	5.8	4.4	5.2	470	654	75	94	133	104
2	1.2	2.3	3.8	5.8	4.4	5.2	648	496	75	94	127	103
3	1.9	2.0	3.8	5.8	4.4	5.2	634	496	75	94	114	97
4	1.8	2.0	3.7	5.8	4.4	5.2	773	585	75	94	108	95
5	1.7	2.0	4.0	5.8	4.4	5.2	750	609	103	94	99	95
6	1.6	2.2	4.0	5.8	4.4	5.3	490	607	120	94	99	95
7	1.6	1.8	4.0	5.8	4.4	5.5	463	606	123	94	98	94
8	1.4	1.8	4.0	5.8	4.4	5.5	429	576	103	94	98	93
9	1.4	1.7	4.0	5.8	4.4	5.5	558	491	95	93	103	93
10	1.3	1.7	4.0	5.8	4.4	8.3	514	417	95	93	114	92
11	1.2	1.8	4.0	5.8	4.6	9.7	409	357	96	93	116	92
12	1.3	2.3	4.0	5.8	4.7	9.7	344	358	95	93	115	92
13	1.5	2.3	4.0	5.9	4.7	9.7	267	403	95	92	114	92
14	1.5	2.3	4.0	6.1	4.7	9.7	231	416	95	103	114	92
15	2.5	2.4	4.0	6.1	4.7	9.7	223	373	95	113	113	91
16	3.1	2.3	4.0	6.1	4.9	9.7	308	265	94	115	113	90
17	3.1	2.0	4.0	4.4	4.9	9.7	377	306	94	115	113	90
18	2.8	1.9	4.0	4.0	4.9	9.9	377	314	94	115	113	90
19	3.1	2.0	3.8	4.0	4.9	13	470	314	94	115	112	89
20	3.1	1.5	3.8	4.2	4.9	18	490	251	94	114	111	89
21	3.3	3.4	4.6	4.2	4.9	21	455	168	95	123	109	89
22	2.5	4.7	5.5	4.2	5.0	85	455	133	95	127	107	88
23	3.1	4.3	5.5	4.2	5.2	282	453	115	95	127	107	87
24	3.3	3.8	5.5	4.2	5.2	421	452	115	95	133	106	87
25	2.9	3.7	5.5	4.2	5.2	744	494	97	95	136	106	86
26	2.8	3.8	5.5	4.2	5.2	864	515	88	95	137	105	86
27	2.6	3.8	5.5	4.2	5.2	574	515	87	95	136	104	85
28	2.0	3.8	5.5	4.2	5.2	569	514	86	94	135	104	85
29	2.7	3.8	5.5	4.2	---	598	513	79	94	135	104	84
30	2.2	3.8	5.5	4.3	---	448	602	75	94	134	104	69
31	2.0	---	5.7	4.4	---	316	---	75	---	133	104	---
TOTAL	67.8	79.5	138.5	156.9	133.0	5086.9	14193	10012	2832	3462	3387	2714
MEAN	2.19	2.65	4.47	5.06	4.75	164	473	323	94.4	112	109	90.5
MAX	3.3	4.7	5.7	6.1	5.2	864	773	654	123	137	133	104
MIN	1.2	1.5	3.7	4.0	4.4	5.2	223	75	75	92	98	69
AC-FT	134	158	275	311	264	10090	28150	19860	5620	6870	6720	5380

CAL YR 1992 TOTAL 16366.20 MEAN 44.7 MAX 237 MIN .11 AC-FT 32460
WTR YR 1993 TOTAL 42262.6 MEAN 116 MAX 864 MIN 1.2 AC-FT 83830

13275300 POWDER RIVER NEAR SUMPTER, OR

LOCATION.--Lat 44°40'20", long 117°59'40", in NE 1/4 NE 1/4 sec.25, T.10 S., R.38 E., Baker County, Hydrologic Unit 17050203, Wallowa Whitman National Forest, on left bank 1,200 ft downstream from Mason Dam, 1.4 mi upstream from California Gulch, 11.4 mi southeast of Sumpter, and at mile 123.2.

DRAINAGE AREA.--168 mi², approximately. Prior to Oct. 1, 1970, 170 mi² at cableway, 0.5 mi downstream.

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

GAGE.--Water-stage recorder. Datum of gage is 3,898.47 ft above sea level (Bureau of Reclamation bench mark). Prior to July 29, 1965, nonrecording gage at datum 1.03 ft higher.

REMARKS.--No estimated daily discharges. Records good except for those below 5 ft³/s, which are poor. Flow completely regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--28 years (water years 1966-93), 106 ft³/s, 76,800 acre-ft/yr, not adjusted for storage in Phillips Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 971 ft³/s Apr. 30, 1965, gage height, 4.43 ft; no flow Nov. 12, 1967; Nov. 23-29, 1988; Sept. 29, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 1,600 ft³/s, approximately, Mar. 20, 1910, based on comparison with records for station downstream, near Baker.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 386 ft³/s Aug. 5, gage height, 3.49 ft; minimum discharge, 0.41 ft³/s Mar. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	5.5	8.3	6.1	7.7	6.1	7.7	5.2	354	167	265	120
2	11	5.5	8.3	6.1	7.7	6.1	5.8	5.5	341	140	294	127
3	11	5.5	8.3	6.1	7.7	6.1	4.7	5.5	280	119	328	147
4	11	5.1	8.3	6.1	7.1	6.1	4.8	5.5	202	106	341	175
5	11	4.6	8.6	6.1	7.1	6.1	4.6	5.5	162	100	366	185
6	11	4.6	8.2	6.1	7.1	6.1	4.5	5.5	149	83	382	185
7	11	4.2	7.7	6.1	7.1	6.1	4.1	5.5	130	103	382	185
8	11	3.7	7.7	6.1	7.3	6.3	4.1	5.5	108	139	382	184
9	11	3.7	7.9	6.1	7.9	6.6	2.9	5.5	154	189	382	183
10	11	3.7	8.3	6.1	7.6	7.0	1.5	9.7	205	197	358	174
11	11	3.7	8.3	6.1	7.1	7.9	1.2	18	305	199	285	163
12	11	3.7	8.3	6.1	7.1	8.1	2.6	18	353	200	237	157
13	11	3.7	8.3	4.7	7.1	1.7	6.1	18	354	200	210	146
14	11	3.7	8.3	3.4	7.1	1.7	5.9	29	332	200	224	128
15	11	3.7	7.6	3.3	7.1	1.7	5.5	57	309	200	234	125
16	11	3.7	6.1	3.3	7.1	1.7	5.5	66	275	199	236	154
17	11	6.3	6.1	3.3	7.1	1.9	5.5	80	235	200	201	161
18	11	7.4	6.1	3.5	7.1	2.1	5.5	103	196	200	162	160
19	11	7.1	6.1	3.3	7.1	2.1	5.5	143	197	221	127	159
20	11	7.1	6.1	3.3	7.1	2.4	5.5	194	198	246	129	157
21	11	7.1	6.1	3.7	7.1	2.5	5.5	235	200	252	130	145
22	11	7.1	6.1	3.7	7.1	4.2	5.3	248	200	241	131	142
23	11	7.1	6.1	3.7	7.1	6.1	5.0	248	200	215	132	130
24	11	7.3	6.1	3.7	7.1	6.1	5.0	248	147	192	117	125
25	11	7.1	6.1	3.7	7.1	5.6	5.0	266	89	178	85	117
26	11	7.1	6.1	3.7	7.1	5.4	5.0	286	97	172	67	112
27	11	7.7	6.1	3.7	6.9	4.1	5.0	319	152	172	93	96
28	11	7.7	6.1	3.7	6.5	4.1	5.0	347	166	174	119	69
29	11	7.2	6.1	3.7	---	4.1	5.0	354	166	197	112	64
30	7.8	7.5	6.1	3.6	---	4.4	5.0	354	167	240	106	64
31	5.1	---	6.1	6.1	---	5.4	---	354	---	262	106	---
TOTAL	331.9	169.1	220.0	144.3	201.3	145.9	144.3	4043.9	6423	5703	6723	4239
MEAN	10.7	5.64	7.10	4.65	7.19	4.71	4.81	130	214	184	217	141
MAX	11	7.7	8.6	6.1	7.9	8.1	7.7	354	354	262	382	185
MIN	5.1	3.7	6.1	3.3	6.5	1.7	1.2	5.2	89	83	67	64
AC-FT	658	335	436	286	399	289	286	8020	12740	11310	13340	8410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

	11.5	8.13	7.70	13.0	15.8	50.9	125	292	273	203	213	82.2
MEAN	11.5	8.13	7.70	13.0	15.8	50.9	125	292	273	203	213	82.2
MAX	19.6	16.0	14.0	105	67.7	317	355	519	546	411	301	171
(WY)	1981	1985	1984	1984	1984	1982	1984	1975	1983	1984	1974	1974
MIN	2.55	.46	.50	.36	.78	1.10	4.81	123	101	77.1	56.0	21.7
(WY)	1974	1968	1968	1968	1968	1968	1993	1991	1990	1992	1976	1984

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1968 - 1993

ANNUAL TOTAL	23749.7	28488.7	108
ANNUAL MEAN	64.9	78.1	186
HIGHEST ANNUAL MEAN			60.0
LOWEST ANNUAL MEAN			592
HIGHEST DAILY MEAN	390	May 16	592
LOWEST DAILY MEAN	3.7	Nov 8	.00
ANNUAL SEVEN-DAY MINIMUM	3.7	Nov 8	.02
ANNUAL RUNOFF (AC-FT)	47110	56510	78550
10 PERCENT EXCEEDS	210	236	308
50 PERCENT EXCEEDS	11	8.3	18
90 PERCENT EXCEEDS	5.0	3.7	4.5

13277000 POWDER RIVER AT BAKER CITY, OR

LOCATION.--Lat 44°46'06", long 117°49'50", in SE 1/4 NE 1/4 sec.20, T.9 S., R.40 E., Baker County, Hydrologic Unit 17050203, on right bank 600 ft upstream from Myrtle Street Bridge in Baker City, 0.5 mi downstream from Sutton Creek, and at mile 107.6.

DRAINAGE AREA.--351 mi².

PERIOD OF RECORD.--May to September 1913, April to July 1914, November 1971 to current year. Monthly discharge only May 1913, April 1914 published in WSP 1317. November 1971 to September 1978 in reports of Oregon Water Resources Department. Prior to October 1990, published as "at Baker".

REVISED RECORDS.--WSP 1317: 1913.

GAGE.--Water-stage recorder. Datum of gage is 3,441.71 ft above sea level. Prior to Oct. 19, 1971, nonrecording gage at site 0.7 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft. Old Settlers Slough diverts from left bank 0.2 mi upstream for irrigation downstream from station. U.S. Bureau of Reclamation satellite telemeter at station. Continuous water-quality records for the period October 1960 to September 1961 have been collected at this location.

AVERAGE DISCHARGE.--21 years, 103 ft³/s, 74,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s Jan. 15, 1974, gage height, 5.55 ft; maximum gage height, 5.57 ft Jan. 5, 1984 (ice jam); minimum discharge, 0.7 ft³/s Oct. 28, 29, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 514 ft³/s Mar. 20, gage height, 4.01 ft; minimum daily discharge, 6.1 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	9.6	e11	e12	e10	e11	101	90	301	123	174	58
2	6.6	9.7	e12	e9.2	e10	e11	105	91	294	115	196	63
3	8.0	8.6	e10	e9.6	e14	e12	100	99	278	77	223	71
4	7.7	8.5	e9.8	e9.6	e15	e11	141	114	201	73	249	96
5	7.1	9.1	e9.0	e10	e15	e12	126	100	158	61	270	110
6	11	8.3	e9.6	e9.0	e15	e14	107	106	141	53	300	110
7	13	9.9	e10	e9.5	e16	e15	95	113	130	46	311	108
8	14	11	e13	e10	e16	19	89	107	104	80	307	104
9	14	10	e14	e8.7	e17	21	90	95	118	119	303	106
10	14	9.2	e15	e9.4	e17	23	95	82	169	133	292	102
11	14	8.3	e14	e8.5	e17	23	92	86	242	139	243	92
12	14	10	e14	e9.0	e15	23	84	101	318	130	184	83
13	13	9.4	e13	e9.0	e15	23	79	87	313	125	154	80
14	14	8.8	e13	e11	e15	20	77	69	299	126	160	66
15	15	8.6	e13	e8.0	e12	31	78	85	270	124	179	58
16	14	6.6	e11	e8.2	e11	51	87	92	257	120	185	66
17	15	6.8	e11	e8.3	e11	73	86	87	218	121	172	85
18	15	8.6	e10	e8.2	e13	185	101	93	167	120	120	87
19	13	9.5	e11	e9.4	e15	245	100	119	162	129	90	93
20	11	8.2	e12	e12	e15	357	88	155	157	156	84	101
21	10	7.8	e12	e12	e13	209	85	196	162	169	92	97
22	11	8.5	e14	e12	e13	166	87	210	166	163	88	91
23	12	8.9	e14	e9.0	e13	181	90	206	162	153	88	95
24	12	7.6	e12	e10	e12	206	89	202	138	127	98	91
25	12	8.6	e11	e9.4	e12	155	85	213	82	113	78	92
26	13	e10	e10	e9.4	e11	125	90	231	53	101	37	87
27	13	e10	e12	e9.3	e12	116	88	249	95	96	40	82
28	13	e11	e13	e9.8	e12	111	83	286	121	95	68	54
29	13	e10	e13	e9.8	---	101	80	303	118	109	70	35
30	15	e11	e12	e8.6	---	88	89	302	118	135	63	28
31	11	---	e12	e9.8	---	80	---	302	---	172	54	---
TOTAL	374.5	272.1	370.4	297.7	382	2718	2787	4671	5512	3603	4972	2491
MEAN	12.1	9.07	11.9	9.60	13.6	87.7	92.9	151	184	116	160	83.0
MAX	15	11	15	12	17	357	141	303	318	172	311	110
MIN	6.1	6.6	9.0	8.0	10	11	77	69	53	46	37	28
AC-FT	743	540	735	590	758	5390	5530	9260	10930	7150	9860	4940

CAL YR 1992 TOTAL 18565.8 MEAN 50.7 MAX 321 MIN 5.0 AC-FT 36830
WTR YR 1993 TOTAL 28450.7 MEAN 77.9 MAX 357 MIN 6.1 AC-FT 56430

e Estimated

POWDER RIVER BASIN

13285000 THIEF VALLEY RESERVOIR NEAR NORTH POWDER, OR

LOCATION.--Lat 45°00'45", long 117°46'50", in NE 1/4 SW 1/4 sec.26, T.6 S., R.40 E., Baker County, Hydrologic Unit 17050203, Bureau of Reclamation land, on top of right end of dam on Powder River, 7.0 mi east of North Powder, and at mile 70.0.

DRAINAGE AREA.--910 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is sea level (Bureau of Reclamation bench mark).

REMARKS.--Reservoir is formed by concrete dam. Storage began in February 1932. Capacity, 17,400 acre-ft between elevations 3,094.00 ft, minimum pool, and 3,133.00 ft, spillway crest. No dead storage. Water used for irrigation of lands of Lower Powder River Irrigation District. U.S. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--Capacity table furnished by Oregon Water Resources Department. Table uncertain below about 3,096 ft, due to siltation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 18,900 acre-ft July 2, 1982, elevation, 3,134.99 ft; no contents observed Sept. 17, 1987; probably no contents most days during September 1987, Sept. 7-18, 1988, August to September 1992, several days in October 1992.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,550 acre-ft Mar. 20, elevation, 3,134.53 ft; minimum contents recorded, 310 acre-ft Oct. 16, elevation, 3,096.55 ft, but probably no usable contents several days in October.

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

3,096	230	3,120	8,950
3,100	966	3,125	11,880
3,105	2,360	3,130	15,210
3,110	4,170	3,135	18,910
3,115	6,370		

ELEVATION (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	3102.36	---	3118.72	3121.38	3127.90	3133.74	3133.70	3133.76	3133.10	3129.50	3123.69
2	---	3103.00	---	3118.88	3121.38	---	3133.73	3133.70	3133.78	3132.98	3129.32	3123.39
3	---	3103.59	---	3119.08	3121.51	---	3133.69	3133.75	3133.84	3132.97	3129.07	3123.06
4	---	3104.11	---	3119.23	3121.69	---	3133.78	3133.75	3133.89	3132.91	3128.78	3122.72
5	---	3104.59	---	3119.37	3121.88	---	3133.77	3133.75	3133.94	3132.82	3128.48	3122.38
6	---	3105.08	---	3119.44	3122.06	3129.02	3133.73	3133.81	3133.97	3132.71	3128.12	3122.03
7	---	3105.54	---	3119.75	3122.26	3129.33	3133.69	3133.86	3133.98	3132.61	3127.80	3121.71
8	---	3106.03	---	3119.94	3122.47	3129.62	3133.65	3133.85	3133.94	3132.54	3127.51	3121.40
9	---	3106.43	---	3120.12	3122.70	3129.95	3133.63	3133.80	3133.90	3132.42	3127.22	3121.04
10	---	3106.84	3114.41	3120.32	3122.96	3130.31	3133.67	3133.80	3133.83	3132.24	3126.90	3120.67
11	---	3107.19	3114.55	3120.50	3123.25	3130.79	3133.64	3133.91	3133.83	3132.03	3126.62	3120.27
12	---	3107.56	3114.76	3120.67	3123.54	3131.27	3133.59	3134.12	3133.89	3131.87	3126.44	3119.87
13	---	3107.90	3115.05	3120.90	3123.86	3131.77	3133.57	3134.20	3133.92	3131.75	3126.24	3119.55
14	---	3108.23	3115.28	3121.09	3124.18	3132.34	3133.57	3134.31	3133.92	3131.56	3126.02	3119.21
15	---	3108.53	3115.50	3121.24	3124.44	3132.97	3133.54	3134.22	3133.90	3131.37	3125.79	3118.85
16	3096.84	3108.80	3115.71	3121.33	3124.66	3133.52	3133.56	3134.16	3133.88	3131.20	3125.61	3118.51
17	3097.18	3109.05	3115.86	3121.32	3124.90	3133.78	3133.55	3134.14	3133.84	3131.06	3125.74	3118.15
18	3097.21	3109.43	3116.03	3121.35	3125.21	3134.01	3133.53	3134.08	3133.84	3130.90	3125.94	3117.79
19	3097.45	3109.68	3116.28	3121.37	3125.45	3134.27	3133.56	3134.10	3133.80	3130.69	3126.07	3117.43
20	3097.54	3109.95	3116.43	3121.37	3125.73	3134.53	3133.54	3134.10	3133.88	3130.47	3126.01	3117.11
21	3097.61	3110.22	3116.57	3121.35	3126.05	3134.44	3133.54	3133.98	3133.85	3130.28	3125.92	3116.83
22	3097.71	3110.46	3116.77	3121.31	3126.36	3134.27	3133.51	3133.87	3133.82	3130.17	3125.88	3116.58
23	3098.62	3110.79	3116.98	3121.25	3126.63	3134.22	3133.53	3133.78	3133.73	3130.03	3125.76	3116.34
24	3099.59	3110.97	3117.17	3121.27	3126.90	3134.18	3133.55	3133.71	3133.67	3130.01	3125.61	3116.11
25	3100.24	3111.11	3117.37	3121.28	3127.12	3134.01	3133.57	3133.69	3133.61	3130.08	3125.48	3115.88
26	3100.53	3111.35	3117.57	3121.28	3127.32	3133.90	3133.58	3133.75	3133.49	3130.12	3125.34	3115.72
27	3096.54	3111.59	3117.80	3121.31	3127.53	3133.84	3133.61	3133.67	3133.39	3130.14	3125.11	3115.56
28	3098.43	3111.87	3117.98	3121.31	3127.76	3133.80	3133.64	3133.65	3133.35	3130.07	3124.79	3115.39
29	3099.86	3112.05	3118.19	3121.33	---	3133.73	3133.66	3133.68	3133.34	3129.93	3124.52	3115.23
30	3100.93	---	3118.37	3121.35	---	3133.69	3133.67	3133.64	3133.21	3129.82	3124.26	3115.04
31	3101.70	---	3118.57	3121.36	---	3133.66	---	3133.65	---	3129.67	3124.00	---
MAX	---	---	---	3121.37	3127.76	---	3133.78	3134.31	3133.98	3133.10	3129.50	3123.69
MIN	---	---	---	3118.72	3121.38	---	3133.51	3133.64	3133.21	3129.67	3124.00	3115.04
(†)	1390	a5580	8170	9710	13660	17900	17900	17890	17560	14980	11260	6390
(‡)	+1390	+4190	+2590	+1540	+3950	+4240	0	-10	-330	-2580	-3720	-4870

CAL YR 1992 AC-FT# -6770
WTR YR 1993 AC-FT# +6390

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

LOCATION.--Lat 45°00'20", long 117°46'50", in NE 1/4 NW 1/4 sec.35, T.6 S., R.40 E., Baker County, Hydrologic Unit 17050203, on right bank 0.6 mi downstream from Thief Valley Reservoir, 7.0 mi east of North Powder, and at mile 69.4.

PERIOD OF RECORD.--March 1909 to June 1912, July to September 1932, August 1978 to current year. Prior to July 1932, published as Powder River near North Powder.

GAGE.--Water-stage recorder. Datum of gage is 3,080.166 ft above sea level (Bureau of Reclamation bench mark). Prior to Aug. 18, 1978, nonrecording gage at site 0.5 mi upstream at different datum.

AVERAGE DISCHARGE.--15 years (water years 1979-93), 201 ft³/s, 145,600 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,510 ft³/s Mar. 20, 21, gage height, 8.93 ft; no flow Nov. 26 to Jan. 15.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	.28	.00	.00	45	4.1	358	313	390	116	62	108
2	12	.32	.00	.00	45	3.9	392	324	471	106	77	107
3	14	.32	.00	.00	27	4.0	377	352	496	100	105	107
4	15	.33	.00	.00	6.0	4.0	426	414	558	101	104	105
5	14	.35	.00	.00	5.8	3.9	463	391	632	99	108	105
6	14	.36	.00	.00	5.8	4.0	415	416	679	98	119	103
7	14	.34	.00	.00	5.8	4.1	369	487	718	78	119	106
8	9.4	.37	.00	.00	5.9	4.1	331	494	674	63	118	110
9	11	.37	.00	.00	5.8	4.1	312	444	597	63	118	110
10	6.9	.34	.00	.00	4.5	4.2	325	397	534	80	117	109
11	4.8	.31	.00	.00	4.3	4.3	338	428	534	92	115	109
12	7.2	.29	.00	.00	4.0	4.3	304	593	551	92	114	106
13	8.9	.32	.00	.00	3.9	4.4	264	843	589	92	114	105
14	11	.32	.00	.00	4.0	4.5	249	1020	600	92	114	104
15	11	.32	.00	.00	4.7	4.6	238	1040	614	91	113	103
16	14	.32	.00	33	6.6	120	232	915	615	90	112	102
17	16	.32	.00	47	4.1	362	234	868	566	93	112	101
18	16	.32	.00	46	4.2	576	241	813	513	106	112	99
19	16	.32	.00	46	4.4	890	232	784	466	113	114	98
20	16	.32	.00	46	4.1	1330	227	817	495	111	114	98
21	17	.29	.00	46	4.1	1420	214	792	560	110	104	97
22	17	.23	.00	45	4.0	1230	212	636	562	110	79	97
23	9.2	.25	.00	45	4.1	1070	203	506	496	110	80	96
24	2.3	.29	.00	45	4.2	1060	219	410	395	94	81	95
25	3.9	.32	.00	45	4.1	873	224	355	295	63	81	94
26	13	.00	.00	45	4.2	682	237	393	229	63	95	93
27	82	.00	.00	45	4.1	568	254	381	169	63	111	92
28	13	.00	.00	45	4.1	500	278	339	136	62	110	92
29	.48	.00	.00	45	---	442	290	344	114	62	110	92
30	.39	.00	.00	45	---	382	321	312	139	62	110	91
31	.30	---	.00	45	---	339	---	301	---	62	109	---
TOTAL	399.77	7.92	0.00	714.00	233.8	11896.5	8779	16922	14387	2737	3251	3034
MEAN	12.9	.26	.000	23.0	8.35	384	293	546	480	88.3	105	101
MAX	82	.37	.00	47	45	1420	463	1040	718	116	119	110
MIN	.30	.00	.00	.00	3.9	3.9	203	301	114	62	62	91
AC-FT	793	16	.00	1420	464	23600	17410	33560	28540	5430	6450	6020
CAL YR 1992	TOTAL	18648.13	MEAN	51.0	MAX	155	MIN	.00	AC-FT	36990		
YR 1993	TOTAL	62361.99	MEAN	171	MAX	1420	MIN	.00	AC-FT	123700		

POWDER RIVER BASIN

13286700 POWDER RIVER NEAR RICHLAND, OR

LOCATION.--Lat 44°46'40", long 117°17'30", in SE 1/4 sec.14, T.9 S., R.44 E., Baker County, Hydrologic Unit 17050203, on left bank 0.4 mi upstream from Upper Timber Canyon, 6.0 mi west of Richland, and at mile 20.3.

DRAINAGE AREA.--1,310 mi², approximately.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,277.42 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Phillips Lake since October 1967, usable capacity, 90,540 acre-ft, Wolf Creek Reservoir since April 1975, usable capacity, 10,400 acre-ft, Thief Valley Reservoir since February 1932, usable capacity, 17,400 acre-ft, and Pilcher Creek Reservoir since April 1984, usable capacity, 5,560 acre-ft. Diversions for irrigation upstream and downstream from station. Continuous water-quality records for the period June 1959 to September 1961 have been collected at this location.

AVERAGE DISCHARGE.--36 years, 254 ft³/s, 184,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft³/s Feb. 21, 1982, gage height, 7.50 ft, from floodmark; maximum gage height, 9.29 ft Jan. 15, 1974 (ice jam); minimum discharge, 0.80 ft³/s Aug. 11, 12, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,800 ft³/s Mar. 21, gage height, 6.06 ft; minimum discharge, 4.7 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	22	e16	e14	e61	e28	842	665	258	98	30	68
2	5.3	21	e15	e13	e63	e34	996	660	372	96	32	68
3	6.2	19	e14	e12	e66	e41	1010	698	485	82	35	68
4	6.7	19	e14	e13	e40	50	1150	897	519	81	31	64
5	7.3	20	e14	e13	e21	53	1120	866	649	80	27	66
6	10	20	e14	e13	e21	57	994	771	731	69	29	65
7	33	19	e15	e13	e21	70	876	840	762	63	24	62
8	34	20	e19	e13	e21	86	807	860	749	76	55	58
9	27	21	e20	e13	e21	141	754	791	722	69	44	54
10	19	21	e20	e12	e22	182	755	709	662	35	39	58
11	18	21	e19	e12	e23	195	767	687	613	29	37	59
12	18	21	e17	e13	e22	191	691	791	599	25	39	56
13	16	21	e15	e14	e21	162	611	974	601	32	40	54
14	15	20	e14	e15	e22	176	564	1160	619	33	38	58
15	15	19	e14	e16	e18	228	541	1260	626	25	45	62
16	15	19	e14	e15	e17	376	528	1170	637	26	52	47
17	15	18	e14	e40	e19	852	547	1030	620	36	31	71
18	15	18	e14	e62	e18	1470	630	927	554	37	57	77
19	16	19	e14	e70	e23	1780	601	835	512	25	67	69
20	16	19	e15	e78	e22	2280	559	802	479	19	98	70
21	16	20	e17	e76	e20	2590	533	815	528	14	165	66
22	15	21	e17	e69	e21	2240	522	727	604	25	131	66
23	16	19	e16	e61	e20	2200	523	582	591	75	80	59
24	15	e19	e15	e62	e17	2440	515	463	508	100	59	64
25	15	e18	e15	e64	e15	2160	524	321	409	65	54	63
26	15	e18	e15	e64	e15	1620	541	286	313	91	58	64
27	14	e18	e16	e65	e20	1340	553	327	229	49	54	68
28	14	e16	e17	e64	e23	1190	558	299	174	43	55	70
29	31	e15	e15	e64	---	1080	569	291	138	38	61	77
30	31	e15	e15	e64	---	935	637	285	99	34	72	73
31	26	---	e15	e62	---	821	---	248	---	31	74	---
TOTAL	521.0	576	484	1179	713	27068	20818	22037	15362	1601	1713	1924
MEAN	16.8	19.2	15.6	38.0	25.5	873	694	711	512	51.6	55.3	64.1
MAX	34	22	20	78	66	2590	1150	1260	762	100	165	77
MIN	5.3	15	14	12	15	28	515	248	99	14	24	47
AC-FT	1030	1140	960	2340	1410	53690	41290	43710	30470	3180	3400	3820

CAL YR 1992 TOTAL 23209.0 MEAN 63.4 MAX 371 MIN 1.2 AC-FT 46040
WTR YR 1993 TOTAL 93996.0 MEAN 258 MAX 2590 MIN 5.3 AC-FT 186400

e Estimated

13288200 EAGLE CREEK ABOVE SKULL CREEK, NEAR NEW BRIDGE, OR

LOCATION.--Lat 44°52'50", long 117°15'10", in SE 1/4 sec.7, T.8 S., R.45 E., Baker County, Hydrologic Unit 17050203, Wallowa-Whitman National Forest, on left bank 0.5 mi upstream from Skull Creek, 6.5 mi northwest of New Bridge, and at mile 10.5.

DRAINAGE AREA.--156 mi².

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation. Some diversions upstream from station for irrigation and one small interbasin diversion for irrigation supply. All diversions are small compared to flow at station during irrigation season. Continuous water-quality records for the period June 1959 to September 1961 have been collected at this location.

AVERAGE DISCHARGE.--36 years, 313 ft³/s, 226,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,310 ft³/s July 12, 1975, gage height, 5.06 ft, from rating curve extended above 2,500 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 6.88 ft Jan. 25, 1962 (ice jam); minimum daily discharge, 30 ft³/s Nov. 28, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 14	2200	*2,400	*3.98	June 21	2130	1,750	3.59

Minimum daily discharge, 40 ft³/s Jan. 6, during period of ice effect.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	102	e64	e60	e46	e62	377	538	1380	568	245	115
2	66	104	e66	e41	e45	e67	398	585	1260	576	237	111
3	76	87	e63	e43	e53	e71	488	774	1140	539	229	110
4	75	86	e58	e43	e60	e70	571	808	1020	519	224	107
5	71	85	e50	e44	e68	e74	499	686	1090	507	219	105
6	69	83	e58	e40	e68	76	428	726	1150	491	207	103
7	68	88	e68	e41	e71	77	392	725	1180	469	202	102
8	68	89	e73	e43	e71	77	387	658	1020	442	196	102
9	66	85	e75	e41	e72	79	387	615	938	435	188	100
10	66	78	e74	e43	76	83	384	674	999	436	179	98
11	66	79	e72	e41	77	83	346	1020	1070	421	172	92
12	66	86	e72	e44	76	84	317	1440	893	419	167	115
13	64	83	e68	e46	75	84	301	1810	807	386	163	122
14	65	84	e70	e60	75	85	296	1960	830	368	156	120
15	65	85	e71	e58	77	87	304	1870	948	350	196	118
16	65	85	e70	e61	e64	93	304	1720	964	332	211	116
17	64	85	e68	e60	e61	123	349	1590	916	323	212	116
18	64	86	e63	e61	e64	179	393	1630	1000	303	175	114
19	64	87	e62	e65	e70	217	373	1820	1120	307	159	113
20	63	86	e68	e72	e74	283	362	2020	1280	330	153	110
21	64	93	e72	e68	78	256	358	1820	1430	313	198	109
22	67	97	e80	e62	75	235	377	1460	1140	311	158	108
23	66	90	e82	e54	74	332	387	1270	778	417	148	106
24	64	76	e72	e56	72	507	374	1190	658	348	142	104
25	64	e70	e75	e62	71	420	384	1340	636	327	139	102
26	64	e72	e69	e56	e58	353	412	1570	716	314	135	101
27	64	e68	e82	e55	e62	352	416	1560	800	294	130	99
28	66	e73	e82	e58	e63	380	401	1560	729	288	126	97
29	83	e64	e79	e58	---	366	444	1330	634	298	123	96
30	97	e68	e77	e49	---	320	528	1210	589	284	120	94
31	89	---	77	e49	---	309	---	1250	---	264	117	---
TOTAL	2126	2504	2180	1634	1896	5882	11737	39229	29115	11979	5426	3205
MEAN	68.6	83.5	70.3	52.7	67.7	190	391	1265	970	386	175	107
MAX	97	104	82	72	78	507	571	2020	1430	576	245	122
MIN	63	64	50	40	45	62	296	538	589	264	117	92
AC-FT	4220	4970	4320	3240	3760	11670	23280	77810	57750	23760	10760	6360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1993, BY WATER YEAR (WY)

MEAN	106	123	113	108	122	186	416	920	1002	406	146	105
MAX	323	264	211	191	230	493	658	1747	2134	1011	253	172
(WY)	1960	1974	1959	1974	1963	1986	1990	1958	1974	1975	1983	1978
MIN	56.1	67.9	70.3	52.7	67.7	64.8	191	252	276	84.0	62.8	61.4
(WY)	1989	1988	1993	1993	1993	1977	1967	1977	1977	1977	1977	1988

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1958 - 1993

	1992	1993	1958-1993
ANNUAL TOTAL	73572	116913	
ANNUAL MEAN	201	320	
HIGHEST ANNUAL MEAN			313
LOWEST ANNUAL MEAN			519
HIGHEST DAILY MEAN	928	2020	118
LOWEST DAILY MEAN	50	40	118
ANNUAL SEVEN-DAY MINIMUM	60	42	3400
ANNUAL RUNOFF (AC-FT)	145900	231900	30
10 PERCENT EXCEEDS	498	978	30
50 PERCENT EXCEEDS	102	107	42
90 PERCENT EXCEEDS	66	62	42

e Estimated

PINE CREEK BASIN

13290190 PINE CREEK NEAR OXBOW, OR

LOCATION.--Lat 44°57'13", long 116°52'21", in NE 1/4 SW 1/4 sec.17, T.7 S., R.48 E., Baker County, Hydrologic Unit 17050201, 1.8 mi south of Oxbow, and at mile 1.9.

DRAINAGE AREA.--230 mi², approximately.

PERIOD OF RECORD.--November 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,850.48 ft above sea level (levels by Idaho Power Co.). Prior to Aug. 24, 1967, nonrecording gage at site 1.7 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation of about 19,000 acres (1966 determination).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	95	68	96	128	118	1080	800	984	272	70	48
2	25	97	74	88	122	128	1120	837	964	268	63	46
3	28	83	68	82	121	120	1310	1070	968	293	61	44
4	30	76	44	e82	119	115	1780	1460	869	283	60	43
5	28	77	e43	e88	108	116	1510	1190	966	276	59	41
6	28	72	e42	90	121	124	1170	1240	1130	252	58	40
7	28	74	e48	88	118	139	1010	1290	1080	229	57	39
8	28	82	e71	e88	116	155	952	1110	922	221	56	39
9	29	82	e80	e92	118	205	985	964	827	205	55	37
10	29	72	e82	97	124	268	963	958	858	185	53	36
11	29	71	e75	97	145	305	872	1160	990	168	50	36
12	29	71	e67	95	157	324	728	1510	836	154	47	36
13	29	69	65	94	167	298	621	1750	721	139	46	36
14	29	69	69	e98	176	329	584	1900	703	129	45	36
15	29	68	69	103	194	417	584	1820	747	122	44	36
16	29	66	66	101	175	741	586	1650	768	122	45	36
17	30	65	70	102	150	1130	636	1540	706	126	48	37
18	30	65	70	103	172	1620	850	1490	733	131	49	37
19	30	66	58	105	169	1860	791	1460	746	131	51	37
20	30	68	83	127	175	2370	728	1530	872	125	52	37
21	30	69	84	183	164	1970	691	1440	851	118	52	37
22	30	73	75	205	153	1490	736	1170	825	99	55	37
23	31	84	75	185	156	1710	737	979	594	153	56	37
24	31	61	74	182	153	3190	695	891	503	171	58	38
25	31	56	70	169	142	2220	710	915	461	152	56	38
26	31	56	83	156	114	1760	762	1140	438	157	56	38
27	32	72	82	139	111	1650	727	1100	427	144	56	38
28	33	78	81	143	122	1520	675	1120	399	133	54	39
29	45	77	85	144	---	1340	690	1100	349	124	53	40
30	90	70	86	133	---	1080	791	917	312	114	52	41
31	80	---	88	133	---	960	---	899	---	86	50	---
TOTAL	1037	2184	2195	3688	3990	29772	26074	38400	22549	5282	1667	1160
MEAN	33.5	72.8	70.8	119	142	960	869	1239	752	170	53.8	38.7
MAX	90	97	88	205	194	3190	1780	1900	1130	293	70	48
MIN	25	56	42	82	108	115	584	800	312	86	44	36
AC-FT	2060	4330	4350	7320	7910	59050	51720	76170	44730	10480	3310	2300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1993, BY WATER YEAR (WY)

	MEAN	68.0	130	207	254	372	621	651	867	761	193	48.5	53.1
MAX	135	491	619	962	1042	1140	1031	1604	1929	541	95.3	119	
(WY)	1983	1974	1974	1974	1986	1983	1989	1971	1974	1983	1983	1978	
MIN	23.9	45.1	58.3	51.9	65.9	69.0	64.9	94.0	67.3	20.6	14.2	20.0	
(WY)	1989	1988	1979	1979	1977	1977	1977	1977	1977	1977	1977	1988	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1967 - 1993

ANNUAL TOTAL	61059												
ANNUAL MEAN	167												
HIGHEST ANNUAL MEAN										351			
LOWEST ANNUAL MEAN										674			1974
HIGHEST DAILY MEAN										55.3			1977
LOWEST DAILY MEAN										5430			Jan 16 1974
ANNUAL SEVEN-DAY MINIMUM										10			Aug 17 1977
INSTANTANEOUS PEAK FLOW										11			Aug 16 1977
INSTANTANEOUS PEAK STAGE										7110			Feb 21 1968
INSTANTANEOUS LOW FLOW										9.82			Feb 21 1968
ANNUAL RUNOFF (AC-FT)	121100									a 10			Aug 17 1977
10 PERCENT EXCEEDS	428									254000			
50 PERCENT EXCEEDS	80									949			
90 PERCENT EXCEEDS	25									153			
										36			

a Occurred Aug. 17-24, 1977; gage height, 2.12 ft.

e Estimated

13290450 SNAKE RIVER AT HELLS CANYON DAM, IDAHO-OREGON STATE LINE

LOCATION.--Lat 45°15'05", long 116°52'21", in SE 1/4 SE 1/4 sec.33, T.3 S., R.49 E., unsurveyed (Willamette meridian), Wallowa County, Wallowa-Whitman National Forest, Hydrologic Unit 17050201, on left bank, 0.2 mi upstream from Hells Canyon Creek, 0.4 mi downstream from Deep Creek, 0.6 mi downstream from Hells Canyon Dam, 15.5 mi northeast of Homestead, Oregon, and at mile 247.0.

DRAINAGE AREA.--73,300 mi², approximately.

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

REVISED RECORDS.--WDR ID-78-2: 1969-70, 1972-76, WDR ID-79-2: 1972(m).

GAGE.--Water-stage recorder. Datum of gage is 1,400 ft above sea level (levels by Idaho Power Company.)

REMARKS.--No estimated daily discharges. Records good. Station equipment includes satellite telemetry. Flow regulated by many reservoirs upstream from station, with a total usable capacity of more than 10,000,000 acre-feet, the most effective of which is Brownlee Reservoir, 38 mi upstream. Diurnal fluctuations caused by Hells Canyon powerplant. Diversions upstream from station for irrigation of about 3,820,000 acres, of which 742,000 acres are irrigated by withdrawals from ground water (1966 determination).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11300	9240	9430	9150	18700	16200	30500	26900	25700	11400	14900	14000
2	11600	9190	9420	10000	16000	16900	32700	23800	23900	11200	13600	14200
3	10600	9190	9490	13400	15500	14800	32800	27000	27400	8730	12600	13800
4	10600	9240	9340	12900	13300	11400	32400	28200	30500	8810	11900	14500
5	10400	9190	9270	11400	14900	11200	48800	30300	31900	12100	11900	12400
6	10300	9190	9270	11100	12000	11000	46300	31200	33300	15300	12700	14200
7	10100	9200	9280	11100	9360	10800	34700	32200	33400	10800	15400	15500
8	9980	9200	9230	10700	15000	12800	30900	33700	33300	11800	15600	15200
9	10000	9230	9240	9520	12400	10400	31000	32400	34100	10800	21000	16300
10	9990	9170	9260	11900	9550	10700	33100	31100	41200	9090	20600	15600
11	10100	9170	9270	12400	12000	10500	31500	31100	43500	8960	20000	13400
12	10200	9220	9290	13700	11400	14000	32800	31300	45100	13700	10800	9320
13	10200	9200	9250	14800	11000	17500	32300	35500	45000	13700	14900	5950
14	10200	9170	9220	11500	9470	14100	28100	35800	45100	13400	9770	5950
15	10400	9200	9160	11000	14200	12400	25400	36500	40800	13200	9150	5980
16	10300	9170	9160	9790	18500	10400	27700	36500	36800	13600	16500	6010
17	10200	9170	9210	12600	18600	12100	27100	36500	36900	15200	17100	6030
18	10300	9200	9170	15300	19000	16800	28200	37700	35900	12500	17100	11900
19	10300	9200	9170	11600	13300	27700	27100	39300	34600	19400	19500	9750
20	10500	9180	9200	14700	15600	37600	26400	38000	25500	19500	21500	13000
21	10500	9150	9270	14000	10100	38600	28700	38000	24000	20400	12100	12700
22	10300	9180	9250	15300	15400	37500	23400	36800	20500	20000	11800	13900
23	9900	9190	9250	14900	16400	37700	25000	33500	25000	20600	12600	18700
24	9190	9200	9230	14600	16700	48600	26400	34100	24100	18300	12500	12700
25	9320	9180	9190	13800	18100	54800	26000	30000	24800	17200	14200	14100
26	9300	9190	9240	14500	20000	53600	27400	27700	22400	22200	11000	17300
27	9340	9190	9220	15000	15100	51500	27100	30000	21000	22600	11700	17300
28	9370	9150	9210	14000	14300	47700	28400	29900	16700	23600	10400	21100
29	9300	9170	10600	15000	---	38800	28500	30400	10500	20500	7420	22400
30	9290	9260	9420	15200	---	36800	29100	30900	11500	10500	13500	19800
31	9250	---	11900	17100	---	35600	---	27600	---	20000	12600	---
TOTAL	312630	275780	291110	401960	405880	780500	907800	1003900	904400	469090	436340	402990
MEAN	10080	9193	9391	12970	14500	25180	30260	32380	30150	15130	14080	13430
MAX	11600	9260	11900	17100	20000	54800	48800	39300	45100	23600	21500	22400
MIN	9190	9150	9160	9150	9360	10400	23400	23800	10500	8730	7420	5950
AC-FT	620100	547000	577400	797300	805100	1548000	1801000	1991000	1794000	930400	865500	799300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1993, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	15690	16990	18920	22180	23930	28130	29830	26760	23510	13370	11040	13840																
MAX	24140	28630	30410	38230	44670	66340	61960	68840	59080	25550	17090	19120																
(WY)	1972	1985	1984	1984	1971	1986	1984	1984	1984	1983	1983	1984																
MIN	9962	9193	9391	12850	11570	10600	7371	6401	5868	6901	6583	6887																
(WY)	1989	1993	1993	1991	1988	1991	1988	1977	1992	1977	1992	1977																

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1966 - 1993
ANNUAL TOTAL	3477070	6592380	
ANNUAL MEAN	9500	18060	20310
HIGHEST ANNUAL MEAN			36560
LOWEST ANNUAL MEAN			9746
HIGHEST DAILY MEAN	20400	May 2	78100
LOWEST DAILY MEAN	5280	Jun 21	4360
ANNUAL SEVEN-DAY MINIMUM	5330	Jun 4	5330
INSTANTANEOUS PEAK FLOW			87800
INSTANTANEOUS PEAK STAGE			84.05
INSTANTANEOUS LOW FLOW			b 1580
ANNUAL RUNOFF (AC-FT)	6897000	13080000	14720000
10 PERCENT EXCEEDS	14200	34100	38200
50 PERCENT EXCEEDS	9190	13800	16500
90 PERCENT EXCEEDS	6480	9200	8990

a Gage height, 62.76 ft.

b Gage height, 59.9 ft.

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LOCATION.--Lat 45°09'20", long 117°46'26", in NW 1/4 SE 1/4 sec.2, T.5 S., R.40 E., Union County, Hydrologic Unit 17060104, on right bank 3.0 mi downstream from Little Catherine Creek, 5.5 mi southeast of Union, and at mile 25.4.

PERIOD OF RECORD.--May 1906 to May 1907 (gage heights only), August 1911 to December 1912, March to September 1915, February 1918 to September 1919, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 3,081.76 ft above sea level (Oregon State Highway Department bench mark). Prior to Nov. 28, 1938, nonrecording gage at several sites within 1.8 mi of present site at various datums. Nov. 28, 1938, to May 16, 1939, water-stage recorder at site 400 ft downstream at datum 4.29 ft lower.

AVERAGE DISCHARGE.--70 years (water years 1912, 1919, 1926-93), 118 ft³/s, 85,490 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Minimum daily discharge, 8.5 ft³/s Dec. 6, result of freezeup.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	46	e26	e21	e26	e31	237	459	455	141	57	36
2	22	47	e27	e17	e27	e34	268	483	416	148	55	36
3	28	33	e19	e18	e30	e34	292	605	479	146	54	35
4	26	32	e13	e21	e33	e35	356	714	404	135	52	34
5	24	31	e9.5	e22	e32	e35	319	632	384	126	51	34
6	23	29	e8.5	e18	e33	51	277	629	388	118	49	34
7	22	34	e10	e15	e34	45	253	621	413	114	49	33
8	21	36	e12	e11	e35	53	250	547	363	109	48	32
9	21	33	e23	e12	e36	54	259	474	333	104	46	32
10	21	29	e27	e13	e37	59	260	492	335	99	45	32
11	20	29	e26	e11	39	59	236	717	334	95	44	31
12	20	30	e25	e9.0	39	60	216	945	302	92	44	32
13	20	29	e24	e11	39	58	205	1080	277	90	43	33
14	21	30	e25	e13	39	58	201	1100	272	89	44	31
15	20	31	e23	e15	e34	63	201	1020	282	89	55	31
16	20	31	e21	e17	e22	66	196	922	276	88	74	30
17	21	30	e21	e13	e20	83	212	818	267	84	73	e30
18	20	31	e20	e11	e33	147	250	796	271	79	54	e29
19	20	30	e19	e13	e40	209	248	842	282	76	49	e29
20	20	30	e22	e17	e38	232	246	846	295	76	46	e28
21	21	29	e26	e30	e36	217	246	742	311	72	49	e28
22	23	32	e28	e30	e33	208	260	595	275	73	45	e27
23	21	e25	e30	e23	e30	262	265	509	227	101	43	e27
24	21	e16	e26	e23	e26	307	267	466	197	78	42	e27
25	21	e12	e21	e34	e24	269	274	486	184	79	42	e27
26	21	e17	e24	e31	e21	235	321	538	189	76	41	e26
27	20	e22	e26	e30	e24	219	310	506	192	70	40	e25
28	21	e29	e25	e29	e32	234	298	480	179	66	39	e25
29	26	e28	e25	e30	---	238	343	426	163	64	39	e25
30	34	e25	e24	e28	---	212	439	392	151	63	38	e25
31	33	---	e23	e25	---	195	---	399	---	60	37	---
TOTAL	693	886	679.0	611.0	892	4062	8006	20281	8896	2900	1487	904
MEAN	22.4	29.5	21.9	19.7	31.9	131	267	654	297	93.5	48.0	30.1
MAX	34	47	30	34	40	307	439	1100	479	148	74	36
MIN	20	12	8.5	9.0	20	31	196	392	151	60	37	25
AC-FT	1370	1760	1350	1210	1770	8060	15880	40230	17650	5750	2950	1790

MEAN	32.5	39.1	43.1	44.3	55.3	97.0	240	413	300	90.6	36.1	29.4
MAX	138	157	125	101	136	268	445	776	686	248	63.0	57.8
(WY)	1960	1928	1942	1971	1986	1986	1952	1912	1974	1984	1912	1959
MIN	17.6	14.2	13.0	12.0	22.0	27.6	83.4	121	65.6	25.7	11.1	15.6
(WY)	1937	1931	1931	1930	1933	1977	1955	1977	1934	1926	1930	1930

ANNUAL TOTAL	25349.0			50297.0					
ANNUAL MEAN	69.3			138				118	
HIGHEST ANNUAL MEAN								185	1912
LOWEST ANNUAL MEAN								48.7	1977
HIGHEST DAILY MEAN	250	May 8		1100	May 14		1500		May 27 1948
LOWEST DAILY MEAN	8.5	Dec 6		8.5	Dec 6		8.0		Nov 7 1925
ANNUAL SEVEN-DAY MINIMUM	14	Dec 3		11					Aug 26 1930
ANNUAL RUNOFF (AC-FT)	50280			99760			85620		
10 PERCENT EXCEEDS	171			395			330		
50 PERCENT EXCEEDS	36			39			47		
90 PERCENT EXCEEDS	21			20			24		

e Estimated

GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR

LOCATION.--Lat 45°43'55", long 117°51'50", in NW 1/4 NW 1/4 sec.19, T.3 N., R.40 E., Union County, Hydrologic Unit 17060104, on left bank at Oregon State Fish and Wildlife Service fish hatchery, 310 ft upstream from Jarboe Creek, 2.3 mi northwest of Looking Glass, and at mile 2.3.

DRAINAGE AREA.--78.3 mi².

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,530 ft, from topographic map.

REMARKS.--Records fair. Records include a diversion by the fish hatchery 0.3 mi upstream from station of up to 50 ft³/s that is returned through the fish ladder to the gage pool.

AVERAGE DISCHARGE.--11 years, 128 ft³/s 92,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,240 ft³/s May 12, 1993, gage height, 6.55 ft; minimum discharge, 25 ft³/s Oct. 11, 1983, result of regulation at fish hatchery upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 3	0030	463	5.04	May 2	2330	811	6.04
Apr. 10	1530	404	5.36	May 12	1900	*1,240	*6.55
Apr. 26	0200	511	5.57				

Minimum daily discharge, 41 ft³/s Aug. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	65	50	57	54	53	221	684	220	86	58	52
2	49	68	51	55	53	52	242	707	211	85	59	51
3	50	55	49	56	53	51	326	711	234	87	57	52
4	49	56	51	56	54	51	400	715	207	83	57	51
5	48	61	e45	55	54	53	319	668	e200	83	50	50
6	47	57	e47	55	55	57	276	680	e210	80	49	51
7	47	65	56	54	55	58	279	628	e220	68	47	49
8	47	65	54	55	55	60	289	570	e200	61	45	50
9	48	61	52	54	56	62	319	546	e180	57	45	50
10	48	56	55	54	57	66	349	599	e170	50	43	51
11	48	54	54	54	58	67	308	772	e180	47	41	50
12	48	55	53	52	58	68	273	922	e160	46	46	47
13	51	55	50	53	58	68	255	1010	e140	47	55	49
14	48	56	53	55	58	69	239	973	e135	52	51	47
15	47	55	54	55	57	95	236	912	e130	54	55	47
16	48	53	54	55	54	109	236	813	125	73	67	47
17	49	53	56	55	e52	102	256	717	123	76	65	48
18	49	54	55	55	56	164	277	661	122	72	56	47
19	49	54	53	56	57	179	279	652	121	70	56	47
20	48	53	57	59	57	197	265	590	116	70	55	45
21	48	52	57	59	56	188	278	538	121	69	53	48
22	48	54	57	59	53	175	304	484	119	70	53	48
23	48	55	58	56	52	259	320	423	104	90	51	47
24	47	51	57	57	52	311	335	352	93	74	49	50
25	48	51	55	57	53	248	371	333	89	69	50	48
26	47	50	58	56	52	216	444	314	93	68	51	49
27	48	51	57	55	52	215	412	292	91	67	52	47
28	49	51	57	55	53	221	385	268	93	66	51	49
29	52	50	58	55	---	217	527	251	89	61	52	50
30	54	51	56	54	---	201	738	238	88	60	52	49
31	57	---	57	55	---	199	---	220	---	58	52	---
TOTAL	1515	1667	1676	1718	1534	4131	9758	18243	4384	2099	1623	1466
MEAN	48.9	55.6	54.1	55.4	54.8	133	325	588	146	67.7	52.4	48.9
MAX	57	68	58	59	58	311	738	1010	234	90	67	52
MIN	47	50	45	52	52	51	221	220	88	46	41	45
AC-FT	3010	3310	3320	3410	3040	8190	19350	36180	8700	4160	3220	2910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	54.0	65.6	67.1	74.3	105	178	305	342	166	69.5	54.7	53.3
MAX	66.7	79.5	86.0	129	174	314	441	588	425	117	65.3	61.9
(WY)	1986	1985	1983	1983	1983	1986	1989	1993	1984	1984	1985	1984
MIN	46.1	46.8	53.2	52.9	54.8	83.3	220	114	57.4	52.7	47.0	45.7
(WY)	1988	1988	1988	1987	1993	1985	1991	1992	1992	1992	1987	1990

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1982 - 1993

ANNUAL TOTAL	35547	49814	128	1984
ANNUAL MEAN	97.1	136	175	1988
HIGHEST ANNUAL MEAN			97.9	1988
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	404	Apr 18	1010	May 13 1993
LOWEST DAILY MEAN	44	Sep 22	41	Oct 11 1983
ANNUAL SEVEN-DAY MINIMUM	48	Oct. 5	45	Oct 6 1990
ANNUAL RUNOFF (AC-FT)	70510	98810	92540	
10 PERCENT EXCEEDS	225	319	303	
50 PERCENT EXCEEDS	56	56	68	
90 PERCENT EXCEEDS	49	48	50	

e Estimated

LOCATION.--Lat 45°37'12", long 117°43'32", in SW 1/4 SW 1/4 sec.29, T.2 N., R.41 E., Wallowa County, Hydrologic Unit 17060105, on left bank 2.3 mi downstream from Squaw Creek, 0.3 mi west of Minam, and at mile 0.3.

WATER-DISCHARGE RECORDS

REMARKS.--Water-discharge records good except for estimated daily discharges, which are poor. No regulation. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s June 16, 1974, gage height, 6.89 ft; maximum gage height, 7.3 ft May 28, 1913, datum then in use; minimum discharge, 10 ft³/s Dec. 6, 1972, Jan. 10, 1973, result of freezeup.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 14	2400	*3,370	*4.63	June 3	0900	2,270	3.80
May 20	0200	3,310	4.59	June 7	0730	2,200	3.75
May 26	0230	2,360	3.87	June 22	0030	2,320	3.84

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	114	107	e100	e105	135	381	784	1990	772	314	136
2	70	151	102	e74	e105	142	414	801	1880	798	298	131
3	84	120	104	e62	e120	122	470	978	2070	810	286	128
4	97	101	e40	e68	e150	120	675	1240	1810	732	277	125
5	85	98	e32	e62	e140	124	614	1120	1660	682	268	122
6	76	92	e28	e58	e155	142	522	1180	1850	662	258	122
7	73	96	e58	e45	e165	e150	464	1190	2060	645	246	117
8	71	118	e32	e105	e160	e160	447	1080	1760	609	237	115
9	69	110	107	e40	e170	e180	498	965	1560	589	229	112
10	69	101	108	e52	e180	e180	517	951	1510	594	218	110
11	67	87	101	e50	e175	180	506	1360	1560	565	211	107
12	66	100	97	e33	e170	167	460	2060	1330	550	204	108
13	66	100	85	e23	e160	159	422	2610	1170	510	201	112
14	76	101	96	e30	e150	155	392	2970	1150	486	193	109
15	69	103	96	e78	e120	240	375	2890	1230	440	241	105
16	66	104	92	e80	e70	315	355	2710	1240	432	268	103
17	65	101	95	e76	e52	287	352	2540	1180	397	314	101
18	65	101	e76	e37	e130	581	385	2540	1290	376	246	101
19	65	99	e62	e38	e160	759	364	2760	1450	366	219	100
20	63	97	e88	e74	e150	749	352	3030	1710	385	205	97
21	63	91	e100	e135	e140	659	346	2720	1920	374	221	96
22	71	91	e105	e120	e130	550	364	2190	1790	361	206	96
23	67	99	115	e88	e115	758	362	1840	1240	527	194	94
24	63	66	110	e92	e105	949	357	1660	1000	458	183	93
25	62	35	e78	e110	e98	776	356	1730	905	410	176	92
26	60	e33	e80	e115	83	635	431	2160	946	421	171	90
27	60	e50	e100	e110	102	555	435	2080	1090	382	163	88
28	59	e62	e110	e110	162	528	434	2060	1040	369	155	86
29	65	102	e120	e115	---	489	495	1800	899	379	151	85
30	86	109	e110	e105	---	420	757	1630	822	372	146	83
31	97	---	e92	e96	---	369	---	1670	---	340	141	---
TOTAL	2188	2832	2799	2308	3722	11735	13302	57299	43112	15793	6840	3162
MEAN	70.6	94.4	90.3	74.5	133	379	443	1848	1437	509	221	105
MAX	97	151	120	135	180	949	757	3030	2070	810	314	136
MIN	59	33	28	23	52	120	346	784	822	340	141	83
AC-FT	4340	5620	5550	4580	7380	23280	26380	113700	85510	31330	13570	6270
CFSM	.29	.39	.38	.31	.55	1.58	1.85	7.70	5.99	2.12	.92	.44
IN.	.34	.49	.43	.36	.58	1.82	2.06	8.88	6.68	2.45	1.06	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1993, BY WATER YEAR (WY)

MEAN	96.1	147	178	200	239	313	523	1284	1592	621	157	99.1
MAX	173	493	604	412	567	697	888	2016	3125	1392	276	179
(WY)	1969	1974	1978	1969	1986	1986	1913	1971	1974	1975	1912	1978
MIN	38.1	57.7	62.4	59.6	56.9	66.7	235	484	493	125	72.6	45.9
(WY)	1988	1988	1979	1977	1977	1977	1967	1977	1992	1977	1966	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1912 - 1993
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ANNUAL TOTAL	97005		165092			
ANNUAL MEAN	265		452		450	
HIGHEST ANNUAL MEAN					713	1974
LOWEST ANNUAL MEAN					189	1977
HIGHEST DAILY MEAN	1510	May 8	3030	May 20	5160	Jun 15 1974
LOWEST DAILY MEAN	28	Dec 6	23	Jan 13	11	Dec 6 1972
ANNUAL SEVEN-DAY MINIMUM	58	Sep 17	37	Jan 8	15	Dec 6 1972
ANNUAL RUNOFF (AC-FT)	192400		327500		326200	
ANNUAL RUNOFF (CFSM)	1.10		1.88		1.88	
ANNUAL RUNOFF (INCHES)	15.04		25.59		25.49	
10 PERCENT EXCEEDS	711		1340		1280	
50 PERCENT EXCEEDS	142		155		196	
90 PERCENT EXCEEDS	65		66		72	

e Estimated

GRANDE RONDE RIVER BASIN

13331500 MINAM RIVER AT MINAM, OR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to September 1985.

REMARKS.--Some samples were analyzed by different methods and may have data with different levels of detection.

WATER-QUALITY DATA

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CACO3)	CALCIUM, DIS-SOLVED (MG/L AS CA)
NOV 1992 06...	1230	93	56	7.9	4.5	0.8	14.4	122	K3	K12	22	6.2
MAR 1993 20...	1315	775	52	7.8	7.0	15	11.1	100	<4	<10	20	5.1
MAY 03...	1400	945	51	7.7	7.0	6.0	12.2	112	K9	37	18	5.0
AUG 11...	1245	213	41	7.9	18.5	0.2	8.4	98	K5	K10	16	4.7
DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CACO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 1992 06...	1.5	2.5	19	0.2	1.1	24	29	0	0.9	1.1	<0.1	17
MAR 1993 20...	1.7	2.5	20	0.2	1.3	23	27	0	0.9	0.6	<0.1	26
MAY 03...	1.4	2.2	20	0.2	1.0	22	27	0	0.8	0.4	<0.1	22
AUG 11...	0.93	1.9	20	0.2	0.9	19	23	0	0.7	0.2	<0.1	14
DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
NOV 1992 06...	49	45	0.07	12.3	<0.01	0.01	<0.01	<0.01	<0.2	<0.05	<0.05	<0.01
MAR 1993 20...	--	52	0.11	167	0.02	--	--	<0.01	0.4	--	0.10	0.07
MAY 03...	45	46	0.06	115	<0.01	--	--	<0.01	0.3	--	<0.05	0.05
AUG 11...	35	35	0.05	20.1	0.02	--	--	<0.01	<0.2	--	<0.05	<0.01
DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BAR- IUM, DIS-SOLVED (UG/L AS BA)	COBALT, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM, DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	
NOV 1992 06...	<0.01	<0.01	<0.01	<10	3	<3	12	<4	<1	<10	<1	
MAR 1993 20...	0.05	0.04	--	--	8	<3	--	<4	4	<10	<1	
MAY 03...	<0.01	0.01	--	160	4	<3	150	<4	2	<10	1	
AUG 11...	<0.01	<0.01	--	<10	4	<3	13	<4	<1	<10	<1	
DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	
NOV 1992 06...	<1	<1	23	--	--	<6	<1	--	--	--	--	
MAR 1993 20...	<1	<1	23	--	--	7	29	61	--	--	--	
MAY 03...	<1	<1	20	0.25	<1	<6	19	48	0.44	0.47	0.92	
AUG 11...	<1	<1	20	0.20	<1	<6	2	1.2	0.41	0.38	0.12	
DATE	ALPHA, 2 SIGMA SED, SUSP, TOT DRY (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90Y90 (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	BETA-2 SIGMA SED, SUSP, TOT DRY (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)	
NOV 1992 06...	--	--	--	--	--	--	--	--	--	--	--	
MAR 1993 20...	--	--	--	--	--	--	--	--	--	--	--	
MAY 03...	0.57	1.4	0.62	1.3	0.53	0.91	0.53	0.88	0.51	0.03	<0.01	
AUG 11...	0.23	1.2	0.52	1.2	0.49	0.06	0.45	0.06	0.43	0.02	0.01	

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

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--Lat 45°56'47", long 117°26'54", in NE 1/4 NW 1/4 sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank 500 ft downstream from bridge at Troy, 600 ft downstream from Wenaha River, and at mile 45.2.

DRAINAGE AREA.--3,275 mi².

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft above sea level. Aug. 17, 1944, to Sept. 30, 1949, nonrecording gage at site 500 ft upstream at datum 10.85 ft lower. Oct. 1, 1949, to Sept. 5, 1963, water-stage recorder at site 500 ft upstream at datum 1.15 ft higher. U.S. Geological Survey satellite telemeter and National Weather Service telemeter at station.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow slightly regulated by Wallowa Lake (station 13326000) and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Big Sheep Creek and tributaries in Imnaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--49 years, 3,018 ft³/s, 2,187,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft³/s Dec. 23, 1964, gage height, 11.25 ft; minimum discharge, 335 ft³/s Dec. 6, 1972; result of freezeup, but may have been less during period of ice effect that day.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 20	2330	12,800	7.07	May 4	0900	12,800	7.08
Mar. 24	0730	15,100	7.55	May 14	0600	*16,700	*7.87
Apr. 4	0600	12,900	7.09				

Minimum discharge, 335 ft³/s Dec. 6, result of freezeup, but may have been less during period of ice effect that day.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	577	858	722	918	925	921	6810	9470	6180	2800	1360	811
2	562	966	710	898	890	919	7430	9780	6440	2700	1270	773
3	574	929	679	879	916	927	8870	10400	6650	2840	1200	732
4	642	850	656	867	931	938	12500	12600	6650	2650	1140	693
5	650	884	e470	853	954	969	11100	12400	e6100	2510	1070	682
6	630	857	e460	832	959	1070	9010	12500	e6200	2360	1010	664
7	620	864	e680	800	938	1300	8070	12500	e8000	2240	918	640
8	612	959	e860	e600	950	1740	7780	12100	e7400	2120	887	597
9	604	990	e900	e700	975	2160	8550	11100	e6600	2040	872	576
10	593	925	1010	e800	1030	2430	8480	10200	e5800	2000	838	561
11	593	868	1060	e680	1140	2630	8360	11300	e6200	1890	787	548
12	584	836	e1000	e600	1230	2530	7430	13200	e5800	1810	764	547
13	602	833	e950	e500	1280	2310	6800	14900	e5400	1760	759	543
14	608	818	888	e600	1300	2260	6480	16000	e4700	1760	762	554
15	617	821	888	e800	1320	3350	6180	15700	4650	1660	829	574
16	608	817	833	e860	1240	5350	5950	14600	4690	1630	1110	586
17	603	798	843	e800	1150	4910	6010	13700	4560	1600	1330	612
18	590	804	830	e700	1150	7400	6530	13000	4590	1580	1380	611
19	581	812	822	e600	1140	10800	6330	12900	4630	1530	1240	603
20	573	800	882	987	1150	11600	6010	13100	4910	1570	1160	617
21	575	807	842	1150	1180	11500	5820	12500	5430	1560	1200	623
22	588	833	853	1220	1120	10300	6050	10900	5760	1550	1170	621
23	604	816	888	1080	1070	11700	6330	9030	4800	1820	1110	613
24	589	774	927	1050	1060	14400	6210	7710	4180	2040	1040	611
25	573	693	899	976	974	13100	6270	7110	3720	1860	968	613
26	573	667	907	933	912	11500	7120	7740	3580	1900	967	614
27	574	669	872	930	889	9940	6940	7400	3920	1800	936	610
28	584	e660	878	934	928	9200	6600	7180	3860	1700	885	605
29	605	e670	891	938	---	8390	6760	6700	3420	1650	890	604
30	664	694	870	919	---	7280	9110	6040	3030	1610	878	596
31	745	---	872	942	---	6650	---	5800	---	1510	850	---
TOTAL	18697	24572	25842	26346	29701	180474	221890	339560	157850	60050	31580	18634
MEAN	603	819	834	850	1061	5822	7396	10950	5262	1937	1019	621
MAX	745	990	1060	1220	1320	14400	12500	16000	8000	2840	1380	811
MIN	562	660	460	500	889	919	5820	5800	3030	1510	759	543
AC-FT	37090	48740	51260	52260	58910	358000	440100	673500	313100	119100	62640	36960

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1945	883	2559	1960	528	1988
1946	1210	3023	1974	618	1988
1947	1924	6295	1978	685	1945
1948	2081	6280	1974	702	1979
1949	2956	7386	1982	769	1977
1950	4130	11520	1972	888	1977
1951	6243	10780	1956	2257	1968
1952	7333	13820	1948	2368	1977
1953	5723	11610	1974	1501	1992
1954	2170	4951	1975	520	1977
1955	852	1385	1984	438	1992
1956	773	1291	1984	465	1988

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1945 - 1993

ANNUAL TOTAL	549430	1135196	
ANNUAL MEAN	1501	3110	
HIGHEST ANNUAL MEAN			3019
LOWEST ANNUAL MEAN			4912
HIGHEST DAILY MEAN	6470	Feb 22	1136
LOWEST DAILY MEAN	368	Aug 16	35700
ANNUAL SEVEN-DAY MINIMUM	382	Aug 11	Dec 23 1964
ANNUAL RUNOFF (AC-FT)	1090000		344
10 PERCENT EXCEEDS	3290		361
50 PERCENT EXCEEDS	928		2187000
90 PERCENT EXCEEDS	449		7360
			1610
			700

e Estimated

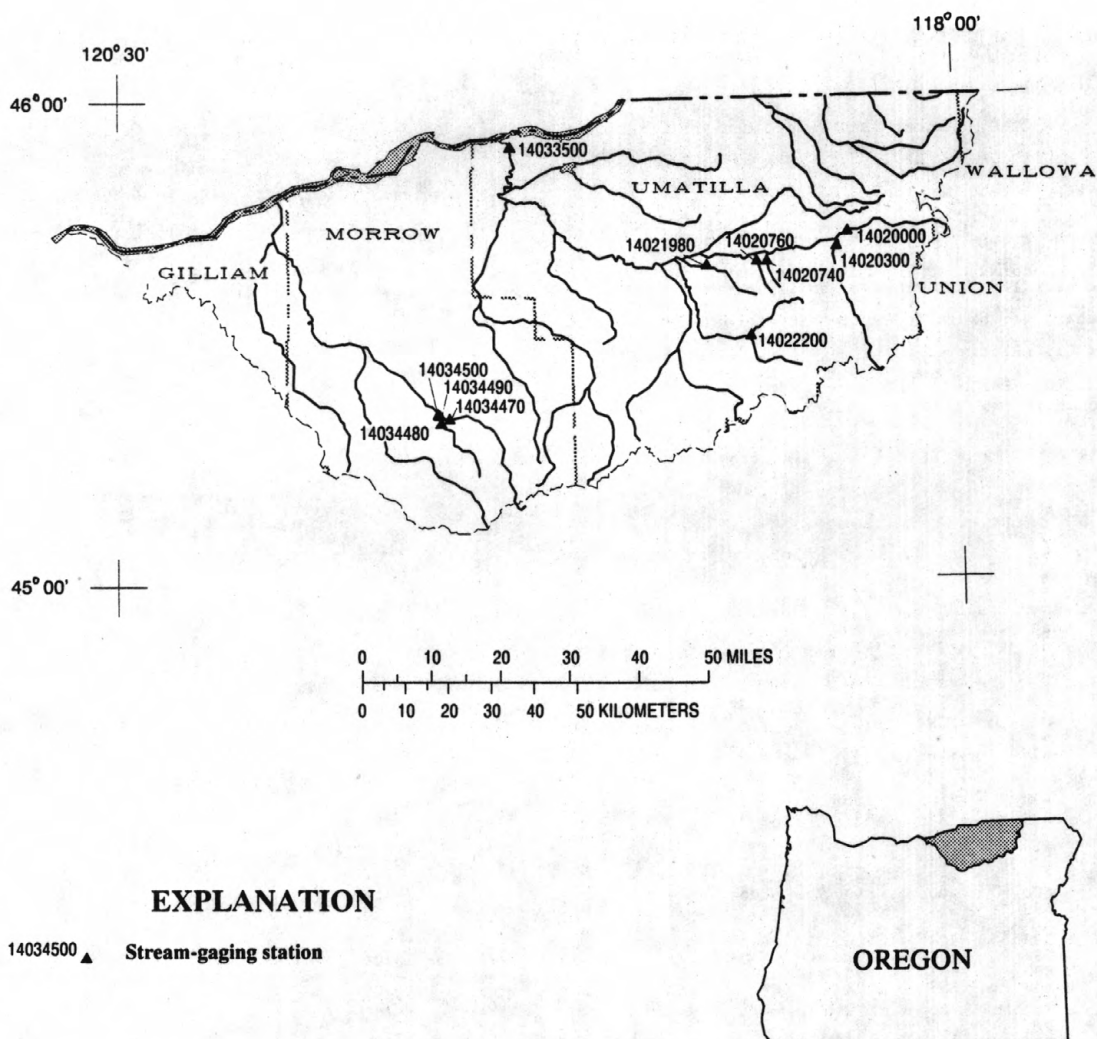


Figure 7--Location of surface-water and water-quality stations in the Walla Walla River, Umatilla River, and Willow Creek Basins.

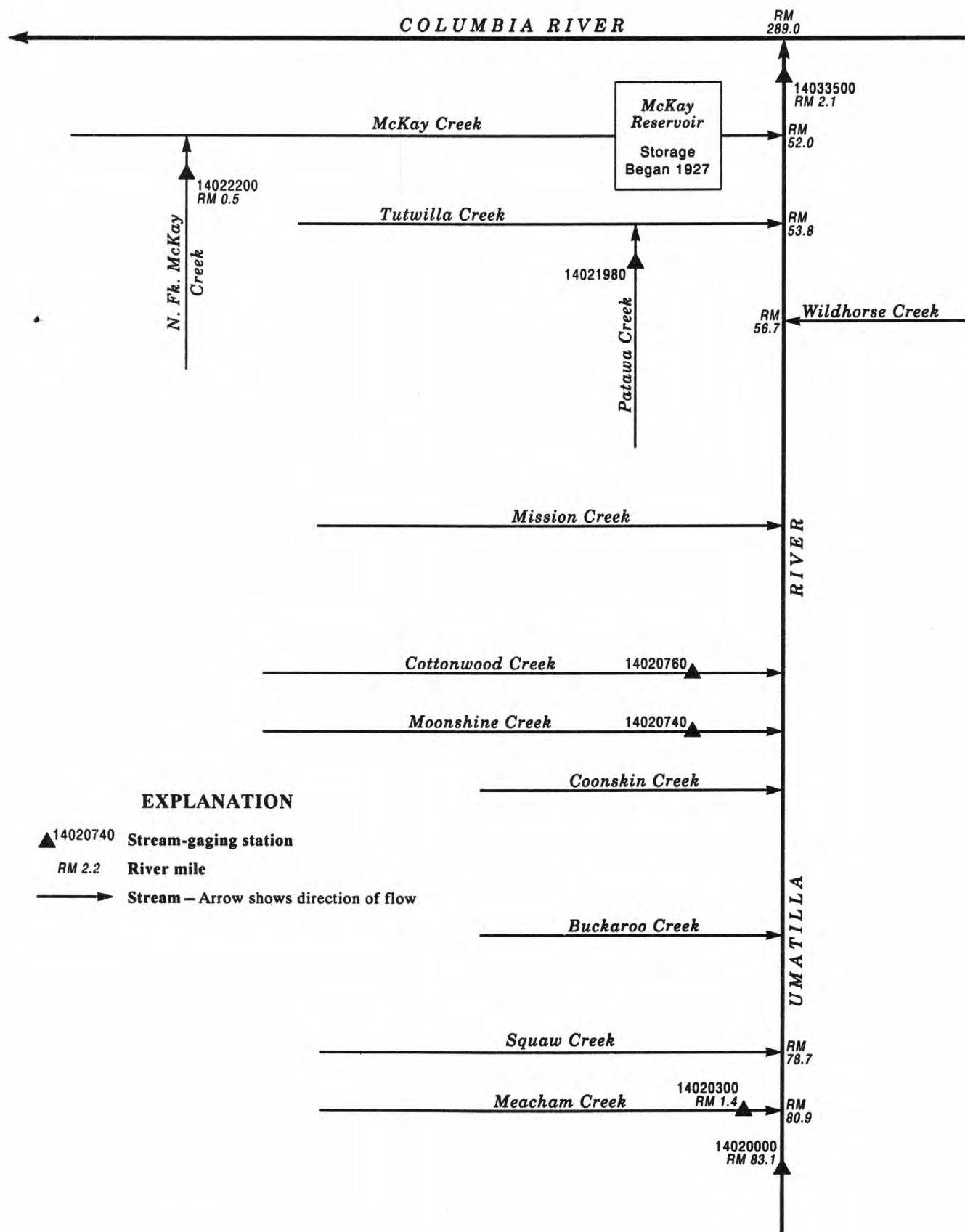


Figure 8--Schematic diagram showing gaging stations in the Umatilla River Basin.

UMATILLA RIVER BASIN

14020000 UMATILLA RIVER ABOVE MEACHAM CREEK, NEAR GIBBON, OR

LOCATION.--Lat 45°43'11", long 118°19'20", in SE 1/4 SW 1/4 sec.21, T.3 N., R.36 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank 0.8 mi downstream from Ryan Creek, 2.2 mi upstream from Meacham Creek, 2.5 mi northeast of Gibbon, and at mile 83.1.

DRAINAGE AREA.--131 mi².

PERIOD OF RECORD.--April 1933 to current year.

REVISED RECORDS.--WSP 1935: 1946-48(M), 1950(M), 1953(M), 1956-59(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,854.81 ft above sea level. Prior to June 27, 1939, at site 1 mi downstream at datum 43.94 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. Continuous water-quality records for the period June 1959 to September 1980 have been collected at this location.

AVERAGE DISCHARGE.--60 years, 224 ft³/s, 23.22 in/yr, 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s Jan. 25, 1975, gage height, 9.18 ft, from rating curve extended above 3,500 ft³/s; maximum gage height, 9.50 ft Jan. 29, 1965; minimum discharge, 16 ft³/s Nov. 9, 1965, momentary regulation from unknown source.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	0230	2,350	6.14	May 4	0930	*3,130	*6.87
Apr. 3	2230	1,650	5.42				

Minimum discharge, 40 ft³/s several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	83	110	111	121	86	602	1380	191	81	51	44
2	41	80	112	104	116	90	700	1330	190	82	50	44
3	48	69	107	99	113	100	982	1450	287	86	49	44
4	48	65	101	100	111	120	1400	2810	265	79	48	43
5	44	68	96	93	117	220	932	2140	248	76	48	43
6	43	67	e92	88	129	332	683	1820	285	73	47	43
7	42	75	90	e86	140	402	626	1530	288	71	47	43
8	41	111	89	e80	167	423	760	1170	266	69	46	43
9	41	145	87	e76	200	352	1000	943	243	67	46	43
10	41	119	92	e70	215	354	899	980	223	65	45	43
11	41	102	112	e68	227	307	768	1180	208	63	45	42
12	40	96	113	e70	212	275	630	1200	205	62	45	42
13	42	99	106	e80	197	243	532	1090	182	62	44	43
14	42	102	123	e90	190	246	470	966	167	65	45	43
15	41	100	210	e88	179	499	461	826	158	63	45	43
16	41	95	193	e86	160	713	445	710	148	61	84	43
17	41	89	171	e86	143	597	493	615	137	63	70	43
18	41	87	149	e88	130	1240	652	548	127	63	57	43
19	41	92	132	e90	121	1230	606	498	119	61	52	43
20	41	94	128	e110	118	1250	563	445	115	65	50	43
21	42	106	119	e140	113	1110	583	390	130	61	49	43
22	42	225	119	e130	108	982	639	341	131	61	48	43
23	40	220	169	123	105	1550	626	290	119	77	47	43
24	40	156	187	114	103	1950	624	257	109	67	46	43
25	40	128	170	143	e90	1110	708	239	102	62	46	42
26	41	112	160	167	e86	761	956	223	98	60	46	42
27	41	105	147	154	e84	618	855	205	95	58	45	42
28	41	116	142	145	e80	588	760	202	91	55	45	42
29	43	109	139	134	---	564	972	187	88	54	45	42
30	53	106	126	126	---	472	1500	167	83	53	45	42
31	59	---	117	123	---	428	---	170	---	52	44	---
TOTAL	1323	3221	4008	3262	3875	19212	22427	26302	5098	2037	1520	1285
MEAN	42.7	107	129	105	138	620	748	848	170	65.7	49.0	42.8
MAX	59	225	210	167	227	1950	1500	2810	288	86	84	44
MIN	40	65	87	68	80	86	445	167	83	52	44	42
AC-FT	2620	6390	7950	6470	7690	38110	44480	52170	10110	4040	3010	2550
CFSM	.33	.82	.99	.80	1.06	4.73	5.71	6.48	1.30	.50	.37	.33
IN.	.38	.91	1.14	.93	1.10	5.46	6.37	7.47	1.45	.58	.43	.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1933	58.0	127	232	256	314
1934	169	405	716	656	910
1935	1948	1976	1965	1982	1972
1936	40.2	44.4	45.7	71.8	189
1937	1936	1966	1937	1977	1955
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SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1933 - 1993

ANNUAL TOTAL	46045	93570	224
ANNUAL MEAN	126	256	415
HIGHEST ANNUAL MEAN			114
LOWEST ANNUAL MEAN			1974
HIGHEST DAILY MEAN	903	2810	5130
LOWEST DAILY MEAN	37	40	28
ANNUAL SEVEN-DAY MINIMUM	38	41	31
ANNUAL RUNOFF (AC-FT)	91330	185600	162500
ANNUAL RUNOFF (CFSM)		1.96	1.71
ANNUAL RUNOFF (INCHES)	13.08	26.57	23.26
10 PERCENT EXCEEDS	275	732	550
50 PERCENT EXCEEDS	86	106	117
90 PERCENT EXCEEDS	41	43	45

e Estimated

UMATILLA RIVER BASIN

85

14020300 MEACHAM CREEK AT GIBBON, OR

LOCATION.--Lat 45°41'20", long 118°21'20", in SE 1/4 SE 1/4 sec.31, T.3. N., R.36 E., Umatilla County, Hydrologic Unit 17070103, on left bank 250 ft downstream from Union Pacific railroad bridge, 0.9 mi southeast of Gibbon, and at mile 1.4.

DRAINAGE AREA.--176 mi².

PERIOD OF RECORD.--August 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,803.05 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 196 ft³/s, 15.12 in/yr, 142,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft³/s Feb. 20, 1982, gage height, 6.60 ft, from floodmark, from rating curve extended above 2,600 ft³/s; minimum discharge, 6.6 ft³/s Aug. 29, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1975, reached a stage of 7.21 ft, from floodmark, discharge, about 8,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1930	1,870	5.13	Apr. 4	0430	2,190	5.42
Mar. 24	0500	2,190	5.42	May 4	2300	*2,260	*5.48

Minimum discharge, 12 ft³/s several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	21	100	111	128	87	1090	1050	138	52	22	15
2	12	21	103	103	121	90	1240	995	159	49	22	15
3	16	20	99	97	117	96	1490	1060	197	47	21	15
4	16	23	93	96	115	119	1950	1830	224	44	21	14
5	16	25	87	91	116	195	1460	1930	221	42	20	14
6	14	26	84	83	128	312	1040	1590	241	41	20	14
7	14	30	80	e64	141	471	977	1330	248	38	20	14
8	13	40	78	e62	165	575	1110	1060	236	37	19	14
9	13	63	76	e60	202	480	1450	827	218	35	19	14
10	13	64	76	e56	222	485	1370	710	199	33	19	14
11	13	58	87	e53	236	419	1170	743	181	31	19	14
12	13	54	94	e54	228	353	933	706	167	29	18	14
13	13	56	93	e57	209	309	740	596	149	29	18	14
14	13	59	98	e60	196	286	608	489	134	32	18	14
15	13	63	142	e62	186	501	554	405	125	32	18	14
16	13	63	159	e63	167	971	512	352	117	31	41	14
17	13	61	155	e64	148	834	522	312	107	32	30	14
18	13	59	144	e65	143	1390	685	282	97	31	26	14
19	12	61	129	67	135	1500	642	259	87	30	24	14
20	12	61	126	101	130	1500	567	243	80	31	23	14
21	13	72	117	108	121	1480	534	216	96	30	22	14
22	13	123	113	120	115	1440	542	197	99	29	21	14
23	12	127	127	112	e105	1500	514	171	93	38	21	14
24	12	104	143	107	e94	1960	472	152	84	42	21	14
25	13	89	143	143	e89	1570	474	141	76	36	19	13
26	13	80	145	172	e82	1270	613	137	69	33	18	13
27	13	77	144	163	e78	1060	588	126	67	30	17	13
28	13	97	141	158	e80	1030	542	127	63	27	17	13
29	14	102	136	152	---	982	604	126	58	26	17	13
30	17	97	126	144	---	775	995	112	54	25	16	13
31	18	---	116	135	---	698	---	114	---	24	16	---
TOTAL	419	1896	3554	2983	3997	24738	25988	18388	4084	1066	643	417
MEAN	13.5	63.2	115	96.2	143	798	866	593	136	34.4	20.7	13.9
MAX	18	127	159	172	236	1960	1950	1930	248	52	41	15
MIN	12	20	76	53	78	87	472	112	54	24	16	13
AC-FT	831	3760	7050	5920	7930	49070	51550	36470	8100	2110	1280	827
CFSM	.08	.36	.65	.55	.81	4.53	4.92	3.37	.77	.20	.12	.08
IN.	.09	.40	.75	.63	.84	5.23	5.49	3.89	.86	.23	.14	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1993, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	16.4	71.6	192	205	368	481	556	317	109	25.1	13.3	12.4							
MAX	26.7	200	582	503	950	804	956	668	354	52.2	20.7	16.7							
(WY)	1985	1987	1976	1984	1986	1984	1985	1991	1984	1984	1993	1978							
MIN	8.48	11.2	18.0	22.2	27.1	134	228	58.3	21.7	13.2	8.48	9.37							
(WY)	1988	1988	1977	1977	1977	1977	1986	1992	1992	1977	1986	1987							

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1975 - 1993

ANNUAL TOTAL	37841.9	88173	196
ANNUAL MEAN	103	242	301
HIGHEST ANNUAL MEAN			66.2
LOWEST ANNUAL MEAN			4220
HIGHEST DAILY MEAN	1050	1960	4220
LOWEST DAILY MEAN	8.4	12	7.5
ANNUAL SEVEN-DAY MINIMUM	8.8	12	7.7
ANNUAL RUNOFF (AC-FT)	75060	174900	142000
ANNUAL RUNOFF (CFSM)		1.37	1.11
ANNUAL RUNOFF (INCHES)	8.00	18.64	15.14
10 PERCENT EXCEEDS	278	796	536
50 PERCENT EXCEEDS	56	90	64
90 PERCENT EXCEEDS	11	14	11

e Estimated

UMATILLA RIVER BASIN

14020740 MOONSHINE CREEK NEAR MISSION, OR

LOCATION.--Lat 45°39'37", long 118°35'42", in NW 1/4 NE 1/4 sec.16, T.2 N., R.34 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank, 60 ft upstream from county road crossing, 5.7 mi west of Mission, and at mile 1.1.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--November 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,600 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No known regulation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65 ft³/s May 4, 1993, gage height, 5.29 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 65 ft³/s May 4, gage height, 5.29 ft; no flow part of or all of several days in October.

REVISIONS.--The maximum discharge for water year 1992 has been revised to 44 ft³/s Nov. 26, gage height, 5.18 ft, superseding figures published in the report for 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.36	3.8	2.7	5.6	e1.4	6.5	6.2	.57	.12	.06	.06
2	.00	.35	3.5	2.5	4.9	1.6	6.0	5.9	.58	.12	.05	.05
3	.03	.34	3.1	2.4	4.2	2.0	7.5	7.5	.89	.12	.05	.05
4	.00	.36	2.7	2.3	3.8	9.9	9.7	45	.85	.11	.04	.04
5	.00	.35	2.5	2.1	3.4	19	9.3	28	1.1	.10	.03	.04
6	.00	.35	2.2	1.9	3.2	16	8.6	20	1.3	.09	.03	.04
7	.00	.39	2.0	e1.6	3.1	16	8.3	15	1.1	.09	.03	.04
8	.01	.42	2.0	e1.4	3.3	14	9.1	12	1.0	.08	.03	.03
9	.00	.40	2.1	e1.1	3.7	11	11	9.1	.93	.07	.03	.03
10	.00	.40	2.5	e.82	4.2	9.6	11	7.0	.83	.07	.03	.03
11	.00	.40	2.8	e.84	4.7	8.0	11	5.3	.80	.07	.03	.03
12	.00	.45	2.6	e.86	4.6	6.8	9.6	4.1	.72	.06	.03	.05
13	.00	.46	2.4	e.88	4.3	6.0	8.5	3.2	.58	.06	.03	.05
14	.02	.46	2.5	e.88	4.3	6.6	7.3	2.5	.49	.07	.03	.06
15	.06	.49	2.8	e.90	4.0	10	6.3	2.2	.46	.07	.04	.06
16	.12	.52	2.9	e.96	3.2	9.8	5.4	1.8	.38	.07	.14	.07
17	.17	.58	2.8	e1.2	3.0	12	5.1	1.5	.32	.07	.06	.07
18	.19	.63	2.6	1.3	2.9	19	5.3	1.3	.28	.07	.05	.07
19	.18	.77	2.4	3.7	2.7	15	4.8	1.2	.23	.08	.06	.07
20	.19	.81	2.6	24	2.5	17	4.6	1.0	.22	.07	.06	.07
21	.20	1.6	2.6	12	2.2	14	4.2	.98	.22	.06	.07	.08
22	.16	9.9	2.7	10	2.0	12	3.9	.86	.21	.06	.07	.08
23	.12	7.5	3.5	7.6	2.0	18	3.6	.74	.20	.05	.07	.08
24	.19	4.6	3.5	10	e1.7	29	3.5	.61	.17	.05	.07	.08
25	.20	3.3	3.3	24	e1.6	24	3.8	.55	.16	.05	.08	.06
26	.22	2.7	3.5	16	e1.5	17	7.5	.48	.15	.05	.07	.06
27	.25	2.6	3.9	11	e1.3	13	7.3	.45	.15	.05	.06	.05
28	.27	4.6	3.8	8.9	e1.2	11	6.7	.49	.14	.06	.06	.05
29	.31	4.6	3.6	9.0	---	9.0	6.6	.48	.14	.07	.07	.05
30	.39	4.0	3.1	7.8	---	7.6	6.5	.39	.13	.06	.07	.05
31	.37	---	3.0	6.6	---	6.6	---	.44	---	.06	.07	---
TOTAL	3.65	54.69	89.3	177.24	89.1	371.9	208.5	186.27	15.30	2.28	1.67	1.65
MEAN	.12	1.82	2.88	5.72	3.18	12.0	6.95	6.01	.51	.074	.054	.055
MAX	.39	9.9	3.9	24	5.6	29	11	45	1.3	.12	.14	.08
MIN	.00	.34	2.0	.82	1.2	1.4	3.5	.39	.13	.05	.03	.03
AC-FT	7.2	108	177	352	177	738	414	369	30	4.5	3.3	3.3

CAL YR 1992 TOTAL 400.74 MEAN 1.09 MAX 9.9 MIN .00 AC-FT 795
WTR YR 1993 TOTAL 1201.55 MEAN 3.29 MAX 45 MIN .00 AC-FT 2380

e Estimated

UMATILLA RIVER BASIN

87

14020760 COTTONWOOD CREEK NEAR MISSION, OR

LOCATION.--Lat 45°39'38", long 118°33'52", in SW 1/4 SW 1/4 sec.8, T.2 N., R.34 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank, on downstream side of county road crossing, 4.5 mi west of Mission, and at mile 1.3.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--November 1991 to current year.

GAGE.--Water-stage recorder, elevation of gage is 1,500 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No known regulation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45 ft³/s May 4, 1993, gage height, 4.94 ft, no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45 ft³/s May 4, gage height, 4.94 ft; no flow many days during fall and summer months.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	e2.1	e1.4	e3.9	e.82	4.5	4.8	.13	.00	.00	.00
2	.00	.00	e1.7	e1.1	e3.4	1.1	4.2	4.7	.12	.00	.00	.00
3	.00	.00	e1.3	e.84	e2.9	e2.4	5.3	5.7	.14	.00	.00	.00
4	.00	.00	e1.1	e.66	e2.5	e7.0	7.3	31	.19	.00	.00	.00
5	.00	.00	e.88	e.50	e2.0	e19	7.0	24	.32	.00	.00	.00
6	.00	.00	e.72	e.40	e1.9	e13	6.4	19	.44	.00	.00	.00
7	.00	.00	e.58	e.28	e2.0	14	6.4	15	.32	.00	.00	.00
8	.00	.00	e.64	e.26	e2.4	11	7.4	13	.18	.00	.00	.00
9	.00	.00	e.70	e.23	e2.9	8.3	8.9	10	.16	.00	.00	.00
10	.00	.00	e1.1	e.21	e3.5	6.9	9.6	7.6	.12	.00	.00	.00
11	.00	.00	e1.4	e.22	4.1	5.4	8.9	5.7	.11	.00	.00	.00
12	.00	.00	e1.2	e.23	3.8	4.7	7.9	4.4	.11	.00	.00	.00
13	.00	.00	e1.1	e.23	3.6	4.2	6.8	3.4	.06	.00	.00	.00
14	.00	.00	e1.2	e.24	3.5	4.6	5.8	2.6	.03	.00	.00	.00
15	.00	.00	e1.5	e.25	3.2	6.4	5.0	2.0	.02	.00	.00	.00
16	.00	.00	e1.7	e.28	2.4	6.1	4.4	1.6	.01	.00	.09	.00
17	.00	.00	e1.4	e.32	1.9	7.0	4.0	1.2	.01	.00	.00	.00
18	.00	e.00	e1.1	e.35	1.8	9.4	4.1	.91	.00	.00	.00	.00
19	.00	e.00	e1.1	e1.9	1.5	8.5	3.9	.64	.00	.00	.00	.00
20	.00	e.21	e1.1	e11	1.3	9.5	3.7	.41	.00	.00	.00	.00
21	.00	e.98	e1.1	e9.0	1.0	8.5	3.2	.34	.00	.00	.00	.00
22	.00	e5.1	e1.1	e7.4	.81	7.3	3.0	.15	.00	.00	.00	.00
23	.00	e3.8	e2.5	e6.2	.76	9.7	2.5	.11	.00	.00	.00	.00
24	.00	e2.7	e2.6	e12	e.82	16	2.4	.10	.00	.00	.00	.00
25	.00	e2.0	e2.4	e16	e.80	14	2.5	.04	.00	.00	.00	.00
26	.00	e1.5	e3.4	e8.6	e.76	12	6.3	.07	.00	.00	.00	.00
27	.00	e1.1	e3.5	e7.6	e.74	9.4	6.1	.04	.00	.00	.00	.00
28	.00	e3.1	e3.1	e6.6	e.74	7.6	5.4	.05	.00	.00	.00	.00
29	.00	e3.0	e2.7	e6.4	---	6.4	5.3	.06	.00	.00	.00	.00
30	.00	e2.6	e2.3	e5.4	---	5.4	5.1	.02	.00	.00	.00	.00
31	.00	---	e1.7	e4.5	---	4.6	---	.05	---	.00	.00	---
TOTAL	0.00	26.09	50.02	110.60	60.93	250.22	163.3	158.69	2.47	0.00	0.09	0.00
MEAN	.000	.87	1.61	3.57	2.18	8.07	5.44	5.12	.082	.000	.003	.000
MAX	.00	5.1	3.5	16	4.1	19	9.6	31	.44	.00	.09	.00
MIN	.00	.00	.58	.21	.74	.82	2.4	.02	.00	.00	.00	.00
AC-FT	.00	52	99	219	121	496	324	315	4.9	.00	.2	.00

CAL YR 1992 TOTAL 224.71 MEAN .61 MAX 5.9 MIN .00 AC-FT 446
WTR YR 1993 TOTAL 822.41 MEAN 2.25 MAX 31 MIN .00 AC-FT 1630

e Estimated

UMATILLA RIVER BASIN

14021980 PATAWA CREEK AT WEST RESERVATION BOUNDARY, NEAR PENDLETON, OR

LOCATION.--Lat 45°39'11", long 118°44'39", in NW 1/4 SW 1/4 sec. 18, T.2 N., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank, at downstream side of county road crossing, 2 mi southwest of Pendleton City Hall, and at mile 2.9.

DRAINAGE AREA.--30 mi², excludes about 1 mi² in upper basin where water has been diverted directly to the Umatilla River.

PERIOD OF RECORD.--December 1973 to April 1975 (discharge measurements only), October 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,220 ft above sea level, from topographic map.

REMARKS.--Records fair except those above 35 ft³/s and estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--2 years (water years 1992-93), 3.82 ft³/s, 1.73 in/yr, 2,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 84 ft³/s Mar. 4, 1993, gage height, 6.49 ft, from rating curve extended above 35 ft³/s; minimum discharge, 0.09 ft³/s Oct. 30, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft³/s Mar. 4, gage height, 6.49 ft, from rating curve extended above 35 ft³/s; minimum discharge, 0.09 ft³/s Oct. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.45	.37	e1.1	10	e3.1	16	13	e1.9	.97	.58	.94
2	.39	.44	.61	e.93	8.7	e4.2	15	13	e2.3	.99	.58	.91
3	.53	.40	e.31	e.86	7.9	5.6	18	17	e3.1	.96	.57	1.0
4	.52	.42	e.26	e.80	7.3	26	21	26	e2.9	.91	.53	1.1
5	.46	.43	e.22	e.75	6.8	36	19	24	3.9	.80	.50	1.1
6	.45	.42	e.20	.61	6.4	29	18	30	3.8	.78	.50	1.2
7	.44	.43	e.19	e.52	6.4	25	18	26	3.0	.77	.49	1.1
8	.43	.47	.18	e.46	6.8	22	22	23	2.5	.76	.49	.97
9	.39	.44	.20	e.42	7.3	19	26	20	2.2	.73	.49	.96
10	.34	.38	.21	e.40	7.6	18	28	17	1.9	.71	.48	.96
11	.35	.41	.21	e.41	8.1	18	26	16	1.7	.71	.47	1.0
12	.34	.43	.22	e.42	7.7	17	23	e12	1.6	.71	.48	.99
13	.33	.43	.18	e.43	7.4	17	21	e9.5	1.5	.75	.48	.98
14	.32	.43	.18	e.44	7.1	17	18	e7.8	1.4	.77	.49	1.0
15	.31	.43	.18	e.45	6.8	17	16	e6.2	1.3	.79	.50	.90
16	.30	.41	.26	.47	e5.2	17	14	e5.2	1.3	.76	6.3	.83
17	.27	.38	.49	.51	e4.7	17	13	e4.0	1.2	.78	1.6	.83
18	.27	.38	.40	.58	e4.0	17	14	e3.5	1.2	.76	1.2	.80
19	.24	.40	.38	.62	e3.5	17	13	e3.1	1.1	.80	1.1	.85
20	.23	.39	.46	39	e3.2	18	13	e2.9	1.1	.80	1.1	.82
21	.22	2.8	.75	22	e3.1	18	12	e2.5	1.2	.77	1.1	.79
22	.15	5.4	.58	17	e3.0	18	e11	e2.2	1.1	.78	1.2	.79
23	.14	4.3	.67	12	e2.7	22	e10	e1.9	1.1	.76	1.1	.81
24	.14	2.1	1.5	18	e2.6	43	e10	e1.7	1.1	.74	1.2	.78
25	.12	.81	1.6	38	e2.5	37	e11	e1.5	1.0	.70	1.2	.73
26	.12	.32	1.5	29	e2.4	30	20	e1.4	1.1	.67	1.0	.70
27	.10	.23	1.7	21	e2.5	25	16	e1.3	1.0	.64	.97	.70
28	.11	.20	1.9	16	e2.7	21	14	e1.5	1.0	.61	1.0	.70
29	.12	.41	1.7	16	---	19	14	e1.3	1.0	.60	.92	.71
30	.39	.41	1.4	14	---	17	13	e1.3	.99	.60	.87	.67
31	.55	---	1.2	12	---	16	---	e1.5	---	.59	.96	---
TOTAL	9.50	25.35	20.21	265.18	154.4	625.9	503	297.3	51.49	23.47	30.45	26.62
MEAN	.31	.84	.65	8.55	5.51	20.2	16.8	9.59	1.72	.76	.98	.89
MAX	.55	5.4	1.9	.39	10	43	28	30	3.9	.99	6.3	1.2
MIN	.10	.20	.18	.40	2.4	3.1	10	1.3	.99	.59	.47	.67
AC-FT	.19	.50	.40	526	306	1240	998	590	102	.47	.60	.53
CFSM	.01	.03	.02	.29	.18	.67	.56	.32	.06	.03	.03	.03
IN.	.01	.03	.03	.33	.19	.78	.62	.37	.06	.03	.04	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

	MEAN	.40	3.36	2.83	4.93	4.15	12.7	9.29	5.30	1.10	.49	.61	.71
MAX	.50	5.88	5.01	8.55	5.51	20.2	16.8	9.59	1.72	.76	.98	.89	.89
(WY)	1992	1992	1992	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	.31	.84	.65	1.30	2.84	5.19	1.81	1.01	.48	.22	.24	.53	.53
(WY)	1993	1993	1993	1992	1992	1992	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1993 WATER YEAR

WATER YEARS 1992 - 1993

ANNUAL TOTAL	2032.87		
ANNUAL MEAN	5.57		
HIGHEST ANNUAL MEAN		3.82	
LOWEST ANNUAL MEAN		5.57	1993
HIGHEST DAILY MEAN		2.08	1992
LOWEST DAILY MEAN	43		
ANNUAL SEVEN-DAY MINIMUM	.10	Mar 24	1993
ANNUAL RUNOFF (AC-FT)	.12	Oct 27	1992
ANNUAL RUNOFF (CFSM)	4030	Oct 23	1992
ANNUAL RUNOFF (INCHES)	.19		
10 PERCENT EXCEEDS	2.52		
50 PERCENT EXCEEDS	18		
90 PERCENT EXCEEDS	1.1		
	.35		

e Estimated

UMATILLA RIVER BASIN

89

14022200 NORTH FORK MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°30'24", long 118°36'57", in NE 1/4 SE 1/4 sec.1, T.1 S., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank 10 mi northeast of Pilot Rock and at mile 0.5.

DRAINAGE AREA.--48.6 mi².

PERIOD OF RECORD.--May 1973 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,870 ft above sea level, from topographic map.

REMARKS.--Records fair. No regulation. Minor diversion upstream from station.

AVERAGE DISCHARGE.--20 years, 42.2 ft³/s, 30,570 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s Jan. 25, 1975, gage height, 8.48 ft, from floodmark, from rating curve extended above 150 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.22 ft³/s June 26, 1985 (result of temporary construction upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 290 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 20	0800	397	3.49	Apr. 8	2230	305	3.17
Mar. 23	2230	580	4.15	May 4	1530	*873	*5.17
Apr. 3	2030	313	3.20				

Minimum discharge, 1.0 ft³/s Aug. 12-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	5.5	55	36	57	e25	152	120	20	4.4	2.2	2.1
2	1.3	9.0	50	31	50	e28	143	112	22	4.5	2.1	2.0
3	2.1	6.7	40	28	43	31	203	146	32	5.0	2.1	1.8
4	2.0	6.7	34	27	38	44	241	655	32	4.4	1.9	1.7
5	1.8	7.5	29	25	37	165	185	482	35	3.9	1.8	1.6
6	1.7	6.9	e24	e24	38	226	153	366	42	3.5	1.7	1.5
7	1.6	9.7	22	e23	41	232	184	297	38	3.3	1.5	1.4
8	1.6	19	20	e22	51	229	207	258	33	3.1	1.4	1.4
9	1.6	28	19	e21	62	177	271	196	29	2.9	1.3	1.3
10	1.6	23	20	e20	73	158	272	143	25	2.7	1.3	1.3
11	1.6	19	21	e19	82	124	237	107	23	2.5	1.3	1.2
12	1.6	18	21	e19	77	103	194	82	21	2.5	1.2	1.2
13	1.7	19	20	e20	73	90	150	66	18	2.5	1.0	1.2
14	1.7	17	24	e20	70	107	122	54	16	2.9	1.0	1.2
15	1.7	16	48	e21	64	216	104	45	16	3.7	1.0	1.2
16	1.7	15	51	e22	e55	227	88	37	15	3.1	9.3	1.2
17	1.7	14	45	e23	45	227	82	32	13	3.2	10	1.2
18	1.7	13	39	e25	35	334	111	27	11	3.2	6.4	1.2
19	1.7	14	33	e30	30	322	100	23	10	3.1	4.9	1.2
20	1.7	14	e29	e60	28	365	87	20	9.2	3.3	4.0	1.2
21	1.8	24	e27	74	e26	305	75	18	9.4	3.3	3.5	1.2
22	1.8	104	33	70	e25	271	69	18	10	3.3	3.2	1.2
23	1.7	93	47	59	e24	359	64	17	8.6	5.3	2.9	1.2
24	1.6	55	57	57	e23	446	63	15	7.4	4.0	2.7	1.2
25	1.7	39	53	137	e22	323	64	14	6.8	3.4	2.7	1.3
26	1.7	31	53	138	e21	250	158	13	6.6	3.2	2.5	1.3
27	1.7	27	61	105	e20	204	131	13	6.0	2.9	2.4	1.3
28	1.8	56	59	88	e23	169	108	13	5.4	2.5	2.2	1.3
29	2.1	56	54	87	---	144	118	14	5.0	2.5	2.2	1.2
30	2.6	50	45	80	---	122	130	13	4.7	2.6	2.2	1.2
31	3.0	---	40	69	---	116	---	14	---	2.4	2.1	---
TOTAL	54.9	816.0	1173	1480	1233	6139	4266	3430	530.1	103.1	86.0	40.5
MEAN	1.77	27.2	37.8	47.7	44.0	198	142	111	17.7	3.33	2.77	1.35
MAX	3.0	104	61	138	82	446	272	655	42	5.3	10	2.1
MIN	1.3	5.5	19	19	20	25	63	13	4.7	2.4	1.0	1.2
AC-FT	109	1620	2330	2940	2450	12180	8460	6800	1050	204	171	80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1993, BY WATER YEAR (WY)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	2.67	22.5	53.3	73.2	92.5	114	89.7	42.7	13.8	2.29	1.16	1.28									
MAX	8.50	74.6	197	170	213	223	200	136	60.4	4.97	2.77	2.74									
(WY)	1983	1992	1974	1976	1982	1984	1974	1991	1984	1991	1993	1977									
MIN	.90	1.30	3.11	5.01	4.39	29.3	16.2	5.08	2.09	.73	.72	.78									
(WY)	1988	1988	1977	1977	1977	1992	1992	1992	1973	1985	1987	1987									

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1973 - 1993
ANNUAL TOTAL	6521.34	19351.6	
ANNUAL MEAN	17.8	53.0	
HIGHEST ANNUAL MEAN			42.4
HIGHEST ANNUAL MEAN			72.5
HIGHEST ANNUAL MEAN			10.7
HIGHEST DAILY MEAN	116	655	1070
HIGHEST DAILY MEAN	.90	1.0	.45
HIGHEST DAILY MEAN	.98	1.2	.50
ANNUAL SEVEN-DAY MINIMUM	12940	38380	30690
ANNUAL RUNOFF (AC-FT)	51	155	119
10 PERCENT EXCEEDS	7.4	21	10
50 PERCENT EXCEEDS	1.5	1.6	1.0
90 PERCENT EXCEEDS			

e Estimated

14033500 UMATILLA RIVER NEAR UMATILLA, OR

LOCATION.--Lat 45°54'11", long 119°19'33", in SW 1/4 NW 1/4 sec.21, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070103, on left bank 1.6 mi downstream from West Division main canal of Umatilla project, 1.2 mi southeast of Umatilla, and at mile 2.1.

DRAINAGE AREA.--2,290 mi², approximately.

PERIOD OF RECORD.--October 1903 to current year.

REVISED RECORDS.--WSP 794: Drainage area. WSP 1398: 1909, 1911, 1914, 1928, 1935.

GAGE.--Water-stage recorder. Datum of gage is 330.47 ft above sea level. Oct. 21, 1903, to Jan. 25, 1931, nonrecording gage.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Some regulation since 1927 by McKay Reservoir (station 14023000). Many diversions upstream from station for irrigation of lands upstream and downstream from station; Brownell Canal diverts downstream from station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir, capacity, 52,380 acre-ft. Continuous water-quality records for the period October 1962 to September 1969 have been collected at this location. U.S. Bureau of Reclamation radio telemeter at station.

AVERAGE DISCHARGE.--66 years (water years 1928-93), 461 ft³/s, 334,000 acre-ft/yr. Water years prior to 1928 not included in computation of average discharge owing to increased regulation and diversion since 1927.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft³/s Jan. 30, 1965, gage height, 10.75 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	1330	5,430	6.06	Apr. 10	0930	3,660	5.40
Mar. 24	2045	7,490	6.67	May 5	1245	*9,170	*7.09
Apr. 4	1830	4,650	5.79				

Minimum discharge, 0.85 ft³/s Oct. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	148	171	406	641	e340	2040	3030	287	79	90	68
2	.91	155	171	429	586	e350	2690	2740	397	78	89	70
3	.99	168	171	404	535	e370	2660	2670	347	82	86	68
4	1.1	172	187	392	500	389	3890	4060	410	78	91	68
5	1.6	168	338	382	343	619	3780	8260	447	81	89	69
6	.97	164	306	e350	275	1400	2900	6130	417	75	84	66
7	.95	171	304	e340	282	1630	2320	5530	450	78	83	66
8	1.0	173	301	e320	322	1780	2250	4190	471	83	88	66
9	1.1	185	309	e290	380	1710	2920	3300	395	80	90	62
10	1.1	269	282	e240	491	1440	3410	2410	308	80	96	56
11	1.1	236	267	e250	563	1320	3270	2040	262	87	82	54
12	1.2	189	291	e250	610	1080	3030	2160	258	96	78	62
13	.99	158	245	e250	583	931	2490	1870	245	102	86	66
14	6.7	145	183	e280	534	820	2280	1430	200	97	92	61
15	48	108	152	e320	497	851	2120	1120	153	159	98	78
16	49	100	288	e330	410	1830	1990	863	149	100	98	97
17	65	93	346	e340	489	2230	1700	632	136	96	405	75
18	56	74	319	e350	534	2420	1810	471	113	104	169	77
19	56	80	282	e350	546	4550	2030	558	199	102	107	79
20	56	70	244	e370	519	4200	1840	485	111	107	87	77
21	54	74	227	867	488	4460	1640	408	145	108	82	69
22	56	78	197	1150	448	3590	1620	265	185	113	74	67
23	60	253	186	1030	371	3550	1630	231	168	103	69	69
24	64	448	237	691	322	5930	1480	190	127	98	64	69
25	64	285	341	681	393	6000	1360	139	147	101	68	65
26	60	212	326	990	e280	3800	1640	248	108	117	62	66
27	57	174	321	976	e300	3050	1770	257	98	110	63	62
28	64	135	325	823	e330	2840	1690	239	90	95	65	120
29	64	137	318	770	---	2650	1620	271	105	87	69	127
30	65	191	307	736	---	2420	2310	275	93	84	71	126
31	96	---	375	699	---	2060	---	265	---	83	70	---
TOTAL	1054.63	5013	8317	16056	12572	70610	68180	56737	7021	2943	2945	2225
MEAN	34.0	167	268	518	449	2278	2273	1830	234	94.9	95.0	74.2
MAX	96	448	375	1150	641	6000	3890	8260	471	159	405	127
MIN	.91	70	152	240	275	340	1360	139	90	75	62	54
AC-FT	2090	9940	16500	31850	24940	140100	135200	112500	13930	5840	5840	4410
CAL YR 1992	TOTAL 71406.39	MEAN 195	MAX 2180	MIN .84	AC-FT 141600							
WTR YR 1993	TOTAL 253673.63	MEAN 695	MAX 8260	MIN .91	AC-FT 503200							

e Estimated

WILLOW CREEK BASIN

91

14034470 WILLOW CREEK ABOVE WILLOW CREEK LAKE, NEAR HEPPNER, OR

LOCATION.--Lat 45°20'27", long 119°30'53", in NE 1/4 NE 1/4 sec.1, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank 1.5 mi southeast of Heppner, 1.7 mi upstream from Willow Creek dam, and at mile 54.1.

DRAINAGE AREA.--67.6 mi².

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,085.41 ft above sea level (levels by Corps of Engineers).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Many diversions for irrigation upstream from station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek upstream from station.

AVERAGE DISCHARGE.--11 years, 21.8 ft³/s, 15,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 445 ft³/s Mar. 4, 1983, gage height, 6.93 ft; minimum discharge, 0.01 ft³/s July 31 to Sept. 14, 1988, Aug. 20, 1992, but may have been less during period of no gage-height record July 31 to Sept. 14, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 7	2115	170	6.84	Apr. 5	0915	145	6.60
Mar. 18	2000	278	7.56	Apr. 29	2300	191	7.02
Mar. 24	0015	*295	*7.64	May 3	1900	255	7.45

Minimum discharge, 0.24 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	2.2	11	7.1	25	19	103	139	35	e15	6.0	2.2
2	.39	3.4	11	7.6	22	18	106	128	35	17	4.3	2.3
3	.46	2.8	7.3	8.6	20	24	114	172	31	17	3.8	2.2
4	.46	2.8	6.2	e6.6	19	65	131	217	33	17	3.6	2.2
5	.43	3.5	5.7	e5.4	17	141	121	184	36	15	4.0	1.7
6	.50	2.7	5.2	e5.0	17	129	107	170	37	15	4.4	1.1
7	.81	2.5	6.2	e4.9	19	144	102	163	48	13	3.7	1.1
8	.92	3.0	7.5	e4.7	23	148	107	146	42	13	3.9	1.2
9	.81	3.4	7.6	e4.4	23	127	122	124	38	12	3.7	1.2
10	.97	2.8	8.2	e4.1	26	111	121	110	36	10	2.6	1.2
11	.92	2.7	10	e4.7	29	95	113	106	33	e9.8	2.6	1.2
12	.97	3.9	9.9	e5.4	29	80	105	101	32	e9.2	2.4	.86
13	.97	4.6	9.5	e5.6	29	68	99	91	28	e9.4	1.9	.87
14	.86	4.3	9.7	e5.8	28	68	93	82	26	9.2	2.0	1.1
15	.76	4.4	10	e5.4	25	88	91	77	32	8.5	2.4	1.3
16	e.76	4.9	9.8	e6.0	17	104	88	68	30	8.3	3.6	1.4
17	e.76	5.2	9.5	e6.0	e23	149	89	58	28	11	4.5	1.5
18	e.78	5.3	9.2	e6.0	e19	229	96	52	26	8.3	2.9	1.5
19	e.84	5.2	8.7	7.0	e17	211	91	45	25	9.2	3.0	1.4
20	.93	4.9	8.8	22	e16	201	87	41	23	13	3.2	1.4
21	1.0	5.4	8.5	30	e16	174	87	47	26	8.0	3.1	1.5
22	1.1	7.5	8.2	26	e17	146	95	43	25	8.9	2.6	1.6
23	1.0	7.4	8.0	23	e16	200	95	37	25	15	2.2	1.5
24	.94	e6.0	8.0	25	e14	271	94	38	23	13	2.3	1.9
25	.92	e4.5	8.0	51	13	205	93	37	21	12	3.1	1.9
26	.99	e4.2	8.5	50	15	177	127	34	19	11	3.1	1.5
27	.98	e8.8	8.8	41	15	147	129	30	e16	10	2.9	1.5
28	1.0	14	8.9	36	17	129	119	29	e15	9.2	2.6	1.6
29	1.1	13	8.8	35	---	112	138	27	e14	6.3	2.6	1.7
30	1.5	12	8.1	32	---	99	154	25	e14	7.2	2.7	1.8
31	2.1	---	7.7	28	---	92	---	27	---	6.4	2.4	---
TOTAL	27.29	157.3	262.5	509.3	566	3971	3217	2648	852	346.9	98.1	45.53
MEAN	.88	5.24	8.47	16.4	20.2	128	107	85.4	28.4	11.2	3.16	1.52
MAX	2.1	14	11	51	29	271	154	217	48	17	6.0	2.3
MIN	.36	2.2	5.2	4.1	13	18	87	25	14	6.3	1.9	.87
AC-FT	54	312	521	1010	1120	7880	6380	5250	1690	688	195	90

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	3.36	8.49	13.3	17.5	31.6	63.2	56.4	44.5	16.6	4.28	1.30	1.49
MAX	7.10	21.2	29.8	53.1	95.5	128	116	102	55.4	11.2	3.44	6.13
(WY)	1983	1987	1984	1984	1986	1993	1984	1983	1984	1993	1984	1984
MIN	.20	2.79	4.02	6.68	8.07	9.81	11.9	2.73	1.60	.88	.010	.064
(WY)	1989	1988	1991	1990	1988	1988	1992	1992	1992	1985	1988	1988

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

	1992	1993	1983-1993
ANNUAL TOTAL	2024.40	12700.92	
ANNUAL MEAN	5.53	34.8	21.8
HIGHEST ANNUAL MEAN			44.3
LOWEST ANNUAL MEAN			6.84
HIGHEST DAILY MEAN	21	271	300
LOWEST DAILY MEAN	.02	.36	.01
ANNUAL SEVEN-DAY MINIMUM	.04	.49	.01
ANNUAL RUNOFF (AC-FT)	4020	25190	15770
10 PERCENT EXCEEDS	13	113	63
50 PERCENT EXCEEDS	3.0	10	8.6
90 PERCENT EXCEEDS	.13	1.2	.56

e Estimated

WILLOW CREEK BASIN

14034480 BALM FORK NEAR HEPPNER, OR

LOCATION.--Lat 45°19'56", long 119°32'24", in NW 1/4 SE 1/4 sec.2, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank, 0.7 mi upstream from bridge on Willow Creek Road, 1.0 mi southeast of Heppner, 1.2 mi upstream from Willow Creek dam, and at mile 1.1.

DRAINAGE AREA.--26.3 mi².

PERIOD OF RECORD.--May 1982 to current year.

REVISED RECORDS.--WDR OR-83-1: Drainage area. WDR OR-88-1: 1987(M).

GAGE.--Water-stage recorder. Concrete control since Aug. 24, 1982. Datum of gage is 2,101.52 ft above sea level (Corps of Engineers bench mark).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversion for irrigation of about 170 acres upstream from station.

AVERAGE DISCHARGE.--11 years, 2.71 ft³/s, 1,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190 ft³/s Mar. 4, 1983, gage height, 4.90 ft, from rating curve extended above 82 ft³/s on basis of slope-area measurement of peak flow; no flow for part or all of several days in 1982, 1990, 1991, 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft³/s June 14, 1903, by computation of slope-area measurement (see WSP 96).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1900	*87	*4.38	Mar. 24	2000	63	4.23

Minimum discharge, 0.02 ft³/s several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.03	.07	e.70	e5.6	2.6	13	18	3.1	1.2	.78	.31
2	.02	.04	.08	e.72	e5.0	2.9	12	16	3.0	1.3	.70	.18
3	.03	.03	.08	e.68	e4.7	5.0	12	21	2.7	1.3	.64	.17
4	.02	.04	.09	e.64	e4.2	25	12	27	3.1	1.4	.59	.12
5	.02	.03	.12	e.60	e4.2	39	12	23	4.8	1.3	.55	.10
6	.02	.03	.13	e.56	e4.4	38	12	23	4.4	1.4	.50	.09
7	.02	.03	.19	e.53	e4.8	40	14	22	3.9	1.5	.47	.10
8	.02	.04	.20	e.50	e5.4	29	18	19	3.5	1.5	.49	.09
9	.02	.04	.12	e.48	e5.4	21	25	17	3.3	1.4	.47	.07
10	.02	.04	.10	e.46	e7.0	17	21	15	3.1	1.4	.37	.07
11	.02	.04	.08	e.50	e8.0	14	19	12	2.9	1.4	.35	.06
12	.02	.04	.09	e.56	8.2	12	17	10	2.8	1.3	.36	.05
13	.02	.04	.22	e.60	7.7	10	16	7.6	2.5	1.3	.36	.06
14	.03	.04	1.7	e.62	7.3	10	15	6.1	2.4	1.3	.33	.05
15	.03	.04	1.8	e.64	e5.5	13	15	5.7	2.5	1.1	.33	.04
16	.02	.04	1.8	e.66	e4.2	15	14	5.4	2.3	1.1	.34	.04
17	.02	.04	1.6	e.66	e6.0	30	14	4.5	2.3	1.1	.30	.05
18	.02	.04	1.4	e.68	e4.8	30	14	2.6	2.1	1.0	.27	.06
19	.02	.05	1.4	e.70	e4.5	28	13	2.6	1.8	1.5	.27	.17
20	.02	.05	1.4	e2.0	e4.3	23	12	2.8	1.7	1.4	.50	.09
21	.03	.06	1.3	e6.4	e4.3	19	11	3.4	1.8	1.2	.30	.05
22	.03	.09	1.2	e6.0	e3.6	16	11	3.8	1.9	1.2	.29	.06
23	.03	.09	1.0	e5.6	e3.3	20	10	4.3	1.9	1.3	.26	.06
24	.02	.08	.71	e6.0	3.2	38	10	3.7	1.9	1.2	.31	.04
25	.02	.07	.72	e12	2.8	35	10	3.6	1.7	1.2	.21	.06
26	.02	.06	.74	e13	e2.8	31	28	3.3	1.5	1.2	.21	.07
27	.02	.06	.76	e9.0	e2.7	25	27	2.2	1.5	1.2	.19	.05
28	.03	.09	.77	e8.5	e2.7	19	21	2.0	1.4	1.1	.20	.07
29	.03	.08	.75	e8.0	---	17	19	2.3	1.1	1.0	.19	.05
30	.04	.07	.74	e7.0	---	14	20	2.2	1.2	.84	.19	.04
31	.03	---	e.72	e6.2	---	12	---	2.4	---	.83	.18	---
TOTAL	0.73	1.52	22.08	101.19	136.6	650.5	467	293.5	74.1	38.47	11.50	2.52
MEAN	.024	.051	.71	3.26	4.88	21.0	15.6	9.47	2.47	1.24	.37	.084
MAX	.04	.09	1.8	13	8.2	40	28	27	4.8	1.5	.78	.31
MIN	.02	.03	.07	.46	2.7	2.6	10	2.0	1.1	.83	.18	.04
AC-FT	1.4	3.0	44	201	271	1290	926	582	147	76	23	5.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	.42	.93	1.89	2.88	5.37	9.48	5.36	4.12	1.33	.45	.20
MAX	1.53	3.01	4.60	7.81	17.1	21.0	16.4	10.4	3.82	1.24	.51
(WY)	1985	1987	1984	1984	1986	1993	1984	1983	1984	1993	1984
MIN	.000	.002	.038	.28	.66	.47	.29	.24	.077	.034	.012
(WY)	1992	1992	1991	1991	1990	1992	1992	1992	1992	1992	1991

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	102.06	1799.71	
ANNUAL MEAN	.28	4.93	
HIGHEST ANNUAL MEAN			2.71
LOWEST ANNUAL MEAN			6.15
HIGHEST DAILY MEAN	1.8	Dec 15	40
LOWEST DAILY MEAN	.00	Aug 19	.02
ANNUAL SEVEN-DAY MINIMUM	.01	Aug 15	.02
ANNUAL RUNOFF (AC-FT)	202	3570	1970
10 PERCENT EXCEEDS	.73	17	7.5
50 PERCENT EXCEEDS	.10	1.3	.78
90 PERCENT EXCEEDS	.02	.04	.04

e Estimated

WILLOW CREEK BASIN

93

14034490 WILLOW CREEK LAKE AT HEPPNER, OR

LOCATION.--Lat 45°20'50", long 119°32'37", in NW 1/4 SE 1/4 sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, U.S. Corps of Engineers land, on top left side of spillway on dam on Willow Creek, 2,000 ft upstream from Court Street bridge and at mile 52.4.

DRAINAGE AREA.--96.6 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers). Prior to Dec. 22, 1983, nonrecording gage at nearby site at present datum.

REMARKS.--Lake is formed behind roller-compacted, concrete dam; storage began Feb. 16, 1983. Capacity, 14,020 acre-ft between elevations 2,000.0 ft, sill of outlet gates, and 2,113.5 ft, crest of spillway. Average minimum lake elevation 2,047.0 ft, storing 2,540 acre-ft. Dead storage, 73 acre-ft below elevation 2,000.0 ft. Reservoir used for flood control. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,820 acre-ft May 5, 1993, elevation, 2,080.04 ft; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,820 acre-ft May 5, elevation, 2,080.04 ft; minimum contents, 2,810 acre-ft Oct. 29, elevation, 2,049.74 ft.

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

2,050	2,840	2,060	3,950	2,070	5,280	2,080	6,820
2,055	3,370	2,065	4,590	2,075	6,020		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2050.64	2049.80	2052.13	2056.30	2063.16	2062.99	2076.51	2078.98	2076.92	2076.61	2076.43	2075.92
2	2050.60	2049.82	2052.42	2056.39	2063.05	2063.18	2076.70	2079.00	2077.04	2076.63	2076.39	2075.91
3	2050.60	2049.84	2052.47	2056.52	2062.85	2063.49	2076.84	2079.45	2077.09	2076.65	2076.38	2075.91
4	2050.52	2049.87	2052.53	2056.60	2062.65	2064.60	2077.06	2080.01	2077.19	2076.65	2076.35	2075.89
5	2050.49	2049.91	2052.64	2056.68	2062.38	2066.88	2076.99	2079.89	2077.38	2076.63	2076.34	2075.86
6	2050.43	2049.91	2052.74	---	2062.15	2068.77	2076.77	2079.64	2077.51	2076.61	2076.33	2075.83
7	2050.39	2049.94	2052.84	2056.74	2061.95	2070.56	2076.46	2079.30	2077.64	2076.58	2076.31	2075.81
8	2050.39	2049.97	2052.94	2056.81	2061.86	2071.88	2076.39	2078.75	2077.63	2076.55	2076.31	2075.77
9	2050.32	2049.99	2053.13	2056.87	2061.96	2072.61	2076.78	2077.98	2077.53	2076.49	2076.29	2075.75
10	2050.29	2050.01	2053.24	2056.94	2062.16	2073.01	2077.01	2076.91	2077.40	2076.43	2076.27	2075.72
11	2050.29	2050.03	2053.45	2057.00	2062.44	2073.11	2077.26	2076.23	2077.25	2076.32	2076.25	2075.66
12	2050.22	2050.07	2053.63	2057.07	2062.63	2073.05	2077.19	2076.01	2077.08	2076.28	2076.24	2075.63
13	2050.17	2050.11	2053.73	2057.14	2062.66	2072.91	2077.00	2075.96	2076.90	2076.30	2076.22	2075.59
14	2050.13	2050.16	2053.93	2057.23	2062.67	2072.90	2076.71	2075.86	2076.71	2076.35	2076.19	2075.56
15	2050.09	2050.21	2054.13	2057.26	2062.60	2073.37	2076.46	2075.76	2076.65	2076.38	2076.18	2075.54
16	2050.05	2050.27	2054.32	2057.36	2062.47	2074.26	2076.32	2075.70	2076.55	2076.43	2076.16	2075.51
17	2050.02	2050.31	2054.43	2057.36	2062.44	2075.96	2076.35	2075.72	2076.50	2076.49	2076.18	2075.50
18	2049.99	2050.40	2054.53	2057.46	2062.48	2078.21	2076.45	2075.87	2076.41	2076.53	2076.16	2075.46
19	2049.99	2050.46	2054.75	2057.60	2062.49	2079.21	2076.49	2075.97	2076.32	2076.69	2076.15	2075.43
20	2049.95	2050.51	2054.93	2057.95	2062.54	2079.11	2076.47	2076.08	2076.22	2076.66	2076.14	2075.40
21	2049.95	2050.64	2055.06	2058.53	2062.52	2078.70	2076.46	2076.19	2076.14	2076.54	2076.11	2075.37
22	2049.92	2050.79	2055.18	2059.04	2062.47	2077.97	2076.50	2076.29	2076.03	2076.52	2076.11	2075.34
23	2049.88	2050.89	2055.24	2059.44	2062.44	2077.84	2076.55	2076.31	2076.02	2076.56	2076.06	2075.32
24	2049.86	2050.96	2055.40	2059.85	2062.42	2078.61	2076.56	2076.31	2076.11	2076.57	2076.02	2075.31
25	2049.84	2051.02	2055.52	2060.82	2062.40	2078.82	2076.56	2076.30	2076.31	2076.59	2076.01	2075.30
26	2049.80	2051.09	2055.63	2061.83	2062.49	2078.52	2077.18	2076.41	2076.42	2076.60	2076.00	2075.26
27	2049.79	2051.22	2055.77	2062.55	2062.63	2077.82	2077.83	2076.48	2076.53	2076.59	2075.98	2075.24
28	2049.77	2051.47	2055.88	2063.05	2062.79	2076.78	2078.21	2076.55	2076.59	2076.56	2075.97	2075.22
29	2049.77	2051.72	2055.99	2063.23	---	2076.20	2078.61	2076.60	2076.59	2076.50	2075.96	2075.20
30	2049.78	2051.93	2056.11	2063.27	---	2076.18	2078.88	2076.62	2076.60	2076.47	2075.95	2075.17
31	2049.80	---	2056.20	2063.25	---	2076.27	---	2076.72	---	2076.45	2075.94	---
MAX	2050.64	2051.93	2056.20	---	2063.16	2079.21	2078.88	2080.01	2077.64	2076.69	2076.43	2075.92
MIN	2049.77	2049.80	2052.13	---	2061.86	2062.99	2076.32	2075.70	2076.02	2076.28	2075.94	2075.17
(†)	2820	3040	3500	4360	4300	6210	6630	6280	6260	6240	6160	6040
(‡)	-90	+220	+460	+860	-60	+1910	+420	-350	-20	-20	-80	-120

CAL YR 1992 AC-FT† -730

WTR YR 1993 AC-FT‡ +3130

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

‡ Change in contents, in acre-feet.

WILLOW CREEK BASIN

14034500 WILLOW CREEK AT HEPPNER, OR

LOCATION.--Lat 45°21'02", long 119°32'56", in SE 1/4 NW 1/4 sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank at Heppner, 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, 0.2 mi downstream from Willow Creek Dam and at mile 52.2.

DRAINAGE AREA.--96.8 mi².

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

REVISED RECORDS.--WDR OR-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since September 1985. Datum of gage is 1,952.73 ft above sea level.

REMARKS.--Records good. Flow regulated by Willow Creek Lake, 0.2 mi upstream, since Feb. 16, 1983. Many diversions for irrigation upstream from station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek upstream from station. Continuous water-quality records for the period February 1963 to June 1968 and March 1972 to September 1973 have been collected at this location.

AVERAGE DISCHARGE.--31 years (water years 1952-82), 19.1 ft³/s, 13,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 812 ft³/s May 10, 1957, gage height, 6.15 ft, from rating curve extended above 230 ft³/s; maximum gage height, 6.46 ft May 25, 1971, backwater from Shobe Canyon; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft³/s June 14, 1903, result of slope-area measurement (see WSP 96). Discharge for flood of Feb. 22, 1949, was 1,700 ft³/s, result of slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 252 ft³/s Mar. 20, gage height, 4.85 ft; minimum discharge, 1.5 ft³/s Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.6	2.8	2.3	34	4.8	94	135	19	14	7.2	3.0
2	3.0	2.6	2.8	2.1	34	4.9	107	135	22	14	6.7	3.1
3	3.1	2.6	2.8	2.0	34	5.1	116	139	26	14	4.5	3.3
4	3.1	2.6	2.8	2.0	34	5.5	130	183	26	14	3.9	3.3
5	3.1	2.6	2.8	2.3	34	6.1	139	232	26	14	3.4	3.3
6	2.9	2.6	2.8	2.4	34	13	139	233	25	14	3.0	3.3
7	2.6	2.6	2.8	2.6	34	21	139	231	24	14	3.0	3.3
8	2.6	2.6	2.8	2.6	29	34	130	232	41	14	3.0	3.3
9	2.6	2.7	2.8	2.5	19	60	116	230	65	14	2.9	3.3
10	2.6	2.8	2.8	2.4	18	73	116	226	47	14	2.8	3.3
11	2.6	2.8	2.8	2.6	17	80	116	177	47	14	2.8	3.2
12	2.6	2.8	2.8	2.5	20	82	122	124	47	11	2.5	3.2
13	2.6	2.8	2.8	2.4	28	74	125	99	47	5.5	2.2	3.2
14	2.6	2.8	3.0	2.4	28	68	125	91	41	5.4	2.3	3.2
15	2.6	2.8	2.9	2.4	28	60	118	82	38	5.4	2.8	3.2
16	2.6	2.8	2.8	2.4	24	47	106	71	38	5.3	2.8	3.2
17	2.6	2.8	2.7	2.9	19	43	95	55	33	5.2	2.8	3.2
18	2.6	2.7	2.5	3.1	18	49	91	36	30	5.1	3.1	3.2
19	2.6	2.7	2.5	3.2	18	e180	91	35	29	5.3	3.3	3.2
20	2.6	2.7	2.5	3.3	18	e250	91	34	29	14	3.3	3.2
21	2.6	2.8	2.5	3.2	18	247	91	34	29	17	3.3	3.2
22	2.6	2.8	2.5	3.0	18	247	91	35	30	9.7	3.3	3.2
23	2.6	2.9	2.5	2.9	18	243	91	36	21	9.7	3.7	3.2
24	2.6	2.9	2.5	2.9	16	246	91	36	9.6	9.7	3.3	3.2
25	2.6	2.8	2.5	2.8	12	242	91	31	6.5	9.7	3.3	3.2
26	2.6	2.8	2.5	2.8	7.2	240	91	23	6.6	9.7	3.3	3.2
27	2.6	2.8	2.5	5.1	5.2	243	91	20	6.5	9.7	3.3	3.5
28	2.6	2.8	2.4	12	5.0	243	98	19	9.5	9.7	3.3	3.2
29	2.6	2.8	2.3	25	---	186	106	19	14	9.7	3.3	3.2
30	2.6	2.8	2.4	35	---	112	126	19	14	8.1	3.3	3.2
31	2.6	---	2.4	34	---	94	---	19	---	7.2	3.3	---
TOTAL	83.2	82.2	82.3	179.1	621.4	3503.4	3273	3071	846.7	326.1	105.0	96.8
MEAN	2.68	2.74	2.65	5.78	22.2	113	109	99.1	28.2	10.5	3.39	3.23
MAX	3.1	2.9	3.0	35	34	250	139	233	65	17	7.2	3.5
MIN	2.6	2.6	2.3	2.0	5.0	4.8	91	19	6.5	5.1	2.2	3.0
AC-FT	165	163	163	355	1230	6950	6490	6090	1680	647	208	192

CAL YR 1992 TOTAL 2411.5 MEAN 6.59 MAX 29 MIN 1.7 AC-FT 4780
WTR YR 1993 TOTAL 12270.2 MEAN 33.6 MAX 250 MIN 2.0 AC-FT 24340

e Estimated

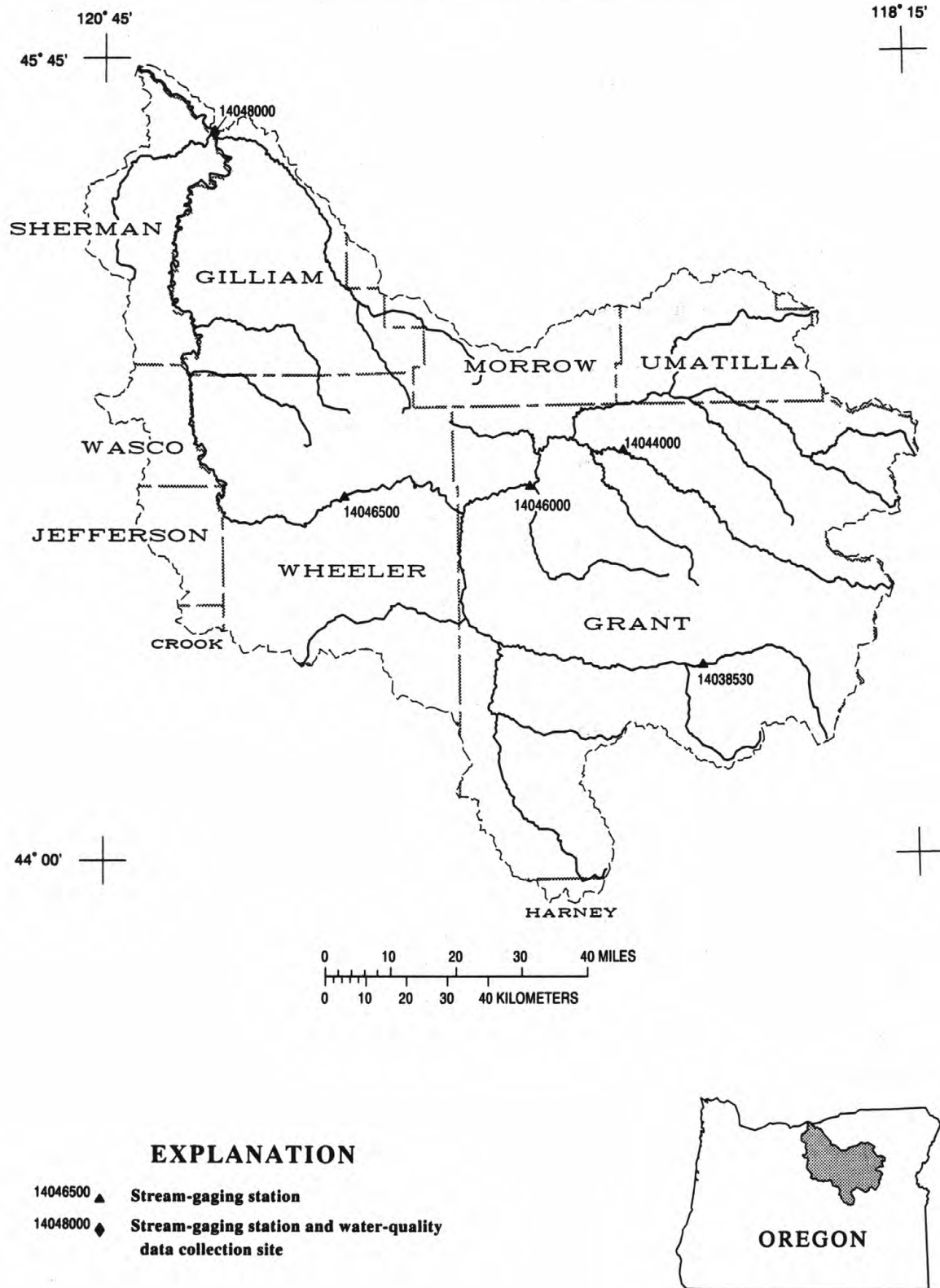


Figure 9--Location of surface-water and water-quality stations in the John Day River Basin.

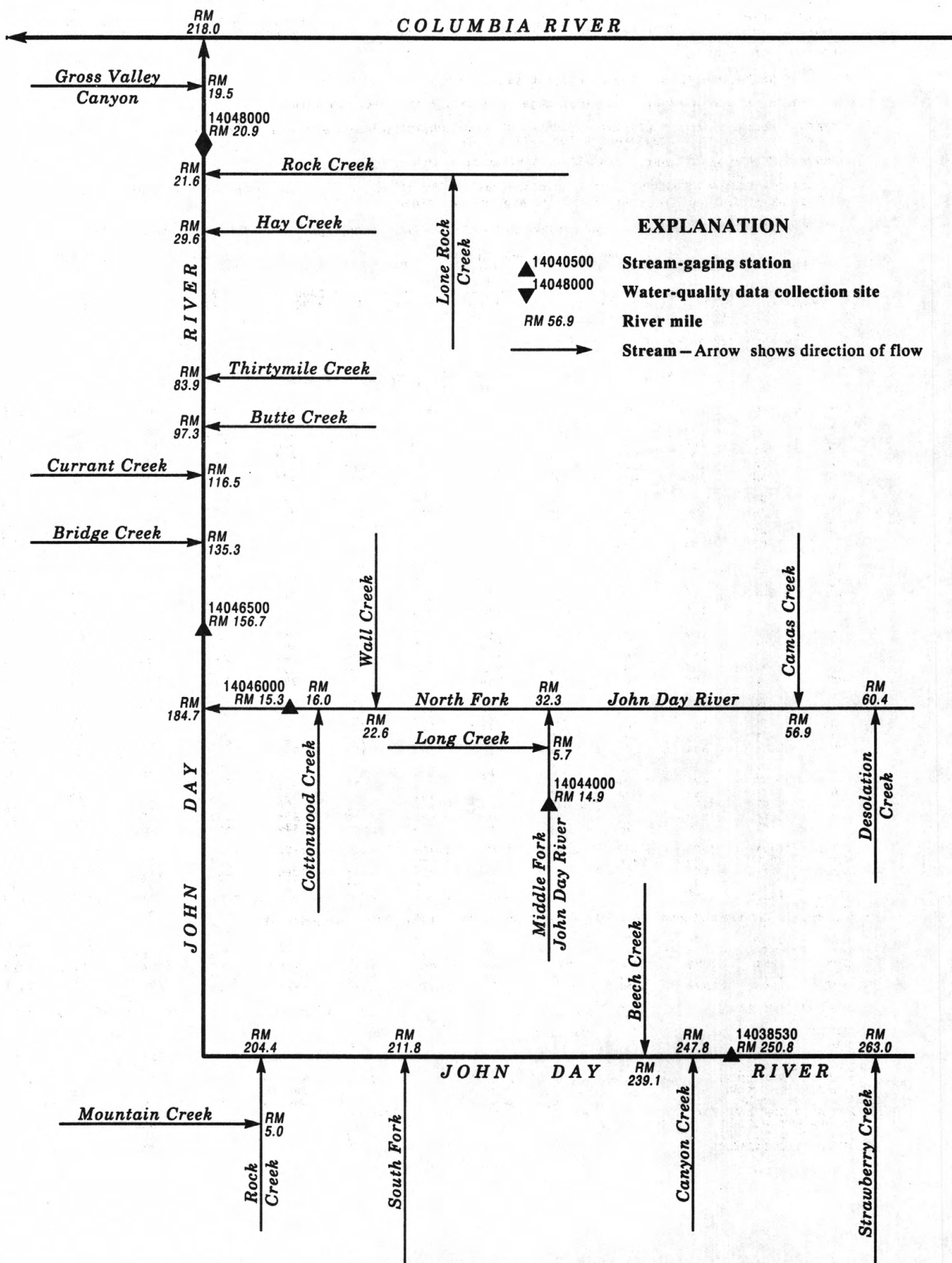


Figure 10--Schematic diagram showing gaging stations in John Day River Basin.

JOHN DAY RIVER BASIN

97

14038530 JOHN DAY RIVER NEAR JOHN DAY, OR

LOCATION.--Lat 44°25'07", long 118°54'19", in SW 1/4 SE 1/4 sec.19, T.13 S., R.32 E., Grant County, Hydrologic Unit 17070201, on left bank 1,200 ft downstream from Dog Creek, 2.5 mi east of John Day, and at mile 250.8.

DRAINAGE AREA.--386 mi².

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,130.56 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--25 years, 205 ft³/s, 148,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,830 ft³/s June 9, 1969, gage height, 10.80 ft, from floodmark; minimum discharge, 3.5 ft³/s Aug. 26-28, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 17	1830	*1,680	*6.96	May 6	2300	959	5.91
Mar. 24	1130	984	5.95	May 13	0730	1,410	6.60
Apr. 4	1630	978	5.94				

Minimum discharge, 28 ft³/s Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	93	e80	104	117	125	440	521	566	167	79	43
2	79	106	e76	99	114	139	442	534	548	206	74	41
3	119	93	e66	100	112	166	538	659	544	214	67	39
4	110	101	e60	101	113	194	845	770	475	199	65	35
5	92	101	e70	101	114	293	725	676	513	174	64	34
6	86	92	e90	e80	124	335	596	788	491	159	61	35
7	85	101	e100	e70	144	362	598	900	603	152	57	34
8	83	111	e100	e66	163	382	514	852	547	134	58	34
9	81	114	105	e64	212	381	509	734	488	125	55	33
10	80	103	149	e60	326	421	501	668	460	113	53	30
11	78	105	134	e70	273	389	482	812	453	110	50	31
12	76	137	117	e80	218	316	444	1140	434	108	52	34
13	76	122	110	e84	199	272	407	1360	375	114	50	41
14	75	115	109	e86	197	313	387	1290	335	123	47	46
15	75	110	111	e90	185	384	445	1140	337	123	58	44
16	75	109	103	e92	141	931	449	1030	331	127	160	45
17	74	107	103	e96	110	1350	410	991	315	139	104	49
18	74	109	102	e100	145	1200	578	941	288	133	87	50
19	74	109	95	e110	208	1010	514	939	271	124	81	52
20	76	105	104	152	256	861	432	906	298	131	86	53
21	76	111	101	182	176	709	419	830	327	123	83	55
22	77	131	100	201	151	602	422	743	374	127	82	56
23	76	114	104	155	143	651	420	641	343	170	77	64
24	74	e96	103	140	134	916	435	546	283	152	75	69
25	74	e80	94	136	123	787	408	519	245	146	72	62
26	74	e60	100	131	111	653	444	552	214	136	68	61
27	74	e80	103	124	113	561	414	534	211	131	69	63
28	75	e90	102	124	123	494	400	536	192	119	63	63
29	81	e100	103	128	---	461	434	500	178	110	61	60
30	88	e90	99	129	---	424	515	456	171	105	61	63
31	88	---	100	119	---	386	---	484	---	87	52	---
TOTAL	2484	3095	3093	3374	4545	16468	14567	23992	11210	4281	2171	1419
MEAN	80.1	103	99.8	109	162	531	486	774	374	138	70.0	47.3
MAX	119	137	149	201	326	1350	845	1360	603	214	160	69
MIN	59	60	60	60	110	125	387	456	171	87	47	30
AC-FT	4930	6140	6130	6690	9020	32660	28890	47590	22240	8490	4310	2810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	93.3	126	155	200	236	327	339	438	339	114	43.7	55.5													
MAX	156	244	385	514	689	746	718	845	810	314	116	145													
(WY)	1983	1974	1974	1971	1982	1984	1984	1984	1982	1982	1984	1984													
MIN	65.8	87.5	90.0	88.1	88.8	88.6	88.1	85.4	53.9	25.9	10.4	24.2													
(WY)	1989	1979	1989	1977	1977	1977	1977	1992	1992	1973	1973	1990													

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1969 - 1993

	1992	1993	1969-1993
ANNUAL TOTAL	33765.9	90699	205
ANNUAL MEAN	92.3	248	393
HIGHEST ANNUAL MEAN			73.5
LOWEST ANNUAL MEAN			2640
HIGHEST DAILY MEAN	249	1360	3.5
LOWEST DAILY MEAN	8.2	30	4.3
ANNUAL SEVEN-DAY MINIMUM	9.6	33	
ANNUAL RUNOFF (AC-FT)	66970	179900	148600
10 PERCENT EXCEEDS	163	597	463
50 PERCENT EXCEEDS	97	119	130
90 PERCENT EXCEEDS	22	60	39

e Estimated

LOCATION.--Lat 44°48'50", long 119°25'50", in SE 1/4 sec.2, T.9 S., R.27 E., Grant County, Hydrologic Unit 17070202, on right bank just downstream from entrance to canyon, 0.7 mi downstream from Cottonwood Creek, 0.8 mi west of Monument, and at mile 15.3.

PERIOD OF RECORD.--March 1925 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: 1932 (M) . WSP 1448: 1927, 1931 (M), 1949.

GAGE.--Water-stage recorder. Datum of gage is 1,959.64 ft above sea level. Prior to Nov. 24, 1925, nonrecording gage and Nov. 24, 1925, to Oct. 16, 1928, water-stage recorder at datum 1.10 ft higher. Oct. 17, 1928, to Sept. 30, 1930, water-stage recorder at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Very slight regulation by small reservoirs upstream. Many small diversions for irrigation upstream from station. Continuous water-quality records for the period July 1966 to September 1968 have been collected at this location. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--68 years, 1,281 ft³/s, 928,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s Jan. 30, 1965, gage height, 18.45 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 6 ft³/s sometime during period Nov. 2-13, 1936 (result of freezeup); minimum daily, 17 ft³/s Dec. 12, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	0030	16,800	12.82	Apr. 18	1130	5,600	7.82
Mar. 24	0530	*18,400	*13.43	May 4	0330	11,800	10.77
Apr. 4	0500	9,860	9.91	May 13	0700	10,400	10.16

Minimum discharge, 63 ft³/s Dec. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	175	262	364	477	477	6630	6920	2840	640	291	218
2	96	197	305	350	469	530	7210	6890	2730	627	277	207
3	102	246	225	352	481	562	7430	8050	2560	727	264	199
4	123	238	156	363	511	647	9570	10800	2630	714	253	195
5	182	215	103	357	504	890	8240	9080	2630	617	239	189
6	155	206	90	320	521	1490	6670	8970	2780	557	230	183
7	134	197	148	187	528	2330	6220	9590	3220	517	228	178
8	125	206	e250	e170	578	3290	5940	8550	2990	489	227	175
9	120	265	328	e160	693	3710	6930	7210	2610	457	217	173
10	119	243	325	e130	1080	4430	6580	6600	2390	429	207	170
11	119	206	377	e170	1240	3660	6100	7490	2270	408	196	166
12	117	183	422	e180	1130	3120	4310	9160	2250	387	190	162
13	116	264	413	e180	1000	2630	4650	9770	1980	375	191	160
14	114	271	391	e180	961	2990	4370	9190	1770	385	197	161
15	113	248	380	e190	922	5570	4170	8040	1800	431	194	162
16	113	235	376	e200	694	7990	4410	7080	1830	427	261	160
17	114	225	348	e210	1170	8340	4280	6570	1660	428	999	158
18	116	229	343	e220	1230	12900	5270	5980	1540	469	631	158
19	117	240	326	369	951	13700	5010	5820	1430	457	462	160
20	115	240	349	448	923	12800	4510	5530	1330	466	413	158
21	115	235	342	643	745	10900	4460	4900	1330	476	372	158
22	117	248	355	798	633	9250	4730	4330	1430	432	342	159
23	121	290	369	688	623	12000	4950	3690	1290	424	311	160
24	125	262	346	640	573	15900	4980	3300	1110	539	288	161
25	121	157	316	633	482	11300	4990	3100	972	474	271	162
26	119	101	318	624	428	9020	5700	3250	881	428	263	160
27	117	126	386	590	427	7720	5670	3100	837	408	256	157
28	118	305	411	589	486	7180	5230	2910	792	370	246	153
29	123	296	395	593	---	6710	5370	2830	733	336	238	152
30	139	279	371	592	---	5860	6900	2460	684	315	235	150
31	159	---	367	533	---	5340	---	2370	---	307	228	---
TOTAL	3782	6828	9893	12013	20460	193236	172480	193530	55299	14516	9217	5064
MEAN	122	228	319	388	731	6233	5749	6243	1843	468	297	169
MAX	182	305	422	798	1240	15900	9570	10800	3220	727	999	218
MIN	96	101	90	130	427	477	4170	2370	684	307	190	150
AC-FT	7500	13540	19620	23830	40580	383300	342100	383900	109700	28790	18280	10040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1993, BY WATER YEAR (WY)

MEAN	161	319	702	898	1378	2414	3630	3604	1700	386	133	122
MAX	420	1621	3374	4126	4970	6456	6695	8794	5227	1211	345	423
(WY)	1983	1974	1965	1965	1982	1983	1943	1948	1948	1982	1984	1984
MIN	58.5	64.5	96.6	75.8	134	345	822	378	259	97.4	36.6	45.2
(WY)	1937	1937	1937	1937	1929	1977	1968	1934	1992	1973	1931	1934

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1929 - 1993
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ANNUAL TOTAL	207686		696318				
ANNUAL MEAN	567		1908			1285	
HIGHEST ANNUAL MEAN						2608	1984
LOWEST ANNUAL MEAN						441	1977
HIGHEST DAILY MEAN	3230	Feb 22	15900	Mar 24	31900		Jan 30 1965
LOWEST DAILY MEAN	76	Sep 3	90	Dec 6	17		Dec 12 1932
ANNUAL SEVEN-DAY MINIMUM	78	Aug 30	115	Oct 14	29		Aug 28 1931
ANNUAL RUNOFF (AC-FT)	411900		1381000		930800		
10 PERCENT EXCEEDS	1750		6650		3720		
50 PERCENT EXCEEDS	294		428		420		
90 PERCENT EXCEEDS	90		153		96		

e Estimated

JOHN DAY RIVER BASIN

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14048000 JOHN DAY RIVER AT McDONALD FERRY, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°35'16", long 120°24'30", in NE 1/4 NW 1/4 sec.11, T.1 N., R.19 E., Sherman County, Hydrologic Unit 17070204, on left bank at McDonald Ferry, 0.8 mi downstream from Rock Creek, 10 mi east of Klondike, and at mile 20.9.

GAGE AREA.--7,580 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1904 to current year. Prior to Oct. 1, 1930, published as "at McDonald."

REVISED RECORDS.--WSP 1094: 1894(M), 1932(M). WSP 1448: 1908-9, 1912, 1916, 1920(M), 1922, 1932.

GAGE.--Water-stage recorder. Datum of gage is 392.27 ft above sea level. Prior to Aug. 30, 1930, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--88 years (water years 1906-93), 2,080 ft³/s, 1,507,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft³/s Dec. 24, 1964, gage height, 13.59 ft, from floodmark, from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of peak flow; no flow for part of Sept. 2, 1966, Aug. 15 to Sept. 16, 1973, Aug. 13, 14, 19-25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1894 reached a stage of 12.8 ft, from floodmarks, discharge, 39,100 ft³/s, from rating curve extended above 22,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 11	1330	7,900	6.58	Apr. 19	1930	8,930	6.95
Mar. 20	0530	26,100	12.08	Apr. 27	1700	9,040	6.99
Mar. 25	0930	*26,800	*12.24	May 5	0630	15,700	9.37
Apr. 5	1100	15,100	9.19	May 14	1000	13,900	8.81
Apr. 10	1030	11,500	7.94				

Minimum discharge, 73 ft³/s Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	305	474	693	1480	1140	9240	9600	4220	1400	676	424
2	82	310	553	e660	1380	1300	10200	10000	4560	1320	646	414
3	117	329	538	e690	1260	1240	11500	9940	4970	1280	616	401
4	121	360	e450	e660	1200	1350	11400	11000	4610	1290	577	389
5	114	374	e470	e620	1200	2160	14700	14800	4930	1420	539	360
6	131	423	e470	e580	1230	3300	13700	12900	5070	1390	507	346
7	146	443	e380	e490	1220	3770	11600	12200	5360	1250	475	322
8	198	423	e340	e450	1260	4950	10800	13500	5680	1140	446	306
9	309	421	e300	e420	1300	6200	10200	12300	5840	1060	427	287
10	299	404	434	e380	1400	6950	11000	10700	5120	1010	422	285
11	291	407	606	e370	1710	7520	10600	9720	4640	958	408	276
12	293	472	573	e360	2420	7270	10100	10300	4310	911	395	256
13	282	479	618	e330	2560	6060	9100	12200	4140	873	375	247
14	268	445	707	e350	2360	5270	8280	13400	3900	909	357	241
15	258	416	689	e460	2170	5280	7820	13000	3480	846	349	230
16	254	476	691	e520	2060	8230	7330	11600	3490	823	333	222
17	250	507	671	e550	1890	13400	7770	10400	3380	852	334	239
18	262	487	633	e630	1580	15500	7500	9630	3230	898	359	234
19	270	483	637	e740	1470	21700	8420	8880	2960	884	502	235
20	272	465	611	e780	1490	23500	8570	8480	2750	920	941	239
21	304	474	575	e740	1610	20700	7810	8190	2540	949	831	244
22	318	493	584	e720	1930	17800	7570	7500	2410	961	804	242
23	308	493	606	e690	1770	15200	7780	6870	2390	950	692	243
24	292	489	603	e1000	1580	18800	8060	6080	2510	910	635	263
25	281	504	615	2080	1500	25000	8040	5420	2320	875	577	283
26	282	540	620	2220	1380	19500	8040	4980	2070	955	536	290
27	285	517	596	1890	1230	15400	8460	5050	1840	974	510	299
28	294	427	568	1670	1160	13000	8680	5270	1670	877	478	301
29	302	364	611	1570	---	11800	8200	5010	1560	824	457	299
30	299	357	667	1540	---	11000	8010	4800	1480	791	441	299
31	303	---	687	1520	---	9970	---	4520	---	731	436	---
TOTAL	7570	13087	17577	26373	44800	324260	280480	288240	107430	31231	16081	8716
MEAN	244	436	567	851	1600	10460	9349	9298	3581	1007	519	291
MAX	318	540	707	2220	2560	25000	14700	14800	5840	1420	941	424
MIN	82	305	300	330	1160	1140	7330	4520	1480	731	333	222
AC-FT	15020	25960	34860	52310	88860	643200	556300	571700	213100	61950	31900	17290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

MEAN	326	614	1193	1648	2586	4001	5696	5203	2720	661	196	186
MAX	892	2310	7030	6402	8882	11450	11900	13180	9531	2131	700	923
(WY)	1985	1974	1965	1965	1982	1983	1984	1917	1948	1984	1984	1984
MIN	59.9	157	221	217	374	557	964	533	285	88.0	5.70	23.8
(WY)	1937	1937	1937	1937	1933	1977	1968	1934	1992	1926	1973	1934

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1906 - 1993
ANNUAL TOTAL	280257	1165845	
ANNUAL MEAN	766	3194	2080
HIGHEST ANNUAL MEAN			4724
LOWEST ANNUAL MEAN			603
HIGHEST DAILY MEAN	3510	25000	39400
LOWEST DAILY MEAN	25	82	.00
ANNUAL SEVEN-DAY MINIMUM	31	114	.00
ANNUAL RUNOFF (AC-FT)	555900	2312000	1507000
10 PERCENT EXCEEDS	2250	10200	5850
50 PERCENT EXCEEDS	472	875	791
90 PERCENT EXCEEDS	74	289	142

e Estimated

JOHN DAY RIVER BASIN

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1911-12, 1960-68, 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1975 to September 1981.

WATER TEMPERATURE: October 1962 to September 1968, October 1975 to September 1981.

SEDIMENT CONCENTRATION: October 1962 to September 1968.

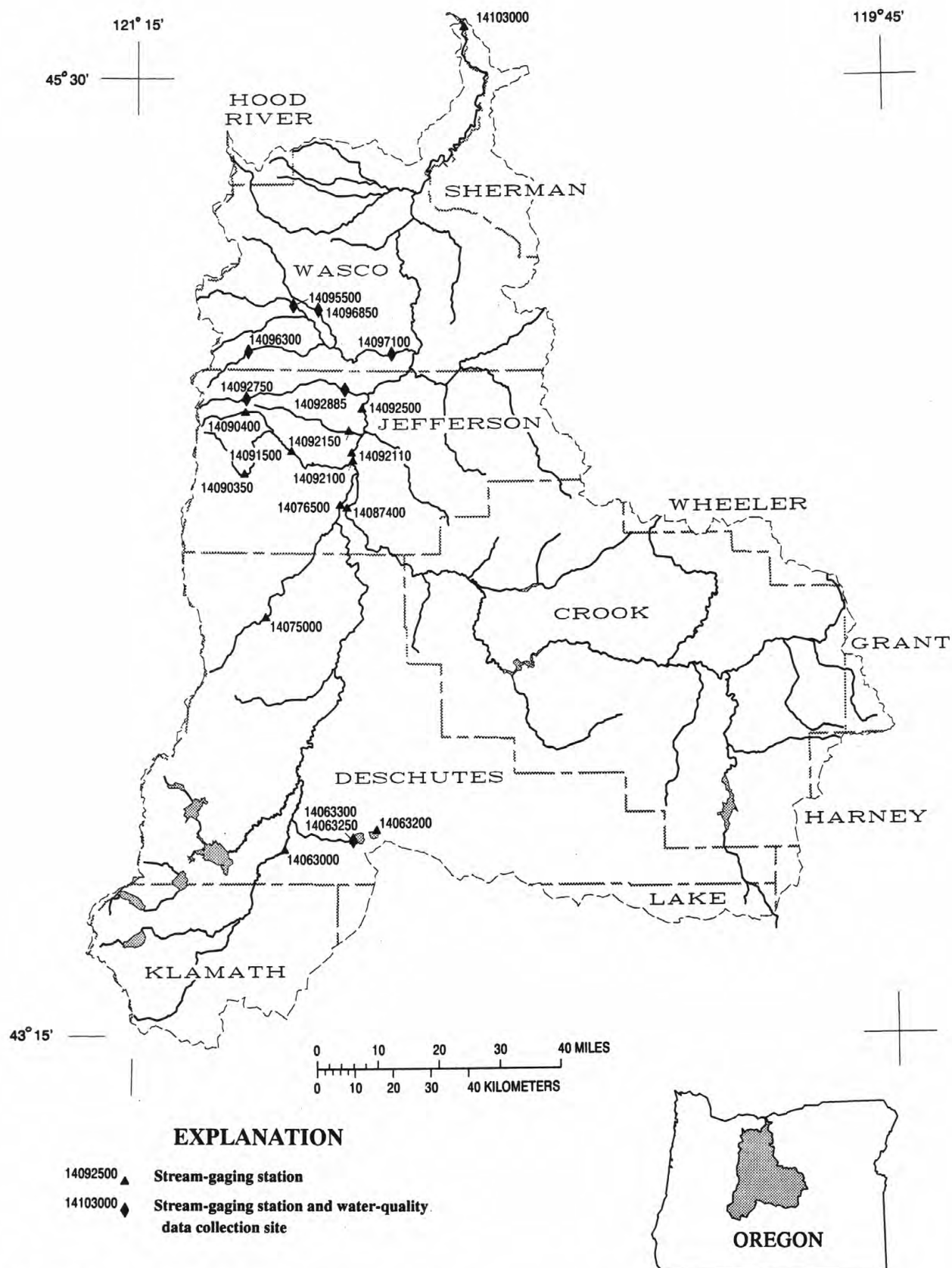
SEDIMENT DISCHARGE: October 1962 to September 1968.

REMARKS.--Some samples were analyzed by different methods and may have data with different levels of detection.

WATER-QUALITY DATA

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)
NOV 1992 05...	1230	372	284	8.7	9.5	1.4	13.4	118	K5	22	110
FEB 1993 23...	1330	1750	207	8.3	2.5	4.7	14.5	108	K6	380	89
MAY 10...	1235	10700	117	8.1	13.0	24	10.5	102	48	21	49
AUG 10...	1230	434	270	8.9	22.5	0.6	8.7	102	K5	410	110
DATE		CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION PERCENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
NOV 1992 05...	25	12	17	24	0.7	2.5	133	153	5	8.9	3.0
FEB 1993 23...	21	8.8	11	21	0.5	1.4	103	126	0	5.4	2.2
MAY 10...	12	4.5	5.3	19	0.3	1.3	58	71	0	3.4	1.1
AUG 10...	26	11	17	25	0.7	2.3	131	143	8	11	2.5
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
NOV 1992 05...	0.2	19	172	168	0.23	173	0.02	0.01	0.02	0.01	<0.2
FEB 1993 23...	0.1	27	131	140	0.18	619	0.01	--	--	0.01	<0.2
MAY 10...	0.1	30	94	93	0.13	2720	0.02	--	--	<0.01	0.3
AUG 10...	0.2	12	162	160	0.22	190	0.03	--	--	<0.01	<0.2
DATE		NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BARIUM, DIS-SOLVED (UG/L AS BA)	COBALT, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 1992 05...	<0.05	<0.050	0.01	<0.01	<0.01	<0.01	<0.01	<10	10	<3	5
FEB 1993 23...	--	0.095	0.01	0.01	<0.01	--	90	8	<3	38	
MAY 10...	--	0.080	0.11	0.02	0.03	--	200	7	<3	110	
AUG 10...	--	<0.050	<0.01	<0.01	<0.01	--	<10	12	<3	8	
DATE		LITHIUM, DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, SUS-PENDED (T/DAY)
NOV 1992 05...	<4	1	<10	1	<1	<1	110	7	<1	--	
FEB 1993 23...	<4	4	<10	1	<1	<1	75	8	12	57	
MAY 10...	<4	3	<10	<1	<1	<1	53	<6	112	3240	
AUG 10...	<4	<1	<10	<1	<1	<1	120	8	2	2.3	

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



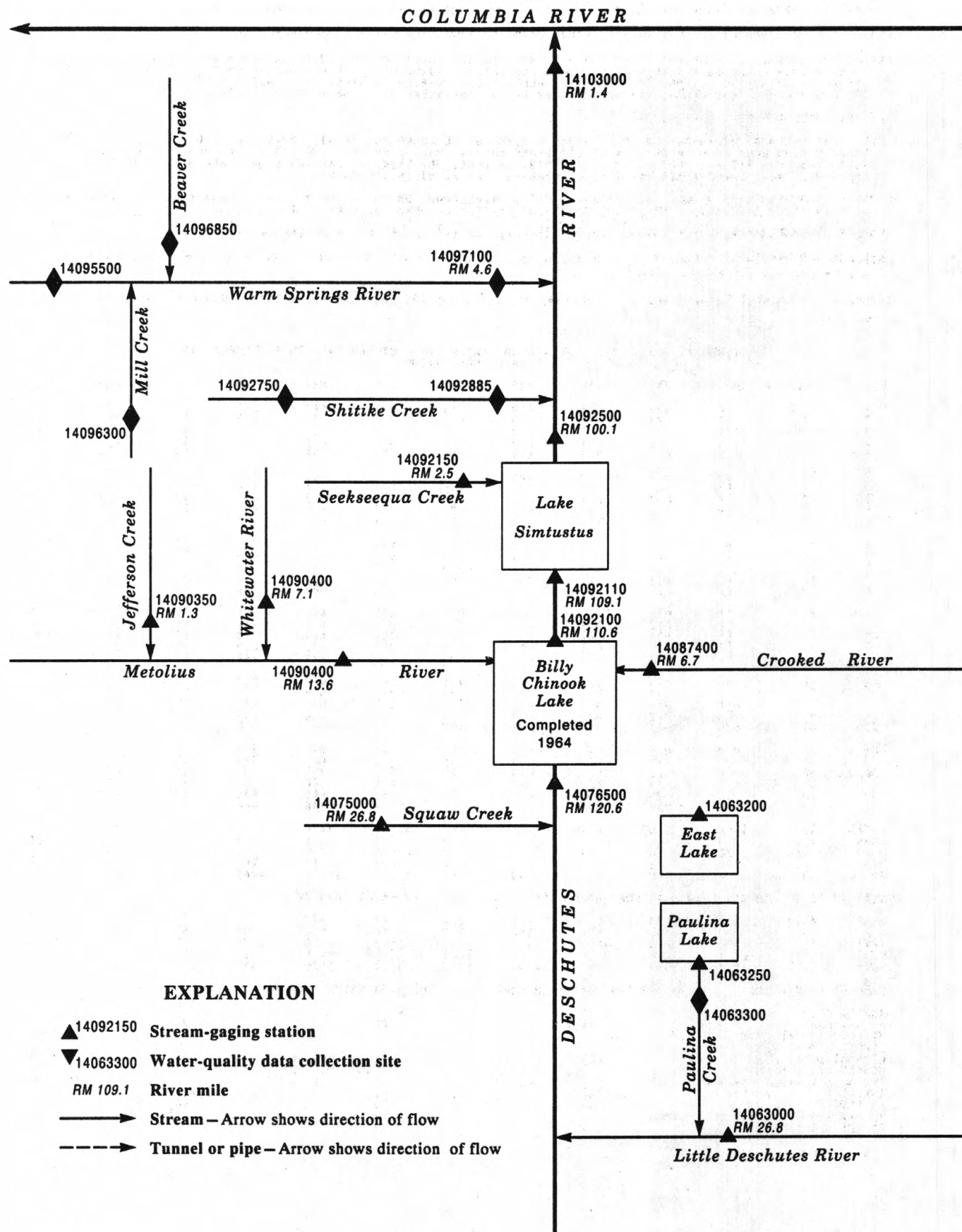


Figure 12--Schematic diagram showing gaging stations in the Deschutes River Basin.

DESCHUTES RIVER BASIN

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14063000 LITTLE DESCHUTES RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°41'21", long 121°30'06", in SW 1/4 SW 1/4 sec.2, T.22 S., R.10 E., Deschutes County, Hydrologic Unit 17070302, on right bank 10 ft downstream from highway bridge, 1.1 mi north of La Pine, and at mile 26.8.

DRAINAGE AREA.--859 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--September 1910 to January 1911, March, April, August 1911, March to September 1912, June to October 1913, June to November 1918, August to October 1920, May 1924 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as Deschutes River near Lapine 1910-12, as East Fork Deschutes River near Lapine 1913-20, and as Little Deschutes River near Lapine 1924-64.

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is 4,192.81 ft above sea level. Sept. 1, 1910, to Aug. 31, 1911, nonrecording gage at present site at different datum. Mar. 1 to Sept. 30, 1912, nonrecording gage at site 1.2 mi downstream at different datum. June 1, 1913, to Sept. 28, 1928, nonrecording gage and Sept. 29, 1928, to Sept. 30, 1931, water-stage recorder at present site at different datums.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated since 1922 by Crescent Lake (station 14059500). Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--69 years (water years 1925-93), 202 ft³/s, 146,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft³/s Dec. 25, 1964, gage height, 8.18 ft; minimum discharge, 7.3 ft³/s Sept. 21-24, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 712 ft³/s May 28, gage height, 6.25 ft; minimum discharge, 8.0 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	62	e30	e23	e19	e13	333	417	551	176	130	219
2	8.6	92	e27	e15	e19	e13	338	438	539	172	127	217
3	9.3	121	e23	e13	e19	e14	338	454	535	166	123	226
4	9.7	131	e21	e14	e19	e15	350	478	529	161	119	226
5	12	121	e21	e15	e19	e20	385	506	513	157	118	224
6	15	99	e21	e15	e20	e29	396	585	494	151	178	218
7	16	85	e22	e15	e20	e40	384	621	484	145	200	224
8	17	78	e22	e14	e21	e55	372	623	450	137	203	233
9	17	78	e23	e14	e22	e80	392	629	422	134	203	219
10	17	77	e23	e13	e21	e110	421	640	386	129	201	207
11	17	65	e23	e14	e20	e130	441	624	363	125	200	210
12	18	57	e23	e19	e19	e150	420	591	343	120	200	198
13	18	70	e22	e20	e18	e175	373	565	329	117	199	193
14	18	68	e21	e18	e17	e195	349	551	315	132	213	191
15	19	63	e22	e17	e17	e215	345	583	302	137	223	189
16	19	59	e22	e17	e15	243	345	646	288	141	242	189
17	19	58	e22	e18	e15	315	356	666	274	141	247	196
18	19	56	e22	e19	e16	303	359	651	263	136	247	196
19	20	54	e21	e21	e16	326	359	631	253	139	243	194
20	22	54	e22	e23	e17	389	360	627	244	139	245	192
21	26	e46	e23	e25	e17	401	363	639	238	139	249	190
22	28	e41	e24	e24	e18	437	361	668	238	144	246	193
23	29	e36	e23	e22	e18	467	370	687	244	156	239	190
24	30	e25	e22	e30	e18	490	374	681	245	175	234	189
25	31	e30	e21	e37	e17	489	378	689	238	175	230	188
26	32	e30	e24	e45	e15	468	391	672	225	163	229	186
27	31	e33	e27	e39	e14	409	398	682	208	154	236	182
28	32	e36	e29	e33	e13	355	401	705	193	147	242	169
29	35	e32	e27	e27	---	335	401	680	185	143	235	92
30	39	e31	e25	e24	---	331	402	649	181	138	229	67
31	48	---	e27	e19	---	328	---	596	---	134	224	---
TOTAL	680.7	1888	725	662	499	7340	11255	18874	10072	4523	6454	5807
MEAN	22.0	62.9	23.4	21.4	17.8	237	375	609	336	146	208	194
MAX	48	131	30	45	22	490	441	705	551	176	249	233
MIN	8.6	25	21	13	13	13	333	417	181	117	118	67
AC-FT	1350	3740	1440	1310	990	14560	22320	37440	19980	8970	12800	11520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1993, BY WATER YEAR (WY)

	MEAN	81.9	113	153	153	179	202	293	379	321	235	193	122
MAX	350	356	712	656	562	709	716	990	788	470	342	320	
(WY)	1957	1951	1965	1965	1951	1972	1943	1956	1974	1974	1976	1956	
MIN	17.3	27.1	23.4	21.4	17.8	60.4	67.5	82.5	63.2	92.7	30.0	9.76	
(WY)	1932	1932	1993	1993	1993	1933	1977	1926	1931	1931	1931	1992	

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1925 - 1993

ANNUAL TOTAL	25475.0	68779.7	
ANNUAL MEAN	69.6	188	202
HIGHEST ANNUAL MEAN			374
LOWEST ANNUAL MEAN			65.8
HIGHEST DAILY MEAN	280	705	3240
LOWEST DAILY MEAN	7.3	8.6	7.3
ANNUAL SEVEN-DAY MINIMUM	7.7	11	7.7
ANNUAL RUNOFF (AC-FT)	50530	136400	146400
10 PERCENT EXCEEDS	128	480	402
50 PERCENT EXCEEDS	71	139	162
90 PERCENT EXCEEDS	12	17	55

e Estimated

DESCHUTES RIVER BASIN

14063200 EAST LAKE NEAR LA PINE, OR

LOCATION.--Lat 43°43'13", long 121°11'57", in SE 1/4 SE 1/4 sec.29, T.21 S., R.13 E., Deschutes County, Hydrologic Unit 17070302, on south shore, east end of lake, 17 mi northeast of La Pine.

DRAINAGE AREA.--7.08 mi², including lake surface.

PERIOD OF RECORD.--February 1992 to September 1993.

GAGE.--Water-stage recorder. Prior to October 21, 1992, at location on north shore, 700 ft west of boat ramp, at Cinder Hill Campground. Datum of gage is sea level.

REMARKS.--Lake is one of two lakes in Newberry Crater. No overland outflow.

EXTREMES FOR PERIOD.--

February 13 to Sept. 30, 1992: Maximum elevation, 6,375.52 ft Feb. 20, 22; minimum, 6,373.14 ft Sept. 30.
Water Year 1993: Maximum elevation, 6,374.75 ft June 6, 9; minimum, 6,372.86 ft Oct. 29.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	6375.46	---	6375.17	6374.80	6374.38	6373.99	6373.47
2	---	---	---	---	---	6375.45	6375.31	6375.17	6374.78	6374.39	6373.97	6373.47
3	---	---	---	---	---	6375.45	6375.29	6375.16	6374.77	6374.38	6373.95	6373.48
4	---	---	---	---	---	6375.45	6375.30	6375.15	6374.75	6374.38	6373.92	6373.47
5	---	---	---	---	---	6375.45	6375.30	6375.14	6374.73	6374.39	6373.90	6373.45
6	---	---	---	---	---	6375.46	6375.29	6375.13	6374.71	6374.37	6373.87	6373.43
7	---	---	---	---	---	6375.45	6375.27	6375.13	6374.70	6374.36	6373.84	6373.41
8	---	---	---	---	---	6375.44	---	6375.10	6374.68	6374.34	6373.82	6373.41
9	---	---	---	---	---	6375.44	---	6375.09	6374.66	6374.33	6373.80	6373.39
10	---	---	---	---	---	6375.43	---	6375.08	6374.64	6374.31	6373.78	6373.39
11	---	---	---	---	---	6375.42	---	6375.06	6374.61	6374.29	6373.76	6373.38
12	---	---	---	---	---	6375.42	---	6375.04	6374.58	6374.27	6373.76	6373.35
13	---	---	---	---	6375.36	6375.40	---	6375.03	6374.56	6374.26	6373.75	6373.35
14	---	---	---	---	6375.39	6375.41	---	6375.02	6374.55	6374.24	6373.75	6373.31
15	---	---	---	---	6375.39	6375.40	---	6375.01	6374.56	6374.22	6373.74	6373.32
16	---	---	---	---	6375.41	6375.41	---	6375.00	6374.55	6374.20	6373.74	6373.30
17	---	---	---	---	6375.41	6375.42	---	6374.99	6374.54	6374.19	6373.73	6373.29
18	---	---	---	---	6375.39	6375.41	---	6374.99	6374.52	6374.19	6373.71	6373.28
19	---	---	---	---	6375.43	6375.40	---	6374.98	6374.51	6374.19	6373.69	6373.27
20	---	---	---	---	6375.45	6375.38	---	6374.96	6374.50	6374.19	6373.69	6373.26
21	---	---	---	---	6375.51	6375.34	---	6374.95	6374.47	6374.17	6373.66	6373.26
22	---	---	---	---	6375.50	6375.33	6375.21	6374.93	6374.45	6374.15	6373.62	6373.25
23	---	---	---	---	6375.49	6375.34	6375.20	6374.92	6374.44	6374.14	6373.60	6373.22
24	---	---	---	---	6375.48	6375.33	6375.18	6374.92	6374.44	6374.12	6373.58	6373.22
25	---	---	---	---	6375.47	6375.33	6375.19	6374.91	6374.43	6374.10	6373.56	6373.27
26	---	---	---	---	6375.47	6375.33	6375.18	6374.88	6374.42	6374.09	6373.54	6373.25
27	---	---	---	---	6375.47	6375.32	6375.17	6374.87	6374.41	6374.07	6373.53	6373.25
28	---	---	---	---	6375.46	6375.31	6375.17	6374.86	6374.39	6374.06	6373.51	6373.24
29	---	---	---	---	6375.46	6375.31	6375.16	6374.84	6374.40	6374.04	6373.50	6373.22
30	---	---	---	---	---	---	6375.19	6374.82	6374.40	6374.03	6373.48	6373.19
31	---	---	---	---	---	---	---	6374.81	---	6374.01	6373.49	---
MAX	---	---	---	---	---	---	---	6375.17	6374.80	6374.39	6373.99	6373.48
MIN	---	---	---	---	---	---	---	6374.81	6374.39	6374.01	6373.48	6373.19

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6373.19	6372.99	6373.02	6373.38	6373.64	6373.72	6373.96	6374.18	6374.67	6374.58	6374.34	6374.10
2	6373.19	6372.97	6373.03	6373.37	6373.62	6373.73	6374.19	6374.66	6374.58	6374.32	6374.10	6374.00
3	6373.19	6372.96	6373.02	6373.37	6373.63	6373.73	6374.00	6374.27	6374.66	6374.57	6374.32	6374.09
4	6373.18	6372.96	6373.01	6373.43	6373.61	6373.75	6374.01	6374.26	6374.68	6374.56	6374.31	6374.08
5	6373.17	6372.95	6373.00	6373.45	6373.63	6373.75	6374.01	6374.26	6374.70	6374.55	6374.30	6374.07
6	6373.15	6372.94	6373.00	6373.44	6373.62	6373.74	6374.03	6374.29	6374.73	6374.53	6374.31	6374.06
7	6373.14	6372.95	6373.00	6373.47	6373.63	6373.73	6374.04	6374.31	6374.72	6374.52	6374.29	6374.05
8	6373.12	6372.96	6373.13	6373.48	6373.62	6373.72	6374.08	6374.29	6374.71	6374.51	6374.28	6374.04
9	6373.11	6372.97	6373.11	6373.48	6373.61	6373.72	6374.10	6374.29	6374.70	6374.49	6374.26	6374.03
10	6373.10	6372.96	6373.15	6373.47	6373.64	6373.74	6374.13	6374.30	6374.71	6374.49	6374.25	6374.02
11	6373.10	6372.97	6373.15	6373.47	6373.62	6373.74	6374.12	6374.29	6374.73	6374.47	6374.23	6373.99
12	6373.06	6372.97	6373.14	6373.46	6373.63	6373.72	6374.11	6374.30	6374.72	6374.46	6374.23	6373.97
13	6373.07	6372.96	6373.14	6373.48	6373.62	6373.73	6374.13	6374.32	6374.71	6374.44	6374.22	6373.96
14	6373.05	6372.96	6373.15	6373.50	6373.62	6373.74	6374.13	6374.31	6374.71	6374.45	6374.20	6373.93
15	6373.04	6372.95	6373.12	6373.51	6373.60	6373.76	6374.13	6374.32	6374.71	6374.45	6374.29	6373.92
16	6373.02	6372.94	6373.15	6373.53	6373.61	6373.81	6374.11	6374.34	6374.70	6374.43	6374.27	6373.90
17	6373.02	6372.94	6373.19	6373.52	6373.61	6373.84	6374.17	6374.34	6374.69	6374.42	6374.27	6373.89
18	6373.01	6372.94	6373.17	6373.51	6373.64	6373.87	6374.16	6374.33	6374.69	6374.41	6374.25	6373.88
19	6373.00	6372.96	6373.18	6373.52	6373.67	6373.88	6374.15	6374.31	6374.69	6374.42	6374.25	6373.86
20	---	6372.95	6373.18	6373.63	6373.68	6373.88	6374.16	6374.36	6374.69	6374.41	6374.29	6373.85
21	---	6372.98	6373.23	6373.63	6373.73	6373.87	6374.14	6374.38	6374.68	6374.40	6374.28	6373.83
22	6372.93	6373.03	6373.17	6373.67	6373.75	6373.90	6374.15	6374.38	6374.66	6374.45	6374.27	6373.81
23	6372.90	6373.00	6373.18	6373.69	6373.75	6373.94	6374.17	6374.38	6374.65	6374.44	6374.25	6373.80
24	6372.89	6372.99	6373.17	6373.69	6373.74	6373.97	6374.18	6374.44	6374.64	6374.43	6374.23	6373.79
25	6372.89	6372.98	6373.16	6373.69	6373.74	6373.97	6374.19	6374.49	6374.64	6374.42	6374.22	6373.78
26	6372.88	6372.97	6373.19	6373.67	6373.73	6373.97	6374.18	6374.50	6374.62	6374.41	6374.21	6373.78
27	6372.88	6372.98	6373.27	6373.67	6373.72	6373.96	6374.17	6374.53	6374.62	6374.40	6374.20	6373.77
28	6372.89	6372.99	6373.30	6373.66	6373.71	6373.95	6374.17	6374.54	6374.61	6374.40	6374.18	6373.76
29	6372.91	6372.97	6373.29	6373.65	---	6373.95	6374.18	6374.55	6374.60	6374.38	6374.16	6373.75
30	6372.93	6372.97	6373.33	6373.64	---	6373.94	6374.18	6374.59	6374.59	6374.36	6374.14	6373.74
31	6372.93	---	6373.38	6373.64	---	6373.95	---	6374.62	---	6374.35	6374.13	---
MAX	---	6373.03	6373.38	6373.69	6373.75	6373.97	6374.19	6374.62	6374.73	6374.58	6374.34	6374.10
MIN	---	6372.94	6373.00	6373.37	6373.60	6373.72	6373.96	6374.18	6374.59	6374.35	6374.13	6373.74

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LOCATION.--Lat 43°42'48", long 121°16'34", in NW 1/4 SE 1/4 sec.34, T.21 S., R.12 E., Deschutes County, Hydrologic Unit 17070302, Deschutes National Forest, on left bank, at outflow gate, 12 mi northeast of La Pine.

PERIOD OF RECORD.--November 1991 to current year.

REMARKS.--Lake is one of two lakes in Newberry Crater. Outflow is controlled by concrete spillway and fish-screen gates.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,332.83 ft Mar. 17; minimum elevation, 6,330.94 ft Oct. 15.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6331.25	6331.14	6331.25	6331.93	6332.58	6332.74	6332.65	6332.63	6332.79	6332.58	6332.56	6332.49
2	6331.26	6331.15	6331.32	6331.94	6332.58	6332.75	6332.67	6332.62	6332.77	6332.58	6332.56	6332.48
3	6331.26	6331.14	6331.31	6331.97	6332.59	6332.77	6332.66	6332.66	6332.76	6332.58	6332.54	6332.47
4	6331.21	6331.13	6331.30	6332.03	6332.57	6332.77	6332.68	6332.65	6332.76	6332.57	6332.55	6332.46
5	6331.19	6331.13	6331.26	6332.05	6332.60	6332.76	6332.66	6332.63	6332.77	6332.57	6332.55	6332.45
6	6331.21	6331.12	6331.22	6332.07	6332.60	6332.76	6332.66	6332.62	6332.76	6332.57	6332.67	6332.44
7	6331.19	6331.12	6331.25	6332.09	6332.64	6332.75	6332.65	6332.64	6332.75	6332.56	6332.65	6332.43
8	6331.17	6331.13	6331.40	6332.13	6332.62	6332.74	6332.71	6332.64	6332.73	6332.55	6332.63	6332.42
9	6331.13	6331.16	6331.46	6332.14	6332.63	6332.75	6332.72	6332.64	6332.72	6332.55	6332.62	6332.41
10	6331.12	6331.15	6331.44	6332.14	6332.66	6332.76	6332.71	6332.64	6332.71	6332.55	6332.60	6332.40
11	6331.11	6331.16	6331.46	6332.16	6332.65	6332.73	6332.70	6332.63	6332.70	6332.54	6332.60	6332.39
12	6331.09	6331.16	6331.47	6332.19	6332.65	6332.74	6332.68	6332.59	6332.70	6332.54	6332.60	6332.37
13	6330.99	6331.15	6331.47	6332.21	6332.65	6332.74	6332.70	6332.60	6332.69	6332.53	6332.59	6332.36
14	6330.95	6331.15	6331.49	6332.25	6332.64	6332.75	6332.68	6332.60	6332.68	6332.55	6332.59	6332.34
15	6331.05	6331.14	6331.49	6332.27	6332.65	6332.74	6332.67	6332.60	6332.67	6332.54	6332.67	6332.33
16	6331.04	6331.14	6331.53	6332.30	6332.64	6332.76	6332.64	6332.60	6332.66	6332.54	6332.65	6332.32
17	6331.04	6331.13	6331.57	6332.33	6332.65	6332.76	6332.69	6332.60	6332.66	6332.54	6332.64	6332.31
18	6331.03	6331.10	6331.57	6332.33	6332.68	6332.77	6332.68	6332.59	6332.66	6332.54	6332.63	6332.29
19	6331.01	6331.14	6331.57	6332.39	6332.70	6332.76	6332.66	6332.58	6332.65	6332.55	6332.62	6332.28
20	6331.04	6331.13	6331.57	6332.44	6332.71	6332.73	6332.66	6332.61	6332.64	6332.55	6332.65	6332.27
21	6331.07	6331.19	6331.62	6332.50	6332.77	6332.70	6332.64	6332.62	6332.64	6332.56	6332.64	6332.27
22	6331.07	6331.24	6331.59	6332.53	6332.78	6332.71	6332.65	6332.62	6332.62	6332.61	6332.62	6332.26
23	6331.06	6331.23	6331.64	6332.57	6332.77	6332.74	6332.66	6332.62	6332.62	6332.60	6332.61	6332.24
24	6331.05	6331.21	6331.65	6332.57	6332.77	6332.75	6332.67	6332.66	6332.62	6332.59	6332.60	6332.23
25	6331.04	6331.19	6331.66	6332.56	6332.76	6332.74	6332.66	6332.69	6332.62	6332.59	6332.59	6332.23
26	6331.03	6331.19	6331.69	6332.57	6332.76	6332.71	6332.65	6332.70	6332.61	6332.59	6332.58	6

DESCHUTES RIVER BASIN

14063300 PAULINA CREEK NEAR LA PINE, OR

LOCATION.--Lat 43°42'47", long 121°16'39", in SW 1/4 NE 1/4 sec.34, T.21 S., R.12 E., Deschutes County, Hydrologic Unit 17070302, on right bank 180 ft downstream from dam at outlet of Paulina Lake, and 12 mi east of La Pine.

DRAINAGE AREA.--10.1 mi², of which 2.2 mi² is lake surface at elevation 6,331 ft, hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to September 1989, October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,315.31 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by dam at outlet of Paulina Lake 180 ft upstream.

AVERAGE DISCHARGE.--9 years (water years 1983-89, 1992-93), 18.7 ft³/s, 13,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66 ft³/s Apr. 29, 1983, gage height, 2.35 ft; minimum discharge, 0.19 ft³/s Oct. 19, 1982, Nov. 22, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 41 ft³/s Oct. 15, gage height, 1.79 ft, result of regulation, but may have been higher during period of estimated record; minimum discharge recorded, 0.80 ft³/s Oct. 1, result of regulation, but may have been lower during period of estimated record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	14	3.0	8.1	e16	22	20	30	16	14	23
2	13	15	14	3.0	8.2	e14	22	20	30	16	14	22
3	14	15	14	3.0	8.2	e13	23	22	30	16	13	21
4	17	15	14	3.2	8.3	e12	23	22	29	15	13	20
5	19	14	14	3.1	8.6	e14	e24	21	29	15	13	20
6	16	14	14	3.0	8.9	e15	23	22	30	14	15	19
7	16	14	14	2.0	9.0	e16	23	22	29	14	21	18
8	15	14	14	1.8	9.1	e13	23	22	28	13	20	18
9	16	14	11	1.9	9.2	e16	26	21	28	13	19	18
10	20	14	4.4	1.9	9.4	e17	27	21	26	13	18	17
11	20	15	4.5	1.9	9.7	15	26	20	26	13	17	17
12	19	15	4.6	1.9	10	14	25	20	26	12	17	16
13	22	15	4.6	2.0	10	16	24	20	25	12	17	16
14	25	15	4.3	1.9	10	22	24	18	24	12	17	15
15	19	15	4.0	1.9	e9.4	23	24	18	23	12	19	15
16	15	15	4.0	1.8	e7.2	25	23	18	23	12	22	15
17	15	15	3.9	e1.7	e7.4	28	23	18	22	12	21	15
18	16	15	3.8	e1.8	e7.8	29	24	18	21	12	19	15
19	16	15	3.8	e1.9	e7.6	29	23	18	21	12	19	15
20	15	15	3.8	e2.0	e7.0	e27	22	19	21	13	22	15
21	14	15	3.8	e2.2	e7.2	26	22	19	20	13	21	15
22	14	15	3.9	4.1	e8.2	25	22	20	20	15	20	15
23	15	15	3.9	5.8	e7.6	28	22	20	19	17	19	14
24	15	14	3.7	7.3	e6.8	29	23	20	19	16	18	14
25	15	14	3.4	7.9	e7.6	28	23	24	19	16	17	14
26	16	14	3.3	7.9	e11	27	23	25	18	15	17	14
27	16	14	3.3	7.9	e13	25	22	26	18	15	16	14
28	15	14	3.2	7.8	e15	24	21	26	17	15	16	15
29	15	14	3.2	8.0	---	22	21	26	17	14	16	15
30	15	14	3.3	8.2	---	21	20	25	16	14	15	14
31	15	---	3.1	8.2	---	21	---	28	---	14	18	---
TOTAL	504	437	206.8	120.0	249.5	650	693	659	704	431	543	494
MEAN	16.3	14.6	6.67	3.87	8.91	21.0	23.1	21.3	23.5	13.9	17.5	16.5
MAX	25	15	14	8.2	15	29	27	28	30	17	22	23
MIN	11	14	3.1	1.7	6.8	12	20	18	16	12	13	14
AC-FT	1000	867	410	238	495	1290	1370	1310	1400	855	1080	980

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	15.3	9.32	10.8	17.0	21.8	22.0	20.5	21.7	23.0	20.8	22.3
MAX	21.4	14.6	21.5	22.0	36.3	27.4	25.5	29.5	32.7	29.1	32.8
(WY)	1984	1993	1985	1989	1983	1989	1984	1983	1984	1985	1983
MIN	10.2	5.16	4.54	3.87	8.91	13.3	16.7	13.7	15.9	13.9	14.3
(WY)	1992	1989	1988	1993	1993	1992	1986	1992	1992	1993	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	5007.4	5691.3	18.7
ANNUAL MEAN	13.7	15.6	23.4
HIGHEST ANNUAL MEAN			13.1
LOWEST ANNUAL MEAN			59
HIGHEST DAILY MEAN	25	30	59
LOWEST DAILY MEAN	3.1	1.7	.23
ANNUAL SEVEN-DAY MINIMUM	3.3	1.9	.37
ANNUAL RUNOFF (AC-FT)	9930	11290	13560
10 PERCENT EXCEEDS	17	24	28
50 PERCENT EXCEEDS	14	15	19
90 PERCENT EXCEEDS	10	4.0	7.6

e Estimated

WATER-QUALITY RECORDS

SPECIFIC CONDUCTANCE: November 1991 to current year.
WATER TEMPERATURE: November 1991 to current year.

SPECIFIC CONDUCTANCE: Maximum recorded, 647 microsiemens Apr. 28, 1992; minimum recorded, 458 microsiemens Oct. 8, 1992.

SPECIFIC CONDUCTANCE: Maximum recorded, 615 microsiemens Sept. 30; minimum recorded, 458 microsiemens Oct. 8.
WATER TEMPERATURE: Maximum recorded, 18.5°C Sept. 7-10; minimum recorded, 0.0°C several days during winter months.

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	595	539	580	542	533	537	530	513	522	524	516	520
2	590	578	585	543	536	540	523	507	514	526	515	523
3	590	578	584	544	536	540	530	520	525	526	521	524
4	591	574	583	546	536	540	532	519	527	530	524	527
5	578	522	546	552	534	546	535	525	530	530	523	527
6	541	472	511	553	535	545	532	524	528	527	520	523
7	499	470	488	550	528	537	531	523	527	524	516	519
8	547	458	509	549	532	540	532	517	525	521	514	518
9	553	466	508	549	524	538	531	517	526	523	516	519
10	540	489	514	548	522	533	526	515	520	523	517	520
11	597	536	569	546	524	530	532	521	527	525	517	521
12	602	590	596	540	522	530	529	520	523	520	---	517
13	604	588	598	547	525	538	531	523	527	523	---	516
14	597	587	592	545	528	537	532	518	525	525	---	---
15	596	541	588	547	530	539	535	523	529	---	---	---
16	590	578	584	547	526	537	539	521	532	---	---	---
17	582	568	578	547	531	539	528	520	525	---	---	---
18	582	571	576	548	531	541	532	523	527	---	---	---
19	577	565	572	548	521	534	535	525	530	---	---	---
20	572	559	566	548	527	537	529	519	525	---	---	---
21	567	556	562	538	508	524	530	523	526	---	---	---
22	570	557	564	535	512	522	530	519	526	561	551	557
23	566	555	561	538	523	529	533	522	529	566	557	561
24	567	552	560	539	518	529	535	527	532	567	559	563
25	561	540	553	534	517	527	545	529	539	567	560	564
26	559	545	552	534	516	525	540	522	531	569	562	565
27	558	542	549	528	512	517	529	517	523	567	562	565
28	549	537	544	533	517	524	522	513	518	568	562	565
29	547	531	539	532	514	524	523	516	520	568	562	566
30	541	526	535	533	521	526	524	519	522	568	563	566
31	541	532	536	---	---	---	523	516	519	569	564	567
MONTH	604	458	557	553	508	533	545	507	526	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	570	565	567	---	---	---	---	---	---	---	---	---
2	571	564	567	---	---	---	---	---	---	---	---	---
3	572	566	568	---	---	---	---	---	---	---	---	---
4	572	565	568	---	---	---	---	---	---	---	---	---
5	571	565	568	---	---	---	---	---	---	---	---	---
6	573	566	568	---	---	---	---	---	---	---	---	---
7	572	564	568</									

DESCHUTES RIVER BASIN

14063300 PAULINA CREEK NEAR LA PINE, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	595	581	589	---	---	---	596	583	590
2	---	---	---	594	---	586	---	---	---	594	584	590
3	---	---	---	594	---	583	---	---	---	595	583	590
4	---	---	---	---	---	---	---	---	---	594	584	589
5	---	---	---	---	---	---	---	---	---	594	586	590
6	---	---	---	---	---	---	---	---	---	595	587	591
7	---	---	---	---	---	---	583	549	575	594	584	589
8	---	---	---	---	---	---	592	580	586	598	588	593
9	594	589	592	---	---	---	593	579	587	611	589	596
10	596	589	592	---	---	---	594	582	588	604	588	596
11	596	585	592	---	---	---	598	581	589	602	588	595
12	596	588	592	---	---	---	595	573	584	602	587	595
13	---	---	---	---	---	---	594	575	585	601	590	595
14	---	---	---	---	---	---	597	581	588	601	586	594
15	592	586	589	---	---	---	594	561	580	601	589	594
16	593	587	590	---	---	---	586	574	582	601	589	594
17	595	588	591	---	---	---	590	577	584	600	586	594
18	596	586	591	---	---	---	589	578	584	599	587	594
19	594	584	590	---	---	---	588	578	583	602	588	594
20	592	585	589	---	---	---	584	559	571	603	589	595
21	594	585	589	---	---	---	588	572	581	601	590	597
22	593	585	589	---	---	---	589	575	582	606	594	599
23	594	582	589	590	579	585	590	576	583	606	595	601
24	594	585	589	594	580	588	592	577	587	606	595	601
25	593	582	588	596	579	589	594	581	588	610	599	604
26	596	583	591	596	576	588	594	581	587	610	601	605
27	594	584	589	596	577	588	593	575	587	611	600	606
28	596	582	590	597	577	587	596	580	588	613	604	609
29	595	584	589	---	---	---	593	584	589	614	604	609
30	594	583	589	---	---	---	591	582	587	615	601	610
31	---	---	---	---	---	---	592	579	587	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	615	583	597

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.0	11.0	12.5	7.5	6.0	7.0	4.0	2.0	3.0	.5	.0	.5
2	12.0	11.0	11.5	9.0	6.5	7.5	2.5	1.0	1.5	1.0	.5	.5
3	12.0	10.0	11.0	9.5	5.5	7.0	3.5	1.0	2.0	1.0	.0	.5
4	14.0	9.0	11.5	8.0	6.5	7.0	3.0	.0	1.0	.5	.0	.5
5	14.0	9.5	11.5	8.5	5.0	7.0	3.0	.5	2.0	1.0	.5	.5
6	14.5	8.5	11.0	9.5	6.5	7.5	3.5	1.0	2.0	.5	.5	.5
7	13.5	9.0	11.0	7.5	6.0	6.5	3.5	1.5	2.5	.5	.0	.5
8	12.5	10.0	11.0	6.0	4.5	5.5	1.5	.0	1.0	.5	.5	.5
9	14.0	7.5	11.0	6.5	3.5	5.0	2.5	.5	1.5	1.0	.5	.5
10	14.5	9.5	12.0	7.0	2.5	4.5	1.0	.5	1.0	1.0	.5	.5
11	14.0	9.5	11.5	6.5	4.0	5.0	1.5	.0	1.0	1.0	.5	.5
12	13.0	9.5	11.0	8.0	5.5	6.5	2.5	1.0	1.5	.5	.0	.5
13	13.0	9.5	11.0	8.0	4.5	6.0	2.5	.5	1.5	.5	.0	.5
14	12.0	8.0	10.0	8.0	5.0	6.5	2.0	1.0	1.5	.5	.0	.5
15	11.5	6.0	9.5	7.0	5.0	6.0	2.0	.5	1.5	1.0	.5	.5
16	11.0	8.0	10.0	6.5	4.5	5.5	1.5	.0	1.0	1.0	.5	.5
17	12.5	8.5	10.5	6.0	5.0	5.5	.5	.0	.5	---	---	---
18	11.5	9.5	10.5	7.0	4.5	5.5	1.0	.5	1.0	---	---	---
19	12.5	8.5	10.5	4.5	3.0	4.0	1.5	.5	1.0	---	---	---
20	10.5	8.5	9.5	6.0	3.5	4.5	1.0	.0	.5	---	---	---
21	10.5	9.0	9.5	4.5	1.5	3.5	1.0	.5	.5	---	---	---
22	12.0	8.0	10.0	4.0	2.0	3.0	1.0	.5	.5	.0	.0	.0
23	12.5	8.0	10.0	4.0	1.0	2.5	2.0	.5	1.5	.5	.0	.0
24	12.0	8.0	10.0	4.5	1.0	3.0	2.0	1.0	1.5	.5	.0	.5
25	12.0	8.0	10.0	4.5	2.0	3.5	1.5	1.0	1.5	.5	.5	.5
26	12.0	8.0	9.5	5.5	2.5	4.0	1.0	.5	1.0	.5	.5	.5
27	11.5	7.5	9.5	4.5	3.5	4.0	1.0	.0	.5	.5	.5	.5
28	9.5	8.0	9.0	5.0	2.0	3.5	.5	.0	.0	.5	.5	.5
29	8.5	6.0	7.5	4.5	1.0	2.5	.5	.5	.5	.5	.0	.5
30	7.5	5.5	6.5	4.0	2.5	3.5	.5	.0	.5	.5	.5	.5
31	7.5	6.0	6.5	---	---	---	.0	.0	.0	.5	.5	.5
MONTH	16.0	5.5	10.0	9.5	1.0	5.0	4.0	.0	1.0	---	---	---

DESCHUTES RIVER BASIN

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14063300 PAULINA CREEK NEAR LA PINE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.5	.5	---	---	---						
2	.5	.5	.5	---	---	---						
3	.5	.5	.5	---	---	---						
4	.5	.5	.5	---	---	---						
5	.5	.0	.5	---	---	---						
6	.5	.5	.5	---	---	---						
7	.5	.5	.5	---	---	---						
8	.5	.5	.5	---	---	---						
9	.5	.5	.5	---	---	---						
10	.5	.5	.5	---	---	---						
11	.5	.0	.5	1.5	.5	.5						
12	.5	.0	.5	1.0	.0	.5						
13	.5	.0	.5	1.0	.5	.5						
14	.5	.0	.5	---	---	---						
15	.5	.0	.0	---	---	---						
16	.5	.0	.0	---	---	---						
17	---	---	---	---	---	---						
18	---	---	---	---	---	---						
19	---	---	---	---	---	---						
20	---	---	---	---	---	---						
21	---	---	---	---	---	---						
22	---	---	---	---	---	---						
23	---	---	---	---	---	---						
24	---	---	---	---	---	---						
25	---	---	---	---	---	---						
26	---	---	---	---	---	---						
27	---	---	---	---	---	---						
28	---	---	---	---	---	---						
29	---	---	---	---	---	---						
30	---	---	---	---	---	---						
31	---	---	---	---	---	---						
MONTH	---	---	---	---	---	---						
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---				---	---	---	16.5	13.0	14.5
2	---	---	---				---	---	---	17.0	12.5	14.5
3	---	---	---				---	---	---	18.0	13.0	15.0
4	---	---	---				---	---	---	18.0	13.5	15.5
5	---	---	---				---	---	---	18.0	13.5	15.5
6	---	---	---				---	---	---	18.0	14.0	16.0
7	---	---	---				---	---	---	18.5	15.5	16.5
8	---	---	---				---	---	---	18.5	14.0	16.0
9	8.0	5.0	6.5				---	---	---	18.5	14.0	16.0
10	10.5	4.5	7.0				---	---	---	18.5	14.0	16.0
11	6.5	4.0	5.0				---	---	---	17.5	14.0	15.5
12	11.0	3.5	7.0				---	---	---	15.5	12.0	13.5
13	---	---	---				---	---	---	16.5	11.0	13.5
14	---	---	---				---	---	---	15.5	12.5	14.0
15	---	---	---				---	---	---	15.0	12.0	13.5
16	---	---	---				---	---	---	13.5	12.0	13.0
17	---	---	---				---	---	---	15.5	11.0	13.0
18	---	---	---				---	---	---	15.5	11.5	13.5
19	---	---	---				---	---	---	15.0	11.5	13.0
20	---	---	---				---	---	---	14.0	11.0	12.5
21	---	---	---				---	---	---	14.5	10.0	12.0
22	---	---	---				---	---	---	14.5	10.0	12.0
23	---	---	---				---	---	---	14.5	10.0	12.0
24	---	---	---				---	---	---	14.0	10.0	12.0
25	---	---	---				16.5	12.0	14.0	15.0	10.5	12.5
26	---	---	---				17.0	12.5	14.5	15.5	11.0	13.0
27	---	---	---				17.5	13.0	15.0	15.5	11.0	13.0
28	---	---	---				17.0	13.0	15.0	15.5	11.5	13.0
29	---	---	---				16.5	12.0	14.0	15.5	11.0	13.0
30	---	---	---				16.5	12.0	14.0	14.5	11.0	13.0
31	---	---	---				17.0	12.5	14.5	---	---	---
MONTH	---	---	---				---	---	---	---	---	---

DESCHUTES RIVER BASIN

14075000 SQUAW CREEK NEAR SISTERS, OR

LOCATION.--Lat 44°14'02", long 121°33'57", in SE 1/4 SW 1/4 sec.29, T.15 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on right bank 800 ft upstream from intake of McAllister ditch, 4 mi south of Sisters, and at mile 26.8.

DRAINAGE AREA.--45.2 mi², not including 12.6 mi² of Pole Creek. See REMARKS.

PERIOD OF RECORD.--July 1906 to October 1918, June to August 1919, October 1919 to September 1920, May 1921 to September 1924 (no winter records), April 1925 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WDR OR-83-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,490 ft, by barometer. July 1, 1906, to May 29, 1913, nonrecording gage at site 1,000 ft downstream at different datum, below intake of McAllister ditch (records include flow in McAllister ditch). May 30, 1913, to Sept. 2, 1915, nonrecording gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder at site 300 ft downstream at different datum. Oct. 6, 1928, to Nov. 7, 1967, water-stage recorder at site 200 ft downstream at datum 2.64 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation. A canal near mouth of Pole Creek has diverted the entire flow of that creek since 1885. Prior to Oct. 1, 1982, drainage area of 57.8 mi² included that of Pole Creek. Water is diverted from Snow Creek, a tributary upstream from station, for irrigation in Three Creek basin.

AVERAGE DISCHARGE.--81 years (water years 1907-18, 1920, 1926-93), 104 ft³/s, 75,150 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since 1909, 2,000 ft³/s Dec. 25, 1980, from rating curve extended above 690 ft³/s on basis of slope-area measurement of peak flow; a maximum gage height of 9.2 ft from water-borne ice was observed on Jan. 11, 1979, and probably occurred on Jan. 10, 1979; previous maximum gage height, about 8.75 ft, over top of gage Nov. 22, 1909, site and datum then in use (discharge not determined); minimum discharge, 14 ft³/s Mar. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 470 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 1	2300	(a)	*3.32	May 25	0930	*400	2.80

Minimum daily discharge, 18 ft³/s Feb. 17.

(a) Backwater from ice.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	75	46	e34	e33	e28	74	95	274	177	137	90
2	54	92	e42	e33	e33	e27	70	112	232	190	140	96
3	50	50	e37	e42	32	e29	81	130	205	179	143	96
4	46	49	e33	e44	34	e30	82	121	200	177	147	98
5	45	46	e29	e38	33	36	76	113	201	175	148	100
6	45	44	e32	e35	33	34	73	126	195	168	148	96
7	44	64	e33	e31	32	35	73	117	204	166	145	94
8	44	50	e34	e30	32	36	77	104	191	167	135	92
9	44	43	e44	e32	32	38	81	101	198	169	133	92
10	46	43	e58	e30	32	37	78	124	228	164	134	90
11	47	46	e52	e30	32	35	74	166	206	163	127	90
12	45	61	e46	e30	32	34	71	185	172	156	120	85
13	45	50	e43	e30	32	35	69	185	176	153	117	80
14	41	46	e50	e30	32	37	68	182	179	149	113	77
15	39	44	e44	e30	e29	52	68	189	212	143	111	77
16	40	43	e40	e31	e19	58	68	211	208	140	105	76
17	42	42	e41	e35	e18	83	68	230	210	139	102	74
18	41	41	e39	e34	e19	105	67	259	227	140	100	72
19	41	40	e38	e34	e21	99	65	294	260	142	106	71
20	41	39	e41	e47	e22	87	65	311	284	145	137	69
21	48	91	e38	e42	e23	74	68	309	277	142	126	67
22	41	89	e38	e37	e28	78	69	262	215	185	113	66
23	42	57	39	e34	e36	131	68	236	176	196	115	65
24	41	51	39	e36	e32	111	67	233	161	163	111	64
25	41	52	e43	e49	e34	92	69	339	172	148	99	63
26	40	61	e41	e46	e31	85	71	282	204	139	93	63
27	40	67	39	e40	e33	80	68	290	221	143	91	63
28	40	49	39	e37	e30	76	68	263	194	160	92	65
29	42	45	38	e37	---	73	85	232	178	169	92	65
30	41	47	37	34	---	71	100	252	174	144	90	65
31	46	---	e34	35	---	69	---	293	---	136	89	---
TOTAL	1362	1617	1247	1107	830	1895	2181	6346	6224	4927	3659	2361
MEAN	43.9	53.9	40.2	35.7	29.6	61.1	72.7	205	207	159	118	78.7
MAX	60	92	58	49	36	131	100	339	284	196	148	100
MIN	39	39	29	30	18	27	65	95	161	136	89	63
AC-FT	2700	3210	2470	2200	1650	3760	4330	12590	12350	9770	7260	4680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

	64.3	77.9	79.9	69.1	67.8	61.6	77.5	142	220	189	119	80.3
MEAN	64.3	77.9	79.9	69.1	67.8	61.6	77.5	142	220	189	119	80.3
MAX	132	255	220	180	220	158	133	279	390	347	209	136
(WY)	1948	1910	1965	1971	1907	1972	1934	1956	1933	1917	1916	1913
MIN	39.9	36.5	35.1	23.6	24.3	33.5	36.9	57.9	106	69.5	67.7	50.6
(WY)	1978	1940	1932	1937	1937	1966	1929	1977	1992	1977	1944	1944

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1906 - 1993
ANNUAL TOTAL	25051	33756	
ANNUAL MEAN	68.4	92.5	104
HIGHEST ANNUAL MEAN			164
LOWEST ANNUAL MEAN			60.6
HIGHEST DAILY MEAN	202	339	1230
LOWEST DAILY MEAN	26	18	18
ANNUAL SEVEN-DAY MINIMUM	27	22	21
ANNUAL RUNOFF (AC-FT)	49690	66960	75150
10 PERCENT EXCEEDS	115	195	205
50 PERCENT EXCEEDS	60	68	79
90 PERCENT EXCEEDS	37	33	45

e Estimated

DESCHUTES RIVER BASIN

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14076500 DESCHUTES RIVER NEAR CULVER, OR

LOCATION.--Lat 44°29'56", long 121°19'12", in NW 1/4 SE 1/4 sec.29, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, on right bank 2.5 mi downstream from Squaw Creek, 6.0 mi southwest of Culver, and at mile 120.6.

DRAINAGE AREA.--2,705 mi².

PERIOD OF RECORD.--July 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,980 ft above sea level (river-profile survey). July 14, 1952, to Sept. 30, 1961, at site 4.1 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Crescent Lake and Crane Prairie and Wickiup Reservoirs. Many diversions for irrigation upstream from station. Continuous water-quality records for the period October 1954 to September 1957 and January 1959 to September 1974 have been collected at this location.

AVERAGE DISCHARGE.--41 years, 902 ft³/s, 653,400 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,680 ft³/s Dec. 24, 1964, gage height, 10.00 ft, from rating curve extended above 2,200 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 418 ft³/s July 7, 8, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,520 ft³/s Mar. 20, 24, gage height, 4.48 ft; minimum discharge, 489 ft³/s Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	494	807	894	875	895	891	1290	551	838	534	496	498
2	499	850	897	864	810	902	1240	542	900	546	499	494
3	499	839	906	844	835	913	1240	553	847	541	498	495
4	497	837	837	902	903	922	1250	556	707	534	498	493
5	496	853	856	906	905	887	1230	558	686	524	497	494
6	493	899	881	874	912	846	1210	555	669	611	502	494
7	495	915	901	849	910	781	1230	555	659	521	501	495
8	495	918	933	841	910	775	1250	544	677	509	498	499
9	494	896	951	857	912	780	1260	538	641	504	498	497
10	522	727	939	856	913	747	1260	540	654	504	496	493
11	519	695	948	854	915	898	1250	546	650	500	497	495
12	509	704	757	880	918	898	1250	586	606	501	497	496
13	510	695	716	872	913	758	1260	589	573	499	497	496
14	508	848	717	878	911	711	1270	550	569	502	499	495
15	512	923	706	861	910	742	1250	539	573	503	502	496
16	518	918	750	887	871	828	1180	546	575	511	506	496
17	518	798	817	892	833	922	1140	586	562	510	507	495
18	521	682	742	898	878	1240	1130	610	559	510	505	494
19	671	676	704	908	909	1340	1120	656	582	509	504	494
20	771	679	730	968	906	1420	854	692	639	508	514	496
21	791	735	718	961	915	1360	889	703	690	505	596	498
22	794	970	860	940	910	1410	888	686	672	509	573	503
23	787	913	911	903	911	1440	745	625	592	514	515	503
24	784	914	908	903	892	1500	748	579	554	530	506	503
25	780	927	896	920	878	1490	776	647	549	512	504	498
26	780	916	901	934	870	1490	779	808	567	508	504	497
27	766	939	917	916	865	1480	659	752	554	507	502	494
28	773	948	908	915	874	1450	560	862	566	545	501	495
29	780	940	918	912	---	1440	541	880	523	502	499	496
30	768	925	904	909	---	1380	538	740	526	497	500	501
31	765	---	908	907	---	1310	---	788	---	495	500	---
TOTAL	19109	25286	26331	27686	24984	33941	31287	19462	18959	16005	15711	14893
MEAN	616	843	849	893	892	1095	1043	628	632	516	507	496
MAX	794	970	951	968	918	1500	1290	880	900	611	596	503
MIN	493	676	704	841	810	711	538	538	523	495	496	493
AC-FT	37900	50150	52230	54920	49560	67320	62060	38600	37610	31750	31160	29540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1993, BY WATER YEAR (WY)

	MEAN	1147	1264	1329	1381	1340	845	585	629	547	527	551
MAX	1172	1706	2130	2012	2034	2360	1799	1228	1020	766	741	782
(WY)	1985	1985	1985	1975	1975	1972	1984	1956	1956	1975	1953	1953
MIN	470	837	849	882	892	839	510	457	455	430	441	455
(WY)	1964	1965	1993	1992	1993	1964	1968	1964	1964	1964	1964	1963

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1953 - 1993
ANNUAL TOTAL	245343	273654	
ANNUAL MEAN	670	750	902
HIGHEST ANNUAL MEAN			1283
LOWEST ANNUAL MEAN			677
HIGHEST DAILY MEAN	1060	Feb 22	4790
LOWEST DAILY MEAN	483	Aug 6	425
ANNUAL SEVEN-DAY MINIMUM	485	Jul 31	426
ANNUAL RUNOFF (AC-FT)	486600		653400
10 PERCENT EXCEEDS	940		1560
50 PERCENT EXCEEDS	522		739
90 PERCENT EXCEEDS	489		489

DESCHUTES RIVER BASIN

14087400 CROOKED RIVER BELOW OPAL SPRINGS, NEAR CULVER, OR

LOCATION.--Lat 44°29'33", long 121°17'50", in NW 1/4 NE 1/4 sec.33, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070305, on right bank 0.2 mi downstream from Opal Springs, 4.8 mi southwest of Culver, and at mile 6.7.

DRAINAGE AREA.--4,300 mi², approximately, of which 500 mi² is probably noncontributing.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,953.60 ft above sea level (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records good except those for Jan. 7 to Feb. 10, Feb. 26 to Apr. 1, Aug. 26 to Sept. 30, which are fair. Flow regulated since December 1960 by Prineville Reservoir (station 14080400) and Ochoco Reservoir, capacity, 47,500 acre-ft. Dam and powerplant 500 ft upstream, completed in 1985, causes brief fluctuations in flow. Many diversions for irrigation upstream from station. Practically all of the summer flow comes from Opal Springs and other springs within 15 mi upstream from station. Simultaneous records (1961-63) at former gaging station 5.6 mi downstream indicated over 15 percent increase to summer flow from springs downstream from this station. Continuous water-quality records for the period October 1963 to September 1974 have been collected at this location.

AVERAGE DISCHARGE.--32 years, 1,570 ft³/s, 1,137,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s Dec. 24, 1964, gage height, 9.36 ft; minimum daily discharge, 1,090 ft³/s May 11, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,030 ft³/s sometime during the period Mar. 23 to Apr. 1, gage height, 8.78 ft, due to powerplant operation; minimum recorded discharge, 661 ft³/s Oct. 2, due to powerplant operation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1210	1290	1280	1270	1320	1270	4760	3130	1680	1190	1410	1440
2	1200	1280	1280	1250	1310	1280	4830	3100	1720	1220	1410	1440
3	1250	1280	1280	1260	1330	1280	4880	3130	1730	1260	1400	1430
4	1260	1280	1270	1270	1320	1320	4850	3130	1780	1260	1390	1410
5	1260	1280	1250	1270	1320	1350	4900	3130	1950	1260	1370	1410
6	1260	1280	1270	1260	1320	1520	4830	3070	2060	1270	1360	1410
7	1280	1280	1270	1290	1320	1720	4810	3050	2040	1230	1370	1400
8	1310	1280	1280	1300	1330	1750	4790	3060	2010	1220	1390	1380
9	1280	1280	1280	1300	1330	1710	4780	3060	1980	1220	1390	1380
10	1280	1280	1280	1290	1320	1630	4710	3110	1950	1210	1380	1360
11	1290	1290	1280	1300	1300	1550	4650	3010	1920	1240	1370	1320
12	1280	1290	1270	1300	1310	1470	4600	2810	1840	1260	1370	1270
13	1290	1300	1290	1300	1320	1440	4540	2710	1710	1260	1370	1310
14	1280	1300	1300	1300	1320	1420	4530	2610	1670	1250	1390	1330
15	1280	1280	1300	1290	1310	1520	4530	2440	1570	1240	1390	1300
16	1290	1280	1300	1300	1310	1610	4540	2400	1490	1250	1420	1350
17	1280	1280	1270	1300	1280	1960	4550	2380	1430	1330	1420	1350
18	1280	1290	1270	1300	1300	2370	4560	2250	1390	1370	1410	1350
19	1290	1280	1270	1300	1310	2330	4590	2210	1350	1380	1420	1370
20	1310	1280	1260	1310	1300	2640	4530	2050	1310	1400	1450	1380
21	1300	1280	1280	1330	1290	3010	4520	1820	1310	1430	1630	1390
22	1300	1280	1280	1340	1290	3350	4380	1600	1310	1530	1630	1400
23	1290	1280	1280	1330	1290	3990	4190	1470	1290	1610	1650	1400
24	1290	1280	1260	1320	1280	4710	4010	1450	1290	1650	1610	1400
25	1280	1270	1260	1320	1280	4840	3880	1440	1240	1620	1560	1400
26	1280	1270	1260	1320	1260	4830	3660	1440	1210	1580	1550	1400
27	1280	1270	1270	1320	1260	4810	3540	1540	1200	1530	1550	1390
28	1290	1270	1280	1320	1270	4830	3420	1620	1230	1470	1530	1370
29	1300	1270	1270	1320	---	4810	3290	1630	1210	1430	1530	1360
30	1300	1270	1260	1320	---	4770	3190	1620	1200	1430	1540	1370
31	1290	---	1270	1320	---	4750	---	1610	---	1420	1480	---
TOTAL	39660	38420	39520	40320	36500	81840	131840	73080	47070	42020	45140	41270
MEAN	1279	1281	1275	1301	1304	2640	4395	2357	1569	1355	1456	1376
MAX	1310	1300	1300	1340	1330	4840	4900	3130	2060	1650	1650	1440
MIN	1200	1270	1250	1250	1260	1270	3190	1440	1200	1190	1360	1270
AC-FT	78670	76210	78390	79970	72400	162300	261500	145000	93360	83350	89540	81860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

MEAN	1430	1380	1508	1604	1788	2003	2170	1707	1321	1272	1306	1370
MAX	1650	2069	2686	3551	3490	4208	4793	3295	1777	1475	1593	1541
(WY)	1970	1985	1965	1965	1972	1984	1984	1984	1984	1983	1976	1965
MIN	1239	1232	1179	1182	1245	1232	1192	1173	1196	1122	1133	1187
(WY)	1969	1964	1964	1964	1989	1977	1977	1964	1977	1981	1980	1980

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1962 - 1993

ANNUAL TOTAL	456680		656680				
ANNUAL MEAN	1248		1799			1570	
HIGHEST ANNUAL MEAN						2196	1984
LOWEST ANNUAL MEAN						1250	1992
HIGHEST DAILY MEAN	1310	Oct 8	4900	Apr 5		6130	Dec 24 1964
LOWEST DAILY MEAN	1200	Apr 27	1190	Jul 1		1090	May 11 1981
ANNUAL SEVEN-DAY MINIMUM	1210	Apr 25	1210	Jun 26		1100	May 10 1981
ANNUAL RUNOFF (AC-FT)	905800		1303000			1137000	
10 PERCENT EXCEEDS	1280		3470			2240	
50 PERCENT EXCEEDS	1250		1330			1350	
90 PERCENT EXCEEDS	1210		1260			1200	

DESCHUTES RIVER BASIN

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14090350 JEFFERSON CREEK NEAR CAMP SHERMAN, OR

LOCATION.--Lat 44°34'18", long 121°38'17", in SW 1/4 SE 1/4 sec.34, T.11 S., R.9 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, on left bank 100 ft upstream from bridge, 7.6 mi north of Camp Sherman, and at mile 1.3.

DRAINAGE AREA.--27.8 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 2,780 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--10 years, 87.9 ft³/s, 42.94 in/yr, 63,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 428 ft³/s Feb. 23, 1986, gage height, 3.21 ft; minimum daily discharge, 36 ft³/s Dec. 22, 1990, but could have been lower during period of ice effect Dec. 19-25, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2100	*270	*2.64	May 21	0230	221	2.43
Mar. 23	0730	248	2.55				

Minimum discharge, 42 ft³/s Dec. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	120	65	56	58	55	103	125	173	138	115	93
2	59	103	62	55	58	54	99	136	161	145	115	93
3	57	68	56	59	58	56	116	146	154	140	114	92
4	57	68	52	60	57	57	108	136	156	137	114	91
5	56	64	49	58	57	62	101	130	163	135	113	91
6	56	61	53	56	57	61	97	138	163	133	112	91
7	55	78	53	53	57	62	97	132	169	132	111	90
8	54	66	54	53	57	66	103	124	156	131	109	90
9	55	61	60	54	57	67	105	121	154	132	109	89
10	55	59	66	53	56	64	100	129	161	130	109	88
11	55	60	64	53	56	62	96	155	151	129	108	87
12	55	91	61	53	56	61	95	184	140	127	107	86
13	55	71	60	53	56	61	93	181	140	126	105	86
14	54	67	62	53	56	67	93	162	150	124	104	85
15	54	65	60	53	54	101	96	163	164	124	104	85
16	54	62	59	54	44	95	95	173	154	123	103	85
17	54	65	60	56	44	121	95	179	152	130	103	85
18	53	64	59	56	45	188	94	189	157	124	102	83
19	53	62	59	57	46	151	92	189	161	124	103	82
20	54	59	60	68	48	122	93	191	159	126	105	82
21	56	117	59	63	49	108	98	206	157	123	103	82
22	54	106	59	60	52	112	99	186	148	140	102	82
23	54	75	58	57	56	206	96	169	140	134	100	82
24	54	67	58	60	54	137	97	170	139	126	100	81
25	54	65	59	71	55	117	100	198	144	122	97	80
26	53	63	60	65	55	108	99	172	153	119	97	79
27	52	74	60	63	56	102	97	196	153	120	96	78
28	53	69	59	61	55	99	98	173	143	122	96	78
29	56	63	58	61	---	97	129	161	138	123	96	78
30	58	65	58	59	---	95	139	168	137	117	94	77
31	75	---	56	58	---	95	---	186	---	116	94	---
TOTAL	1722	2178	1818	1791	1509	2909	3023	5068	4590	3972	3240	2551
MEAN	55.5	72.6	58.6	57.8	53.9	93.8	101	163	153	128	105	85.0
MAX	75	120	66	71	58	206	139	206	173	145	115	93
MIN	52	59	49	53	44	54	92	121	137	116	94	77
AC-FT	3420	4320	3610	3550	2990	5770	6000	10050	9100	7880	6430	5060
CFSM	2.00	2.61	2.11	2.08	1.94	3.38	3.62	5.88	5.50	4.61	3.76	3.06
IN.	2.30	2.91	2.43	2.40	2.02	3.89	4.05	6.78	6.14	5.32	4.34	3.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	73.5	80.2	70.3	72.4	72.9	78.5	93.3	114	124	107	89.6	78.5
MEAN												
MAX	90.1	101	86.4	112	107	129	110	163	153	145	117	98.5
(WY)	1985	1985	1984	1984	1986	1986	1986	1993	1993	1984	1984	1984
MIN	55.5	59.3	58.6	57.8	50.6	57.9	71.6	83.3	80.0	70.5	63.7	60.8
(WY)	1993	1988	1993	1993	1989	1985	1991	1991	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1984 - 1993

ANNUAL TOTAL	26064	34371	
ANNUAL MEAN	71.2	94.2	87.9
HIGHEST ANNUAL MEAN			109
LOWEST ANNUAL MEAN			74.4
HIGHEST DAILY MEAN	175	206	312
LOWEST DAILY MEAN	49	44	36
ANNUAL SEVEN-DAY MINIMUM	53	47	38
ANNUAL RUNOFF (AC-FT)	51700	68170	63700
ANNUAL RUNOFF (CFSM)	2.56	3.39	3.16
ANNUAL RUNOFF (INCHES)	34.88	45.99	42.97
10 PERCENT EXCEEDS	93	154	128
50 PERCENT EXCEEDS	67	90	82
90 PERCENT EXCEEDS	57	54	60

DESCHUTES RIVER BASIN

14090400 WHITEWATER RIVER NEAR CAMP SHERMAN, OR

LOCATION.--Lat 44°43'04", long 121°38'07", in SE 1/4 NE 1/4 sec.11, T.10 S., R.9 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, on left bank 0.2 mi downstream from Lionshead Creek, 18 mi north of Camp Sherman, and at mile 7.1.

DRAINAGE AREA.--22.9 mi².

PERIOD OF RECORD.--July 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,230 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--11 years, 78.7 ft³/s, 46.68 in/yr, 56,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 613 ft³/s Dec. 10, 1987, from rating curve extended above 170 ft³/s, gage height, 3.24 ft; minimum daily discharge, 28 ft³/s Dec. 22, 1990, but could be less because of ice effect.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	*345	a*2.60	May 27	unknown	260	b2.37
May 22	unknown	280	b2.42				

Minimum daily discharge, 31 ft³/s Oct. 27.

a From crest-stage gage.

b From graph based on recorded gage heights.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e38	e110	60	41	39	35	e110	124	e180	e130	e90	67
2	e40	e95	57	e40	39	35	e110	136	e170	e130	e90	74
3	e40	e50	53	39	39	37	e130	156	e160	e125	e85	73
4	e38	e55	e48	39	39	39	e120	144	e150	e120	e85	75
5	e36	e44	e46	39	39	42	e115	133	e160	e120	e85	73
6	e36	e36	49	37	39	43	e110	135	e160	e120	e80	71
7	e36	e65	49	e34	39	47	e105	132	e160	e120	e80	71
8	e34	e46	52	38	39	53	e110	123	e150	e115	e80	71
9	e34	e40	52	36	39	56	116	118	e140	e115	e80	71
10	e34	e36	58	35	39	56	110	122	e150	e110	e80	70
11	e36	e38	54	35	39	53	103	153	e140	e110	e80	70
12	e36	e75	52	35	39	53	98	194	e120	e110	e75	61
13	e34	e50	50	e34	38	51	96	198	e120	e110	77	57
14	e34	e46	54	34	37	57	92	181	e130	e105	74	55
15	e34	e48	54	34	37	93	96	178	e140	e105	71	55
16	e33	e44	51	33	e36	88	93	187	e130	e105	67	54
17	e33	e50	50	33	e36	108	92	195	131	e110	69	52
18	e32	49	45	33	36	e200	91	212	141	e105	72	51
19	e32	49	44	36	e38	e150	88	218	162	e105	76	50
20	e34	47	48	51	37	e120	88	227	164	e100	83	48
21	e36	e135	46	42	36	e105	93	246	157	e100	79	47
22	e34	e115	46	40	36	e110	92	e230	143	e115	75	47
23	e34	e80	45	38	36	e220	91	e200	e130	e110	83	46
24	e32	e68	45	38	35	e140	91	e190	e130	e100	75	46
25	e32	e62	44	45	e35	e115	92	e220	e135	e95	65	46
26	e32	57	45	43	e35	e105	94	e200	e140	e95	62	48
27	e31	69	45	42	e35	e100	92	e220	e145	e95	62	50
28	e34	65	43	42	35	e95	91	e190	e135	e95	63	52
29	e42	59	42	42	---	e95	117	e170	e130	e100	63	53
30	e40	63	42	42	---	e90	136	e180	e125	e90	61	55
31	e65	---	e40	41	---	e100	---	e190	---	e90	62	---
TOTAL	1116	1846	1509	1191	1046	2691	3062	5502	4328	3355	2329	1759
MEAN	36.0	61.5	48.7	38.4	37.4	86.8	102	177	144	108	75.1	58.6
MAX	65	135	60	51	39	220	136	246	180	130	90	75
MIN	31	36	40	33	35	35	88	118	120	90	61	46
AC-FT	2210	3660	2990	2360	2070	5340	6070	10910	8580	6650	4620	3490
CFSM	1.57	2.69	2.13	1.68	1.63	3.79	4.46	7.75	6.30	4.73	3.28	2.56
IN.	1.81	3.00	2.45	1.93	1.70	4.37	4.97	8.94	7.03	5.45	3.78	2.86

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	48.9	62.8	61.0	64.2	67.8	77.0	92.4	108	121	102	79.3	59.0
MAX	65.3	97.9	93.9	121	125	132	134	177	157	139	109	76.1
(WY)	1983	1985	1983	1983	1986	1986	1989	1993	1983	1983	1983	1983
MIN	36.0	36.6	46.5	38.4	37.4	50.1	50.3	64.5	60.7	54.0	60.4	49.6
(WY)	1993	1988	1986	1993	1993	1985	1991	1991	1992	1992	1992	1989

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	21918	29734	
ANNUAL MEAN	59.9	81.5	
HIGHEST ANNUAL MEAN			78.7
LOWEST ANNUAL MEAN			105
HIGHEST DAILY MEAN	185	Apr 17	460
LOWEST DAILY MEAN	31	Oct 27	28
ANNUAL SEVEN-DAY MINIMUM	33	Oct 22	33
ANNUAL RUNOFF (AC-FT)	43470	58980	56990
ANNUAL RUNOFF (CFSM)	2.62	3.56	3.44
ANNUAL RUNOFF (INCHES)	35.60	48.30	46.68
10 PERCENT EXCEEDS	94	150	128
50 PERCENT EXCEEDS	53	65	70
90 PERCENT EXCEEDS	38	36	42

e Estimated

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LOCATION.--Lat 44°37'33", long 121°28'55", in SE 1/4 SW 1/4 sec.12, T.11 S., R.10 E., Jefferson County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 1.0 mi upstream from maximum controlled pool of Lake Billy Chinoak, 15.0 mi northwest of Culver, and at mile 13.6.

PERIOD OF RECORD.--April 1910 to February 1912 (gage heights and discharge measurements only), March 1912 to December 1913, October 1921 to current year. Published as "at Hubbard's ranch, near Sisters" 1910, and as "at Hubbard's ranch, near Grandview" 1910-13.

GAGE.--Water-stage recorder. Datum of gage is 1,974.36 ft above sea level (levels by Portland General Electric Co.). Prior to Dec. 31, 1913, nonrecording gage at site 2.3 mi upstream at different datum. Oct. 1, 1921, to May 3, 1949, nonrecording gage and May 4, 1949, to June 18, 1963, water-stage recorder at site 2.7 mi downstream at datum 64 ft lower.

AVERAGE DISCHARGE.--73 years (water years 1913, 1922-93), 1,483 ft³/s, 1,075,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,410 ft³/s Mar. 23, gage height, 2.68 ft; minimum discharge, 1,090 ft³/s Feb. 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	1310	1240	1180	1190	1150	1770	1610	1700	1440	1340	1290
2	1170	1340	1230	1160	1190	1150	1730	1630	1640	1460	1340	1290
3	1160	1200	1210	1170	1180	1170	1790	1600	1600	1440	1350	1280
4	1160	1190	1190	1180	1180	1170	1780	1690	1600	1430	1350	1290
5	1160	1180	1170	1180	1180	1200	1730	1640	1650	1430	1350	1290
6	1150	1170	1190	1170	1180	1220	1700	1650	1620	1420	1350	1280
7	1150	1210	1200	1150	1180	1230	1680	1640	1630	1410	1350	1280
8	1150	1200	1230	1150	1180	1270	1690	1610	1600	1410	1330	1280
9	1150	1180	1230	1150	1170	1290	1730	1590	1570	1410	1330	1280
10	1150	1170	1250	1140	1170	1280	1700	1590	1600	1400	1330	1280
11	1150	1170	1230	1140	1180	1270	1660	1640	1570	1400	1320	1280
12	1150	1240	1210	1130	1180	1260	1630	1710	1530	1390	1320	1270
13	1150	1210	1200	1120	1180	1250	1600	1750	1510	1380	1320	1260
14	1140	1190	1210	1130	1180	1280	1590	1700	1520	1380	1320	1260
15	1140	1180	1210	1120	1180	1460	1590	1690	1560	1380	1320	1260
16	1140	1180	1210	1120	1130	1600	1570	1710	1550	1370	1310	1260
17	1140	1180	1210	1120	1150	1810	1560	1720	1530	1390	1310	1260
18	1140	1180	1200	1130	1170	e2180	1560	1750	1540	1370	1310	1250
19	1140	1180	1190	1160	1170	2160	1540	1750	1550	1380	1310	1250
20	1150	1170	1220	1250	1170	2120	1530	1760	1550	1380	1330	1250
21	1160	1300	1200	1230	1180	2010	1540	1800	1550	1380	1330	1250
22	1150	1430	1200	1210	1170	1950	1540	1780	1510	1420	1310	1250
23	1150	1270	1190	1190	1160	2290	1530	1700	1480	1430	1320	1250
24	1150	1230	1190	1200	1160	2210	1540	1680	1460	1390	1310	1240
25	1150	1210	1190	1230	1150	2040	1550	1770	1460	1370	1290	1240
26	1150	1200	1190	1220	1140	1930	1550	1710	1480	1360	1290	1240
27	1140	1230	1200	1210	1140	1860	1530	1780	1500	1360	1290	1240
28	1150	1230	1200	1210	1150	1800	1530	1730	1470	1370	1290	1240
29	1160	1210	1190	1200	---	1760	1570	1660	1450	1380	1290	1250
30	1170	1220	1190	1190	---	1720	1640	1650	1440	1350	1280	1240
31	1200	---	1180	1190	---	1700	---	1720	---	1340	1280	---
TOTAL	35730	36560	37350	36330	32740	49790	48650	52500	46420	43220	40870	37880
MEAN	1153	1219	1205	1172	1169	1606	1622	1694	1547	1394	1318	1263
MAX	1200	1430	1250	1250	1190	2290	1790	1800	1700	1460	1350	

[illegible]

ANNUAL TOTAL	456840		498040						
ANNUAL MEAN	1248		1364				1483		
HIGHEST ANNUAL MEAN							1845		1956
LOWEST ANNUAL MEAN							1167		1941
HIGHEST DAILY MEAN	1670	Apr 17	2290	Mar 23			7100	Dec 24	1964
LOWEST DAILY MEAN	1140	Oct 14	1120	Jan 13			1080	Feb 17	1932
ANNUAL SEVEN-DAY MINIMUM	1140	Oct 13	1120	Jan 12			1080	Oct 2	1942
ANNUAL RUNOFF (AC-FT)	906100		987900				1075000		
10 PERCENT EXCEEDS	1380		1700				1780		
50 PERCENT EXCEEDS	1230		1280				1440		
90 PERCENT EXCEEDS	1160		1150				1230		

e Estimated

DESCHUTES RIVER BASIN

14092100 LAKE BILLY CHINOOK NEAR METOLIUS, OR

LOCATION.--Lat 44°36'14", long 121°16'40", in SW 1/4 NE 1/4 sec.22, T.11 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, near left end of Round Butte Dam on Deschutes River, 5.0 mi west of Metolius, and at mile 110.6.

DRAINAGE AREA.--7,490 mi², approximately.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Nonrecording gage. Datum of gage is sea level (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by rock fill dam completed in June 1964 by Portland General Electric Co.; storage began Jan. 2, 1964. Total capacity is 534,700 acre-ft at elevation 1,945.0 ft proposed upper limit of operation, and usable capacity is 273,900 acre-ft between elevations 1,860.0 ft, proposed lower limit of operation, and 1,945.0 ft. Reservoir used for power generation under FERC license 2030. Figures given herein represent total contents.

COOPERATION.--Gage readings and capacity tables furnished by Portland General Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 538,700 acre-ft July 15, 16, 1972, elevation, 1,946.00 ft; minimum contents observed since first filling, 431,100 acre-ft Feb. 13, 1972, elevation, 1,917.13 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 535,900 acre-ft June 3, elevation, 1,945.28 ft; minimum contents observed, 494,100 acre-ft Jan. 19, elevation, 1,934.43 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,943.70	529,600	--
Oct. 31.....	1,943.62	529,300	-300
Nov. 30.....	1,942.70	525,700	-3,600
Dec. 31.....	1,937.15	504,400	-21,300
CAL YR 1992.....	--	--	-18,200
Jan. 31.....	1,935.93	499,800	-4,600
Feb. 28.....	1,937.90	507,300	+7,500
Mar. 31.....	1,939.95	515,100	+7,800
Apr. 30.....	1,942.17	523,600	+8,500
May 31.....	1,944.39	532,300	+8,700
June 30.....	1,944.25	531,800	-500
July 31.....	1,944.23	531,700	-100
Aug. 31.....	1,944.15	531,400	-300
Sept. 30.....	1,944.39	532,300	+900
WTR YR 1993.....	--	--	+2,700

14092110 DESCHUTES RIVER BELOW ROUND BUTTE DAM, NEAR MADRAS, OR

LOCATION.--Lat 44°37'23", long 121°16'54", in NE 1/4 NW 1/4 sec.15, T.11 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, on right bank, 1.5 mi downstream from Round Butte Dam, and at mile 109.1.

DRAINAGE AREA.--7,500 mi², approximately.

PERIOD OF RECORDS.--October 1988 to current year.

REVISED RECORDS.--WDR OR-90-1: 1989(M).

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is 1,580 ft above sea level, from topographic map.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Flow regulated by Round Butte Dam. Additional records are available in the files of the Portland Field Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge recorded, 9,330 ft³/s Mar. 26, 1993; maximum gage height recorded, 10.69 ft Jan. 31, 1991; minimum daily discharge recorded, 2,220 ft³/s June 3, 1991.

EXTREMES FOR 1991 WATER YEAR.--Maximum daily discharge recorded, 5,400 ft³/s Oct. 4; maximum gage height recorded, 10.69 ft Jan. 31; minimum daily discharge recorded, 2,220 ft³/s June 3.

EXTREMES FOR 1992 WATER YEAR.--Maximum daily discharge recorded, 5,390 ft³/s Nov. 29; maximum gage height recorded, 10.66 ft Sept. 13; minimum daily discharge recorded, 2,420 ft³/s Sept. 15.

EXTREMES FOR 1993 WATER YEAR.--Maximum daily discharge recorded, 9,330 ft³/s Mar. 26; maximum gage height recorded, 10.39 ft Jan. 7; minimum daily discharge recorded, 2,830 ft³/s Oct. 2.

REVISION.--Revised figures of discharge for the water year 1990, superceding those published in the report for 1990 are given below.

EXTREMES FOR 1990 WATER YEAR.--Maximum daily discharge recorded, 6,440 ft³/s Feb. 14; minimum daily discharge recorded, 2,260 ft³/s June 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	3960	4010	3780	3390	4200	3510	e3860	4340	---	---	4190
2	---	4100	4040	4460	3710	4140	4090	e3940	3910	---	---	4460
3	---	4550	3720	3550	4960	4530	3320	e3990	4010	---	---	3890
4	---	4150	4080	e2990	4480	3900	2460	e4170	4680	---	---	---
5	---	4130	3970	e3910	4820	4710	3990	e4940	3520	---	---	---
6	---	4110	4150	4130	5110	4310	3230	e4200	e3570	---	---	---
7	---	3460	4770	3650	4650	4570	3830	5470	e3520	---	---	---
8	---	4580	4670	4720	5210	4150	3480	3530	3690	---	---	---
9	---	4160	4870	4920	4520	2760	3290	4400	2670	---	---	---
10	---	4560	4770	4610	4840	4090	3020	4010	2960	---	---	---
11	---	4180	5110	5210	4500	3580	3530	3600	4000	---	---	---
12	---	4670	3900	5000	3920	4330	4140	4180	2920	---	---	---
13	---	4300	4030	4600	4400	3010	3160	3760	2330	---	---	---
14	---	3820	4250	4280	6440	3540	3790	5550	4320	---	---	---
15	---	4170	4310	4530	4690	3810	3470	3920	3590	---	---	---
16	---	4270	3960	4740	5400	2780	2460	4520	2260	---	3770	---
17	---	4360	4030	4750	3690	3520	3720	4610	3530	---	4050	---
18	---	3990	3640	4420	3760	2960	3350	3420	---	---	3680	---
19	---	3790	3620	4640	4040	4270	3530	---	---	---	4340	---
20	---	4290	3730	3790	3900	3680	3430	---	---	---	4000	---
21	---	3960	---	3700	---	3330	3800	---	---	---	3570	---
22	---	3940	---	4710	---	3240	2970	---	---	---	3970	---
23	---	3600	3930	4050	3800	3340	3110	---	---	---	3960	---
24	---	3770	4290	3840	3990	2700	3980	---	---	---	4340	---
25	3660	3610	3790	4110	4260	2710	4280	---	---	---	3790	---
26	4260	3720	e3630	4730	3700	3550	4640	---	---	---	4150	---
27	3770	3570	4230	4440	3890	3280	4210	---	---	---	3260	3820
28	4100	3840	4030	4460	6260	3220	3520	---	---	---	4170	4000
29	4140	3620	4170	4210	---	3110	e3700	---	---	---	3300	3970
30	3670	3550	4350	3910	---	3350	e4290	---	---	---	3450	3710
31	4140	---	4380	4830	---	2860	---	---	---	---	3730	---
TOTAL	---	120780	---	133670	---	111530	107300	---	---	---	---	---
MEAN	---	4026	---	4312	---	3598	3577	---	---	---	---	---
MAX	---	4670	---	5210	---	4710	4640	---	---	---	---	---
MIN	---	3460	---	2990	---	2700	2460	---	---	---	---	---
AC-FT	---	239600	---	265100	---	221200	212800	---	---	---	---	---

e Estimated

DESCHUTES RIVER BASIN

14092110 DESCHUTES RIVER BELOW ROUND BUTTE DAM, NEAR MADRAS, OR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5020	e4110	3870	3900	3980	---	---	3380	3750	3430	---	---
2	4430	4090	3890	5050	4310	---	---	3090	3460	---	---	---
3	4920	4050	4360	3800	3480	---	---	4280	2220	---	---	---
4	5400	4170	3500	3390	3920	---	---	3400	3310	---	---	---
5	4500	4090	3710	3120	---	---	---	3560	2890	---	---	---
6	4100	4010	4560	4230	---	---	---	3250	3170	---	---	---
7	4050	4290	4100	2920	---	---	---	3440	3050	---	---	---
8	3980	4300	3930	4790	---	---	---	3400	3310	---	---	---
9	4010	4230	4100	3380	---	---	---	2720	3560	---	---	---
10	3920	4090	3870	3030	---	---	3300	3910	3640	---	---	---
11	3790	4480	4450	4050	---	---	3050	3230	2850	---	---	3600
12	3330	4160	3840	3470	---	---	2890	3210	3060	---	---	3110
13	e3570	4110	4160	3880	---	---	3940	3160	---	---	---	3280
14	e3920	3390	3350	3580	---	---	3350	3310	3280	---	---	3290
15	3490	5000	3620	3920	---	---	3320	3740	3500	---	---	3190
16	3260	e4090	3370	3500	---	---	2650	3730	3850	---	---	3370
17	3680	e4550	3690	3210	---	---	3340	3070	3010	---	---	3050
18	3510	e4530	4300	4060	---	---	3400	3290	---	---	---	2800
19	3180	4490	4290	4080	---	---	2920	2750	---	---	---	3250
20	e3810	4000	4160	3850	---	---	3480	3600	3280	---	---	3180
21	e3470	3720	4380	4030	---	---	3340	3840	3400	---	---	2760
22	e3650	4490	3400	4110	---	---	3360	3620	---	---	---	3470
23	e3700	3970	3890	3460	---	---	3270	3500	---	---	---	3750
24	e4140	e4060	3600	4340	---	---	3050	3720	---	---	---	3200
25	e4090	5270	5080	4060	---	---	2880	3480	3620	---	---	3750
26	e4080	3720	4430	4310	---	---	3670	3590	4110	---	---	3230
27	e3910	4070	4520	3450	---	---	2570	3750	---	---	---	2920
28	e4090	3870	4960	3830	---	---	3860	2750	---	---	---	3040
29	e4000	4500	4570	4110	---	---	2560	3840	---	---	---	3140
30	e4150	4280	3430	4160	---	---	3750	2730	3910	---	---	3200
31	e4260	---	4580	3980	---	---	---	2470	---	---	---	---
TOTAL	123410	126180	125960	119050	---	---	---	104810	---	---	---	---
MEAN	3981	4206	4063	3840	---	---	---	3381	---	---	---	---
MAX	5400	5270	5080	5050	---	---	---	4280	---	---	---	---
MIN	3180	3390	3350	2920	---	---	---	2470	---	---	---	---
AC-FT	244800	250300	249800	236100	---	---	---	207900	---	---	---	---

e Estimated

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3450	4440	4030	3810	3910	4180	3670	3500	---	---	---	---
2	3430	4320	4240	3680	3960	3990	3760	3470	---	---	---	---
3	3930	4210	3900	3780	3390	3950	3700	3230	---	---	---	---
4	3880	4420	3880	3870	3840	4050	3630	3060	---	---	---	---
5	3910	4230	3960	3990	3950	4140	3380	3170	---	---	---	---
6	3820	4210	4110	3870	4280	3880	3570	---	---	---	---	---
7	4060	4420	4380	3840	3940	3980	3700	---	---	---	---	---
8	3640	4240	4310	3790	3860	3860	3600	---	---	---	---	---
9	3740	3910	4260	3660	3810	3570	3210	---	---	---	---	---
10	3470	3730	4510	3940	3890	3900	3790	3610	---	---	---	---
11	3510	3840	4280	3950	3510	3600	3820	3710	---	---	---	3080
12	3750	3890	4740	3550	e3870	3710	3500	3220	---	---	---	2930
13	3630	3910	4030	3540	3510	e3660	2890	3170	---	---	---	2650
14	3350	3740	4400	3690	4190	3590	3840	3390	---	---	---	3000
15	3780	4080	4100	3890	4060	3300	3530	3480	---	---	---	e2420
16	3560	4210	4700	4110	3680	3930	3920	---	---	---	---	e3890
17	4080	4020	4060	4060	3850	3800	3790	---	---	---	---	3790
18	3790	3980	4000	4130	3790	4370	3760	---	---	---	---	3480
19	3770	3800	4160	4000	3970	4070	e3310	---	---	---	---	3560
20	3880	4270	4150	3940	3820	3930	e3670	---	---	---	---	3320
21	4320	4100	3890	3560	3800	3820	e4150	---	---	---	---	3600
22	4500	3610	4010	4000	3880	3930	e4220	---	---	---	---	3440
23	4050	4070	4120	4200	3860	3590	e4330	---	---	---	---	2890
24	4280	4170	3910	3890	4280	4060	4870	---	---	---	---	3750
25	3820	3540	3940	3650	4100	3760	3890	---	---	---	---	3860
26	4250	4580	4080	3680	4100	4230	4130	---	---	---	---	3700
27	3680	4710	4080	3690	4430	3940	3770	---	---	---	---	3600
28	3780	4060	3820	4000	3920	3900	3440	---	---	---	---	3680
29	4260	5390	3920	3710	3910	3870	3420	---	---	---	---	3300
30	4410	4270	4100	3650	---	3750	3310	---	---	---	---	3450
31	4250	---	3810	4020	---	3840	---	---	---	---	---	---
TOTAL	120030	124370	127880	119140	113360	120150	111570	---	---	---	---	---
MEAN	3872	4146	4125	3843	3909	3876	3719	---	---	---	---	---
MAX	4500	5390	4740	4200	4430	4370	4870	---	---	---	---	---
MIN	3350	3540	3810	3540	3390	3300	2890	---	---	---	---	---
AC-FT	238100	246700	253600	236300	224800	238300	221300	---	---	---	---	---

e Estimated

DESCHUTES RIVER BASIN

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14092110 DESCHUTES RIVER BELOW ROUND BUTTE DAM, NEAR MADRAS, OR--Continued
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3260	4250	3760	3710	3630	4270	7670	4340	4130	---	---	---
2	2830	3870	3980	3270	3520	4250	7130	4570	4070	---	---	---
3	e3230	3960	3850	e4090	3560	3960	6810	4890	5100	---	---	---
4	3470	4190	4010	e3650	3330	4060	7380	5490	4820	---	---	---
5	3340	4320	3220	4270	3050	4180	7330	5880	4900	---	---	---
6	3410	3700	4490	4190	3910	3610	7300	5620	e4900	---	---	---
7	3650	3990	4260	3490	3620	3230	7870	5900	e4100	---	---	---
8	3370	3950	5000	3360	3270	3450	8300	5890	5020	---	---	---
9	3870	3670	4960	4550	3610	3910	8410	5860	4880	---	---	---
10	3590	3460	6000	4620	3520	3430	8460	5350	4780	---	---	---
11	3320	4090	5510	4250	3040	3450	8110	5680	4810	---	---	---
12	3270	3610	e5270	4430	3430	3920	8620	5830	e3500	---	---	---
13	3360	3970	e5550	4360	3240	3780	7960	5630	5140	---	---	---
14	3360	e4040	e5490	4270	3170	3850	8040	5190	e3900	---	---	---
15	3830	3630	5050	4440	3140	3730	7900	4370	e4100	---	---	---
16	3610	3750	4710	3840	3070	3070	7770	6120	---	---	---	---
17	3820	3910	3640	3850	3570	4600	7020	4940	---	---	---	---
18	3270	3800	4270	4030	4540	4540	7250	5480	---	---	---	---
19	3290	3900	3830	3780	3930	5690	7190	4490	---	---	---	---
20	3160	3840	4030	4010	4200	7050	7600	4970	---	---	---	---
21	3890	4120	4020	4260	4250	7400	7100	4870	---	---	---	---
22	3620	4170	3230	3700	4520	8200	7240	5060	4040	---	---	3440
23	3940	3740	3670	4120	4990	8860	7050	5480	3810	---	---	3540
24	4060	e4150	3780	3670	4630	8660	7020	4830	3630	---	---	3570
25	3760	3820	3290	4170	4920	9300	6880	4610	e3700	---	---	3340
26	4020	e3360	3330	4030	4680	9330	6560	4480	---	---	---	3710
27	3310	4250	3370	3740	4180	8870	6530	3660	3640	---	---	3630
28	4010	4030	3440	3740	4100	8610	5950	4070	---	---	---	3570
29	3760	3440	3420	3840	---	8470	5730	3800	---	---	---	3690
30	4030	e4100	3750	3240	---	8300	4420	e4000	---	---	---	3380
31	3750	---	3180	3360	---	8360	---	e3800	---	---	---	---
TOTAL	110460	117080	129360	122330	106620	176390	218600	155150	---	---	---	---
MEAN	3563	3903	4173	3946	3808	5690	7287	5005	---	---	---	---
MAX	4060	4320	6000	4620	4990	9330	8620	6120	---	---	---	---
MIN	2830	3360	3180	3240	3040	3070	4420	3660	---	---	---	---
AC-FT	219100	232200	256600	242600	211500	349900	433600	307700	---	---	---	---

e Estimated

DESCHUTES RIVER BASIN

14092150 SEEKSEEQUA CREEK NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°40'28", long 121°17'28", in SW 1/4 NW 1/4 sec.27, T.10 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 75 ft upstream from culvert, 8.3 mi east of Madras, and at mile 2.5.

DRAINAGE AREA.--93.3 mi².

PERIOD OF RECORD.--May 1987 to September 1993 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,860 ft, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--6 years, 5.62 ft³/s, 0.82 in/yr, 4,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 224 ft³/s Mar. 18, 1993, gage height, 6.70 ft; minimum discharge, 0.37 ft³/s Aug. 5, 6, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 224 ft³/s Mar. 18, gage height, 6.70 ft; minimum discharge, 0.37 ft³/s Aug. 5, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	4.3	2.3	2.5	6.3	3.5	61	15	6.7	1.0	.67	2.5
2	2.5	2.4	2.6	2.1	6.3	3.4	52	14	6.5	1.0	.62	2.4
3	2.7	2.3	1.9	3.1	5.9	3.7	48	14	5.6	1.0	.60	2.4
4	3.3	1.9	e1.8	3.8	5.4	4.1	45	13	5.5	.98	.57	2.4
5	3.5	1.8	e1.8	2.8	5.0	17	41	13	8.0	.92	.53	2.4
6	3.1	1.2	e1.9	2.5	5.2	30	36	13	7.9	.92	.48	2.7
7	3.9	1.4	e3.2	2.2	5.1	37	36	12	7.1	.92	.48	2.3
8	5.0	1.2	5.2	1.7	6.5	41	42	11	6.5	.92	.56	2.3
9	4.7	1.6	5.0	1.9	10	49	42	10	5.9	.92	.53	2.3
10	5.5	2.7	4.6	1.7	11	51	37	9.9	5.7	.92	.54	2.3
11	4.5	2.0	4.3	1.5	13	47	34	9.5	5.3	.92	.58	2.4
12	4.1	2.3	3.2	e1.5	11	44	32	8.9	4.8	.89	.55	2.6
13	4.7	3.3	3.5	e1.4	12	38	31	8.6	4.3	.70	.53	2.6
14	4.8	3.4	3.6	e1.3	12	41	29	8.4	3.6	.70	.51	2.6
15	4.3	2.1	3.2	e1.2	12	77	28	7.7	2.4	.70	.55	2.5
16	3.1	2.0	2.7	e1.2	11	100	27	7.4	2.2	.80	.62	2.7
17	4.9	2.5	3.3	e1.3	9.7	144	26	7.4	2.2	1.0	.96	2.8
18	3.2	2.7	2.8	1.4	10	190	24	6.9	2.1	1.1	2.8	2.8
19	4.6	2.6	2.7	2.2	7.0	151	24	6.8	1.7	1.1	3.4	2.9
20	5.1	2.6	3.8	4.5	6.1	136	24	6.6	1.6	1.1	3.7	3.0
21	7.4	3.8	3.8	7.7	5.3	117	24	6.6	1.6	1.0	3.8	3.3
22	10	4.4	3.2	4.0	5.2	103	21	6.3	1.6	1.0	3.2	2.8
23	7.4	2.7	2.9	2.8	5.0	117	21	6.0	1.6	1.0	3.0	3.1
24	3.0	2.4	2.7	3.7	4.3	100	20	5.5	1.5	.91	3.0	2.8
25	3.1	2.2	2.2	4.0	3.7	86	19	6.5	1.4	.84	3.0	2.8
26	3.5	2.0	2.4	7.8	3.2	74	17	6.5	1.3	.85	3.0	2.6
27	3.5	2.0	2.7	6.9	3.2	67	17	8.8	1.2	.81	3.0	2.7
28	4.0	1.8	2.4	7.3	3.7	61	17	7.7	1.2	.79	3.0	3.1
29	4.2	2.3	1.8	7.5	---	55	16	6.2	1.0	.67	3.0	3.1
30	4.0	1.7	2.2	7.5	---	50	15	5.6	1.0	.87	2.8	3.2
31	3.8	---	2.0	7.5	---	48	---	6.7	---	.58	2.7	---
TOTAL	133.6	71.6	91.7	108.5	204.1	2085.7	906	275.5	109.0	27.83	53.28	80.4
MEAN	4.31	2.39	2.96	3.50	7.29	67.3	30.2	8.89	3.63	.90	1.72	2.68
MAX	10	4.4	5.2	7.8	13	190	61	15	8.0	1.1	3.8	3.3
MIN	2.2	1.2	1.8	1.2	3.2	3.4	15	5.5	1.0	.58	.48	2.3
AC-FT	265	142	182	215	405	4140	1800	546	216	55	106	159
CFSM	.05	.03	.03	.04	.08	.72	.32	.10	.04	.01	.02	.03
IN.	.05	.03	.04	.04	.08	.83	.36	.11	.04	.01	.02	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

	MEAN	2.56	3.01	3.40	6.91	7.08	22.1	10.2	4.28	2.27	1.66	1.95	2.00
MAX	4.31	3.57	6.41	14.5	21.0	67.3	30.2	8.89	3.63	2.67	3.71	2.68	
(WY)	1993	1992	1988	1988	1988	1993	1993	1993	1993	1992	1992	1993	
MIN	1.82	2.39	1.91	1.89	3.11	2.29	1.93	1.93	1.40	.90	1.26	1.59	
(WY)	1988	1993	1991	1991	1991	1991	1991	1991	1989	1993	1991	1990	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1988 - 1993

ANNUAL TOTAL	1170.73	4147.21	5.62	
ANNUAL MEAN	3.20	11.4	11.4	
HIGHEST ANNUAL MEAN			2.13	1993
LOWEST ANNUAL MEAN				1991
HIGHEST DAILY MEAN	10	190	190	Mar 18 1993
LOWEST DAILY MEAN	.94	.48	.48	Aug 6 1993
ANNUAL SEVEN-DAY MINIMUM	1.1	.53	.53	Aug 4 1993
ANNUAL RUNOFF (AC-FT)	2320	8230	4070	
ANNUAL RUNOFF (CFSM)	.034	.12	.060	
ANNUAL RUNOFF (INCHES)	.47	1.65	.82	
10 PERCENT EXCEEDS	5.0	33	9.7	
50 PERCENT EXCEEDS	3.0	3.3	2.7	
90 PERCENT EXCEEDS	1.6	.94	1.3	

e Estimated

DESCHUTES RIVER BASIN

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14092500 DESCHUTES RIVER NEAR MADRAS, OR

LOCATION.--Lat 44°43'34", long 121°14'45", in SE 1/4 SW 1/4 sec.1, T.10 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, on right bank 400 ft downstream from reregulating dam, 2.7 mi downstream from Pelton Dam, 8.5 mi northwest of Madras, and at mile 100.1.

DRAINAGE AREA.--7,820 mi², approximately.

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1398: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,390.25 ft above sea level (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Nov. 23, 1957.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Diurnal fluctuation caused by Lake Simtustus and reregulating reservoir since 1957, combined capacity for normal operation, 6,500 acre-ft. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 47,500 acre-ft, in Crescent Lake, Crane Prairie and Wickiup Reservoirs, combined capacity, 354,600 acre-ft, and since 1960, in Prineville Reservoir, capacity, 152,800 acre-ft, and since 1964, in Lake Billy Chinook, capacity, 534,700 acre-ft. Large diversions in upper basin for irrigation. Continuous water-quality records for the period October 1978 to September 1988 have been collected at this location.

AVERAGE DISCHARGE.--70 years, 4,526 ft³/s, 3,279,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s July 16, 1983, accidental release from Pelton Dam, gage height, 7.70 ft, from floodmarks; minimum discharge, 916 ft³/s July 4, 1982, caused by power company testing control gates on dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft³/s Mar. 23, gage height, 4.91 ft; minimum discharge, 2,290 ft³/s Feb. 11, result of regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3730	4170	4180	3960	3640	4310	8240	4180	4400	3710	3700	3860
2	3730	4170	4170	3960	3640	4280	7390	4720	4460	3630	3700	3880
3	3720	4160	4220	3960	3630	4100	7390	5270	5020	3630	3730	3830
4	3720	4170	4440	3970	3610	4090	7390	5820	5070	3620	3950	3720
5	3710	4160	4430	3970	3610	4030	7430	6050	5030	3630	3930	3670
6	3720	4150	4430	3950	3600	3790	8000	6040	4890	3810	3750	3680
7	3700	4170	4470	4060	3600	3710	8430	6040	4870	3920	3750	3680
8	3720	4160	5240	4520	3640	3730	8760	6040	4900	3930	3750	3720
9	3720	4150	5870	4730	3610	3730	8910	6050	5090	3930	3740	3840
10	3710	4160	5890	4740	3570	3730	8900	6000	5150	3830	3750	3820
11	3710	4170	5890	4730	3330	3750	8890	5760	4850	3700	3800	3830
12	3720	4150	5900	4740	3310	3830	8830	5760	4530	3830	3850	3870
13	3710	4160	5890	4740	3290	4200	8560	5750	4180	3830	3850	3830
14	3700	4160	5900	4740	3290	4170	8510	5730	4300	3710	3760	3650
15	3670	4150	5840	4680	3300	4190	8120	5450	4260	3710	3620	3660
16	3710	4160	4730	4190	3330	4210	7830	5460	4060	3720	3700	3660
17	3700	4150	4190	4200	4000	5060	7500	5420	4070	3710	3880	3650
18	3690	4150	4200	4200	4270	5360	7500	5150	4150	3710	4130	3650
19	3710	4160	4180	4200	4290	6500	7500	5140	4090	3710	4070	3650
20	3720	4160	4190	4200	4460	7860	7510	5150	4060	3740	3970	3640
21	3760	4160	4150	4200	4460	8010	7480	5140	4200	3960	3970	3650
22	3920	4160	3730	4210	4540	8910	7440	5130	4190	3980	3970	3770
23	3950	4150	3740	4200	5100	10300	7420	5150	4080	4070	3960	3870
24	3950	4160	3740	4220	5100	10300	7430	5110	4050	4200	3940	3870
25	3950	4180	3730	4240	5060	10300	7420	4540	4050	4300	3790	3820
26	3950	4160	3740	4090	4740	10300	7380	4060	3830	4290	4170	3820
27	3940	4170	3750	3880	4320	9640	6790	4070	3850	4210	4220	3830
28	3950	4160	3740	3870	4320	9380	6190	4090	3740	4220	4220	3830
29	3970	4170	3730	3820	---	9380	5530	4170	3720	3700	4200	3960
30	4170	4180	3730	3630	---	9140	4620	4180	3740	3690	4000	3980
31	4160	---	3770	3630	---	8700	---	4170	---	3690	3980	---
TOTAL	117890	124840	139800	130430	110660	192990	229290	160790	130880	119320	120800	113190
MEAN	3803	4161	4510	4207	3952	6225	7643	5187	4363	3849	3897	3773
MAX	4170	4180	5900	4740	5100	10300	8910	6050	5150	4300	4220	3980
MIN	3670	4150	3730	3630	3290	3710	4620	4060	3720	3620	3620	3640
AC-FT	233800	247600	277300	258700	219500	382800	454800	318900	259600	236700	239600	224500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	4166	4675	5112	5337	5238	5506	5160	4433	4236	4019	3938	3973																		
MAX	5097	6124	6655	8097	8182	9590	8988	6346	5134	4786	4718	4553																		
(WY)	1973	1985	1982	1965	1965	1972	1984	1984	1974	1974	1976	1984																		
MIN	3085	3521	3951	3305	3094	3455	3602	3554	3492	3059	3064	3081																		
(WY)	1965	1965	1970	1964	1964	1964	1968	1964	1964	1964	1964	1964																		

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1964 - 1993

	1992	1993	1964-1993
ANNUAL TOTAL	1433680	1690880	
ANNUAL MEAN	3917	4633	4647
HIGHEST ANNUAL MEAN			5878
LOWEST ANNUAL MEAN			3558
HIGHEST DAILY MEAN	5900	10300	15100
LOWEST DAILY MEAN	3460	3290	2770
ANNUAL SEVEN-DAY MINIMUM	3510	3350	3040
ANNUAL RUNOFF (AC-FT)	2844000	3354000	3366000
10 PERCENT EXCEEDS	4220	7390	6140
50 PERCENT EXCEEDS	3750	4150	4290
90 PERCENT EXCEEDS	3620	3690	3640

DESCHUTES RIVER BASIN

14092750 SHITIKE CREEK AT PETERS PASTURE, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°45'02", long 121°37'56", in NW 1/4 NE 1/4 sec.35, T.9 S., R.9 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank 0.5 mi downstream from Peters Pasture, and 18 mi west of town of Warm Springs.

DRAINAGE AREA.--22.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,580 ft, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--11 years, 71.7 ft³/s, 42.57 in/yr, 51,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft³/s Feb. 23, 1986, gage height, 3.65 ft, from rating curve extended above 170 ft³/s; minimum daily discharge, 17 ft³/s Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	0930	*480	*2.61	No other peak greater than base discharge.			
Minimum discharge, 20 ft ³ /s many days in October.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	123	56	e30	41	28	e150	e165	e210	89	e58	38
2	24	130	51	e30	39	28	e140	e175	e175	97	e58	37
3	24	62	44	e30	39	31	e160	e210	e150	92	e57	37
4	23	51	41	e32	38	32	e170	e195	e145	90	e57	36
5	22	47	e41	e30	37	34	e150	e165	e185	87	e57	36
6	22	40	39	e27	36	34	e125	e165	e175	82	e56	35
7	21	68	40	e27	36	37	e120	e170	e175	78	e54	35
8	21	51	41	e28	35	45	e120	e135	e155	77	e54	34
9	21	44	39	e26	34	53	e139	e125	e130	78	e54	34
10	21	39	44	e26	33	56	130	e130	e160	75	e52	34
11	21	38	e44	e25	33	55	117	e180	e140	74	e50	32
12	21	64	e38	e25	33	53	108	e245	e125	71	e48	32
13	21	54	e36	e25	32	51	101	e260	e110	70	47	32
14	20	48	e42	e26	32	53	97	e225	e115	71	47	32
15	20	45	e43	e26	e34	109	96	e195	e135	70	47	31
16	20	42	e41	e27	e28	139	95	e190	125	69	46	31
17	20	41	e39	e32	e28	151	94	e220	120	73	47	31
18	20	41	e35	e30	e26	339	94	e230	122	69	46	31
19	20	40	e37	e32	e26	326	90	e210	127	68	45	30
20	20	37	e38	e55	e28	266	88	e240	120	70	46	31
21	20	113	e36	e59	e28	203	94	e250	118	70	45	30
22	20	191	e35	e51	e40	179	98	e255	104	83	44	30
23	20	109	e35	e41	30	411	99	e205	94	e84	44	30
24	20	83	e34	e42	30	331	101	e180	90	e75	44	29
25	20	68	e35	e52	e32	238	103	e205	94	e69	43	29
26	20	59	e36	e51	e31	189	108	e200	111	e65	41	28
27	20	66	e35	e49	e31	e165	103	e210	112	e62	40	27
28	20	67	e34	47	e31	e145	e100	e220	95	e64	39	27
29	23	58	e33	46	---	e130	e125	e170	89	e62	39	27
30	24	57	e33	44	---	e120	e190	e170	87	e61	39	26
31	34	---	e32	43	---	e115	---	e215	---	e60	39	---
TOTAL	667	1976	1207	1114	921	4146	3505	6110	3893	2305	1483	952
MEAN	21.5	65.9	38.9	35.9	32.9	134	117	197	130	74.4	47.8	31.7
MAX	34	191	56	59	41	411	190	260	210	97	58	38
MIN	20	37	32	25	26	28	88	125	87	60	39	26
AC-FT	1320	3920	2390	2210	1830	8220	6950	12120	7720	4570	2940	1890
CFSM	1.94	2.88	1.70	1.57	1.44	5.84	5.10	8.61	5.67	3.25	2.09	1.39
IN.	1.08	3.21	1.96	1.81	1.50	6.73	5.69	9.93	6.32	3.74	2.41	1.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	34.4	60.7	57.8	69.2	78.5	88.1	102	118	109	68.3	43.1	33.2
MAX	60.2	103	117	152	190	166	137	197	154	111	67.8	48.6
(WY)	1983	1985	1983	1983	1986	1986	1990	1993	1983	1983	1983	1983
MIN	20.3	23.8	34.9	35.9	32.9	41.4	50.4	69.4	41.7	33.4	24.5	22.7
(WY)	1988	1988	1991	1993	1993	1985	1991	1991	1992	1992	1992	1987

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	19183	28279	71.7
ANNUAL MEAN	52.4	77.5	106
HIGHEST ANNUAL MEAN			53.4
LOWEST ANNUAL MEAN			1983
HIGHEST DAILY MEAN	268	411	930
LOWEST DAILY MEAN	19	20	17
ANNUAL SEVEN-DAY MINIMUM	19	20	19
ANNUAL RUNOFF (AC-FT)	38050	56090	51980
ANNUAL RUNOFF (CFSM)	2.29	3.38	3.13
ANNUAL RUNOFF (INCHES)	31.16	45.94	42.57
10 PERCENT EXCEEDS	100	175	133
50 PERCENT EXCEEDS	41	48	56
90 PERCENT EXCEEDS	21	26	28

e Estimated

14092750 SHITIKE CREEK AT PETERS PASTURE, NEAR WARM SPRINGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to current year.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV 1992					
17...	1430	5.0	42	1	0.11
JAN 1993					
27...	1615	3.0	48	1	0.13
APR					
08...	1230	6.5	119	2	0.64
JUN					
15...	1230	12.0	147	3	1.2
AUG					
17...	1340	9.5	47	1	0.13

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

14092885 SHITKE CREEK BELOW WOLFORD CANYON, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°46'20", long 121°18'15", in NW 1/4 SE 1/4 sec.21, T.9 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank at bridge crossing 2.3 mi upstream from Tenino Creek, and 2.1 mi northwest of Warm Springs.

DRAINAGE AREA.--75.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year. Records for June 1911 to October 1916, April 1923 to September 1928, and October 1972 to September 1974 (see sta 14093000) at sites downstream not equivalent owing to difference in drainage areas.

GAGE.--Water-stage recorder. Elevation of gage is 1,600 ft, from topographic map.

REMARKS.--Water-discharge records fair except for flows above 1,000 ft³/s and estimated daily discharges, which are poor. No regulation. Some diversion for irrigation and Warm Springs water supply.

AVERAGE DISCHARGE.--19 years, 93.8 ft³/s, 16.81 in/yr, 67,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s Feb. 23, 1986, gage height, 6.40 ft, from rating curve extended above 860 ft³/s; maximum gage height, 7.35 ft Dec. 13, 1977; minimum daily discharge, 17 ft³/s Oct. 12-15, 17-22, 24-27, Nov. 12, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1830	618	5.19	Mar. 23	1600	*632	*5.21

Minimum discharge, 18 ft³/s Feb. 16, but could have been lower during periods of ice effect.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	134	63	e38	e62	e40	226	191	226	105	72	52
2	40	192	60	e38	59	e42	213	202	184	112	71	52
3	40	82	51	e45	58	57	234	225	166	114	74	51
4	38	62	41	e50	56	52	250	230	160	106	73	49
5	38	60	31	49	55	57	221	189	193	109	69	47
6	37	56	e35	43	55	67	193	184	184	107	67	46
7	37	70	e46	e38	54	83	184	180	186	102	69	44
8	37	70	e58	e36	55	98	185	163	170	96	68	40
9	36	61	59	e34	55	116	200	149	151	99	66	38
10	35	56	58	e34	55	126	188	146	171	96	66	36
11	34	55	58	e32	58	124	174	184	153	96	66	36
12	33	70	56	e34	61	113	160	247	135	92	64	37
13	33	72	50	e36	60	105	151	269	122	91	64	37
14	33	64	50	e38	57	116	144	239	123	92	66	37
15	33	62	52	e36	e52	206	142	221	149	91	66	36
16	33	58	48	e40	32	318	141	232	148	90	63	36
17	33	56	49	e52	e32	337	139	235	137	94	62	35
18	33	56	45	e48	e34	540	138	251	136	91	61	34
19	33	55	45	50	e40	515	131	261	143	85	63	34
20	33	53	48	88	e50	465	127	264	140	89	70	35
21	35	65	46	97	e50	385	133	277	136	89	67	35
22	34	219	44	e74	e52	345	137	278	123	98	64	35
23	33	124	44	e68	e50	537	137	218	113	113	63	35
24	33	93	45	e64	e46	507	138	194	109	93	66	34
25	33	77	45	71	e42	384	137	222	113	85	62	32
26	33	67	45	e74	e38	304	140	214	128	81	62	32
27	33	65	47	73	e36	257	136	229	143	83	60	32
28	35	73	46	70	e38	226	130	234	118	84	59	31
29	37	65	45	67	---	202	140	186	108	90	59	32
30	40	60	44	65	---	186	211	183	104	81	58	32
31	43	---	e40	64	---	180	---	232	---	75	55	---
TOTAL	1097	2352	1494	1646	1392	7090	4980	6729	4372	2929	2015	1142
MEAN	35.4	78.4	48.2	53.1	49.7	229	166	217	146	94.5	65.0	38.1
MAX	43	219	63	97	62	540	250	278	226	114	74	52
MIN	33	53	31	32	32	40	127	146	104	75	55	31
AC-FT	2180	4670	2960	3260	2760	14060	9880	13350	8670	5810	4000	2270
CFSM	.47	1.03	.64	.70	.66	3.02	2.19	2.86	1.92	1.25	.86	.50
IN.	.54	1.15	.73	.81	.68	3.48	2.44	3.30	2.15	1.44	.99	.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1993, BY WATER YEAR (WY)

	MEAN	48.0	77.6	108	96.7	123	119	114	129	126	84.6	56.1	46.3
MAX	76.5	134	238	183	324	263	167	217	217	147	86.5	67.9	67.9
(WY)	1983	1985	1978	1976	1982	1986	1989	1993	1982	1982	1983	1982	1982
MIN	17.9	29.7	43.9	40.4	39.2	40.3	50.8	56.3	57.5	37.6	29.0	25.7	25.7
(WY)	1979	1979	1986	1979	1977	1977	1977	1977	1992	1977	1978	1978	1978

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1975 - 1993

ANNUAL TOTAL	22907	37238	
ANNUAL MEAN	62.6	102	93.8
HIGHEST ANNUAL MEAN			143
LOWEST ANNUAL MEAN			46.8
HIGHEST DAILY MEAN	273	540	1360
LOWEST DAILY MEAN	30	31	17
ANNUAL SEVEN-DAY MINIMUM	30	32	17
ANNUAL RUNOFF (AC-FT)	45440	73860	67940
ANNUAL RUNOFF (CFSM)	.83	1.35	1.24
ANNUAL RUNOFF (INCHES)	11.24	18.28	16.81
10 PERCENT EXCEEDS	100	218	166
50 PERCENT EXCEEDS	53	66	74
90 PERCENT EXCEEDS	33	35	39

e Estimated

14092885 SHITIKE CREEK BELOW WOLFORD CANYON, NEAR WARM SPRINGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to current year.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
NOV 1992					
18...	1400	4.5	57	1	0.15
FEB 1993					
10...	1230	3.5	55	2	0.30
APR					
09...	0930	5.5	207	3	1.7
JUN					
09...	1830	10.0	144	4	1.6
AUG					
18...	1230	18.0	61	2	0.33

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

DESCHUTES RIVER BASIN

14095500 WARM SPRINGS RIVER NEAR SIMNASHO, OR

LOCATION.--Lat 44°58'10", long 121°28'35", in SE 1/4 SW 1/4 sec.7, T.7 S., R.11 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank abutment of log bridge at Hehe Butte rodeo grounds, 3.3 mi upstream from Badger Creek, and 6.2 mi west of Simnasho.

DRAINAGE AREA.--107 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to September 1915, August 1949 to September 1954, October 1983 to current year. Prior to October 1983, published as "at Hehe Mill near Warm Springs."

GAGE.--Water-stage recorder. Datum of gage is 2,533.78 ft above sea level. June to September 1915 1.0 mi downstream at different datum. August 1949 to September 1954 0.5 mi downstream at datum 7.12 ft lower.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--15 years (water years 1950-54, 1984-93), 159 ft³/s, 20.19 in/yr, 115,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft³/s Feb. 23, 1986, gage height, 5.70 ft, from floodmark; minimum discharge, 91 ft³/s Dec. 14, 15, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	2200	*505	*4.02	No other peak greater than base discharge.			
Minimum discharge, 91 ft ³ /s Dec. 14, 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	111	109	109	99	108	307	246	176	130	117	112
2	104	108	107	109	99	108	300	245	166	129	117	111
3	103	103	105	109	99	108	319	264	158	129	117	111
4	101	103	105	108	99	108	331	266	160	128	116	111
5	101	103	105	108	104	107	311	246	243	127	116	111
6	101	103	105	108	104	108	292	243	221	126	115	111
7	101	103	105	107	104	117	282	240	201	126	116	111
8	101	107	105	107	106	128	286	236	191	125	115	110
9	101	109	105	107	108	137	320	228	182	124	115	110
10	101	104	105	107	107	133	312	221	175	124	114	110
11	101	103	104	107	108	136	291	221	175	123	114	110
12	101	106	104	107	108	135	272	224	170	123	114	110
13	101	104	102	107	109	132	262	225	164	123	114	110
14	101	103	93	107	109	147	252	220	159	123	114	110
15	101	102	97	107	109	223	253	213	156	122	115	111
16	101	101	104	107	108	284	254	207	153	122	114	111
17	101	101	105	107	108	328	252	201	150	125	115	110
18	101	102	104	107	108	360	247	198	146	123	114	110
19	101	105	104	107	108	365	238	193	144	125	114	109
20	101	104	108	107	108	392	235	187	143	125	115	109
21	103	112	105	108	108	366	254	191	141	123	114	109
22	101	127	108	109	108	338	257	184	145	123	113	109
23	101	111	110	109	108	437	249	175	146	122	113	109
24	101	106	107	109	108	472	247	168	141	121	113	109
25	101	104	107	108	108	394	249	172	138	121	113	109
26	101	103	108	108	108	340	244	173	136	120	112	109
27	101	104	109	108	108	307	236	192	134	120	112	109
28	101	106	108	108	108	284	233	195	133	119	112	109
29	104	104	107	104	---	272	234	174	131	119	112	109
30	104	107	105	102	---	261	249	170	130	118	112	109
31	109	---	107	102	---	259	---	183	---	118	112	---
TOTAL	3152	3169	3262	3324	2976	7394	8068	6501	4808	3826	3539	3298
MEAN	102	106	105	107	106	239	269	210	160	123	114	110
MAX	109	127	110	109	109	472	331	266	243	130	117	112
MIN	101	101	93	102	99	107	233	168	130	118	112	109
AC-FT	6250	6290	6470	6590	5900	14670	16000	12890	9540	7590	7020	6540
CFSM	.95	.99	.98	1.00	.99	2.23	2.51	1.96	1.50	1.15	1.07	1.03
IN.	1.10	1.10	1.13	1.16	1.03	2.57	2.80	2.26	1.67	1.33	1.23	1.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

MEAN	117	129	139	156	203	204	225	209	163	129	120	117
MAX	140	197	272	300	412	374	307	310	310	160	140	134
(WY)	1951	1951	1951	1951	1986	1986	1951	1951	1950	1950	1951	1951
MIN	102	106	104	107	106	154	153	128	113	108	103	103
(WY)	1993	1953	1953	1993	1993	1990	1991	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1950 - 1993

ANNUAL TOTAL	44814		53317			
ANNUAL MEAN	122		146		159	
HIGHEST ANNUAL MEAN					229	1951
LOWEST ANNUAL MEAN					126	1992
HIGHEST DAILY MEAN	274	Feb 22	472	Mar 24	1600	Feb 23 1986
LOWEST DAILY MEAN	93	Dec 14	93	Dec 14	93	Dec 14 1992
ANNUAL SEVEN-DAY MINIMUM	101	Oct 4	101	Jan 29	101	Jan 29 1993
ANNUAL RUNOFF (AC-FT)	88890		105800		115200	
ANNUAL RUNOFF (CFSM)	1.14		1.37		1.49	
ANNUAL RUNOFF (INCHES)	15.58		18.54		20.19	
10 PERCENT EXCEEDS	161		252		246	
50 PERCENT EXCEEDS	111		111		132	
90 PERCENT EXCEEDS	102		102		107	

DESCHUTES RIVER BASIN

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14095500 WARM SPRINGS RIVER NEAR SIMNASHO, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV 1992					
16...	1245	6.0	101	2	0.55
FEB 1993					
08...	1400	4.5	107	2	0.58
APR					
06...	1400	5.5	289	1	0.78
JUN					
14...	1130	11.0	159	6	2.6
AUG					
16...	1230	10.5	115	2	0.62

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

DESCHUTES RIVER BASIN

14096300 MILL CREEK NEAR BADGER BUTTE, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°51'42", long 121°37'35", in SW 1/4 sec.23, T.8 S., R.9 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 200 ft upstream from bridge on road B241, 3.4 mi upstream from headworks of Mill Creek Canal, and 19.3 mi northwest of Warm Springs.

DRAINAGE AREA.--26.8 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,380 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--10 years, 60.7 ft³/s, 30.76 in/yr, 43,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 478 ft³/s Apr. 27, 1990; maximum gage height, 7.30 ft Feb. 23, 1986, from high-water mark on crest-stage gage; minimum discharge recorded, 23 ft³/s Feb. 15, 25, 1993, but may have been lower during period of estimated record.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2300	144	5.57	Apr. 9	0430	136	5.47
Mar. 15	1500	183	5.72	May 3	1400	141	5.49
Mar. 18	2230	*252	5.90	May 13	0030	141	5.49
Mar. 18	2230	(a)	*6.29	May 22	0430	138	5.48
Mar. 23	1600	220	5.78	May 27	1000	133	5.45
Apr. 1	0130	133	5.46	June 5	0730	136	5.47

Minimum discharge recorded, 23 ft³/s Feb. 15, 25, but may have been lower during period of missing record.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	64	61	e54	49	33	120	109	112	56	44	37
2	29	57	62	56	47	33	111	107	107	57	42	37
3	30	41	57	51	45	40	124	124	101	56	42	37
4	29	37	49	52	44	44	123	124	101	55	42	36
5	29	34	e34	52	43	52	115	113	125	54	41	37
6	29	34	e32	53	42	54	108	111	110	51	41	38
7	29	36	e38	e38	41	56	107	112	102	51	41	37
8	29	39	57	e34	40	64	112	106	97	51	40	37
9	29	40	61	e34	40	67	124	101	91	50	41	37
10	29	37	75	e36	39	63	115	99	88	49	41	38
11	29	38	72	e42	39	59	104	109	86	49	41	37
12	29	46	65	e46	38	57	96	127	84	50	40	37
13	29	41	63	48	38	55	90	130	80	48	39	37
14	29	41	68	49	37	65	86	124	77	48	40	37
15	29	40	67	42	36	148	88	117	75	48	40	38
16	29	38	62	41	e28	144	85	115	73	48	40	38
17	29	39	64	39	e46	145	84	116	71	49	40	38
18	29	41	62	38	50	222	84	117	70	48	40	38
19	29	42	59	41	50	210	80	118	67	49	40	37
20	29	42	65	83	48	186	79	118	65	50	41	38
21	30	77	60	70	41	155	84	127	63	49	41	38
22	29	113	60	61	38	141	84	132	69	49	40	37
23	29	81	61	57	36	193	84	123	68	49	40	36
24	29	62	60	59	35	171	87	112	65	47	40	37
25	29	52	58	70	e34	141	89	118	64	46	40	36
26	29	47	61	67	e33	127	89	117	62	45	40	36
27	29	54	60	62	e32	116	86	123	61	45	40	36
28	29	62	59	60	e32	108	84	122	59	45	40	36
29	33	55	56	58	---	103	93	113	58	43	38	36
30	35	59	54	55	---	98	107	108	56	45	37	36
31	49	---	e48	52	---	98	---	113	---	44	37	---
TOTAL	929	1489	1810	1600	1121	3248	2922	3610	2407	1524	1249	1110
MEAN	30.0	49.6	58.4	51.6	40.0	105	97.4	116	80.2	49.2	40.3	37.0
MAX	49	113	75	83	50	222	124	132	125	57	44	38
MIN	27	34	32	34	28	33	79	99	56	43	37	36
AC-FT	1840	2950	3590	3170	2220	6440	5800	7160	4770	3020	2480	2200
CFSM	1.12	1.85	2.18	1.93	1.49	3.91	3.63	4.35	2.99	1.83	1.50	1.38
IN.	1.29	2.07	2.51	2.22	1.56	4.51	4.06	5.01	3.34	2.12	1.73	1.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	40.0	58.9	60.8	65.7	68.4	74.4	85.9	84.6	68.7	44.6	38.9	38.3
MEAN	40.0	58.9	60.8	65.7	68.4	74.4	85.9	84.6	68.7	44.6	38.9	38.3
MAX	50.6	80.5	72.8	92.0	121	106	106	116	92.1	56.5	47.3	48.6
(WY)	1985	1985	1984	1990	1986	1986	1988	1993	1984	1984	1984	1984
MIN	30.0	38.2	50.3	43.8	40.0	58.2	62.4	43.7	33.3	35.6	31.1	30.9
(WY)	1993	1988	1991	1992	1993	1992	1991	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	16899	23019	
ANNUAL MEAN	46.2	63.1	60.7
HIGHEST ANNUAL MEAN			69.0
LOWEST ANNUAL MEAN			46.8
HIGHEST DAILY MEAN	143	222	342
LOWEST DAILY MEAN	27	27	27
ANNUAL SEVEN-DAY MINIMUM	28	29	28
ANNUAL RUNOFF (AC-FT)	33520	45660	43960
ANNUAL RUNOFF (CFSM)	1.72	2.35	2.26
ANNUAL RUNOFF (INCHES)	23.46	31.95	30.76
10 PERCENT EXCEEDS	71	115	94
50 PERCENT EXCEEDS	39	50	54
90 PERCENT EXCEEDS	29	34	35

e Estimated

DESCHUTES RIVER BASIN

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14096300 MILL CREEK NEAR BADGER BUTTE, NEAR WARM SPRINGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to current year.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 1992					
23...	1340	3.0	81	2	0.44
JAN 1993					
28...	1230	2.5	60	2	0.32
APR					
09...	1300	4.0	117	1	0.32
JUN					
16...	1610	13.0	72	3	0.58
AUG					
17...	1000	7.5	41	4	0.44

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

DESCHUTES RIVER BASIN

14096850 BEAVER CREEK BELOW QUARTZ CREEK, NEAR SIMNASHO, OR

LOCATION.--Lat 44°57'32", long 121°23'35", in NE 1/4 SW 1/4 sec.14, T.7 S., R.11 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 600 ft downstream from culvert on Warm Springs Reservation Highway 9, 200 ft downstream from Quartz Creek, and 2.4 mi west of Simnasho.

DRAINAGE AREA.--145 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 2,260 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--10 years, 76.2 ft³/s, 7.14 in/yr, 55,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s, Feb. 23, 1986, gage height, 7.96 ft; minimum discharge, 4.5 ft³/s Jan. 7, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 17	2330	*879	*4.65	June 5	1200	509	3.92

Minimum discharge, 33 ft³/s many days during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	43	43	38	72	36	236	147	107	52	40	36
2	35	40	41	39	65	38	228	145	104	51	40	36
3	35	37	36	39	60	46	235	153	89	50	40	36
4	34	35	36	39	57	49	240	154	86	50	40	36
5	34	35	38	38	55	131	222	141	356	49	40	36
6	33	34	36	36	56	310	200	137	242	49	40	36
7	33	35	37	35	64	323	190	131	152	48	39	36
8	34	37	37	36	69	318	190	127	127	48	39	36
9	33	40	38	e34	74	272	208	121	113	47	39	36
10	33	37	38	e39	84	216	200	115	104	46	39	36
11	33	36	39	40	110	180	185	116	97	45	39	36
12	33	38	38	39	131	155	170	120	92	45	39	36
13	33	38	37	39	134	136	160	124	87	45	39	36
14	33	36	e36	39	113	159	153	117	83	45	39	36
15	33	36	e36	38	95	254	150	111	80	45	39	36
16	33	36	e39	38	63	402	150	106	77	45	39	36
17	33	35	40	38	57	714	148	103	74	44	39	36
18	34	36	39	37	52	685	147	99	71	44	39	36
19	33	36	37	38	50	527	140	94	68	45	38	36
20	33	36	41	44	52	518	134	90	66	46	38	36
21	34	39	42	75	52	430	154	90	64	45	38	36
22	33	58	42	71	50	365	152	85	64	44	37	36
23	33	47	51	61	50	369	150	82	64	44	37	36
24	33	42	47	62	49	386	151	78	62	43	37	36
25	33	39	44	74	46	337	146	78	60	42	37	36
26	33	38	43	126	45	275	145	79	58	42	37	36
27	33	37	45	113	42	233	137	93	56	42	37	36
28	34	40	44	94	39	208	131	100	55	41	37	36
29	35	39	43	84	---	196	132	88	54	41	37	36
30	36	39	40	84	---	187	148	83	53	41	36	36
31	36	---	38	81	---	191	---	111	---	40	36	---
TOTAL	1042	1154	1241	1688	1886	8646	5132	3418	2865	1404	1190	1080
MEAN	33.6	38.5	40.0	54.5	67.4	279	171	110	95.5	45.3	38.4	36.0
MAX	36	58	51	126	134	714	240	154	356	52	40	36
MIN	33	34	36	34	39	36	131	78	53	40	36	36
AC-FT	2070	2290	2460	3350	3740	17150	10180	6780	5680	2780	2360	2140
CFSM	.23	.27	.28	.38	.46	1.92	1.18	.76	.66	.31	.26	.25
IN.	.27	.30	.32	.43	.48	2.22	1.32	.88	.74	.36	.31	.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	37.8	50.0	53.0	88.7	163	158	120	79.5	56.5	41.1
MAX	42.6	104	85.5	244	634	305	175	110	95.5	45.4
(WY)	1985	1985	1984	1984	1986	1986	1988	1993	1993	1984
MIN	33.6	35.6	40.0	47.6	60.0	75.2	71.6	50.4	36.5	33.9
(WY)	1993	1988	1986	1987	1989	1992	1991	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1984 - 1993

ANNUAL TOTAL	18419	30746	76.2
ANNUAL MEAN	50.3	84.2	123
HIGHEST ANNUAL MEAN			50.5
LOWEST ANNUAL MEAN			3680
HIGHEST DAILY MEAN	260	714	5.8
LOWEST DAILY MEAN	33	33	8.3
ANNUAL SEVEN-DAY MINIMUM	33	33	Jan 2 1991
ANNUAL RUNOFF (AC-FT)	36530	60980	55210
ANNUAL RUNOFF (CFSM)	.35	.58	.53
ANNUAL RUNOFF (INCHES)	4.73	7.89	7.14
10 PERCENT EXCEEDS	79	174	141
50 PERCENT EXCEEDS	40	44	46
90 PERCENT EXCEEDS	33	36	36

e Estimated

DESCHUTES RIVER BASIN

133

14096850 BEAVER CREEK BELOW QUARTZ CREEK, NEAR SIMNASHO, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 1992					
16...	1415	7.5	35	3	0.28
FEB 1993					
09...	1700	4.0	73	10	2.0
MAR					
31...	1315	6.0	192	5	2.6
JUN					
10...	1450	12.5	104	6	1.7
AUG					
16...	1430	14.0	39	2	0.21

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

DESCHUTES RIVER BASIN

14097100 WARM SPRINGS RIVER NEAR KAHNEETA HOT SPRINGS, OR

LOCATION.--Lat 44°51'24", long 121°08'55", in SE 1/4 SW 1/4 sec.23, T.8 S., R.13 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 25 ft upstream from bridge, 2.5 mi east of Kahneeta Hot Springs, and at mile 4.6.

DRAINAGE AREA.--526 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--21 years, 425 ft³/s, 10.97 in/yr, 307,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,240 ft³/s Feb. 23, 1986, gage height, 10.54 ft; minimum discharge, 149 ft³/s Dec. 20, 1990, but may have been less during period of ice effect Dec. 20, 1990 to Jan. 10, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	0400	*2,370	*4.97	Mar. 24	0700	1,750	4.17

Minimum discharge, 201 ft³/s Oct. 13-15, 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	279	290	258	316	256	1050	735	583	312	257	235
2	217	288	292	274	313	258	1040	734	557	308	256	233
3	223	253	233	303	297	262	1050	769	507	307	253	233
4	216	233	238	257	287	271	1090	837	489	303	252	232
5	213	225	261	251	281	338	1040	765	876	298	251	231
6	212	220	311	230	279	566	953	733	891	293	249	231
7	210	219	257	221	289	719	896	732	662	290	247	230
8	210	229	277	237	306	806	877	711	594	289	247	230
9	211	248	273	243	316	849	982	671	551	285	246	229
10	208	234	290	237	338	717	968	642	524	283	245	229
11	208	228	288	274	372	677	904	644	503	279	245	228
12	207	245	275	244	438	619	830	683	495	277	245	227
13	206	244	263	242	456	530	785	726	470	278	244	228
14	205	237	260	240	428	613	754	709	451	280	244	228
15	203	232	277	287	393	1260	734	668	434	278	248	229
16	206	229	266	299	277	1540	732	644	422	281	247	230
17	209	229	267	266	308	1960	715	628	407	286	246	229
18	209	228	261	239	284	2110	714	617	393	282	245	231
19	208	232	252	243	282	1870	686	608	381	281	243	230
20	207	241	265	320	281	1840	662	590	371	288	251	228
21	215	239	271	392	279	1650	708	600	362	283	249	228
22	211	407	263	374	267	1430	723	606	367	281	244	228
23	208	387	282	325	272	1500	707	575	381	281	241	229
24	207	310	281	324	261	1700	710	533	367	276	242	228
25	207	274	267	343	248	1480	700	527	352	272	242	229
26	207	256	267	404	237	1250	698	552	343	269	240	227
27	205	249	280	405	249	1110	677	574	332	266	239	226
28	211	271	281	380	266	1000	658	640	327	263	238	227
29	217	269	272	357	---	940	656	566	324	263	237	225
30	224	259	251	348	---	894	713	514	317	260	237	225
31	234	---	255	339	---	862	---	591	---	259	236	---
TOTAL	6545	7694	8366	9156	8620	31877	24412	20124	14033	8751	7606	6873
MEAN	211	256	270	295	308	1028	814	649	468	282	245	229
MAX	234	407	311	405	456	2110	1090	837	891	312	257	235
MIN	203	219	233	221	237	256	656	514	317	259	236	225
AC-FT	12980	15260	16590	18160	17100	63230	48420	39920	27830	17360	15090	13630
CFSM	.40	.49	.51	.56	.59	1.95	1.55	1.23	.89	.54	.47	.44
IN.	.46	.54	.59	.65	.61	2.25	1.73	1.42	.99	.62	.54	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1993, BY WATER YEAR (WY)

	MEAN	257	315	470	546	659	637	566	501	382	278	254	249
MAX	318	570	1210	1520	1732	1285	814	819	803	401	323	301	
(WY)	1973	1985	1978	1974	1986	1986	1993	1974	1974	1974	1974	1974	
MIN	211	239	264	201	264	274	278	278	246	216	212	210	
(WY)	1993	1988	1991	1979	1977	1977	1977	1977	1977	1977	1977	1992	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1973 - 1993

ANNUAL TOTAL	107990	154057	425	
ANNUAL MEAN	295	422	660	1974
HIGHEST ANNUAL MEAN			259	1977
LOWEST ANNUAL MEAN			7560	Feb 23 1986
HIGHEST DAILY MEAN	919	2110	160	Jan 1 1979
LOWEST DAILY MEAN	201	203	174	Dec 31 1978
ANNUAL SEVEN-DAY MINIMUM	203	206		
ANNUAL RUNOFF (AC-FT)	214200	305600	307800	
ANNUAL RUNOFF (CFSM)	.56	.80	.81	
ANNUAL RUNOFF (INCHES)	7.64	10.90	10.97	
10 PERCENT EXCEEDS	443	767	707	
50 PERCENT EXCEEDS	260	280	312	
90 PERCENT EXCEEDS	210	226	229	

14097100 WARM SPRINGS RIVER NEAR KAHNEETA HOT SPRINGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to current year.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 1992 16...	1640	7.5	228	3	1.8
FEB 1993 09...	1400	5.5	315	7	6.0
APR 06...	1700	--	944	7	18
JUN 10...	1130	14.0	522	8	11
AUG 18...	1000	15.5	243	4	2.6

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

DESCHUTES RIVER BASIN

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR

LOCATION.--Lat 45°37'20", long 120°54'05", in SW 1/4 SE 1/4 sec.26, T.2 N., R.15 E., Sherman County, Hydrologic Unit 17070306, on right bank at Moody, 4.0 mi southwest of Biggs, and at mile 1.4.

DRAINAGE AREA.--10,500 mi², approximately.

PERIOD OF RECORD.--October 1897 to December 1899 (published as "near Moro"), July 1906 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 167.54 ft above sea level. Oct. 19, 1897, to Dec. 31, 1899, nonrecording gage at site 10 mi upstream at different datum. July 22, 1906, to July 18, 1930, nonrecording gage at site 300 ft downstream at datum 0.50 ft lower.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some fluctuation caused by regulation at Lake Simtustus since 1957. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 46,420 acre-ft, in Crescent Lake, Crane Prairie, and Wickiup Reservoirs, combined capacity, 323,390 acre-ft, and since 1960, in Prineville Reservoir (station 14080400), and since 1964 in Lake Billy Chinook (station 14092100). Large diversions in upper river basin for irrigation. Water-quality records for periods 1911-12, 1953-58, 1962-90, have been collected at this location.

AVERAGE DISCHARGE.--89 years, 5,814 ft³/s, 4,212,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,500 ft³/s Dec. 22, 1964, gage height, 11.80 ft, from rating curve extended above 47,000 ft³/s; minimum discharge, 2,400 ft³/s Dec. 5, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,500 ft³/s Mar. 24, gage height, 5.49 ft; minimum discharge, 3,760 ft³/s Feb. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4150	4790	4820	4280	4570	4770	11100	6250	5640	4180	4090	4320
2	4160	4960	4900	4410	4470	4820	10800	6100	5710	4130	4080	4280
3	4170	4960	4790	4390	4400	4800	10300	6690	5790	4080	4100	4240
4	4170	4810	4750	4480	4330	4630	10500	7450	6130	4060	4180	4150
5	4160	4770	4940	4480	4270	4890	10400	7760	6650	4040	4360	4070
6	4150	4740	4900	4420	4240	7270	10300	7830	7310	4100	4290	4020
7	4140	4730	4970	4390	4220	7010	10700	7800	6610	4250	4140	4030
8	4120	4770	5030	4560	4250	6610	11000	7730	6360	4360	4140	4020
9	4120	4790	5810	4990	4320	6440	11400	7620	6260	4350	4130	4090
10	4120	4760	6490	5120	4320	6120	11500	7520	6330	4310	4120	4180
11	4120	4710	6520	5120	4320	5910	11300	7370	6190	4200	4160	4140
12	4120	4740	6480	5170	4310	5520	11100	7320	5880	4110	4200	4170
13	4120	4780	6420	5160	4320	5450	10800	7530	5390	4220	4250	4210
14	4120	4760	6410	5190	4260	5610	10500	7490	5160	4220	4240	4130
15	4110	4740	6500	5150	4160	5820	10200	7220	5170	4110	4130	3980
16	4070	4710	6250	4970	4040	6840	9880	6910	5060	4130	4050	3980
17	4090	4710	5170	4650	3870	8410	9530	6860	4840	4150	4140	3980
18	4110	4690	4770	4640	4570	11400	9340	6700	4830	4150	4400	3970
19	4110	4720	4740	4650	4910	11100	9290	6500	4830	4150	4560	3960
20	4130	4720	4740	4860	4960	12400	9210	6450	4740	4190	4510	3950
21	4150	4730	4830	6410	5050	12800	9320	6450	4760	4260	4460	3940
22	4170	4850	4630	5790	5040	12300	9360	6420	4870	4460	4430	3980
23	4230	5180	4350	5330	5160	13700	9260	6330	4860	4530	4410	4120
24	4260	5040	4370	5150	5570	15400	9280	6210	4730	4640	4400	4190
25	4270	4920	4320	6040	5530	15100	9280	5970	4660	4730	4330	4170
26	4270	4830	4280	7110	5410	14300	9250	5510	4510	4830	4270	4140
27	4340	4780	4300	5840	5070	13500	8930	5250	4370	4760	4660	4130
28	4430	4760	4320	5280	4730	12500	8160	5530	4350	4680	4680	4140
29	4460	4800	4300	5090	---	12100	7500	5450	4230	4580	4670	4150
30	4500	4780	4270	4900	---	11900	6900	5320	4200	4120	4580	4270
31	4710	---	4270	4680	---	11400	---	5410	---	4100	4400	---
TOTAL	130350	144030	157640	156700	128670	280820	296390	206950	160420	133180	133560	123100
MEAN	4205	4801	5085	5055	4595	9059	9880	6676	5347	4296	4308	4103
MAX	4710	5180	6520	7110	5570	15400	11500	7830	7310	4830	4680	4320
MIN	4070	4690	4270	4280	3870	4630	6900	5250	4200	4040	4050	3940
AC-FT	258500	285700	312700	310800	255200	557000	587900	410500	318200	264200	264900	244200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1993, BY WATER YEAR (WY)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	4686	5387	6529	7158	7191	7323	6757	5876	5259	4637	4421	4470																	
MAX	5594	7814	13150	11290	13090	13580	10930	8267	7643	5917	5359	5185																	
(WY)	1973	1985	1965	1974	1986	1972	1984	1984	1974	1974	1976	1984																	
MIN	3385	3910	4610	4873	4401	5001	4467	4141	4024	3992	3980	3890																	
(WY)	1965	1965	1970	1992	1977	1990	1977	1977	1992	1968	1968	1991																	

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1965 - 1993
ANNUAL TOTAL	1659410	2051810	
ANNUAL MEAN	4534	5621	
HIGHEST ANNUAL MEAN			5801
LOWEST ANNUAL MEAN			7376
HIGHEST DAILY MEAN			4585
LOWEST DAILY MEAN			62400
ANNUAL SEVEN-DAY MINIMUM			3320
ANNUAL RUNOFF (AC-FT)	3291000	4070000	3360
10 PERCENT EXCEEDS	5120	9280	4203000
50 PERCENT EXCEEDS	4340	4740	8120
90 PERCENT EXCEEDS	4000	4120	5130
			4170

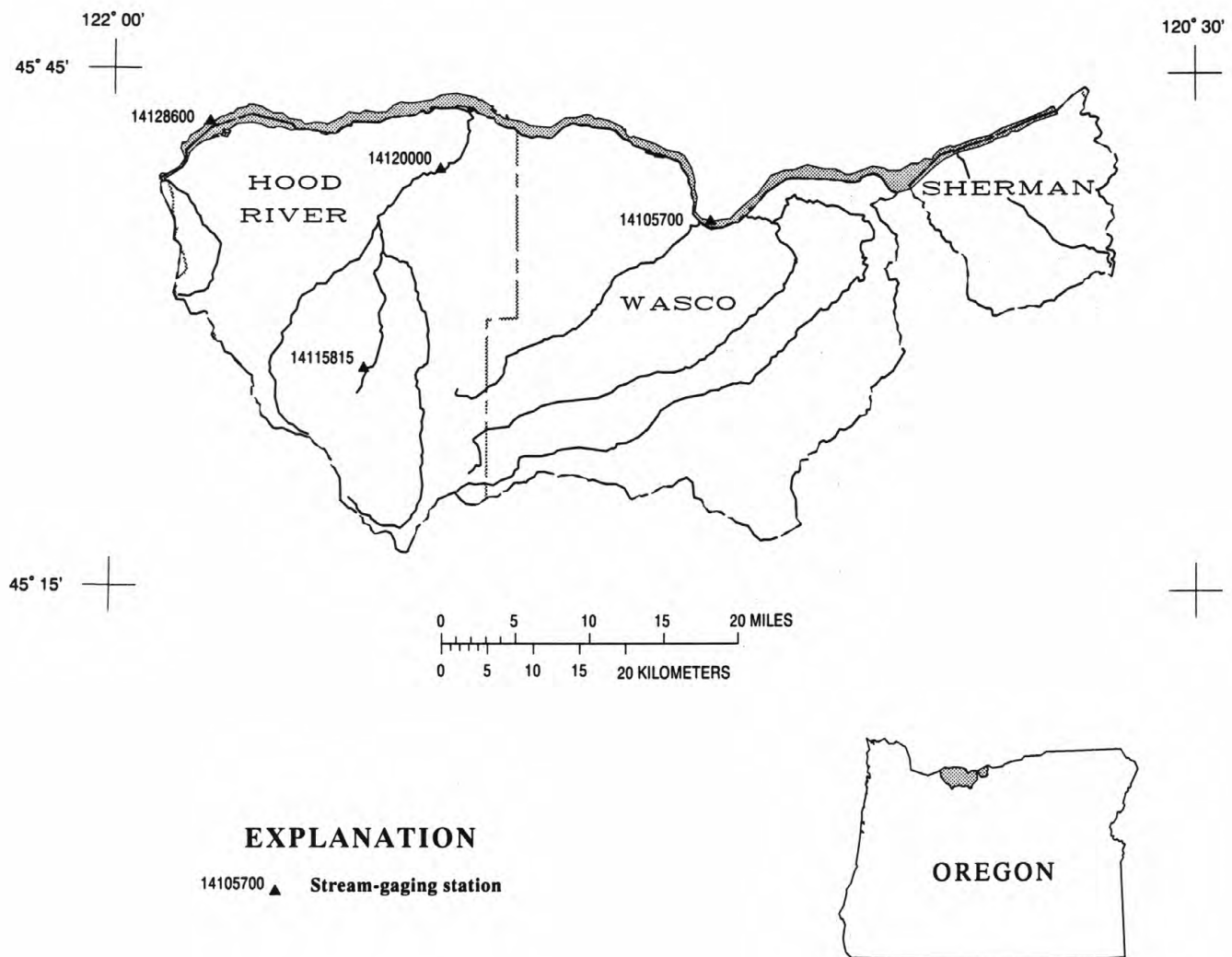


Figure 13--Location of surface-water and water-quality stations in the Middle and Lower Columbia River area, and Hood River Basin.

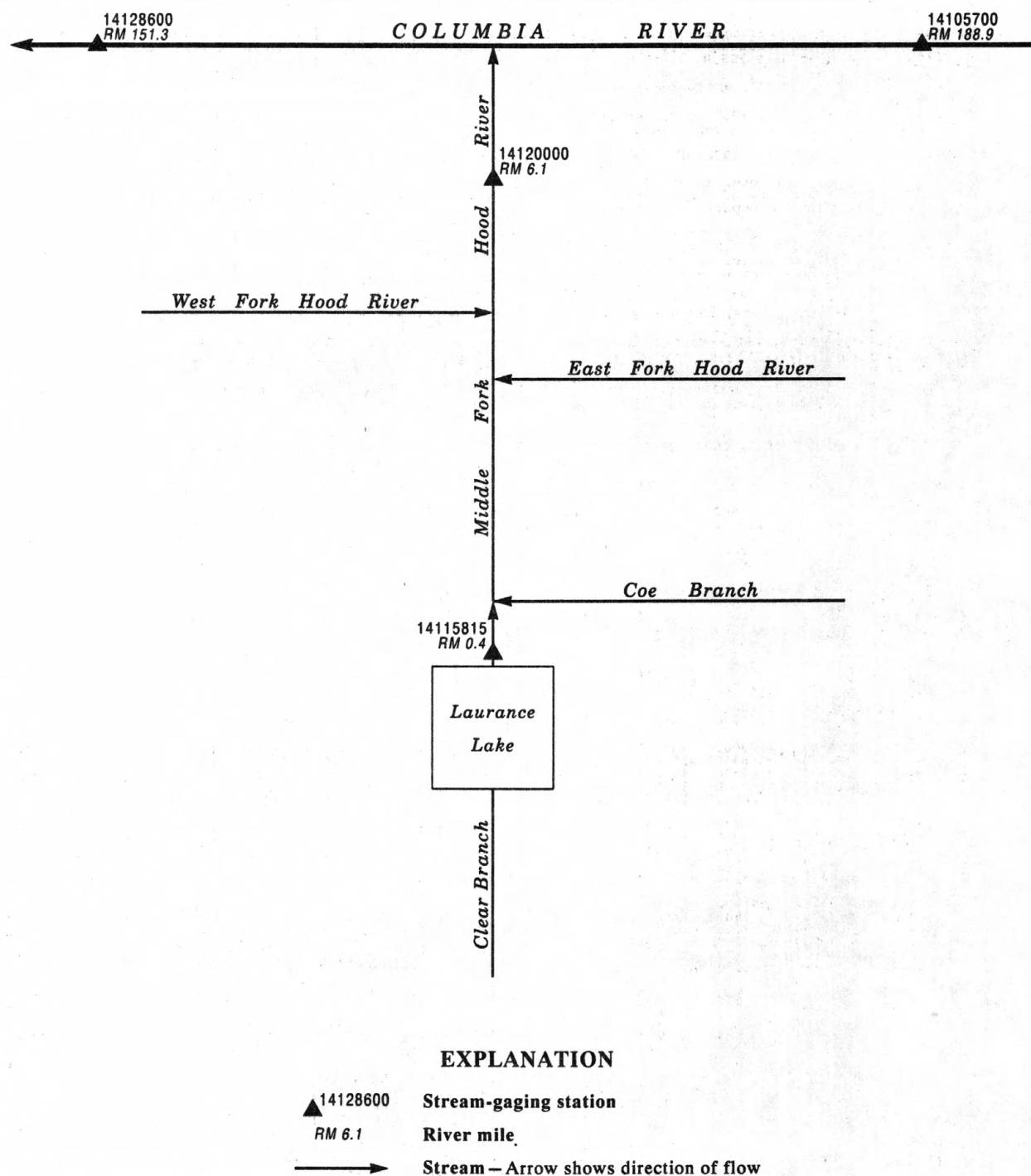


Figure 14--Schematic diagram showing gaging stations in the Middle and Lower Columbia River area, and Hood River Basin.

COLUMBIA RIVER MAIN STEM

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14105700 COLUMBIA RIVER AT THE DALLES, OR

LOCATION.--Lat 45°36'27", long 121°10'20", in SW 1/4 SW 1/4 sec.34, T.2 N., R.13 E., Wasco County, Hydrologic Unit 17070105, Corps of Engineers land, on left bank 0.3 mi downstream from Mill Creek, 2.6 mi downstream from The Dalles Dam, and at mile 188.9.

DRAINAGE AREA.--237,000 mi², approximately.

PERIOD OF RECORD.--October 1857 to September 1877 (annual maximum only, at Lower Cascades Landing, published in WSP 1318), June 1878 to current year. Published as "near The Dalles" 1936-56.

REVISED RECORDS.--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1866, 1888, 1899, 1909. WSP 1518: 1876(M).

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is sea level. See WSP 1738 for history of changes prior to Mar. 16, 1957. Mar. 16, 1957, to Sept 30, 1968, water-stage recorder at site 0.4 mi upstream at same datum.

REMARKS.--Records good. Daily discharge estimates for period Oct. 1 to Feb. 3, June 8-10, Sept. 28-30 determined from records provided by U.S. Army Corps of Engineers. Considerable regulation by many large reservoirs. Diurnal fluctuations caused by powerplant and gates at The Dalles Dam. Many diversions for irrigation upstream from station. Continuous water-quality records for the period October 1957 to February 1985 have been collected at this location.

AVERAGE DISCHARGE.--115 years, 191,400 ft³/s, 138,700,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (since 1858), 1,240,000 ft³/s June 6, 1894, elevation, 106.5 ft; minimum discharge (since 1878), 12,100 ft³/s Apr. 16, 1968 (due to closure of John Day dam, recorded by AVM).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 401,000 ft³/s May 17; maximum elevation, 82.97 ft May 17; minimum daily discharge, 72,200 ft³/s Sept 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e104000	e79900	e132000	e151000	e129000	131000	142000	222000	260000	198000	114000	124000
2	e91900	e92900	e128000	e138000	e134000	138000	149000	178000	294000	194000	155000	120000
3	e92700	e108000	e147000	e139000	e132000	109000	148000	191000	278000	164000	171000	116000
4	e78200	e107000	e180000	e162000	152000	97600	152000	193000	290000	152000	152000	104000
5	e89600	e107000	e139000	e174000	117000	105000	181000	222000	279000	159000	153000	87900
6	e112000	e104000	e148000	e185000	108000	88200	184000	222000	229000	181000	153000	83800
7	e104000	e99900	e167000	e189000	93700	93800	193000	253000	233000	180000	113000	108000
8	e104000	e88500	e160000	e193000	117000	120000	186000	247000	e281000	180000	112000	124000
9	e99900	e111000	e147000	e181000	113000	119000	186000	272000	e280000	163000	125000	120000
10	e87000	e127000	e166000	e161000	124000	103000	150000	246000	e256000	163000	116000	129000
11	e84300	e101000	e159000	e183000	112000	104000	172000	273000	237000	128000	134000	93100
12	e89800	e117000	e134000	e159000	125000	118000	176000	282000	274000	171000	138000	82800
13	e104000	e104000	e124000	e194000	119000	107000	166000	266000	254000	164000	97600	106000
14	e102000	e115000	e135000	e173000	85800	102000	159000	330000	227000	163000	113000	94800
15	e113000	e103000	e170000	e168000	129000	116000	116000	338000	204000	167000	108000	107000
16	e94600	e98400	e183000	e139000	169000	135000	155000	370000	214000	158000	118000	109000
17	e85700	e118000	e166000	e103000	166000	130000	142000	401000	207000	183000	133000	98400
18	e94600	e123000	e147000	e141000	168000	123000	144000	392000	225000	178000	150000	84900
19	e93300	e105000	e148000	e163000	169000	140000	148000	374000	211000	171000	133000	72200
20	e90200	e114000	e128000	e108000	143000	168000	161000	387000	201000	165000	122000	81600
21	e93400	e127000	e134000	e128000	116000	188000	149000	382000	200000	174000	92200	106000
22	e99100	e116000	e128000	e128000	148000	193000	156000	393000	204000	177000	95000	127000
23	e93100	e145000	e137000	e141000	147000	202000	152000	384000	205000	176000	103000	113000
24	e83600	e173000	e116000	e101000	163000	224000	121000	380000	212000	168000	103000	93800
25	e75300	e149000	e88700	e122000	154000	228000	131000	349000	211000	140000	128000	92800
26	e89100	e133000	e95600	e127000	156000	212000	159000	319000	170000	164000	127000	79500
27	e106000	e98000	e97800	e114000	138000	194000	156000	313000	166000	173000	120000	101000
28	e98300	e100000	e139000	e135000	121000	179000	163000	322000	179000	166000	93300	e118000
29	e102000	e103000	e150000	e115000	---	181000	164000	308000	201000	161000	102000	e120000
30	e115000	e132000	e156000	e117000	---	181000	157000	289000	189000	185000	98200	e123000
31	e92100	---	e165000	e105000	---	169000	---	290000	---	165000	104000	---
TOTAL	2961800	3399600	4415100	4537000	3748500	4498600	4718000	9388000	6871000	5231000	3776300	3120600
MEAN	95540	113300	142400	146400	133900	145100	157300	302800	229000	168700	121800	104000
MAX	115000	173000	183000	194000	169000	228000	193000	401000	294000	198000	171000	129000
MIN	75300	79900	88700	101000	85800	88200	116000	178000	166000	128000	92200	72200
AC-FT	5875000	6743000	8757000	8999000	7435000	8923000	9358000	18620000	13630000	10380000	7490000	6190000
CAL YR 1992	TOTAL 50903100	MEAN 139100	MAX 243000	MIN 75300	AC-FT 101000000							
WTR YR 1993	TOTAL 56665500	MEAN 155200	MAX 401000	MIN 72200	AC-FT 112400000							

e Estimated

HOOD RIVER BASIN

14115815 CLEAR BRANCH BELOW LAURANCE LAKE, NEAR PARKDALE, OR

LOCATION.--Lat 45°27'44", long 121°39'04", in SE 1/4 SE 1/4 sec.22, T.1 S., R.9 E., Hood River County, Hydrologic Unit 17070105, on right bank 0.3 mi downstream from Laurance Lake, and 5.0 mi southwest of Parkdale.

DRAINAGE AREA.--8.62 mi².

PERIOD OF RECORD.--May 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,790 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Laurance Lake 0.3 mi upstream. Diversion for irrigation directly from Laurance Lake bypasses gage via Clear Branch conduit.

AVERAGE DISCHARGE.--7 years, 20.7 ft³/s, 15,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 184 ft³/s Apr. 27, 1990, gage height, 7.03 ft; minimum discharge, no flow Nov. 3, 1992, due to construction upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 90 ft³/s May 12, gage height, 6.52 ft; minimum discharge, no flow Nov. 3, due to construction upstream from gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	20	31	27	27	17	29	60	31	8.4	7.5	13
2	14	15	31	27	27	17	29	72	24	8.5	7.4	16
3	14	12	31	27	27	17	29	73	25	11	7.1	16
4	14	12	30	26	26	19	29	72	24	12	7.0	16
5	14	12	30	24	25	25	30	54	56	13	7.0	15
6	13	22	30	18	23	29	30	62	41	12	7.0	15
7	13	29	30	19	23	29	30	65	41	10	7.0	15
8	11	29	29	18	23	29	30	78	35	11	6.9	15
9	13	32	29	17	23	29	30	62	33	9.5	6.8	15
10	13	33	29	17	23	29	31	58	33	8.6	6.8	15
11	13	31	29	18	22	29	31	67	31	9.5	6.8	15
12	13	31	29	18	22	28	31	77	30	9.1	6.8	15
13	12	30	28	18	22	28	30	72	24	9.9	6.8	15
14	12	30	29	19	22	28	31	60	23	12	6.8	15
15	13	29	29	18	22	30	31	53	34	10	6.7	17
16	13	25	29	18	21	30	29	52	25	9.9	6.7	18
17	13	23	29	18	21	31	28	50	21	8.2	6.7	19
18	12	23	29	18	21	32	28	56	19	8.2	6.7	20
19	12	24	29	18	21	31	28	53	18	8.2	6.6	20
20	12	24	29	18	21	29	28	49	16	8.1	6.6	18
21	12	28	29	22	21	30	28	57	15	8.0	6.5	17
22	12	31	29	24	21	29	28	53	15	7.9	6.4	16
23	12	30	29	21	21	29	23	38	17	7.9	6.3	16
24	12	31	29	23	19	29	30	35	12	7.8	6.2	16
25	12	31	29	27	18	28	35	42	13	7.8	6.1	16
26	10	31	28	27	17	28	46	39	14	7.8	6.0	16
27	15	31	27	27	17	28	47	42	8.9	7.7	5.9	16
28	15	31	27	27	17	28	35	44	8.5	7.6	5.8	17
29	17	31	27	27	---	28	34	35	8.7	7.5	5.5	17
30	17	32	27	27	---	28	48	34	8.3	7.5	5.5	17
31	19	---	27	27	---	29	---	43	---	7.5	5.4	---
TOTAL	411	793	897	680	613	850	946	1707	704.4	282.1	203.5	487
MEAN	13.3	26.4	28.9	21.9	21.9	27.4	31.5	55.1	23.5	9.10	6.56	16.2
MAX	19	33	31	27	27	32	48	78	56	13	7.5	20
MIN	10	12	27	17	17	17	23	34	8.3	7.5	5.4	13
AC-FT	815	1570	1780	1350	1220	1690	1880	3390	1400	560	404	966

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	13.6	20.7	24.6	26.3	28.5	27.9	33.9	29.5
MAX	20.6	29.8	34.8	41.7	44.4	33.1	48.9	55.1
(WY)	1991	1989	1992	1991	1991	1988	1988	1990
MIN	4.45	5.59	8.53	8.22	10.3	12.0	8.76	12.8
(WY)	1988	1988	1987	1987	1987	1987	1987	1986

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1986 - 1993

	1992	1993	1986-1993
ANNUAL TOTAL	7226.0	8574.0	20.7
ANNUAL MEAN	19.7	23.5	25.8
HIGHEST ANNUAL MEAN			8.12
LOWEST ANNUAL MEAN			149
HIGHEST DAILY MEAN	33 Feb 26	78 May 8	Jan 15
LOWEST DAILY MEAN	5.0 Aug 31	5.4 Aug 31	Sep 29
ANNUAL SEVEN-DAY MINIMUM	5.1 Aug 27	5.8 Aug 25	Sep 28
ANNUAL RUNOFF (AC-FT)	14330	17010	15020
10 PERCENT EXCEEDS	31	35	33
50 PERCENT EXCEEDS	22	23	16
90 PERCENT EXCEEDS	7.5	7.8	5.8

LOCATION.--Lat 45°39'20", long 121°32'50", in SE 1/4 sec.15, T.2 N., R.10 E., Hood River County, Hydrologic Unit 17070105, on right bank 25 ft downstream from Tucker Bridge, 0.5 mi upstream from Odell Creek, 4.0 mi, southwest of town of Hood River, and at mile 6.1.

PERIOD OF RECORD.--October 1897 to December 1899, September 1913 to September 1914, August 1915 to September 1917, January 1965 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 383.2 ft above sea level (Oregon State Highway Department bench mark). Prior to July 23, 1915, nonrecording gage at bridge at various datums. July 23 to Dec. 21, 1915, water-stage recorder at site 0.8 mi upstream at different datum. January 1916 to September 1917, nonrecording gage at bridge at different datum. Jan. 16 to July 23, 1965, nonrecording gage at bridge.

REMARKS.--No estimated daily discharges. Records good. Some daily fluctuation caused by diversion dam upstream from station and sawmill at Dee. Diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft³/s Dec. 13, 1977, gage height, 15.59 ft; minimum discharge recorded, 136 ft³/s Sept. 16, 1915, caused by temporary storage behind dam at Dee.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 20.6 ft, present datum, discharge, 33,200 ft³/s, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of peak flow.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2030	*5,600	*8.34	Mar. 23	0930	5,140	8.08

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	1230	965	576	744	464	1460	1720	1150	528	366	250
2	304	1110	796	538	689	477	1850	1780	1040	524	390	298
3	285	660	678	540	642	478	3030	1860	946	500	419	298
4	274	572	597	546	609	646	2310	1840	917	486	421	301
5	256	517	551	504	584	1150	1810	1590	1330	480	402	287
6	246	447	527	468	560	1100	1620	1690	1170	461	389	268
7	240	654	512	504	551	1080	1660	1710	1190	444	373	281
8	239	914	546	509	554	1130	1780	2000	1080	431	337	273
9	241	853	586	510	563	1140	2160	1720	1030	431	312	278
10	239	635	567	478	574	1030	2030	1630	1050	412	299	251
11	249	554	540	478	593	921	1790	1710	1040	412	296	252
12	252	581	499	468	587	851	1540	1830	1040	393	289	226
13	326	534	472	465	577	804	1400	1810	947	393	289	213
14	303	504	548	463	569	1040	1330	1610	910	394	290	211
15	293	478	608	451	575	2860	1350	1480	1010	374	276	217
16	294	454	555	450	520	2250	1320	1420	926	381	269	223
17	311	440	553	443	542	1950	1380	1390	862	420	282	220
18	303	481	501	435	535	3230	1430	1440	845	374	293	220
19	326	534	487	444	560	2600	1350	1450	819	415	307	222
20	319	519	608	546	561	2720	1280	1440	761	469	332	222
21	382	1840	658	573	506	2250	1440	1440	748	432	335	217
22	340	2640	915	545	477	2310	1480	1410	786	478	303	216
23	333	1480	1120	496	459	4500	1420	1220	835	602	361	221
24	323	1020	939	560	442	2940	1600	1140	696	526	347	223
25	316	803	820	1210	427	2110	1800	1170	663	468	267	220
26	309	680	844	1180	417	1720	1800	1100	665	424	246	222
27	264	681	878	1000	410	1500	1740	1170	703	406	240	226
28	239	776	783	937	451	1370	1520	1190	626	431	249	232
29	276	645	703	966	---	1300	1900	1070	585	460	247	232
30	350	979	639	876	---	1240	1980	1070	544	405	244	248
31	631	---	607	808	---	1230	---	1290	---	367	234	---
TOTAL	9355	24215	22602	18967	15278	50391	50560	46390	26914	13721	9704	7268
MEAN	302	807	665	612	546	1626	1685	1496	897	443	313	242
MAX	631	2640	1120	1210	744	4500	3030	2000	1330	602	421	301
MIN	239	440	472	435	410	464	1280	1070	544	367	234	211
AC-FT	18560	48030	40860	37620	30300	99950	100300	92010	53380	27220	19250	14420

MEAN	467	1028	1433	1561	1532	1341	1318	1211	957	600	407	384
MAX	929	1989	4109	3313	3367	2915	2358	2418	2439	1687	1088	804
(WY)	1900	1898	1978	1974	1982	1972	1916	1969	1899	1899	1899	1899
MIN	218	282	438	363	430	681	704	532	278	229	209	229
(WY)	1988	1988	1977	1979	1977	1977	1973	1992	1992	1992	1992	1987

ANNUAL TOTAL	213331		293365			
ANNUAL MEAN	583		804		1012	
HIGHEST ANNUAL MEAN					1664	1899
LOWEST ANNUAL MEAN					465	1977
HIGHEST DAILY MEAN	3820	Feb 22	4500	Mar 23	18000	Dec 13 1977
LOWEST DAILY MEAN	160	Aug 26	211	Sep 14	160	Aug 26 1992
ANNUAL SEVEN-DAY MINIMUM	172	Aug 24	218	Sep 13	172	Aug 24 1992
ANNUAL RUNOFF (AC-FT)	423100		581900		732900	
10 PERCENT EXCEEDS	995		1710		1900	
50 PERCENT EXCEEDS	512		560		782	
90 PERCENT EXCEEDS	215		254		314	

COLUMBIA RIVER MAIN STEM

14128600 COLUMBIA RIVER AT STEVENSON, WA

LOCATION.--Lat 45°41'58", long 121°52'02", in NW 1/4 SE 1/4 sec.36, T.3 N., R.7-1/2 E., Skamania County, Hydrologic Unit 17070105, on right bank 0.9 mi east of Stevenson, and at mile 151.3.

DRAINAGE AREA.--239,800 mi², approximately.

PERIOD OF RECORD.--October 1973 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 79.79 ft June 20, 1974; minimum, 70.39 ft Oct. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 78.39 ft May 17; minimum, 70.89 ft Nov. 12.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	75.76	75.08	75.31	74.62	74.12	74.42	75.56	73.82	74.53	75.45	74.75	75.04
2	75.78	74.80	75.37	74.43	73.73	73.97	74.76	73.50	74.15	75.77	75.01	75.35
3	76.24	74.72	75.60	74.10	73.08	73.70	75.35	73.93	74.59	75.26	74.03	74.56
4	75.93	73.80	74.92	74.09	73.19	73.69	75.75	73.87	74.87	75.14	73.57	74.34
5	73.82	72.77	73.22	74.18	73.22	73.68	75.21	73.71	74.34	76.57	74.27	75.37
6	74.20	72.43	73.32	74.18	73.38	73.68	75.37	73.63	74.21	76.50	75.77	76.14
7	75.05	73.80	74.43	74.12	72.74	73.53	75.06	72.52	73.94	76.45	75.77	76.20
8	75.26	74.35	74.89	74.21	73.87	74.05	75.55	73.05	74.21	76.92	75.66	76.10
9	75.68	74.56	75.09	74.25	73.47	73.93	75.49	73.35	74.37	77.05	76.30	76.58
10	75.75	74.92	75.16	74.09	73.37	73.67	75.50	73.30	74.39	77.10	75.41	76.35
11	75.58	74.76	75.07	73.88	72.45	73.27	75.48	74.30	74.90	75.41	74.01	74.47
12	75.39	74.92	75.12	74.32	70.89	72.42	75.34	74.05	74.76	74.63	72.75	73.70
13	75.27	74.25	74.77	74.41	74.15	74.31	75.15	74.00	74.53	74.65	73.19	73.95
14	75.21	74.55	74.93	74.60	74.28	74.46	75.27	73.48	74.51	74.72	73.80	74.16
15	75.61	74.18	75.00	74.63	74.08	74.38	75.37	74.19	74.88	75.57	73.74	74.37
16	75.14	74.24	74.60	74.28	73.76	74.08	76.75	73.82	75.32	75.76	75.07	75.36
17	74.95	74.52	74.78	74.59	73.78	74.17	76.57	74.32	75.18	75.75	74.68	75.05
18	75.36	74.01	74.70	74.70	73.86	74.32	75.57	73.36	74.69	75.35	74.42	74.84
19	75.10	73.09	73.80	74.60	73.88	74.19	75.54	73.77	74.66	75.42	74.17	74.67
20	73.37	72.57	72.86	75.74	73.54	74.43	75.85	74.46	74.94	75.34	73.23	73.89
21	72.68	71.93	72.38	76.44	75.74	76.09	75.82	73.53	74.63	75.66	73.28	74.34
22	73.87	72.03	72.83	76.12	74.94	75.61	75.38	73.67	74.69	75.66	73.92	74.88
23	74.19	73.31	73.68	75.63	74.30	74.76	75.76	73.74	74.81	75.60	74.65	75.13
24	74.72	73.66	74.01	75.64	74.25	74.86	76.40	74.07	75.20	75.46	74.33	74.98
25	74.85	73.79	74.27	75.57	74.08	74.75	76.56	74.65	75.21	75.70	74.58	75.10
26	74.17	73.56	73.77	75.48	73.91	74.48	75.35	74.30	74.78	75.86	74.67	75.07
27	73.94	73.35	73.68	74.71	73.54	73.83	75.44	74.42	74.84	74.81	72.48	73.27
28	73.89	73.28	73.68	74.28	73.14	73.66	75.84	73.87	74.88	74.56	71.33	72.51
29	73.95	73.43	73.68	74.29	73.05	73.50	75.69	74.21	74.82	76.09	74.05	74.90
30	74.04	73.20	73.74	75.57	73.26	74.06	75.51	74.02	74.72	76.05	75.26	75.57
31	74.51	73.46	74.02	---	---	---	75.50	74.56	74.96	75.83	75.07	75.36
MONTH	76.24	71.93	74.28	76.44	70.89	74.13	76.75	72.52	74.69	77.10	71.33	74.89

14128600 COLUMBIA RIVER AT STEVENSON, WA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	75.62	74.87	75.32	77.03	76.21	76.56	76.21	74.81	75.20	76.11	73.73	74.93
2	75.60	74.25	74.90	77.46	76.12	76.78	76.30	74.35	75.06	76.05	74.69	75.15
3	75.57	74.11	74.90	76.74	74.74	75.26	76.37	74.63	75.64	76.07	73.96	75.17
4	76.00	73.70	74.47	77.43	75.81	76.48	76.28	74.99	75.49	75.89	73.47	74.42
5	76.07	74.61	75.07	76.71	75.47	75.89	76.34	74.91	75.56	75.29	73.50	74.11
6	75.70	74.65	75.10	77.52	76.00	76.72	76.23	73.84	75.03	76.10	74.32	74.96
7	75.89	74.86	75.15	76.10	74.92	75.62	76.35	74.73	75.36	76.37	75.57	76.08
8	75.54	74.39	75.09	75.95	74.70	75.33	76.37	73.89	74.96	76.24	75.61	75.92
9	75.54	74.01	74.86	75.77	74.21	74.69	76.75	73.76	75.15	77.00	75.74	76.36
10	75.85	73.99	74.72	74.21	72.79	73.21	76.86	73.68	75.07	76.49	74.19	75.21
11	75.99	74.52	75.30	73.72	73.22	73.46	76.49	73.21	74.91	76.24	74.19	75.58
12	75.94	74.34	74.93	73.79	72.84	73.24	76.56	73.08	74.76	75.75	74.46	74.87
13	75.72	74.97	75.23	73.59	72.63	73.09	76.44	73.88	75.07	76.63	75.17	75.98
14	75.29	74.07	74.49	73.61	72.62	72.96	76.52	74.41	75.38	77.24	75.03	75.95
15	74.66	73.89	74.31	73.74	72.81	73.45	75.79	73.99	74.46	77.24	76.07	76.56
16	76.44	73.04	74.41	73.71	72.63	73.04	75.52	73.35	74.33	77.59	76.06	76.59
17	76.47	74.48	75.22	74.07	72.41	73.07	75.66	73.86	74.48	78.39	76.05	77.41
18	75.12	73.09	74.12	74.18	73.42	73.75	75.05	73.12	74.07	77.32	75.97	76.39
19	76.15	72.89	74.29	74.44	72.73	73.66	75.17	73.15	74.25	75.97	75.27	75.62
20	76.16	73.89	75.08	75.68	72.27	73.54	75.99	73.01	74.52	76.40	75.64	76.05
21	75.97	74.42	75.06	75.85	73.37	74.40	75.85	73.67	74.55	75.92	75.02	75.65
22	75.42	73.75	74.49	75.55	72.76	73.98	75.98	73.05	74.60	76.68	75.74	76.20
23	75.14	73.10	74.32	75.97	73.08	74.48	76.09	74.19	74.99	77.33	76.68	77.09
24	75.84	73.74	74.86	76.20	75.20	75.74	75.48	73.89	74.58	77.52	76.84	77.19
25	76.13	74.68	75.48	75.57	74.41	74.85	75.74	73.80	74.59	77.22	76.26	76.65
26	75.51	74.62	75.11	75.05	73.55	74.53	76.10	74.22	75.03	76.89	76.05	76.53
27	77.52	75.48	76.86	75.19	73.26	74.21	76.08	75.22	75.66	76.19	75.57	75.86
28	77.44	75.69	76.44	75.24	73.82	73.87	76.37	74.48	75.38	77.20	75.57	76.19
29	---	---	---	74.18	72.81	73.69	76.18	74.43	75.33	76.90	76.21	76.55
30	---	---	---	75.06	73.25	74.10	75.72	73.71	74.60	76.21	75.22	75.68
31	---	---	---	76.16	73.53	74.59	---	---	---	76.93	75.09	76.21
MONTH	77.52	72.89	74.98	77.52	72.27	74.46	76.86	73.01	74.94	78.39	73.47	75.91

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	76.74	75.02	75.96	76.36	74.97	75.54	75.95	74.61	75.04	76.59	74.73	75.46
2	76.51	74.31	75.23	76.80	76.00	76.32	76.70	74.58	75.41	76.74	75.36	75.90
3	76.66	76.00	76.35	76.81	75.55	76.10	76.79	75.01	75.83	76.73	75.50	76.09
4	76.32	75.82	76.06	75.89	74.44	75.22	76.83	74.74	75.63	76.82	75.99	76.33
5	76.76	75.69	76.25	76.67	75.53	75.82	76.73	76.07	76.43	76.95	76.05	76.36
6	77.09	75.69	76.39	76.83	75.21	75.92	76.57	75.35	75.77	76.34	75.74	75.94
7	77.23	76.89	77.07	76.95	75.49	76.00	76.38	74.56	75.46	76.43	75.47	75.86
8	77.31	75.76	76.43	76.25	74.87	75.52	76.53	74.41	75.26	76.77	74.72	75.54
9	77.34	76.11	76.58	75.98	74.95	75.34	76.51	75.51	75.92	76.36	74.87	75.62
10	76.93	76.14	76.51	76.89	75.98	76.47	75.78	74.28	75.00	76.65	74.38	75.41
11	76.78	75.27	76.09	76.53	74.98	75.40	76.19	74.73	75.37	76.37	74.13	74.98
12	77.45	75.27	76.43	75.98	75.23	75.58	76.78	75.81	76.33	75.21	74.54	74.83
13	77.35	76.76	76.99	75.97	74.53	75.05	76.45	74.86	75.32	74.93	74.09	74.65
14	77.02	76.02	76.59	75.81	74.68	75.24	76.16	74.45	75.25	75.24	74.25	74.61
15	76.02	74.92	75.45	75.00	74.23	74.64	76.30	75.48	75.92	75.39	74.65	75.03
16	77.03	75.61	76.06	75.99	74.23	75.13	76.32	74.64	75.39	75.78	74.66	75.14
17	77.23	76.00	76.43	76.60	75.95	76.45	76.69	75.53	76.06	75.89	75.06	75.37
18	76.82	75.34	75.90	77.06	75.98	76.39	76.85	75.03	75.71	75.88	75.16	75.48
19	76.64	75.09	75.78	77.08	75.19	75.61	76.23	74.14	75.22	75.68	74.88	75.20
20	76.18	74.94	75.57	76.13	75.47	75.69	76.14	74.41	75.29	75.42	74.41	74.76
21	76.04	74.79	75.40	75.93	74.04	75.17	75.88	74.42	74.96	75.48	74.43	74.92
22	76.07	74.91	75.36	75.11	72.91	73.72	75.31	74.26	74.81	75.79	74.88	75.34
23	76.51	75.90	76.12	76.30	74.65	75.33	75.26	74.14	74.65	75.79	74.86	75.23
24	76.56	75.99	76.20	76.54	75.88	76.27	75.75	74.70	75.22	75.77	74.81	75.46
25	76.82	74.87	75.89	76.66	75.92	76.31	75.89	74.85	75.25	76.28	74.48	75.22
26	77.16	75.54	75.97	76.44	74.67	75.66	75.94	75.10	75.56	76.35	75.75	76.03
27	76.16	74.51	75.34	76.39	75.10	75.88	75.71	75.03	75.27	76.37	75.89	76.11
28	76.49	74.94	75.74	77.00	74.91	75.95	75.71	74.67	75.09	76.74	75.19	75.71
29	76.56	75.47	76.01	76.73	75.84	76.35	76.10	74.92	75.45	76.85	75.99	76.26
30	76.14	74.72	75.34	76.35	75.33	75.92	75.85	75.03	75.31	76.69	75.78	76.24
31	---	---	---	76.29	74.78	75.50	75.68	74.96	75.21	---	---	---
MONTH	77.45	74.31	76.05	77.08	72.91	75.66	76.85	74.14	75.43	76.95	74.09	75.50

YEAR	78.39	70.89	75.08									
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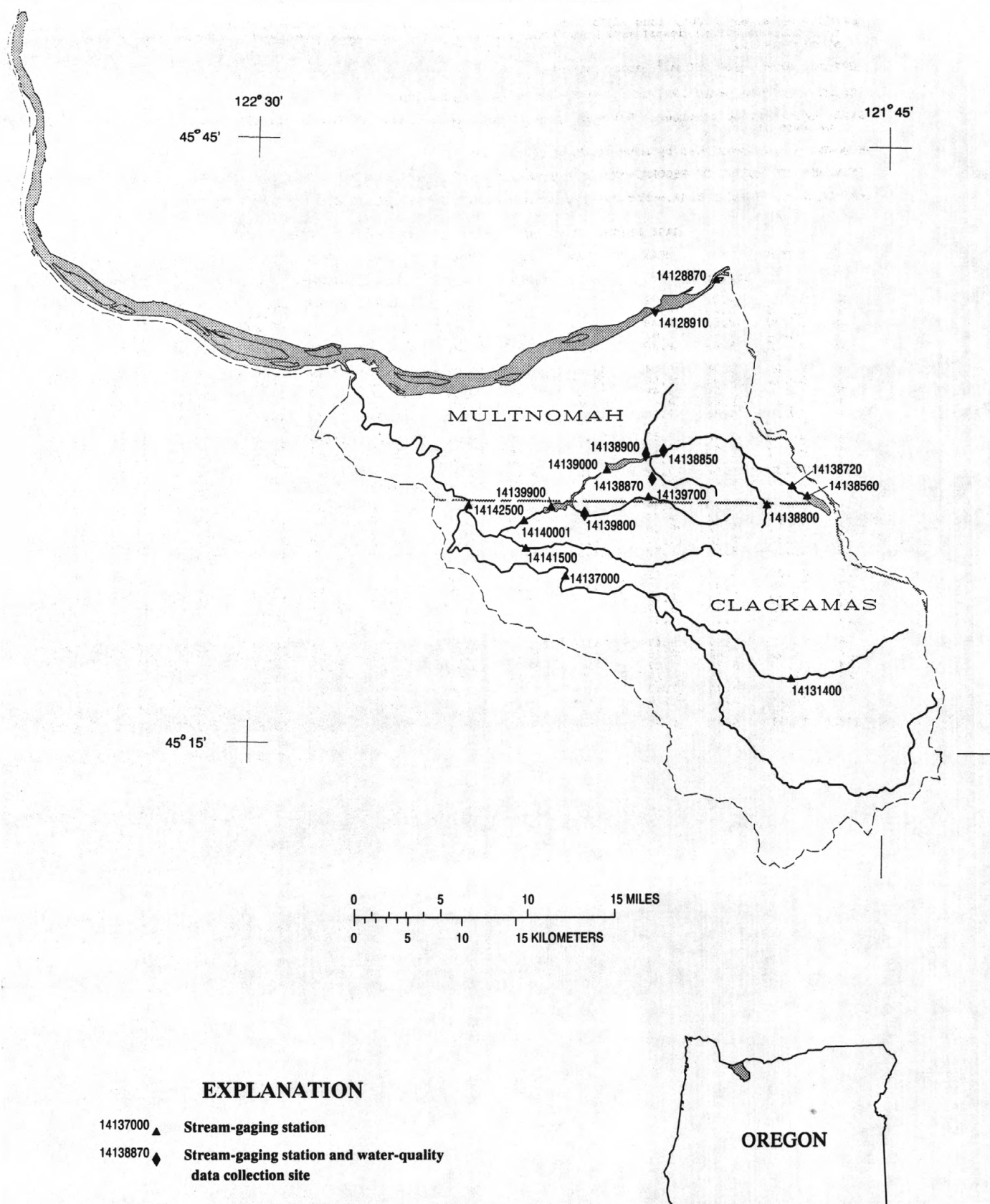


Figure 15--Location of surface-water and water-quality stations in the Middle and Lower Columbia River area, and Sandy River Basin.

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR

LOCATION.--Lat 45°38'00", long 121°57'33", in sec.21, T.2 N., R.7 E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.9 mi downstream from Bonneville Dam left bank powerhouse, 50 ft upstream from Tanner Creek, and at mile 144.5.

DRAINAGE AREA.--239,900 mi², approximately.

PERIOD OF RECORD.--May 1981 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to August 15, 1990, at a site 0.5 mi upstream at the same datum.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 30.40 ft June 11, 1981; minimum, 6.22 ft Sept. 26, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 28.50 ft May 18; minimum, 6.22 ft Sept. 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	11.75	9.08	10.72	10.44	7.84	9.06	15.00	10.09	13.30	14.46	13.08	13.87
2	10.45	8.68	9.59	11.19	8.66	9.92	14.64	9.39	11.87	13.85	12.80	13.27
3	10.30	8.53	9.28	11.36	8.78	10.29	15.18	10.67	13.13	15.10	13.15	13.88
4	11.32	8.42	9.61	12.03	7.85	9.98	15.12	13.40	14.66	15.01	12.98	13.84
5	11.13	8.66	9.36	11.75	8.87	10.21	15.05	11.34	12.73	15.80	12.72	14.30
6	11.09	8.32	9.44	12.35	8.61	10.31	15.30	11.80	13.84	16.11	14.94	15.48
7	10.62	6.95	8.50	11.78	8.84	10.00	15.66	12.41	14.30	16.26	14.92	15.67
8	11.54	7.51	9.48	11.02	7.94	9.64	15.54	12.70	14.24	16.54	15.65	16.16
9	11.24	8.56	9.47	13.42	8.14	11.07	15.14	14.03	14.59	16.24	15.22	15.82
10	10.57	8.31	9.10	13.90	10.28	12.41	15.95	13.44	14.80	16.47	14.07	15.53
11	10.09	7.70	8.53	14.26	8.68	10.97	16.25	14.45	15.40	17.15	15.98	16.52
12	11.16	7.42	9.13	12.51	8.14	10.30	16.17	13.51	14.12	16.19	12.78	14.58
13	11.70	8.34	10.08	11.22	8.46	10.01	15.07	12.15	12.95	16.59	14.00	15.37
14	11.32	8.67	10.09	11.87	9.14	10.62	14.16	11.81	13.27	16.06	13.84	15.13
15	11.58	9.42	10.53	12.07	8.00	10.36	16.00	12.31	15.11	15.14	13.25	13.97
16	10.43	8.13	9.37	12.04	8.51	9.90	16.18	13.83	15.23	13.32	12.06	12.54
17	9.53	7.32	8.73	13.33	8.18	10.88	16.30	15.51	15.98	12.06	9.74	10.44
18	11.50	7.52	8.68	13.07	8.92	11.51	15.95	12.00	14.10	13.72	9.58	11.55
19	11.33	9.10	10.47	12.89	9.21	11.43	14.66	11.69	13.77	15.01	13.02	14.08
20	11.17	8.56	9.63	11.56	8.41	10.01	14.92	12.07	13.22	14.91	11.40	12.79
21	11.28	8.08	9.62	15.47	8.69	12.23	14.11	12.88	13.51	13.80	10.20	11.71
22	10.24	7.92	9.10	14.79	11.97	13.42	14.34	12.86	13.51	14.73	11.67	12.95
23	10.96	7.53	8.99	---	---	---	15.06	12.23	13.75	14.70	13.30	13.84
24	9.85	7.59	8.47	---	---	---	14.77	10.84	12.22	13.40	10.73	11.80
25	10.04	7.53	8.67	---	---	---	12.59	10.46	11.05	14.88	9.58	12.29
26	10.92	7.86	9.47	15.20	11.16	13.02	11.78	9.24	10.74	15.46	10.77	13.67
27	11.80	7.89	10.25	12.56	9.01	10.54	11.49	9.25	10.43	14.74	12.36	13.74
28	11.74	8.22	9.97	11.84	8.97	10.55	14.27	9.47	12.65	13.88	11.67	12.37
29	12.46	7.81	10.17	11.23	8.45	10.13	15.11	13.32	14.39	11.86	9.80	11.03
30	13.31	8.94	11.40	13.02	9.11	11.38	15.05	12.68	14.23	13.27	8.85	11.33
31	12.16	8.07	9.70	---	---	---	15.89	13.61	15.03	11.85	8.72	10.49
MONTH	13.31	6.95	9.54	---	---	---	16.30	9.24	13.62	17.15	8.72	13.55

COLUMBIA RIVER MAIN STEM

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	13.60	9.18	11.96	---	8.98	---	14.97	13.66	14.33	19.13	15.32	17.94
2	13.50	10.46	12.24	14.41	9.54	12.51	15.04	13.31	13.88	18.54	16.44	17.23
3	14.41	10.28	12.75	13.53	8.54	10.50	16.37	13.97	15.03	19.08	16.23	16.91
4	13.53	9.98	12.19	12.37	8.03	9.81	16.72	15.18	15.63	19.17	16.80	17.92
5	13.15	10.34	11.81	11.60	8.40	10.29	18.54	15.05	17.06	20.04	18.51	19.26
6	12.19	9.40	10.83	12.74	8.48	10.01	18.27	16.48	16.98	20.79	18.29	18.72
7	11.47	8.78	10.25	13.70	8.37	10.56	19.63	16.45	17.72	21.64	20.23	20.54
8	12.82	8.45	11.21	14.15	9.20	11.73	18.22	16.80	17.31	21.41	20.33	20.93
9	12.77	9.34	11.52	13.76	10.75	12.79	17.96	17.01	17.44	22.28	21.02	21.45
10	13.39	9.65	11.85	12.78	9.92	11.46	18.04	15.27	16.29	22.45	20.19	21.10
11	12.82	10.87	11.64	11.68	8.31	10.39	17.76	15.89	16.57	23.34	20.97	21.90
12	14.33	9.82	12.36	12.58	8.32	11.14	18.06	16.18	16.93	22.83	20.44	21.83
13	13.75	9.19	11.91	12.47	8.55	10.76	17.14	15.66	16.10	22.37	21.33	21.77
14	12.73	9.08	10.04	13.04	8.99	10.88	16.03	14.23	15.66	23.89	21.26	23.11
15	14.19	9.11	12.16	14.48	8.66	11.83	14.84	12.79	13.59	25.71	23.65	24.35
16	14.27	8.66	12.37	14.92	11.66	13.39	14.65	12.61	13.62	26.78	24.80	25.61
17	15.55	13.94	14.93	13.92	11.77	13.12	14.91	14.29	14.61	28.20	25.63	26.88
18	15.99	14.08	14.72	15.10	10.05	13.52	14.42	13.45	14.15	28.50	27.06	27.79
19	15.09	12.44	13.89	15.99	13.05	14.34	14.83	13.32	14.13	27.20	26.28	26.73
20	14.15	12.74	13.46	16.53	14.57	15.60	15.09	13.54	14.39	27.80	26.40	26.90
21	13.52	11.27	12.04	18.67	15.80	17.56	15.42	14.60	14.89	28.09	27.01	27.46
22	15.25	11.75	13.75	18.88	16.54	17.88	15.79	13.43	14.47	28.01	27.11	27.35
23	14.80	10.86	13.11	20.29	17.90	19.18	16.01	13.93	14.88	27.76	27.04	27.29
24	14.64	13.61	14.13	21.14	20.04	20.61	14.64	12.42	13.64	27.72	26.44	27.12
25	15.51	12.89	14.14	21.40	20.04	20.60	14.59	11.79	13.09	27.24	25.21	26.36
26	14.99	11.49	13.46	20.88	18.71	19.75	15.96	14.25	15.18	26.86	24.54	25.11
27	13.66	8.71	10.81	18.73	17.65	18.03	16.23	14.80	15.59	24.80	24.13	24.40
28	13.99	8.17	11.16	17.90	16.57	17.68	16.00	14.79	15.12	24.55	23.96	24.16
29	---	---	---	17.47	15.01	16.67	16.64	15.29	15.76	---	---	---
30	---	---	---	17.73	15.25	16.01	15.88	15.29	15.51	---	22.86	---
31	---	---	---	16.12	13.72	14.72	---	---	---	24.07	22.07	22.50
MONTH	15.99	8.17	12.38	---	8.03	---	19.63	11.79	15.32	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	22.50	21.79	22.26	16.05	15.51	15.77	14.53	10.70	12.10	11.94	8.05	10.42
2	22.81	20.57	22.19	16.13	14.84	15.53	12.59	10.25	11.66	11.73	9.56	11.07
3	23.11	21.66	22.24	16.20	14.01	15.05	14.81	12.38	13.85	11.84	9.96	10.89
4	23.18	21.94	22.71	14.36	13.13	13.68	14.81	12.82	14.06	11.81	8.06	9.61
5	23.01	20.17	21.95	13.44	12.95	13.20	14.63	10.87	13.05	11.67	7.85	9.30
6	20.40	18.69	19.50	16.10	12.94	14.49	14.69	12.97	14.14	9.45	7.34	8.34
7	21.41	17.42	19.40	15.79	15.08	15.34	12.97	10.67	11.13	11.26	7.43	9.08
8	22.22	20.94	21.59	16.05	14.83	15.12	11.23	9.05	10.27	11.45	9.11	10.48
9	22.43	21.81	22.09	15.97	13.30	14.20	13.05	10.21	11.48	11.75	9.61	10.95
10	21.92	19.63	20.60	14.64	12.12	13.35	12.28	9.32	10.52	12.23	9.18	10.99
11	---	---	---	14.31	11.53	12.43	12.94	9.32	11.13	12.08	9.05	10.41
12	22.15	---	---	15.40	11.41	13.21	13.14	9.88	11.82	9.61	7.72	8.39
13	21.79	19.28	20.27	15.73	13.43	14.31	12.96	9.37	10.44	10.83	7.16	9.56
14	20.36	18.62	19.10	15.66	13.12	14.32	10.19	9.22	9.64	9.47	7.34	8.53
15	18.72	15.94	17.44	16.07	11.73	14.28	10.63	9.59	10.05	11.17	7.44	9.79
16	17.75	16.48	16.85	15.05	11.53	12.79	12.12	9.50	10.48	11.45	7.93	9.70
17	17.63	16.48	17.24	15.63	12.36	14.41	13.15	9.08	11.60	11.44	8.56	9.67
18	---	---	---	15.25	14.03	14.77	14.70	12.01	13.57	9.85	8.10	8.89
19	---	17.54	---	15.93	13.06	15.11	14.71	11.50	12.45	9.63	7.37	8.31
20	18.09	17.17	17.50	15.41	12.23	14.36	13.28	11.13	11.82	9.21	7.10	8.08
21	17.53	16.24	17.13	16.66	14.00	15.59	11.99	9.34	10.12	10.89	8.26	9.71
22	17.44	16.98	17.18	16.82	12.52	14.99	10.39	9.11	9.63	11.99	8.59	10.38
23	17.77	17.03	17.26	14.89	13.41	14.27	10.37	9.43	9.79	11.67	9.44	10.26
24	18.38	17.64	17.90	15.48	13.52	14.42	10.37	8.59	9.45	10.50	8.23	9.29
25	18.25	17.09	17.28	14.68	12.01	12.91	12.21	8.28	11.10	9.06	6.91	7.63
26	17.49	14.36	16.23	15.28	12.60	13.78	12.89	9.02	11.05	7.69	6.22	6.94
27	16.01	14.15	14.79	14.93	14.48	14.64	12.80	10.38	11.14	10.34	6.46	8.96
28	---	---	---	14.97	13.01	14.00	10.38	8.23	9.11	11.87	8.05	9.87
29	17.37	15.89	16.37	15.83	12.29	14.43	11.30	7.58	8.85	12.16	8.12	10.44
30	17.58	15.75	16.32	15.75	13.62	15.13	11.37	8.04	9.30	13.02	9.11	11.19
31	---	---	---	15.71	14.14	14.78	11.51	7.42	9.35	---	---	---
MONTH	---	---	---	16.82	11.41	14.34	14.81	7.42	11.10	13.02	6.22	9.57

14128910 COLUMBIA RIVER AT WARRENDALE, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°36'45", long 122°01'35", in NE 1/4 SE 1/4 sec.35, T.2 N., R.6 E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.1 mi downstream from Tumult Creek, 1.0 mi west of Warrendale, 5.1 mi downstream from Bonneville Dam, and at mile 141.0.

DRAINAGE AREA.--240,000 mi², approximately.

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 244 microsiemens Jan. 7, 1988; minimum, 95 microsiemens June 26, 27, 1982.

WATER TEMPERATURE: October 1975 to September 1992 (discontinued).

INSTRUMENTATION.--Specific conductance and temperature recorders from October 1975 to September 1992 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 244 microsiemens Jan. 7, 1988; minimum, 95 microsiemens June 26, 27, 1982.
WATER TEMPERATURE: Maximum, 22.5°C Aug. 17, 18, 1977, Aug. 11, 1980, July 31, 1992; minimum recorded, 0.0°C many days in January and February, 1979.

WATER-QUALITY DATA

		DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCHI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)	
NOV 1992	18...	1203	E123000	166	8.1	11.5	1.2	10.2	94	K14	K5	66
JAN 1993	26...	1026	E127000	161	8.2	1.5	1.5	13.6	97	K4	<1	70
JUN 25...	0940	211000	112	8.2	17.0	1.7	1.7	10.6	111	K5	K2	46
AUG 04...	1029	152000	130	8.1	20.5	1.4	1.4	9.5	107	K5	27	57
DATE		CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
NOV 1992	18...	18	5.0	6.3	17	0.3	1.1	62	76	0	12	3.0
JAN 1993	26...	19	5.4	5.5	14	0.3	1.1	67	82	0	12	2.8
JUN 25...	13	3.3	5.1	19	0.3	1.1	1.1	44	54	0	7.1	2.2
AUG 04...	16	4.1	4.7	15	0.3	1.1	1.1	51	62	0	8.6	1.8
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 1992	18...	0.2	7.3	95	91	0.13	--	0.02	0.02	0.01	0.01	<0.2
JAN 1993	26...	0.1	7.9	98	95	0.13	--	<0.01	--	--	0.02	<0.2
JUN 25...	0.2	10	71	69	0.10	40400	0.01	--	--	--	<0.01	<0.2
AUG 04...	0.1	9.2	78	77	0.11	32000	0.02	--	--	--	<0.01	<0.2
DATE		NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BARIUM, DIS-SOLVED (UG/L AS BA)	COBALT, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM, DIS-SOLVED (UG/L AS LI)
NOV 1992	18...	0.19	0.170	0.02	0.02	0.03	0.02	<10	23	<3	4	<4
JAN 1993	26...	--	0.240	0.02	0.01	0.01	--	120	27	<3	6	<4
JUN 25...	--	0.077	0.03	0.02	0.02	0.02	--	20	17	<3	20	<4
AUG 04...	--	0.085	0.03	<0.01	<0.01	<0.01	--	<10	23	<3	9	<4
DATE		MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MOLYB-DENUM, DIS-SOLVED (UG/L AS Mo)	NICKEL, DIS-SOLVED (UG/L AS Ni)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	STRON-TIUM, DIS-SOLVED (UG/L AS Sr)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE, DIAM. % FINER THAN .062 MM	
NOV 1992	18...	<1	<10	<1	<1	<1	100	<6	4	E1330	95	
JAN 1993	26...	<1	<10	<1	<1	<1	93	<6	3	E1030	85	
JUN 25...	1	<10	<1	<1	<1	<1	69	<6	11	6270	91	
AUG 04...	<1	20	<1	<1	<1	<1	79	<6	9	3690	83	

E - Estimated.

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

14129400 COLUMBIA RIVER AT WASHOUGAL, WA

LOCATION.--Lat 45°34'30", long 122°21'10", in SE 1/4 sec.18, T.1 N., R.4 E., Clark County, Hydrologic Unit 17080001, on right bank on rock-fill point at south end of 17th Street, in Washougal, and at river mile 122.9.

DRAINAGE AREA.--240,000 mi², approximately.

PERIOD OF RECORD.--October 1971 to September 1981, February 1990 to September 1993 (discontinued), gage heights only.

GAGE.--Water stage recorder. Datum of gage is sea level.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 28.87 ft June 19, 1972; minimum, 3.68 ft July 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 20.52 ft May 18; minimum, 3.74 ft Sept. 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	8.40	5.97	6.95	7.29	5.24	5.97	8.82	7.51	8.17	9.46	8.40	8.97
2	7.79	5.51	6.17	6.67	5.41	6.03	8.47	6.52	7.60	8.91	8.05	8.36
3	6.91	5.07	5.67	6.42	5.58	6.04	9.10	7.25	8.15	9.07	7.96	8.56
4	6.08	4.62	5.42	6.41	4.77	5.79	9.52	8.77	9.18	9.37	8.25	8.83
5	6.02	4.57	5.34	6.54	5.36	6.06	9.41	7.63	8.38	9.84	8.39	9.17
6	5.79	4.65	5.31	6.86	4.91	6.03	9.49	7.85	8.68	10.76	9.55	10.04
7	5.52	4.24	4.95	7.37	5.42	6.41	9.98	8.46	9.10	10.87	9.76	10.25
8	6.54	4.69	5.58	7.39	5.37	6.25	10.57	8.77	9.46	11.20	10.20	10.65
9	6.38	5.02	5.80	8.11	5.64	6.85	10.43	9.44	9.88	10.91	10.17	10.52
10	6.35	4.85	5.69	8.51	6.46	7.46	11.20	9.42	10.12	10.95	9.77	10.26
11	6.23	4.53	5.44	8.43	5.60	6.83	11.67	10.41	10.93	11.02	10.27	10.77
12	6.80	4.53	5.58	8.05	5.52	6.83	11.62	9.68	10.33	10.96	8.97	9.82
13	7.38	5.18	6.20	7.46	5.50	6.44	10.48	8.55	9.16	10.36	9.09	9.88
14	7.21	5.31	6.18	7.73	5.87	6.73	9.35	7.90	8.78	10.29	9.19	9.87
15	7.10	5.74	6.32	7.72	5.81	6.60	10.11	8.55	9.48	9.73	8.61	9.21
16	6.88	4.93	5.72	7.54	5.59	6.33	10.12	9.09	9.64	8.63	7.57	8.24
17	6.24	4.28	5.30	7.66	5.13	6.36	10.68	9.79	10.19	7.61	6.28	7.14
18	6.81	4.34	5.19	7.66	5.65	6.89	10.32	8.50	9.29	8.22	5.93	7.00
19	6.81	5.64	6.19	8.06	5.99	7.13	9.41	7.89	8.77	9.68	7.88	8.66
20	6.58	5.13	5.98	7.45	5.43	6.47	9.41	8.31	8.93	9.80	8.31	9.06
21	6.77	5.22	6.06	9.83	5.78	7.43	9.52	8.39	8.89	9.41	7.66	8.37
22	6.53	5.02	5.86	10.41	8.96	9.59	9.58	8.46	8.99	9.74	8.48	9.06
23	6.98	4.89	5.88	11.10	9.08	10.02	9.68	8.66	9.18	9.77	9.39	9.57
24	6.97	4.85	5.81	10.92	9.95	10.30	9.63	7.64	8.49	9.51	7.97	8.67
25	6.91	4.88	5.79	10.29	8.78	9.41	8.37	6.99	7.51	9.66	7.27	8.36
26	7.29	4.89	6.02	9.74	8.27	8.83	8.08	6.33	7.17	9.80	8.07	9.20
27	7.82	5.40	6.54	9.00	6.80	7.41	7.95	6.48	7.17	9.80	8.67	9.30
28	7.74	5.55	6.54	8.10	6.37	7.05	9.51	6.38	8.09	9.34	8.12	8.60
29	8.20	5.55	6.69	7.70	5.90	6.61	9.93	8.77	9.52	8.13	6.91	7.54
30	8.54	6.18	7.29	7.57	5.61	6.87	9.91	8.65	9.40	7.94	6.20	7.26
31	8.50	5.84	6.57	---	---	---	10.25	9.31	9.76	7.94	6.10	6.92
MONTH	8.54	4.24	5.94	11.10	4.77	7.10	11.67	6.33	8.98	11.20	5.93	8.97

COLUMBIA RIVER MAIN STEM

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14129400 COLUMBIA RIVER AT WASHOUGAL, WA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.09	6.07	7.23	7.72	5.61	6.65	9.52	8.52	9.17	12.34	9.96	11.32
2	8.22	6.99	7.70	7.93	6.25	7.26	9.12	8.52	8.83	12.32	11.09	11.82
3	8.86	6.94	7.88	7.93	5.31	6.96	10.68	8.78	9.78	11.97	10.89	11.27
4	8.46	7.31	7.95	7.35	5.10	6.15	11.26	10.57	10.84	12.52	11.65	12.16
5	8.62	7.27	7.91	7.84	6.19	6.90	12.61	10.92	11.68	13.46	12.52	13.16
6	8.43	6.81	7.54	8.14	5.78	6.93	12.61	11.75	12.15	13.39	12.95	13.13
7	8.21	6.52	7.32	8.49	6.41	7.22	13.08	11.86	12.37	14.58	13.39	14.14
8	8.80	6.14	7.71	8.97	6.69	7.75	13.00	12.08	12.39	15.07	14.58	14.76
9	8.84	6.77	8.00	9.06	7.75	8.57	12.62	12.03	12.30	15.41	14.83	15.12
10	8.57	6.73	7.98	8.87	7.47	8.03	12.40	11.07	11.78	15.46	14.57	15.05
11	8.60	7.24	7.98	7.73	6.10	7.05	12.03	11.39	11.64	15.87	15.06	15.43
12	8.91	6.60	7.94	7.86	5.82	7.13	12.29	11.58	11.92	15.59	14.53	15.27
13	8.03	6.29	7.55	7.69	6.24	7.06	11.75	10.74	11.28	15.11	14.67	14.93
14	7.94	5.67	6.70	7.82	6.02	7.12	10.84	10.35	10.58	16.36	14.96	15.71
15	8.07	5.58	6.90	8.53	5.95	7.35	10.35	8.50	9.37	17.42	16.36	16.86
16	8.24	5.87	7.24	9.05	7.85	8.55	9.09	8.43	8.73	18.34	17.42	18.05
17	9.19	8.00	8.62	9.34	8.38	8.90	9.71	9.04	9.48	19.95	18.03	18.94
18	9.52	8.80	9.14	10.32	8.27	9.36	9.67	9.19	9.46	20.52	19.78	20.22
19	9.19	8.44	8.81	10.69	9.87	10.20	9.54	8.93	9.25	19.78	19.32	19.51
20	8.98	8.14	8.64	11.23	10.20	10.89	9.82	9.19	9.52	19.57	19.37	19.45
21	8.56	7.45	7.99	12.82	11.01	11.91	10.08	9.55	9.84	19.79	19.35	19.56
22	9.34	7.23	8.44	13.22	12.13	12.60	9.98	9.19	9.60	19.43	19.28	19.38
23	9.08	7.82	8.44	14.86	13.13	13.86	10.28	9.42	9.83	19.43	19.29	19.35
24	9.11	8.46	8.80	15.53	14.86	15.18	10.11	9.08	9.49	19.37	18.85	19.21
25	9.18	8.18	8.80	15.58	14.97	15.30	9.51	8.40	8.94	18.96	17.89	18.62
26	9.02	7.84	8.50	15.14	14.04	14.59	10.54	9.45	10.10	17.89	16.99	17.46
27	8.21	6.15	6.83	14.04	12.67	13.17	10.78	10.11	10.51	16.99	16.49	16.74
28	7.63	6.31	6.83	12.67	11.83	12.30	10.47	9.94	10.12	16.55	16.26	16.44
29	---	---	---	12.06	10.68	11.23	10.52	10.03	10.29	16.48	16.17	16.34
30	---	---	---	11.30	10.31	10.55	10.39	9.97	10.25	16.32	15.54	15.91
31	---	---	---	10.32	9.07	9.55	---	---	---	15.82	15.10	15.44
MONTH	9.52	5.58	7.91	15.58	5.10	9.56	13.08	8.40	10.38	20.52	9.96	16.15

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	15.35	15.10	15.24	10.81	10.21	10.47	9.29	7.07	8.15	7.66	5.58	6.70
2	15.67	14.93	15.30	10.52	10.05	10.28	7.83	6.55	7.38	7.71	6.45	7.13
3	15.85	15.45	15.62	10.44	9.59	10.09	9.31	7.51	8.56	7.70	6.38	7.01
4	16.25	15.85	16.11	9.61	8.71	9.17	9.67	8.51	9.14	7.67	5.36	6.28
5	16.19	15.14	15.95	9.11	8.29	8.68	9.36	7.46	8.31	7.25	5.31	6.07
6	15.14	13.48	14.19	10.15	8.27	9.07	9.36	8.62	8.96	6.65	4.73	5.45
7	14.26	12.88	13.46	10.15	9.64	9.88	9.07	6.53	7.39	7.08	4.53	5.46
8	15.33	14.26	14.85	10.10	9.41	9.76	7.47	5.89	6.51	7.21	5.59	6.22
9	15.64	15.33	15.50	10.12	8.61	9.15	7.78	6.28	6.83	7.33	5.95	6.48
10	15.63	14.04	14.83	9.02	7.72	8.27	7.85	5.92	6.45	7.04	6.07	6.51
11	14.05	13.07	13.65	9.00	6.97	7.88	7.44	5.77	6.43	7.43	5.69	6.49
12	14.22	13.07	13.51	8.90	7.18	7.73	7.82	6.23	6.96	6.40	4.55	5.48
13	14.66	13.28	13.98	9.63	8.26	8.89	7.86	5.44	6.55	6.62	4.85	6.05
14	---	---	---	9.14	8.41	8.76	6.74	5.44	6.07	6.40	5.12	5.82
15	---	---	---	9.40	8.21	8.76	7.11	5.55	6.39	7.29	4.91	6.28
16	---	---	---	9.34	7.29	8.25	7.19	5.79	6.60	7.47	5.58	6.59
17	---	---	---	9.51	7.91	8.94	8.24	6.06	7.28	7.41	5.85	6.72
18	---	---	---	9.97	9.13	9.55	9.30	7.48	8.49	7.25	5.29	6.22
19	---	---	---	10.22	9.05	9.74	9.28	7.62	8.28	7.01	4.83	5.88
20	---	---	---	10.05	8.86	9.47	8.50	7.06	7.84	6.87	4.64	5.52
21	---	---	---	10.67	8.96	9.87	8.12	5.85	6.84	6.78	5.41	6.01
22	---	---	---	10.76	9.03	10.11	7.42	5.51	6.37	7.34	5.41	6.13
23	11.30	10.88	11.09	9.92	8.99	9.37	7.42	5.82	6.47	7.36	5.77	6.22
24	11.83	11.18	11.39	10.02	9.04	9.38	7.31	5.46	6.04	6.56	5.06	5.64
25	11.89	10.79	11.19	9.80	7.67	8.45	6.94	6.07	6.55	5.74	4.06	4.89
26	11.16	9.60	10.49	9.13	8.01	8.55	7.05	6.37	6.63	5.27	3.74	4.54
27	9.71	8.84	9.17	9.63	8.91	9.25	7.36	6.10	6.77	6.37	3.86	5.37
28	9.65	8.82	9.21	9.67	8.43	8.92	6.38	5.13	5.77	6.98	5.27	6.04
29	10.73	9.65	10.51	9.69	8.51	9.22	6.26	4.70	5.56	7.39	5.89	6.48
30	11.20	10.32	10.83	9.72	8.55	9.50	6.46	4.90	5.94	7.92	5.94	6.78
31	---	---	---	10.25	9.05	9.58	7.12	5.20	6.07	---	---	---
MONTH	---	---	---	10.81	6.97	9.19	9.67	4.70	7.02	7.92	3.74	6.08

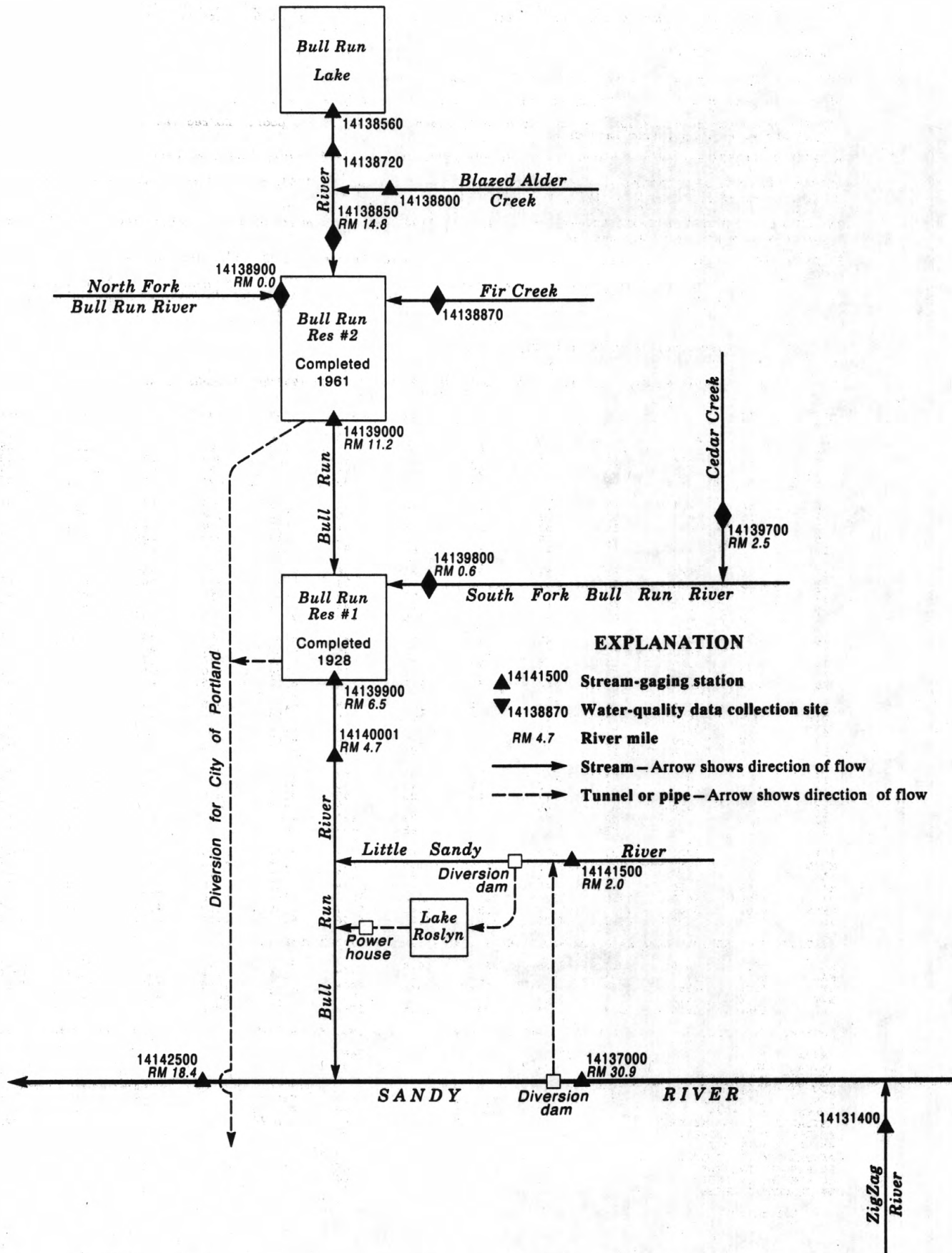


Figure 16--Schematic diagram showing gaging stations and diversions in the Sandy River Basin.

SANDY RIVER BASIN

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14131400 ZIGZAG RIVER NEAR RHODODENDRON, OR

LOCATION.--Lat 45°18'32", long 121°51'31", in NE 1/4 SE 1/4 sec.18, T.3 S., R.8 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank at bridge, 0.5 mi upstream from Devil Canyon Creek, 1.2 mi downstream from Lady Creek, and 2.8 mi southeast of Rhododendron.

DRAINAGE AREA.--14.8 mi².

PERIOD OF RECORD.--July 1981 to September 1993 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2,191.52 ft above sea level.

REMARKS.--Records good, except for estimated daily discharges, which are poor. No regulation. Small diversion for private water supply from Lady Creek.

AVERAGE DISCHARGE.--12 years (water years 1982-93), 77.3 ft³/s, 70.95 in/yr, 55,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 438 ft³/s Jan. 6, 1983, gage height, 5.35 ft; minimum discharge, 32 ft³/s Oct. 26, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 25, 1980, reached a stage of 6.0 ft, discharge, 863 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	0530	*177	*4.75				
Minimum discharge, 42 ft ³ /s Sept. 26, 28-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	e100	e82	55	59	47	89	104	e100	e70	e56	49
2	60	e90	e70	55	57	47	95	107	e95	e70	e56	48
3	67	e74	58	54	56	54	132	115	e90	e70	e56	48
4	62	e68	57	53	55	64	108	111	e85	e68	e56	47
5	58	e60	54	52	56	77	95	103	e95	e68	e54	47
6	58	e54	53	51	57	70	92	113	e90	e68	e54	46
7	55	e76	52	51	58	71	93	112	e110	e68	e54	47
8	57	e98	54	50	59	71	96	125	e100	e68	e54	46
9	52	e92	52	49	60	69	95	119	e95	e66	e52	46
10	52	e76	65	49	58	67	93	123	e90	e66	e52	45
11	50	e68	58	49	57	64	88	e120	e90	e66	e52	46
12	49	e66	55	49	55	62	84	e120	e85	e66	e52	45
13	51	e62	53	48	54	61	84	e110	e80	e64	e52	46
14	56	e56	65	48	53	69	82	e110	e75	e64	e50	45
15	52	e54	61	47	52	105	86	e100	e90	e64	e50	45
16	e52	e50	57	48	e48	96	83	e100	e85	e68	e52	45
17	e54	e50	57	46	e47	114	84	e110	e80	e74	54	45
18	e54	e54	55	45	50	147	83	e110	e80	e70	52	44
19	e56	e62	54	50	50	122	79	e100	e80	e64	52	45
20	e58	e64	60	64	50	119	81	e110	e75	e68	53	45
21	e68	e120	58	53	49	102	88	e100	e75	e70	52	45
22	e68	e116	67	51	49	106	86	e100	e80	e72	51	44
23	e62	e100	81	49	48	148	87	e100	e90	e78	53	44
24	e58	e80	72	61	46	120	90	e100	e80	e74	54	44
25	e56	e66	68	66	46	106	91	e110	e75	e70	52	44
26	e54	e60	69	63	46	94	87	e100	e70	e68	50	43
27	e54	e74	67	62	46	89	85	e110	e75	e62	50	43
28	e56	e74	65	64	46	83	83	e100	e70	e60	49	43
29	e70	e68	62	65	---	80	119	e95	e70	e58	50	43
30	e86	e92	58	64	---	79	133	e100	e70	e58	49	43
31	e98	---	58	61	---	82	---	e110	---	e58	48	---
TOTAL	1841	2224	1897	1672	1467	2685	2771	3347	2525	2078	1621	1356
MEAN	59.4	74.1	61.2	53.9	52.4	86.6	92.4	108	84.2	67.0	52.3	45.2
MAX	98	120	82	66	60	148	133	125	110	78	56	49
MIN	49	50	52	45	46	47	79	95	70	58	48	43
AC-FT	3650	4410	3760	3320	2910	5330	5500	6640	5010	4120	3220	2690
CFSM	4.01	5.01	4.13	3.64	3.54	5.85	6.24	7.30	5.69	4.53	3.53	3.05
IN.	4.63	5.59	4.77	4.20	3.69	6.75	6.96	8.41	6.35	5.22	4.07	3.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	56.1	76.9	80.1	83.8	86.9	84.4	94.5	99.3	92.0	68.3	54.1	51.9
MAX	66.9	97.7	107	151	120	112	117	112	119	88.0	63.8	63.0
(WY)	1986	1985	1992	1983	1986	1986	1988	1988	1985	1984	1984	1985
MIN	38.6	44.3	61.2	53.9	52.4	59.1	75.4	71.7	54.5	47.0	44.6	44.6
(WY)	1988	1988	1993	1993	1993	1985	1982	1992	1992	1992	1992	1987

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1982 - 1993

ANNUAL TOTAL	23505	25484	77.3
ANNUAL MEAN	64.2	69.8	88.8
HIGHEST ANNUAL MEAN			1984
LOWEST ANNUAL MEAN			1987
HIGHEST DAILY MEAN	138	148	349
LOWEST DAILY MEAN	40	43	35
ANNUAL SEVEN-DAY MINIMUM	43	43	35
ANNUAL RUNOFF (AC-FT)	46620	50550	55990
ANNUAL RUNOFF (CFSM)	4.34	4.72	5.22
ANNUAL RUNOFF (INCHES)	59.08	64.05	70.95
10 PERCENT EXCEEDS	88	102	110
50 PERCENT EXCEEDS	61	64	71
90 PERCENT EXCEEDS	46	47	49

e Estimated

SANDY RIVER BASIN

14137000 SANDY RIVER NEAR MARMOT. OR

LOCATION.--Lat 45°23'30", long 122°07'40", in SE 1/4 sec.13, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on right bank 0.7 mi southwest of Marmot, 0.8 mi upstream from Sandy River Dam of Portland General Electric Co., 6.6 mi downstream from Salmon River, and at mile 30.9.

DRAINAGE AREA.--262 mi².

PERIOD OF RECORD.--August 1911 to current year. Monthly discharges only, January to September 1916, October 1918 to June 1919, published in WSP 1318. Published as "at Marmot" October 1912 to September 1913. Records for January 1916 to June 1919, published as "below dam, near Marmot," obtained by combining records for Sandy River below dam, near Marmot, with records for Sandy River Canal near Marmot.

REVISED RECORDS.--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M). WSP 1318: 1932(M).

GAGE.--Water-stage recorder. Elevation of gage is 730 ft, from river-profile map. Aug. 15, 1911, to Dec. 20, 1915, and July 2, 1919, to Oct. 19, 1933, nonrecording gage at site 1.0 mi upstream at different datum. Oct. 20, 1933, to Sept. 30, 1958, water-stage recorder at site 0.6 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--82 years, 1,351 ft³/s, 70.03 in/yr, 978,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft³/s Dec. 22, 1964, gage height, 17.05 ft, from rating curve extended above 7,000 ft³/s; maximum gage height, 17.10 ft, Feb. 23, 1986; minimum, 195 ft³/s Nov. 27, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2030	*12,500	*12.77	No other peak greater than base discharge.			
Minimum discharge, 254 ft ³ /s Oct. 15, 16, 27, 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	300	2030	2280	906	1130	481	1700	2520	1610	745	736	377
2	312	1880	1780	829	1020	524	1920	2470	1450	778	719	386
3	417	1190	1370	800	929	686	4200	2580	1300	742	691	394
4	390	939	1130	783	859	1360	3350	2630	1220	709	676	391
5	329	802	990	708	815	2550	2440	2280	1690	691	647	377
6	304	669	901	646	791	2030	2070	2470	1690	665	624	378
7	287	1250	824	e590	797	1900	1980	2800	2700	641	598	378
8	280	1930	931	e560	792	1800	2000	3440	2400	621	562	373
9	278	1920	1000	e540	805	1580	2290	2970	1990	608	544	370
10	276	1300	1520	e520	817	1400	2370	2500	1810	590	532	357
11	274	1050	1420	e500	799	1220	2270	2260	1790	579	517	354
12	267	1180	1130	e490	772	1090	2100	2110	1660	558	506	344
13	300	1120	958	e480	736	1090	1930	1940	1450	553	502	336
14	276	1030	1200	e480	703	1270	1810	1710	1320	589	498	333
15	259	916	1380	e480	675	2840	1740	1560	1430	569	482	334
16	255	813	1150	468	608	2730	1680	1460	1320	651	494	329
17	266	806	1050	455	588	3170	1750	1380	1210	903	497	322
18	263	928	917	442	598	5460	1770	1390	1130	783	466	318
19	270	1010	858	511	591	4070	1670	1340	1060	801	467	318
20	277	1010	1360	955	574	3610	1550	1300	982	947	484	317
21	341	5100	1350	893	554	2850	1730	1310	955	935	482	312
22	326	5730	1850	811	529	2780	1690	1290	1120	1180	457	309
23	300	3220	2870	702	511	5500	1670	1120	1270	1600	515	307
24	279	2010	2020	823	492	4010	1860	1040	1040	1490	499	307
25	272	1460	1560	1500	470	2820	2140	1140	951	1310	449	304
26	268	1160	1650	1590	462	2220	2200	1090	919	1160	416	304
27	257	1260	1700	1450	454	1850	2050	1310	941	1030	401	306
28	266	1810	1520	1560	454	1610	1820	1360	882	964	397	304
29	310	1370	1300	1830	---	1460	2580	1270	848	944	394	305
30	420	2210	1120	1560	---	1360	2990	1230	783	840	385	306
31	840	---	1000	1320	---	1330	---	1640	---	768	378	---
TOTAL	9759	49103	42089	26182	19325	68561	63320	56910	40921	25944	16015	10150
MEAN	315	1637	1358	845	690	2212	2111	1836	1364	837	517	338
MAX	840	5730	2870	1830	1130	5500	4200	3440	2700	1600	736	394
MIN	255	669	824	442	454	481	1550	1040	783	553	378	304
AC-FT	19360	97400	83480	51930	38330	136000	125600	112900	81170	51460	31770	20130
CFSM	1.20	6.25	5.18	3.22	2.63	8.44	8.06	7.01	5.21	3.19	1.97	1.29
IN.	1.39	6.97	5.98	3.72	2.68	9.73	8.99	8.08	5.81	3.68	2.27	1.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1993, BY WATER YEAR (WY)

MEAN	645	1578	2054	1997	1839	1651	1896	1822	1233	647	430	420
MAX	2168	3699	6278	4752	4686	3983	3134	3443	3457	1385	663	1056
(WY)	1960	1956	1965	1953	1961	1972	1962	1949	1917	1917	1974	1959
MIN	239	236	445	498	464	631	658	743	420	354	268	265
(WY)	1988	1937	1977	1937	1977	1941	1941	1992	1992	1992	1940	1942

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1912 - 1993
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ANNUAL TOTAL	326480		428279			
ANNUAL MEAN	892		1173		1346	
HIGHEST ANNUAL MEAN					1933	1974
LOWEST ANNUAL MEAN					766	1977
HIGHEST DAILY MEAN	5730	Nov 22	5730	Nov 22	41400	Dec 22 1964
LOWEST DAILY MEAN	249	Sep 14	255	Oct 16	207	Nov 28 1952
ANNUAL SEVEN-DAY MINIMUM	260	Aug 25	267	Oct 14	212	Oct 13 1931
ANNUAL RUNOFF (AC-FT)	647600		849500		975400	
ANNUAL RUNOFF (CFSM)	3.40		4.48		5.14	
ANNUAL RUNOFF (INCHES)	46.36		60.81		69.82	
10 PERCENT EXCEEDS	1770		2270		2610	
50 PERCENT EXCEEDS	669		941		990	
90 PERCENT EXCEEDS	277		318		352	

SANDY RIVER BASIN

153

14138560 BULL RUN LAKE NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°27'39", long 121°50'34", in SE 1/4 SE 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, in main cabin on northwest side of Bull Run Lake, near outlet structure, and 10.7 mi northeast of Brightwood.

DRAINAGE AREA.--3.5 mi².

PERIOD OF RECORD.--October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 3,147.2 ft above sea level, Portland Water Bureau datum.

REMARKS.--Bull Run Lake was formed by natural processes, including a large landslide. A temporary log crib dam was constructed in 1917 to increase the capacity of the lake. In 1920 the log crib dam was reconstructed. A concrete dam and improved outlet valve were constructed in 1958. A lower outlet and tunnel was constructed in 1961. Portland Water Bureau releases water from the lake to augment streamflows during periods of low flow.

COOPERATION.--Capacity tables provided by Portland Water Bureau.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 39,960 acre-ft June 15, 16, elevation, 3,165.78 ft; minimum contents observed, 31,080 acre-ft Oct. 29, elevation, 3,143.97 ft.

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

2,905	0.0	3,100	17,280
2,940	228.8	3,140	29,509
2,980	1,269.8	3,150	33,554
3,020	3,735.8	3,160	37,528
3,060	8,879.8	3,180	46,232

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3144.90	3145.06	---	3150.71	3151.15	---	---	3160.69	3164.97	3165.15	3163.77	3161.53
2	3144.87	3145.24	---	3150.68	3151.16	---	---	3160.90	3164.96	3165.09	3163.73	3161.45
3	3144.89	3145.32	---	3150.75	3151.12	---	---	3161.23	3164.96	3165.04	3163.63	3161.38
4	3144.85	3145.39	---	3150.77	3151.10	---	---	3161.52	3164.98	3164.97	3163.55	3161.30
5	3144.82	3145.42	---	3150.72	3151.08	---	---	3161.67	3165.18	3164.90	3163.49	3161.22
6	3144.76	3145.43	---	3150.70	3151.05	---	---	3161.97	3165.26	3164.83	3163.42	3161.14
7	3144.71	3145.69	---	3150.78	3151.02	---	---	3162.26	3165.39	3164.74	3163.33	3161.06
8	3144.67	3146.05	---	3150.73	3150.99	---	---	3162.60	3165.44	3164.66	3163.26	3160.98
9	3144.62	3146.13	---	3150.73	---	---	---	3162.77	3165.51	3164.59	3163.17	3160.90
10	3144.57	3146.17	---	3150.67	---	---	---	3162.95	3165.56	3164.50	3163.09	3160.83
11	3144.53	3146.23	---	3150.64	---	---	---	3163.11	3165.69	3164.43	3163.01	3160.72
12	3144.50	3146.32	---	3150.60	---	---	---	3163.29	3165.72	3164.34	3162.93	3160.65
13	3144.46	3146.40	---	3150.56	---	---	---	3163.44	3165.72	3164.30	3162.85	3160.56
14	3144.41	3146.43	---	3150.54	---	---	---	3163.54	3165.74	3164.23	3162.77	3160.48
15	3144.34	3146.44	3149.89	3150.46	---	---	---	3163.64	3165.78	3164.16	3162.70	3160.40
16	3144.32	3146.47	3149.96	3150.45	---	---	3157.66	3163.73	3165.75	3164.18	3162.65	3160.31
17	3144.27	3146.54	3150.02	3150.40	---	---	3157.82	3163.82	3165.73	3164.15	3162.58	3160.23
18	3144.24	3146.59	3149.99	3150.37	---	---	3157.96	3163.93	3165.69	3164.09	3162.50	3160.15
19	3144.21	3146.74	3150.09	3150.51	---	---	3158.04	3164.06	3165.64	3164.08	3162.43	3160.07
20	3144.24	3146.77	3150.15	3150.60	---	---	3158.16	3164.19	3165.58	3164.08	3162.36	3160.01
21	3144.25	3148.02	3150.28	3150.61	---	---	3158.33	3164.33	3165.58	3164.04	3162.28	3159.92
22	3144.22	3148.56	3150.40	3150.65	---	---	3158.49	3164.45	3165.59	3164.11	3162.20	3159.84
23	3144.18	---	3150.47	3150.68	---	---	3158.65	3164.45	3165.58	3164.15	3162.22	3159.76
24	3144.14	---	3150.51	3150.76	---	---	3158.93	3164.54	3165.53	3164.14	3162.18	3159.68
25	3144.11	---	3150.54	3150.94	---	---	3159.22	3164.60	3165.47	3164.11	3162.10	3159.62
26	3144.06	---	3150.67	3151.00	---	---	3159.46	3164.63	3165.41	3164.08	3162.03	3159.52
27	3144.01	---	3150.72	3151.03	---	---	3159.62	3164.73	3165.38	3164.03	3161.95	3159.44
28	3144.00	3149.18	3150.73	3151.14	---	---	3159.77	3164.78	3165.34	3163.98	3161.87	3159.39
29	3144.04	---	3150.72	3151.16	---	---	3160.21	3164.77	3165.28	3163.94	3161.69	3159.29
30	3144.16	---	3150.73	3151.16	---	---	3160.47	3164.87	3165.21	3163.89	3161.68	3159.21
31	3144.63	---	3150.74	3151.16	---	---	---	3164.94	---	3163.84	3161.61	---
MAX	3144.90	---	---	3151.16	---	---	---	3164.94	3165.78	3165.15	3163.77	3161.53
MIN	3144.00	---	---	3150.37	---	---	---	3160.69	3164.96	3163.84	3161.61	3159.21
(†)	31340	a33330	33840	34000	a34020	a35380	37720	39600	39720	39130	38200	37200
(‡)	-100	+1990	+510	+160	+20	+1360	+2340	+1880	+120	-590	-930	-1000

WTR YR 1993 AC-FT‡ +5760

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

‡ Change in contents, in acre-feet.

a Interpolated from recorded gage readings.

SANDY RIVER BASIN

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'08", long 121°51'38", in SW 1/4 NW 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, at flume, 1.0 mi downstream from outlet structure at Bull Run Lake, and 10.4 mi northeast of Brightwood.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1992 to September 1993.

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Regulation at times since 1915 by Bull Run Lake, usable capacity, 12,270 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 49 ft³/s Mar. 23, gage height, 1.95 ft; minimum discharge recorded, 8.2 ft³/s Oct. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	e16	17	16	17	13	41	28	21	19	16	14
2	16	e15	17	16	17	13	38	28	21	19	16	14
3	14	e14	17	16	17	13	36	28	21	19	16	14
4	13	e13	17	16	17	14	32	29	21	18	16	14
5	13	e12	17	16	17	18	30	29	21	18	16	13
6	12	e12	17	16	17	17	28	29	21	18	16	13
7	11	e13	16	16	17	17	27	29	22	18	16	13
8	11	e14	16	16	17	18	26	30	22	18	16	13
9	11	e13	16	16	17	18	27	30	22	18	16	13
10	10	e13	16	15	17	18	27	30	22	17	16	13
11	10	e12	16	15	16	19	27	30	22	17	16	13
12	9.8	e12	16	15	16	19	27	29	22	17	15	13
13	9.7	e11	16	15	16	19	26	29	22	17	15	13
14	9.6	e11	16	15	16	20	26	28	22	17	15	13
15	9.5	e11	16	14	16	28	25	28	22	17	15	13
16	9.3	e11	16	14	16	28	25	27	22	17	15	13
17	9.2	e11	16	14	15	29	25	27	22	17	15	13
18	9.0	e11	15	14	15	35	25	26	21	17	15	13
19	9.0	e11	15	14	15	35	25	26	21	17	15	13
20	8.9	11	15	14	15	37	24	25	21	17	15	13
21	9.0	18	15	14	15	37	24	25	21	17	15	13
22	8.8	22	16	14	14	39	25	25	21	17	15	13
23	8.8	18	18	14	14	48	25	24	21	17	15	13
24	8.6	16	18	14	14	48	25	24	21	17	14	13
25	8.6	16	17	16	14	47	26	23	20	17	14	13
26	8.5	16	17	17	14	46	27	23	20	17	14	13
27	8.4	16	17	16	14	45	27	22	20	17	14	12
28	8.4	16	17	16	13	44	26	22	20	17	14	12
29	e9.0	16	17	17	---	43	27	22	20	17	14	12
30	e10	17	17	17	---	42	28	21	19	16	14	12
31	e13	---	17	17	---	41	---	21	---	16	14	---
TOTAL	326.1	418	509	475	438	908	827	817	634	537	468	390
MEAN	10.5	13.9	16.4	15.3	15.6	29.3	27.6	26.4	21.1	17.3	15.1	13.0
MAX	20	22	18	17	17	48	41	30	22	19	16	14
MIN	8.4	11	15	14	13	13	24	21	19	16	14	12
AC-FT	647	829	1010	942	869	1800	1640	1620	1260	1070	928	774

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MEAN	10.5	13.9	16.4	15.3	15.6	29.3	27.6	26.4	21.1	17.3	15.1	13.0
MAX	10.5	13.9	16.4	15.3	15.6	29.3	27.6	26.4	21.1	17.3	15.1	13.0
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	10.5	13.9	16.4	15.3	15.6	29.3	27.6	26.4	21.1	17.3	15.1	13.0
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993

SUMMARY STATISTICS

FOR 1993 WATER YEAR

ANNUAL TOTAL
ANNUAL MEAN
HIGHEST DAILY MEAN
LOWEST DAILY MEAN
ANNUAL SEVEN-DAY MINIMUM
ANNUAL RUNOFF (AC-FT)
10 PERCENT EXCEEDS
50 PERCENT EXCEEDS
90 PERCENT EXCEEDS

6747.1
18.5
48
8.4
8.6
13380
28
16
12

Mar 23
Oct 27
Oct 22

e Estimated

SANDY RIVER BASIN

155

14138800 BLAZED ALDER CREEK NEAR RHODODENDRON, OR

LOCATION.--Lat 45°27'10", long 121°53'25", in NW 1/4 SE 1/4 sec.25, T.1 S., R.7 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 600 ft below the confluence of Bedrock and Hickman Creeks and 8.6 mi north of Rhododendron.

DRAINAGE AREA.--8.17 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--30 years, 57.5 ft³/s, 95.61 in/yr, 41,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,610 ft³/s Dec. 22, 1964, gage height, 8.25 ft, from rating curve extended above 330 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.2 ft³/s Oct. 16, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1730	*976	*4.81	Mar. 23	0530	686	4.04
Mar. 15	0830	610	3.82				

Minimum discharge, 2.5 ft³/s several days in September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	245	99	24	39	14	79	122	48	14	14	4.0
2	8.5	180	60	21	33	16	158	116	42	15	13	3.8
3	12	88	41	20	28	30	315	129	36	14	12	3.8
4	11	57	33	20	25	150	179	155	32	13	10	3.7
5	9.0	41	27	e18	23	277	103	115	90	13	9.5	3.5
6	7.9	31	24	e16	22	152	85	126	79	12	9.1	3.5
7	7.1	100	21	e15	22	132	84	146	120	11	8.8	3.4
8	6.7	184	31	e14	22	120	106	229	94	10	8.4	3.1
9	6.5	123	30	e13	23	90	168	145	73	9.4	8.0	3.1
10	6.1	68	43	e12	26	69	159	94	60	9.0	7.6	3.1
11	5.7	48	39	e12	26	53	128	82	78	8.6	7.5	2.9
12	5.4	53	30	e11	25	42	92	65	78	8.6	7.1	2.9
13	6.5	46	25	e11	24	39	77	54	57	8.5	7.0	2.9
14	5.8	39	49	e10	23	127	75	44	44	9.1	6.2	2.9
15	5.4	33	46	e10	21	396	76	39	48	8.3	6.2	2.9
16	5.4	27	37	e9.0	e18	183	72	34	39	11	6.9	2.8
17	6.6	26	32	e9.0	e18	211	99	32	32	15	6.6	2.7
18	6.1	32	26	e8.0	e17	430	106	30	27	12	5.9	2.7
19	6.8	48	24	e17	e17	211	82	28	24	17	5.4	2.7
20	9.0	40	73	e50	e16	213	69	31	20	22	5.4	2.7
21	14	465	56	44	e14	136	85	35	20	20	5.4	2.7
22	13	388	127	33	e14	201	88	41	29	43	5.2	2.5
23	9.8	170	161	26	e13	525	86	31	38	63	9.5	2.5
24	8.5	86	88	44	e12	218	127	27	27	52	8.1	2.5
25	7.9	51	56	111	e12	116	164	27	22	40	6.3	2.5
26	7.5	37	77	97	e11	74	153	24	19	31	5.4	2.5
27	7.1	72	66	71	e11	56	121	32	20	25	5.0	2.5
28	7.7	87	47	82	e11	47	90	32	19	21	5.0	2.5
29	16	57	37	98	---	43	208	30	18	20	4.7	2.5
30	29	136	31	68	---	42	167	31	16	18	4.2	2.5
31	158	---	27	49	---	45	---	51	---	16	4.0	---
TOTAL	424.8	3058	1563	1043.0	566	4458	3601	2177	1349	589.5	227.4	88.3
MEAN	13.7	102	50.4	33.6	20.2	144	120	70.2	45.0	19.0	7.34	2.94
MAX	158	465	161	111	39	525	315	229	120	63	14	4.0
MIN	5.4	26	21	8.0	11	14	69	24	16	8.3	4.0	2.5
AC-FT	843	6070	3100	2070	1120	8840	7140	4320	2680	1170	451	175
CFSM	1.68	12.5	6.17	4.12	2.47	17.6	14.7	8.60	5.50	2.33	.90	.36
IN.	1.93	13.92	7.12	4.75	2.58	20.30	16.40	9.91	6.14	2.68	1.04	.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	28.0	87.4	103	103	80.3	67.3	78.7	75.1	40.1	11.1	5.85	11.7																		
MAX	82.5	177	288	207	183	167	150	165	115	35.4	27.6	35.5																		
(WY)	1968	1978	1965	1974	1982	1972	1990	1969	1964	1983	1968	1977																		
MIN	1.57	15.1	22.6	19.2	17.5	17.7	33.1	18.1	4.74	3.95	2.37	1.67																		
(WY)	1988	1977	1977	1985	1969	1992	1983	1992	1992	1992	1967	1991																		

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1964 - 1993

	1992	1993	1964-1993
ANNUAL TOTAL	12468.0	19145.0	
ANNUAL MEAN	34.1	52.5	
HIGHEST ANNUAL MEAN			57.5
LOWEST ANNUAL MEAN			88.1
HIGHEST DAILY MEAN	465	Nov 21	1780
LOWEST DAILY MEAN	2.1	Aug 20	1.3
ANNUAL SEVEN-DAY MINIMUM	2.2	Aug 28	1.3
ANNUAL RUNOFF (AC-FT)	24730	37970	41650
ANNUAL RUNOFF (CFSM)	4.17	6.42	7.04
ANNUAL RUNOFF (INCHES)	56.77	87.17	95.61
10 PERCENT EXCEEDS	83	130	129
50 PERCENT EXCEEDS	15	27	31
90 PERCENT EXCEEDS	2.9	5.3	3.6

e Estimated

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'50", long 122°00'50", near center of sec.12, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 1.2 mi upstream from North Fork, 7.0 mi southeast of Multnomah Falls, and at mile 14.8.

DRAINAGE AREA.--47.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1966 to current year.

REVISED RECORDS.--WDR OR-91-1: 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,080 ft, from topographic map.

REMARKS.--Water-discharge records good. Regulation at times since 1915 by Bull Run Lake, usable capacity, 12,270 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--27 years, 409 ft³/s, 116.00 in/yr, 296,300 acre-ft/yr.EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,610 ft³/s Jan. 20, 1972, gage height, 13.22 ft; minimum discharge, 30 ft³/s Oct. 28-31, 1987.EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1730	*5,220	*10.49	Mar. 23	0600	4,350	9.69
Mar. 15	0900	3,810	9.18				

Minimum discharge, 39 ft³/s Sept. 29, 30.DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e110	1680	720	195	319	90	537	817	380	121	127	52
2	e91	1160	462	169	267	110	1030	732	337	123	114	51
3	156	599	339	158	226	251	2200	831	299	115	103	50
4	137	417	266	149	196	933	1140	922	267	107	95	50
5	113	319	220	129	178	1790	695	698	483	101	89	49
6	101	245	189	114	171	1050	595	869	445	96	85	48
7	91	598	168	113	177	844	581	947	800	91	82	47
8	87	1210	259	108	183	726	761	1420	604	87	79	47
9	83	976	293	100	219	584	1200	935	500	83	76	46
10	79	536	529	95	268	473	1150	666	426	81	73	46
11	75	386	430	92	262	377	982	522	606	78	71	46
12	72	390	308	87	236	312	728	430	622	77	69	46
13	80	342	243	85	207	277	608	384	441	78	68	45
14	73	289	448	84	190	918	573	333	348	81	67	45
15	69	239	433	82	172	2520	554	292	379	77	66	45
16	68	197	334	79	141	1210	505	261	320	93	70	44
17	73	176	289	77	138	1370	671	239	270	122	68	44
18	72	207	229	75	130	2610	710	225	230	102	63	43
19	81	329	209	137	125	1320	572	221	198	127	61	43
20	85	339	610	480	122	1350	472	232	174	159	61	43
21	137	2580	601	374	113	889	537	281	180	160	61	43
22	135	2410	1290	273	106	1360	560	390	265	440	59	42
23	104	1190	1470	208	98	3300	572	290	312	702	71	42
24	93	630	753	376	93	1450	877	240	231	471	72	42
25	86	407	491	1080	89	822	1150	229	196	343	64	41
26	82	306	629	816	85	566	1080	204	171	267	60	41
27	79	492	608	583	83	440	898	239	176	212	57	41
28	79	568	433	690	83	377	658	238	157	197	56	40
29	138	402	337	853	---	344	1310	228	148	214	55	40
30	278	935	270	556	---	329	1100	242	131	169	53	40
31	959	---	226	401	---	342	---	394	---	143	52	---
TOTAL	3966	20554	14086	8818	4677	29334	25006	14951	10096	5317	2247	1342
MEAN	128	685	454	284	167	946	834	482	337	172	72.5	44.7
MAX	959	2580	1470	1080	319	3300	2200	1420	800	702	127	52
MIN	68	176	168	75	83	90	472	204	131	77	52	40
AC-FT	7870	40770	27940	17490	9280	58180	49600	29660	20030	10550	4460	2660
CFSM	2.67	14.3	9.49	5.94	3.49	19.8	17.4	10.1	7.03	3.58	1.51	.93
IN.	3.08	15.96	10.94	6.85	3.63	22.78	19.42	11.61	7.84	4.13	1.75	1.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1993, BY WATER YEAR (WY)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	228	605	697	695	599	506	520	448	287	117	87.7	132															
MAX	535	1050	1434	1238	1215	1120	834	885	699	292	231	294															
(WY)	1968	1978	1978	1975	1972	1993	1969	1974	1983	1968	1977	1967															
MIN	36.5	147	193	177	167	148	242	150	54.8	54.0	43.7	42.6															
(WY)	1988	1977	1977	1985	1993	1992	1967	1992	1992	1977	1967	1967															

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1967 - 1993

ANNUAL TOTAL	99917	140394	409
ANNUAL MEAN	273	385	643
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	2580	Nov 21	7000
LOWEST DAILY MEAN	39	Sep 2	30
ANNUAL SEVEN-DAY MINIMUM	40	Aug 28	31
ANNUAL RUNOFF (AC-FT)	198200	278500	296300
ANNUAL RUNOFF (CFSM)	5.70	8.03	8.54
ANNUAL RUNOFF (INCHES)	77.60	109.03	116.00
10 PERCENT EXCEEDS	607	934	867
50 PERCENT EXCEEDS	137	229	258
90 PERCENT EXCEEDS	52	60	62

e Estimated

SANDY RIVER BASIN

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14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

pH: August 1990 to September 1992 (discontinued).

WATER TEMPERATURE: October 1977 to current year.

TURBIDITY: August 1990 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Water-quality monitor, turbidimeter with data recording interval dependent upon river stage.

REMARKS.--Turbidity values herein are recorded values and may not reflect actual extremes for the day. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 44 microsiemens Sept. 17, 1988; minimum recorded, 9 microsiemens Jan. 23, 1982, Feb. 23, 1986, Dec. 4, 1989.

pH: Maximum recorded, 8.1 units Aug. 30, Sept. 1, 1990; minimum recorded, 5.7 units Jan. 18, 1991.

WATER TEMPERATURE: Maximum, 18.0°C June 22-25, 1992; minimum, 0.0°C on many days during winter periods.

TURBIDITY: Maximum recorded, 44 NTU Jan. 15, 1991; minimum recorded, 0.08 NTU Aug. 30, 31, 1992.

SEDIMENT CONCENTRATION: Maximum daily, 290 mg/L Dec. 2, 1977; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 5,930 tons Dec. 2, 1977; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 33 microsiemens Sept. 27; minimum recorded, 11 microsiemens May 7, 8.

WATER TEMPERATURE: Maximum, 16.5°C Aug. 3-5; minimum, 0.0°C several days in January.

TURBIDITY: Maximum recorded, 29 NTU Nov. 21; minimum recorded, 0.13 NTU Feb. 11, 13, Mar. 13.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	25	23	24	20	18	19	19	18	19	21	21	21
2	25	24	24	20	19	20	20	19	20	21	21	21
3	24	24	24	21	20	20	21	20	20	21	21	21
4	24	23	23	23	21	22	21	21	21	21	21	21
5	23	23	23	23	22	22	22	21	21	22	21	22
6	23	23	23	24	22	23	22	22	22	22	22	22
7	23	23	23	25	21	23	22	22	22	22	18	18
8	25	23	24	22	18	20	22	20	21	22	18	22
9	25	24	25	19	18	19	21	20	21	22	22	22
10	25	24	25	20	19	20	21	19	20	23	22	22
11	26	25	25	20	20	20	20	19	20	23	22	23
12	26	25	25	21	20	21	21	20	21	23	23	23
13	26	25	25	21	21	21	22	21	21	23	23	23
14	25	25	25	21	21	21	22	20	21	23	23	23
15	25	25	25	22	21	21	20	19	19	23	23	23
16	25	25	25	22	22	22	20	19	19	23	23	23
17	26	25	25	23	22	22	20	20	20	24	23	23
18	26	25	26	23	22	22	21	20	20	24	23	24
19	26	26	26	22	20	21	21	20	21	24	20	23
20	26	25	26	21	20	20	20	18	19	20	18	19
21	25	24	25	21	15	18	19	18	19	22	19	20
22	24	24	24	17	15	16	18	17	18	21	19	20
23	25	24	25	18	17	18	18	17	17	20	19	20
24	25	25	25	20	18	19	19	18	18	20	18	19
25	25	25	25	21	20	20	19	19	19	18	17	17
26	25	25	25	21	21	21	19	18	18	18	17	17
27	25	25	25	21	19	21	19	18	18	18	18	18
28	25	25	25	20	19	20	19	19	19	18	17	18
29	25	23	24	21	20	20	20	19	20	18	17	17
30	23	22	22	21	18	19	20	20	20	18	18	18
31	22	18	20	---	---	---	21	20	20	19	18	19
MONTH	26	18	24	25	15	20	22	17	20	24	17	21

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	19	19	19	22	21	22	18	16	17	14	13	14
2	20	19	20	21	21	21	16	13	15	15	13	14
3	20	19	19	21	18	19	14	13	13	14	13	14
4	20	19	20	19	15	17	16	14	15	14	13	13
5	20	20	20	16	15	15	16	16	16	15	14	14
6	20	20	20	17	16	17	16	16	16	15	13	14
7	20	20	20	17	16	17	17	16	16	13	11	13
8	20	20	20	18	17	17	17	15	16	12	11	11
9	20	19	20	18	17	17	15	14	15	14	12	13
10	19	19	19	17	17	17	15	14	14	15	13	14
11	19	19	19	18	17	17	15	14	15	15	14	15
12	20	19	19	18	17	18	16	15	15	15	15	15
13	20	19	20	18	18	18	16	15	16	16	15	15
14	20	19	20	18	14	16	16	15	16	16	15	16
15	20	19	20	14	12	13	16	16	16	17	16	16
16	20	16	19	15	14	15	16	15	16	---	---	---
17	20	18	19	15	13	15	15	14	15	---	---	---
18	20	20	20	14	12	13	15	14	14	---	---	---
19	20	20	20	16	14	15	16	14	15	---	---	---
20	20	20	20	15	15	15	16	15	16	---	---	---
21	21	20	21	17	15	16	16	15	15	---	---	---
22	21	21	21	16	12	15	15	15	15	---	---	---
23	21	21	21	13	12	12	15	15	15	---	---	---
24	21	21	21	15	13	14	15	13	14	---	---	---
25	22	21	21	16	15	16	14	13	13	---	---	---
26	22	21	22	17	16	17	14	13	13	---	---	---
27	23	21	22	18	17	17	14	13	14	23	22	23
28	22	22	22	19	17	18	14	14	14	22	22	22
29	---	---	---	18	18	18	14	12	13	23	22	22
30	---	---	---	18	18	18	13	12	13	23	22	22
31	---	---	---	18	18	18	---	---	---	22	21	21
MONTH	23	16	20	22	12	17	18	12	15	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	21	20	21	24	23	24	26	25	26	30	28	29
2	21	20	21	24	23	23	27	26	26	31	28	29
3	21	20	20	25	23	24	27	26	26	31	29	29
4	21	21	21	25	24	24	27	26	27	31	29	29
5	21	19	20	25	24	25	27	27	27	32	29	29
6	20	19	20	25	24	25	27	27	27	31	29	30
7	19	18	18	26	24	25	27	26	26	31	29	30
8	19	18	19	27	25	26	27	26	27	32	29	30
9	20	19	19	26	24	25	27	26	27	32	29	30
10	20	19	19	25	24	25	27	27	27	31	29	30
11	20	18	19	26	24	25	28	27	27	31	28	29
12	19	18	19	26	24	25	27	27	27	30	28	29
13	21	19	20	27	24	26	27	27	27	31	28	29
14	21	21	21	27	27	27	30	27	28	30	28	29
15	21	20	20	27	27	27	32	27	28	32	28	30
16	21	20	21	28	26	27	29	27	28	31	30	31
17	22	21	22	27	26	26	29	28	28	31	30	31
18	23	22	22	28	26	27	29	28	29	31	30	31
19	23	22	22	28	26	27	30	29	29	31	30	31
20	23	22	23	26	25	25	30	29	29	31	30	30
21	23	21	22	25	24	25	29	28	29	31	30	30
22	22	20	21	24	21	22	30	28	29	31	30	30
23	22	19	20	21	20	20	29	28	29	30	29	30
24	22	20	21	22	21	21	28	27	28	30	29	30
25	23	22	22	23	22	22	30	28	29	31	29	30
26	23	22	23	24	23	23	30	28	29	31	30	30
27	23	22	22	25	24	24	30	28	29	33	30	31
28	22	22	22	25	24	24	30	28	29	31	30	31
29	23	22	22	24	23	23	32	28	30	31	30	31
30	24	23	23	25	24	24	30	28	29	31	31	31
31	---	---	---	26	24	25	29	28	29	---	---	---
MONTH	24	18	21	28	20	25	32	25	28	33	28	30

SANDY RIVER BASIN

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14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.5	---	---	9.5	9.5	9.5	5.0	4.0	4.5	2.0	1.5	1.5
2	12.5	11.5	12.0	9.5	8.5	9.0	4.0	3.5	4.0	2.0	1.5	2.0
3	11.5	11.0	11.5	8.5	7.5	8.0	3.5	3.0	3.0	2.5	1.5	2.0
4	11.0	10.5	10.5	8.5	8.0	8.0	3.0	1.5	2.0	2.0	1.5	1.5
5	10.5	9.5	10.0	8.0	7.5	7.5	2.0	1.0	1.5	2.0	1.0	1.5
6	10.0	9.0	9.5	9.0	7.5	8.0	2.0	1.0	1.5	1.0	.0	.5
7	10.0	9.0	9.5	9.0	8.0	8.5	2.5	1.0	1.5	.0	.0	.0
8	10.0	9.5	9.5	8.0	7.0	7.5	3.0	2.5	2.5	.5	.0	.5
9	10.0	9.0	9.5	7.0	6.5	6.5	3.5	2.5	3.0	.5	.0	.5
10	10.0	9.0	9.0	6.5	6.0	6.5	4.0	3.5	3.5	.5	.0	.5
11	10.0	9.5	9.5	6.5	5.5	6.0	4.0	3.5	4.0	.5	.5	.5
12	10.5	9.5	10.0	7.5	6.5	7.0	4.0	4.0	4.0	.5	.0	.5
13	10.5	10.0	10.5	7.5	6.5	7.0	4.5	4.0	4.0	.5	.0	.5
14	10.0	8.5	9.0	7.0	6.0	6.5	4.5	4.0	4.5	1.5	.5	1.0
15	8.5	7.0	7.5	7.0	6.0	6.5	4.0	3.5	3.5	1.5	1.5	1.5
16	7.5	7.0	7.0	7.0	6.5	6.5	3.5	2.5	3.0	1.5	1.5	1.5
17	9.0	7.5	8.5	7.5	7.0	7.0	3.0	1.5	2.0	1.5	1.5	1.5
18	10.0	9.0	9.5	7.5	7.0	7.5	3.0	2.0	2.5	1.5	1.0	1.5
19	10.5	10.0	10.0	7.0	5.0	6.0	3.0	2.5	2.5	2.0	1.5	1.5
20	10.5	10.5	10.5	6.0	5.0	5.5	4.0	3.0	3.5	2.0	1.5	2.0
21	10.5	10.5	10.5	7.0	5.5	6.0	4.0	3.5	4.0	3.0	2.0	2.5
22	10.5	9.5	10.0	6.5	6.0	6.5	4.5	4.0	4.5	3.0	2.5	2.5
23	10.5	10.0	10.5	6.0	5.0	5.5	5.0	4.0	4.5	2.5	2.0	2.5
24	10.5	10.0	10.0	5.0	4.0	4.5	5.0	4.0	4.5	3.5	2.0	2.5
25	10.5	9.5	10.0	4.0	3.5	3.5	4.5	3.5	4.0	4.0	3.5	4.0
26	10.5	10.0	10.5	4.0	3.0	3.5	4.0	3.0	3.5	4.5	4.0	4.0
27	10.0	8.5	9.0	5.5	4.0	4.5	4.0	3.5	4.0	4.5	3.5	4.0
28	9.0	9.0	9.0	5.5	4.5	5.0	4.0	3.5	4.0	4.5	4.0	4.0
29	9.0	8.5	9.0	5.0	4.0	4.5	4.0	3.0	3.5	4.5	4.0	4.0
30	9.0	8.5	8.5	5.5	5.0	5.0	3.0	2.5	3.0	4.0	3.5	4.0
31	9.5	8.0	8.5	---	---	---	2.5	1.0	1.5	4.0	3.5	3.5
MONTH	12.5	---	---	9.5	3.0	6.5	5.0	1.0	3.5	4.5	.0	2.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.0	3.5	3.5	3.0	2.0	2.5	6.5	5.0	6.0	7.0	5.5	6.5
2	4.0	3.0	3.5	3.5	2.5	3.0	6.0	5.5	6.0	8.0	6.5	7.0
3	3.5	3.0	3.5	3.5	3.0	3.0	5.5	5.0	5.5	7.5	6.5	7.0
4	3.5	3.0	3.0	3.5	3.0	3.0	6.5	5.0	5.5	7.0	6.0	6.5
5	4.5	3.5	4.0	5.0	3.5	4.0	6.0	5.0	5.5	9.0	6.5	7.5
6	4.5	4.0	4.5	5.5	4.0	4.5	6.5	5.0	5.5	7.5	6.5	7.0
7	4.5	4.0	4.0	6.0	4.0	4.5	7.5	5.5	6.5	6.5	6.0	6.0
8	5.0	4.0	4.5	6.0	4.5	5.0	7.0	6.0	6.5	7.0	6.0	6.5
9	5.0	4.5	5.0	5.5	4.0	5.0	6.0	5.5	5.5	8.5	5.5	7.0
10	5.5	4.5	5.0	5.5	4.5	5.0	5.5	5.0	5.5	10.5	7.5	9.0
11	5.0	4.5	5.0	4.5	3.5	4.0	5.5	4.5	5.0	10.5	7.0	8.5
12	5.0	4.0	4.5	4.5	3.5	4.0	6.0	5.0	5.5	10.0	8.5	9.0
13	5.0	4.0	4.5	5.5	4.0	4.5	5.5	5.0	5.5	10.5	7.5	9.0
14	4.5	3.5	4.0	5.5	5.0	5.0	7.0	4.5	5.5	10.5	8.0	9.0
15	4.0	1.5	3.0	5.0	3.5	4.5	7.0	6.0	6.5	10.5	8.0	9.0
16	1.5	.5	.5	5.0	4.5	4.5	7.0	5.0	6.0	11.5	8.0	9.5
17	.5	.5	.5	5.0	4.5	5.0	6.5	6.0	6.5	12.0	8.5	10.5
18	1.5	.5	1.0	5.0	4.5	5.0	6.5	5.5	6.0	12.5	10.0	11.0
19	1.5	.5	1.0	6.0	4.5	5.5	7.5	5.0	6.0	12.0	9.5	11.0
20	2.0	1.0	1.5	6.0	5.0	5.5	8.0	6.0	7.0	11.0	9.5	10.0
21	2.0	1.5	2.0	6.5	4.5	5.5	7.5	6.0	7.0	10.0	9.0	9.5
22	2.5	1.5	2.0	6.0	5.0	5.5	7.0	6.0	6.5	10.0	8.5	9.0
23	2.5	2.0	2.0	5.5	4.5	5.0	7.0	6.0	6.5	11.5	7.5	9.5
24	2.0	1.5	1.5	6.0	4.5	5.0	7.0	6.0	6.5	12.5	9.5	11.0
25	2.0	1.0	1.5	6.0	4.0	5.0	6.5	5.5	6.0	11.0	9.5	10.0
26	1.5	1.0	1.5	6.0	4.0	5.0	6.0	5.5	6.0	12.0	9.0	10.5
27	2.0	1.0	1.5	6.5	5.0	5.5	7.0	5.5	6.0	11.5	10.0	10.5
28	2.5	1.5	2.0	6.5	4.5	5.5	7.0	5.5	6.5	10.0	9.0	9.5
29	---	---	---	6.0	5.5	5.5	7.0	6.5	7.0	11.5	8.5	10.0
30	---	---	---	6.5	5.0	5.5	7.0	6.0	6.5	11.0	10.0	10.5
31	---	---	---	6.5	5.5	6.0	---	---	---	10.5	9.5	10.0
MONTH	5.5	.5	3.0	6.5	2.0	4.5	8.0	4.5	6.0	12.5	5.5	9.0

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.5	9.0	9.5	13.0	11.0	12.0	15.0	12.0	13.5	12.5	11.5	12.0
2	10.5	8.5	9.0	12.0	11.0	11.5	16.0	12.5	14.0	13.0	11.5	12.5
3	10.0	9.0	9.5	11.5	10.5	11.0	16.5	13.0	14.5	13.5	12.5	13.0
4	10.0	9.0	9.5	11.0	10.5	10.5	16.5	14.0	15.0	13.5	12.5	13.0
5	10.0	9.0	9.5	11.0	10.0	10.5	16.5	14.0	15.5	13.0	12.0	12.5
6	9.5	9.0	9.5	11.5	10.0	10.5	16.0	14.5	15.5	13.5	12.5	13.0
7	9.0	8.5	9.0	13.0	10.0	11.5	15.5	13.5	14.0	13.5	12.5	13.0
8	9.5	8.0	8.5	14.0	10.5	12.5	14.5	13.0	13.5	13.5	13.0	13.5
9	9.5	8.5	9.0	13.0	11.0	11.5	14.5	12.5	13.5	13.5	12.5	13.0
10	9.0	8.5	9.0	12.5	10.5	11.5	14.0	12.5	13.0	13.0	12.0	12.5
11	8.5	7.5	8.0	12.0	11.0	11.5	14.0	12.0	13.0	12.5	11.5	12.0
12	10.5	8.0	9.0	11.0	10.5	10.5	13.5	12.0	12.5	11.5	11.0	11.5
13	11.0	8.0	9.5	11.0	10.0	10.5	13.0	12.0	12.5	11.5	10.5	11.0
14	12.0	9.5	10.5	11.0	10.5	10.5	12.0	11.5	12.0	11.0	10.5	10.5
15	11.0	9.5	10.0	11.0	10.5	10.5	13.0	11.0	12.0	11.5	11.0	11.0
16	11.0	9.0	10.0	11.5	10.5	11.0	12.5	11.5	12.0	11.0	10.0	10.5
17	13.0	9.5	11.0	11.5	10.5	11.0	13.5	11.5	12.5	10.5	10.0	10.0
18	14.0	10.5	12.0	12.5	10.0	11.5	14.0	12.0	13.0	10.0	9.5	10.0
19	13.5	11.0	12.0	12.5	11.0	11.5	14.5	13.0	13.5	10.0	10.0	10.0
20	13.0	10.0	11.5	11.5	11.0	11.0	14.5	13.0	13.5	10.0	9.0	9.5
21	11.5	9.5	10.5	12.0	10.5	11.5	13.5	12.5	13.0	9.0	8.0	8.5
22	9.5	8.5	9.0	11.5	11.0	11.5	14.0	12.0	12.5	8.5	8.0	8.0
23	10.5	8.5	9.5	11.0	10.5	11.0	14.0	12.0	13.0	8.5	8.0	8.5
24	12.0	8.5	10.0	10.5	10.0	10.0	12.0	11.0	11.5	9.0	8.5	9.0
25	14.0	10.0	11.5	11.0	10.0	10.5	12.0	10.5	11.0	9.0	8.5	9.0
26	13.5	11.5	12.5	13.0	10.0	11.5	12.0	10.0	11.0	10.0	9.0	9.5
27	12.5	10.5	11.0	13.5	10.5	12.0	12.0	10.5	11.0	10.5	10.0	10.0
28	10.5	10.0	10.0	12.0	11.0	11.0	12.0	11.0	11.5	11.0	10.0	10.5
29	12.0	9.5	10.5	11.5	10.5	11.0	12.0	10.0	11.0	11.0	10.5	10.5
30	13.0	9.5	11.0	13.0	10.5	11.5	12.5	11.0	11.5	11.5	11.0	11.0
31	---	---	---	14.0	10.5	12.0	12.5	11.0	12.0	---	---	---
MONTH	14.0	7.5	10.0	14.0	10.0	11.0	16.5	10.0	13.0	13.5	8.0	11.0

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	.70	.43	---	---	.21	.21	---	---
2	---	---	---	---	.43	.36	---	---	.14	.14	---	---
3	---	---	---	.36	.36	.36	---	---	---	---	---	---
4	---	---	.36	.29	.36	.29	---	---	.14	.14	---	---
5	---	---	.29	.22	.29	.22	---	---	.14	.14	---	.80
6	---	---	.22	.22	.29	.22	---	---	.15	.14	.80	.50
7	---	---	.93	.22	.22	.22	---	---	.14	.14	.50	.37
8	---	---	---	.44	.43	.22	---	---	.15	.14	.44	.29
9	---	---	.65	.36	.29	.22	---	---	.57	.14	.37	.28
10	---	---	.36	.28	.95	.22	---	---	.28	.21	.29	.20
11	---	---	.29	.21	.29	.22	---	---	.21	.13	.28	.20
12	---	---	.29	.22	.36	.22	---	---	.21	.20	.28	.20
13	---	---	.22	.21	.22	.14	---	---	.20	.13	.24	.13
14	---	.14	.22	.15	.58	.14	---	---	---	---	2.6	.20
15	.15	.14	.22	.14	.36	.21	---	---	---	---	17	2.6
16	.15	.14	---	.15	.21	.21	---	---	---	---	5.9	4.6
17	.15	.15	.22	.15	---	---	---	---	---	---	9.1	4.7
18	.22	.15	.22	.14	---	---	---	---	---	---	---	---
19	.22	.15	.50	.14	---	.21	---	---	---	---	.98	.69
20	.50	.15	.29	.21	.85	.28	---	---	---	---	---	.55
21	.50	.29	29	.21	.56	.28	---	---	---	---	.55	.39
22	.50	.22	---	---	---	.42	.21	.21	---	---	---	.32
23	.22	.15	---	.79	---	.63	---	---	---	---	13	---
24	.22	.15	.79	.50	.71	.35	.57	.21	---	---	---	---
25	.15	.15	.57	.29	.35	.28	1.4	.57	---	---	---	---
26	.15	.15	.29	.22	.42	.28	1.2	.64	---	---	---	---
27	.15	.15	1.0	.22	.35	.21	.71	.49	---	---	.31	.24
28	.22	.15	.58	.29	.42	.21	2.0	.49	---	---	.31	.17
29	.76	.22	.29	.22	.35	.28	.71	.28	---	---	.24	.23
30	1.1	.65	.94	.22	.35	.21	.35	.28	---	---	.23	.15
31	3.6	1.1	---	---	---	---	.28	.21	---	---	.44	.15
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.51	.23	1.1	.78	.36	.29	.27	.22	.22	.15	.16	.15
2	---	.43	1.1	.64	.29	.29	.28	.22	.65	.15	.16	.15
3	---	---	---	---	.29	.22	.22	.22	.65	.22	.16	.15
4	.65	.50	1.1	.78	.29	.22	.22	.22	.51	.15	.16	.15
5	.51	.28	---	---	.77	.29	.22	.22	.72	.15	.16	.15
6	.28	.24	---	---	.68	.36	.22	.22	.23	.15	.16	.15
7	.43	.21	---	---	---	---	.22	.21	.23	.15	.16	.15
8	.71	.36	---	---	.59	.42	---	---	.15	.15	.16	.15
9	.85	.64	---	---	.42	.42	---	---	.15	.14	.16	.15
10	.71	.57	---	---	.49	.36	---	---	.15	.14	.16	.15
11	.71	.57	---	---	.70	.36	.22	.21	.15	.14	.16	.15
12	.63	.43	---	---	---	---	.22	.21	.15	.14	.16	.15
13	.46	.35	---	---	.42	.35	.22	.21	.15	.14	.16	.15
14	.50	.36	---	---	.35	.29	---	---	.15	.14	.16	.15
15	.43	.36	---	---	.35	.29	---	---	.15	.14	.15	.15
16	.43	.35	---	---	.29	.29	.35	.21	.15	.14	.15	.14
17	.50	.43	---	---	.30	.22	---	---	.16	.14	.15	.15
18	.57	.43	---	---	.30	.22	---	---	.16	.14	.15	.15
19	.43	.36	---	---	.29	.22	---	---	.16	.15	.15	.15
20	.50	.43	---	---	.29	.22	---	---	.16	.16	.15	.15
21	.57	.50	---	---	.35	.29	---	---	.16	.15	.15	.14
22	.57	.50	.56	.29	.56	.29	---	---	.16	.15	.15	.14
23	.64	.50	.30	.22	.56	.29	---	---	.23	.15	.15	.14
24	.85	.50	.30	.22	.29	.22	---	---	.22	.15	.15	.15
25	---	---	.36	.29	.29	.22	---	---	.16	.15	.15	.15
26	---	---	.31	.22	.29	.22	---	---	.16	.15	.15	.15
27	---	---	.36	.29	.29	.22	---	---	.16	.15	.16	.15
28	---	---	.36	.22	.22	.22	---	---	.15	.15	.15	.15
29	---	---	.36	.22	.22	.22	---	---	.16	.15	.16	.15
30	1.5	.85	.43	.29	.22	.22	.22	.15	.16	.15	.16	.15
31	---	---	.56	.36	---	---	.22	.15	.16	.15	---	---
MONTH	---	---	---	---	---	---	---	---	.72	.14	.16	.14

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'56", long 122°01'36", in NE 1/4 SE 1/4 sec.14, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, on right bank, 6.4 mi north of Brightwood and 0.6 mi above Bull Run Reservoir Number One.

DRAINAGE AREA.--5.46 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

REVISED RECORDS.--WDR OR-78-1: 1976. WDR OR-82-2: 1976(P), 1978-79(P), 1981, WDR OR-91-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 34.7 ft³/s, 86.37 in/yr, 25,150 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s Dec. 2, 1977, gage height, 5.64 ft; minimum discharge, 1.5 ft³/s Oct. 19-21, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1800	*514	*4.61	No other peak greater than base discharge.			
Minimum discharge recorded, 2.5 ft ³ /s Sept. 29, 30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	127	69	27	35	9.7	51	72	42	14	16	4.7
2	10	82	51	24	30	11	83	64	37	14	15	4.5
3	20	52	38	22	26	26	177	73	31	14	14	4.4
4	16	40	31	20	23	77	100	74	27	13	12	4.3
5	13	31	27	18	21	120	64	61	38	12	11	4.1
6	11	26	24	16	21	78	55	76	47	11	11	4.1
7	9.8	54	22	15	21	65	50	86	86	11	10	3.9
8	8.7	98	31	14	21	56	62	113	61	10	9.8	3.8
9	7.8	86	33	13	23	46	96	81	52	9.7	9.2	3.8
10	7.1	55	77	12	27	39	98	60	45	9.3	8.8	3.7
11	6.4	43	61	12	26	32	82	48	57	9.0	8.4	3.7
12	6.0	45	43	11	24	27	70	39	56	8.6	8.0	3.6
13	7.5	38	33	11	22	25	65	34	44	9.1	7.8	3.5
14	6.2	32	50	10	20	74	65	29	35	9.4	7.6	3.5
15	5.7	27	49	9.6	18	197	62	26	40	8.8	7.4	3.5
16	5.4	23	39	9.2	15	103	55	23	33	11	8.2	3.5
17	5.8	20	33	8.9	15	135	64	21	28	17	7.6	3.4
18	5.5	20	27	8.5	14	242	63	20	25	14	6.7	3.3
19	6.3	29	25	17	14	123	54	19	22	18	6.3	3.3
20	7.7	28	65	46	13	119	46	20	19	20	6.3	3.3
21	12	242	62	37	12	79	48	24	18	21	6.3	e3.2
22	12	211	138	29	12	126	48	37	23	49	6.0	e3.0
23	9.1	115	178	24	11	277	51	27	24	71	9.5	e2.8
24	7.9	65	88	38	10	130	71	23	20	52	8.3	e2.8
25	7.1	46	59	85	9.6	77	100	22	18	38	7.0	e2.8
26	6.6	35	69	70	9.2	58	93	19	17	30	6.3	e2.6
27	6.2	53	66	57	8.9	47	70	22	20	25	5.9	e2.7
28	6.2	58	56	68	8.8	39	57	21	17	23	5.7	e2.7
29	13	45	46	90	---	34	103	20	16	27	5.5	2.6
30	26	85	36	61	---	32	93	22	15	22	5.2	2.5
31	84	---	31	46	---	32	---	41	---	18	5.0	---
TOTAL	365.9	1911	1657	929.2	510.5	2535.7	2196	1317	1013	618.9	261.8	103.6
MEAN	11.8	63.7	53.5	30.0	18.2	81.8	73.2	42.5	33.8	20.0	8.45	3.45
MAX	84	242	178	90	35	277	177	113	86	71	16	4.7
MIN	5.4	20	22	8.5	8.8	9.7	46	19	15	8.6	5.0	2.5
AC-FT	726	3790	3290	1840	1010	5030	4360	2610	2010	1230	519	205
CFSM	2.16	11.7	9.79	5.49	3.34	15.0	13.4	7.78	6.18	3.66	1.55	.63
IN.	2.49	13.02	11.29	6.33	3.48	17.28	14.96	8.97	6.90	4.22	1.78	.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1993, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	16.7	54.9	62.6	52.6	55.6	45.1	49.0	34.2	23.3	9.18	5.57	9.44						
MAX	42.2	88.6	133	96.9	126	81.8	73.2	53.0	58.6	27.3	13.0	27.7						
(WY)	1991	1989	1978	1976	1982	1993	1977	1981	1983	1987	1978	1977						
MIN	1.97	11.2	15.3	16.6	16.9	14.0	28.6	14.6	3.80	3.50	3.01	2.57						
(WY)	1988	1977	1977	1979	1977	1992	1983	1992	1992	1992	1987	1991						

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1976 - 1993

ANNUAL TOTAL	9123.8	13419.6	
ANNUAL MEAN	24.9	36.8	
HIGHEST ANNUAL MEAN			34.7
LOWEST ANNUAL MEAN			47.4
HIGHEST DAILY MEAN	257	277	616
LOWEST DAILY MEAN	2.5	2.5	1.5
ANNUAL SEVEN-DAY MINIMUM	2.6	2.7	1.6
ANNUAL RUNOFF (AC-FT)	18100	26620	25150
ANNUAL RUNOFF (CFSM)	4.57	6.73	6.36
ANNUAL RUNOFF (INCHES)	62.16	91.43	86.37
10 PERCENT EXCEEDS	59	82	72
50 PERCENT EXCEEDS	12	24	22
90 PERCENT EXCEEDS	2.9	5.7	3.8

e Estimated

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

pH: August 1990 to September 1992 (discontinued).

WATER TEMPERATURE: October 1977 to current year.

TURBIDITY: August 1990 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Water-quality monitor, turbidimeter with data recording interval dependent upon river stage.

REMARKS.--Turbidity values herein are recorded values and may not reflect actual extremes for the day. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 49 microsiemens May 6, 1988, Aug. 13, 1990; minimum, 9 microsiemens Dec. 4, 1978, Jan. 6, 1990.

pH: Maximum recorded, 7.7 units Sept. 13, 1990, but may have been higher during periods of missing record;

minimum recorded, 6.0 units Sept. 5, 6, 8, 1991, but may have been lower during periods of missing record.

WATER TEMPERATURE: Maximum recorded, 16.0°C Sept. 1, 1987, June 23, 24, July 18, 19, 1992; minimum recorded,

0.0°C on several days in 1978-80, 1983, 1989, 1991, 1993.

TURBIDITY: Maximum recorded, 11 NTU Nov. 25, 1991; minimum recorded, 0.04 NTU Feb. 15, 16, 1993.

SEDIMENT CONCENTRATION: Maximum, 200 mg/L Jan. 23, Feb. 20, 1982; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum, 345 tons Dec. 2, 1977; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 27 microsiemens Sept. 28-30; minimum, 11 microsiemens Nov. 21.

WATER TEMPERATURE: Maximum recorded, 13.5°C Aug. 4, 5; minimum, 0.0°C Feb. 17.

TURBIDITY: Maximum recorded, 5.3 NTU Nov. 21; minimum recorded, 0.04 NTU Feb. 15, 16.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21	20	21	18	16	17	19	17	18	22	21	21
2	21	21	21	18	16	18	19	18	19	21	21	21
3	21	20	20	19	18	18	20	19	20	21	21	21
4	20	19	20	19	19	19	20	20	20	22	21	21
5	20	20	20	20	19	19	20	20	20	22	21	22
6	21	20	20	20	19	20	20	20	20	22	22	22
7	21	20	21	20	16	18	21	20	21	22	22	22
8	23	20	21	18	15	17	21	18	19	22	22	22
9	21	20	21	18	15	17	19	18	19	22	22	22
10	22	21	21	18	16	17	19	16	17	22	22	22
11	22	21	21	19	17	18	19	17	18	23	22	22
12	22	21	22	19	18	18	20	19	19	23	22	22
13	22	21	22	19	17	18	20	19	20	23	22	23
14	22	21	21	19	17	18	20	18	19	23	22	23
15	22	21	21	19	17	18	20	18	19	23	22	23
16	22	21	22	18	17	18	20	20	20	23	22	23
17	23	21	22	18	18	18	21	19	20	23	23	23
18	23	22	22	18	17	18	21	20	21	23	23	23
19	23	22	22	19	15	17	21	20	21	23	19	22
20	23	22	22	18	15	16	20	19	19	20	18	19
21	22	22	22	19	11	15	19	19	19	19	19	19
22	22	21	22	17	14	16	19	16	18	20	19	20
23	22	22	22	18	16	17	18	16	17	20	20	20
24	22	22	22	19	18	18	19	18	18	20	19	20
25	23	22	22	20	19	19	20	19	19	19	18	18
26	23	22	22	20	20	20	19	18	19	19	18	18
27	22	22	22	20	18	19	19	18	19	19	18	19
28	22	22	22	19	18	19	20	19	19	19	17	18
29	22	21	22	20	19	19	20	19	20	18	17	18
30	21	19	21	20	17	18	21	20	20	19	18	18
31	20	15	19	---	---	---	21	20	21	19	19	19
MONTH	23	15	21	20	11	18	21	16	19	23	17	21

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	20	19	19	23	22	22	19	18	18	18	17	18
2	20	20	20	23	21	22	18	15	17	18	17	18
3	20	20	20	22	20	21	16	14	15	19	16	18
4	20	20	20	21	17	19	18	16	17	18	17	17
5	21	20	20	17	17	17	18	17	18	19	18	18
6	21	20	20	19	17	18	19	18	18	19	16	18
7	21	20	20	19	17	18	19	18	18	18	16	17
8	21	20	20	20	18	19	19	17	18	18	16	17
9	21	20	20	19	18	18	18	16	17	18	17	18
10	20	20	20	19	18	19	17	16	17	19	17	18
11	20	20	20	19	19	19	18	16	17	19	18	19
12	20	20	20	20	19	19	18	17	18	20	18	19
13	21	20	20	20	19	20	19	17	18	20	18	19
14	21	20	21	19	16	17	19	17	18	21	19	20
15	21	20	21	16	13	15	18	17	18	21	19	20
16	21	21	21	17	16	16	19	18	18	21	20	21
17	21	21	21	16	14	16	18	17	18	22	20	21
18	21	21	21	16	13	14	18	17	18	22	21	21
19	21	21	21	17	15	16	19	17	18	22	20	21
20	21	21	21	17	15	16	19	17	18	21	20	21
21	22	21	21	18	17	18	19	17	18	21	19	20
22	22	21	22	18	14	17	19	17	18	20	17	19
23	22	21	22	15	13	14	19	17	18	20	19	20
24	22	22	22	18	15	17	18	16	17	21	19	20
25	22	22	22	19	17	18	17	16	17	21	20	20
26	22	22	22	20	18	19	17	16	17	21	20	20
27	22	22	22	20	19	20	18	17	18	21	19	20
28	22	22	22	20	20	20	19	17	18	21	19	20
29	---	---	---	21	20	20	19	16	17	21	20	21
30	---	---	---	21	20	20	18	16	17	21	20	21
31	---	---	---	20	19	20	---	---	---	21	18	19
MONTH	22	19	21	23	13	18	19	14	18	22	16	19
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	19	18	19	23	22	22	22	21	21	24	23	23
2	20	18	19	23	21	22	22	21	21	24	23	24
3	20	19	19	23	21	22	22	21	22	24	23	24
4	20	19	20	23	22	22	22	21	22	24	23	24
5	21	18	20	23	22	22	23	22	22	24	23	24
6	20	16	19	23	22	23	23	22	22	25	24	24
7	18	16	17	23	22	23	22	22	22	25	24	24
8	19	16	18	23	23	23	23	22	22	26	23	25
9	19	16	18	24	23	23	23	22	22	26	25	25
10	19	17	18	24	23	24	23	22	23	26	25	25
11	19	16	18	24	23	24	23	22	23	26	25	25
12	19	17	18	24	22	24	23	22	23	26	25	25
13	20	17	19	24	24	24	23	22	23	25	25	25
14	20	18	20	24	24	24	23	22	23	26	25	25
15	20	17	19	24	23	24	24	22	23	26	25	25
16	20	18	19	24	23	23	23	22	23	26	25	25
17	21	19	20	23	22	23	23	22	23	26	25	25
18	21	20	21	23	22	23	23	23	23	26	25	25
19	21	20	21	23	21	22	24	23	23	26	25	25
20	22	21	21	22	21	22	24	23	23	25	25	25
21	22	21	21	22	21	21	23	22	23	25	25	25
22	21	20	21	21	18	19	24	23	23	26	25	25
23	21	20	20	18	17	17	24	22	23	26	25	26
24	21	20	21	18	18	18	23	22	23	26	25	26
25	22	21	21	19	18	19	23	22	23	26	26	26
26	22	21	22	20	19	19	23	22	23	26	26	26
27	21	20	21	20	20	20	23	22	23	26	26	26
28	22	20	21	20	20	20	23	22	23	27	26	26
29	22	21	21	20	19	20	23	22	23	27	26	27
30	23	21	22	21	20	20	23	23	23	27	26	27
31	---	---	---	21	20	21	24	23	23	---	---	---
MONTH	23	16	20	24	17	22	24	21	23	27	23	25
YEAR	27	11	20									

SANDY RIVER BASIN

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14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.0	8.0	8.5	10.0	9.5	10.0	12.0	10.0	11.0	11.0	10.0	10.5
2	9.0	8.0	8.5	9.5	9.5	9.5	12.5	10.5	11.5	11.5	10.0	11.0
3	9.0	8.0	8.5	10.0	9.0	9.5	---	---	12.0	11.5	10.5	11.0
4	9.0	8.5	8.5	9.5	9.0	9.0	13.5	11.5	12.5	11.5	10.5	11.0
5	9.0	8.5	8.5	9.5	9.0	9.0	13.5	11.5	12.5	11.5	10.5	11.0
6	8.5	8.5	8.5	10.0	9.0	9.5	13.0	12.0	12.5	12.0	10.5	11.5
7	8.5	8.0	8.5	10.5	9.0	9.5	12.0	11.0	11.5	12.0	11.0	11.5
8	8.5	8.0	8.0	11.5	9.0	10.0	12.0	11.0	11.5	12.5	11.5	12.0
9	8.5	8.0	8.5	10.5	9.5	10.0	12.0	10.5	11.5	12.5	11.5	12.0
10	8.5	8.0	8.5	10.0	9.5	9.5	11.0	10.5	11.0	12.0	11.0	11.5
11	8.0	7.5	7.5	10.0	9.5	9.5	11.5	10.5	11.0	11.5	10.5	11.0
12	9.0	7.5	8.0	10.0	9.0	9.5	11.0	10.0	10.5	10.5	10.0	10.5
13	9.5	7.5	8.5	9.5	9.0	9.5	10.5	10.0	10.5	10.5	9.5	10.0
14	10.0	8.5	9.0	9.5	9.0	9.5	10.5	10.0	10.0	10.5	9.5	10.0
15	9.0	8.5	9.0	9.5	9.0	9.5	10.5	10.0	10.5	10.5	9.5	10.0
16	9.5	8.5	9.0	10.0	9.0	9.5	10.5	10.0	10.0	10.0	9.0	9.5
17	10.5	8.5	9.5	10.0	9.0	9.5	11.0	10.0	10.5	10.0	9.0	9.5
18	11.0	9.0	10.0	10.5	9.0	9.5	11.5	10.0	11.0	9.5	9.0	9.0
19	11.0	9.5	10.0	10.0	9.5	9.5	12.0	11.0	11.5	9.5	9.0	9.0
20	11.0	8.5	10.0	10.0	9.5	9.5	12.0	11.0	11.5	9.0	8.0	8.5
21	9.5	8.5	9.0	10.0	9.0	9.5	11.0	10.5	11.0	8.5	7.5	8.0
22	8.5	8.0	8.0	10.0	9.5	9.5	11.5	10.0	11.0	8.5	7.5	8.0
23	9.5	8.0	8.5	9.5	9.5	9.5	11.5	10.5	11.0	8.5	7.5	8.0
24	10.0	8.0	9.0	9.5	9.0	9.0	10.5	9.5	10.0	9.0	8.0	8.5
25	11.5	9.0	10.0	9.0	8.5	9.0	10.0	9.5	9.5	9.0	8.0	8.5
26	11.0	9.5	10.5	10.0	9.0	9.5	10.0	8.5	9.5	9.5	8.5	9.0
27	10.0	9.0	9.5	11.0	9.0	10.0	10.5	9.0	10.0	10.0	9.0	9.5
28	9.5	9.0	9.0	10.0	9.5	9.5	10.0	9.5	10.0	10.5	9.5	10.0
29	10.0	8.5	9.0	10.0	9.0	9.5	10.5	9.0	9.5	10.5	10.0	10.0
30	10.5	8.5	9.5	10.5	9.0	9.5	11.0	9.5	10.5	10.5	10.0	10.5
31	---	---	---	11.0	9.0	10.0	11.0	10.0	10.5	---	---	---
MONTH	11.5	7.5	9.0	11.5	8.5	9.5	---	---	11.0	12.5	7.5	10.0

SANDY RIVER BASIN

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14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	.41	.34	---	---	.33	.18	.11	.11	.12	.12	.19	.18
2	.48	.34	---	---	.26	.18	.11	.11	.12	.11	.19	.19
3	.70	.41	.39	.26	.26	.18	.11	.11	.11	.11	.61	.18
4	.56	.48	.26	.26	.26	.11	.11	.11	.11	.05	1.2	.19
5	.70	.48	.26	.19	.18	.11	.11	.11	.12	.11	.82	.25
6	.56	.41	.19	.19	.18	.11	.11	.11	.12	.11	.26	.19
7	.49	.41	.54	.19	.33	.11	---	---	.12	.12	.19	.19
8	.49	.05	.75	.25	.47	.11	---	---	.12	.05	.19	.19
9	.12	.05	.32	.18	.19	.11	---	---	.12	.11	.19	.18
10	.12	.12	.19	.19	.83	.11	---	---	.12	.12	.19	.12
11	---	---	.19	.19	.34	.11	.32	.25	.12	.11	.12	.11
12	---	---	.19	.12	.33	.11	.32	.25	.12	.05	.12	.11
13	---	---	.40	.12	.12	.11	.25	.18	.12	.11	.19	.11
14	---	---	.40	.12	.32	.12	---	---	.12	.05	.61	.19
15	---	---	.12	.12	.12	.12	---	---	.11	.04	3.6	.46
16	---	---	.12	.12	.12	.12	---	---	.11	.04	.46	.26
17	---	---	.12	.12	.12	.11	---	---	.11	.11	2.3	.25
18	---	---	.12	.12	.11	.11	---	---	.11	.11	2.6	.39
19	---	---	.26	.11	.19	.11	---	---	.18	.11	.47	.32
20	---	---	.12	.11	.46	.12	---	---	.18	.18	.47	.26
21	---	---	5.3	.11	.12	.11	.40	.19	.18	.18	.26	.26
22	---	---	2.6	.62	1.2	.11	.19	.12	.18	.18	1.4	.19
23	---	---	.75	.40	1.2	.25	.19	.12	.18	.18	2.9	.61
24	---	---	.40	.33	.32	.19	.33	.12	.18	.18	.61	.32
25	---	---	.40	.18	.32	.18	.53	.19	.18	.18	.32	.25
26	---	---	.19	.18	.25	.12	.19	.12	.18	.18	.26	.19
27	---	---	.97	.19	.12	.11	.12	.12	.19	.18	.26	.19
28	---	---	.54	.26	.25	.11	.53	.12	.19	.18	.19	.19
29	---	---	.26	.18	.19	.11	.33	.12	---	---	.19	.19
30	---	---	.98	.19	.11	.11	.12	.12	---	---	.19	.19
31	---	---	---	---	.18	.11	.12	.12	---	---	.39	.12
MONTH	---	---	---	---	1.2	.11	---	---	.19	.04	3.6	.11

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	.39	.25	.19	.19	.26	.19	.12	.12	.27	.13	.62	.20
2	.97	.19	.19	.19	.19	.12	.12	.12	.27	.20	.20	.20
3	1.1	.33	.26	.19	.19	.12	.12	.12	.34	.20	.20	.13
4	.33	.26	.19	.12	.19	.19	.12	.12	.27	.13	.20	.13
5	.26	.19	.19	.12	.26	.19	.19	.12	.27	.13	.20	.13
6	.26	.19	.33	.19	.82	.12	.12	.12	.20	.13	.20	.13
7	.19	.19	.54	.12	.61	.26	---	.06	.27	.06	.20	.13
8	.33	.19	.26	.19	.26	.19	---	.13	.13	.13	.19	.13
9	.33	.19	.26	.19	.26	.19	---	.13	.13	.13	.20	.13
10	.19	.19	.26	.19	.26	.12	---	.27	.13	.13	.13	.13
11	.19	.12	.33	.19	.26	.19	---	---	.34	.27	---	---
12	.19	.12	.33	.19	.19	.12	---	---	.27	.20	---	---
13	.19	.12	.26	.19	.19	.12	---	---	.20	.13	---	---
14	.19	.11	.26	.19	.23	.19	.19	.12	.20	.20	---	---
15	.19	.12	.26	.19	.33	.19	.26	.12	.20	.13	---	---
16	.19	.12	.26	.19	.19	.12	.33	.12	.41	.20	---	---
17	.19	.12	.26	.19	.19	.12	.33	.19	.41	.20	---	---
18	.19	.12	.26	.19	.19	.12	.19	.12	.27	.20	---	---
19	.19	.12	.33	.19	.19	.12	---	.12	.27	.13	---	---
20	.19	.19	.26	.12	.19	.12	---	.41	.13	---	---	---
21	.19	.19	.54	.19	.12	.12	---	---	.27	.13	---	---
22	.19	.12	.54	.19	.33	.12	---	---	.13	.13	---	---
23	.26	.12	.19	.19	.19	.12	---	---	.40	.13	---	---
24	.33	.19	.19	.19	.19	.12	---	---	.20	.13	---	---
25	.61	.19	.19	.12	.13	.12	---	---	.13	.13	---	---
26	.26	.19	.19	.12	.19	.12	---	---	.13	.13	---	---
27	.19	.19	.26	.19	.19	.12	---	---	.13	.13	---	---
28	.26	.12	.19	.12	.19	.12	---	---	.13	.13	---	---
29	.47	.26	.19	.12	.19	.12	.34	.12	.13	.13	---	---
30	.26	.19	.26	.12	.19	.12	.34	.27	.13	.13	---	---
31	---	---	.47	.23	---	---	.34	.19	.62	.13	---	---
MONTH	1.1	.11	.54	.12	.82	.12	---	---	.62	.06	---	---

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'40", long 122°02'05", near line between SE 1/4 and SW 1/4 sec.11, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, Mount Hood National Forest, on left bank 7.0 mi southeast of Multnomah Falls and at mouth.

DRAINAGE AREA.--8.32 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-91-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft, from topographic map. Prior to Oct. 1, 1978, and from June 13, 1989 to July 1990 (during bridge construction), at site 700 ft upstream at datum 18.7 ft higher. From Oct. 1, 1978 to June 13, 1989, and July 1990 to present, site located 5 ft upstream from bridge, on left bank wing wall.

REMARKS.--No estimated daily discharges. Water-discharge records good except those above 400 ft³/s, which are poor. Regulation at times since 1958 by North Fork Reservoir, capacity, about 1,030 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--28 years, 73.6 ft³/s, 120.13 in/yr, 53,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft³/s, probably affected by surge from release of water temporarily impounded by landslide upstream from station, Jan. 20, 1972, gage height, 9.89 ft, from floodmark, from rating curve, extended above 850 ft³/s on basis of estimate of peak flow from slope-area survey; minimum discharge, 8.6 ft³/s Oct. 19-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*), from rating curve extended above 250 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1800	*898	*6.17	Mar. 23	0500	727	5.93
Mar. 15	0730	713	5.91	Apr. 3	0630	754	5.97

Minimum discharge, 11 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	226	104	44	62	23	85	111	57	28	29	14
2	20	167	77	39	53	25	185	94	48	28	27	14
3	37	86	60	37	47	51	525	115	46	27	26	13
4	28	71	49	36	44	121	202	110	43	26	24	13
5	23	54	44	32	41	212	122	89	58	25	23	13
6	20	45	39	29	41	141	117	128	52	24	23	13
7	19	108	37	27	42	104	121	128	92	23	22	13
8	18	182	52	28	41	90	133	171	71	22	21	13
9	17	144	52	26	44	79	194	115	69	21	20	13
10	16	87	115	25	47	72	188	88	61	21	20	13
11	15	69	84	25	45	60	165	73	84	20	19	13
12	14	70	61	24	41	50	121	62	81	20	20	13
13	16	56	50	23	37	49	103	56	62	22	19	13
14	14	47	92	23	36	164	92	48	52	23	19	13
15	14	42	78	22	34	402	102	44	54	22	19	13
16	13	38	62	22	29	181	86	41	47	28	20	13
17	16	36	56	21	28	242	109	38	42	28	19	13
18	15	44	47	21	28	388	108	36	39	25	18	13
19	21	64	45	32	29	182	90	34	36	28	17	13
20	21	60	107	76	28	193	79	36	34	32	17	13
21	31	406	111	68	27	124	95	45	37	31	17	12
22	29	331	208	60	26	261	96	48	66	84	17	12
23	22	174	220	42	25	538	101	38	62	116	19	12
24	20	99	114	70	23	213	170	34	45	72	19	12
25	19	71	84	163	23	124	212	34	41	51	17	12
26	18	56	112	125	22	87	181	32	37	43	16	12
27	17	102	102	95	22	71	170	37	37	38	16	12
28	17	92	82	127	22	60	114	36	35	38	15	12
29	29	67	66	155	---	52	195	35	33	45	15	12
30	49	147	54	97	---	52	145	42	30	37	14	11
31	133	---	46	75	---	52	---	67	---	32	14	---
TOTAL	760	3241	2510	1679	987	4463	4406	2065	1551	1080	601	381
MEAN	24.5	108	81.0	54.2	35.2	144	147	66.6	51.7	34.8	19.4	12.7
MAX	133	406	220	163	62	538	525	171	92	116	29	14
MIN	13	36	37	21	22	23	79	32	30	20	14	11
AC-FT	1510	6430	4980	3330	1960	8850	8740	4100	3080	2140	1190	756
CFSM	2.95	13.0	9.73	6.51	4.24	17.3	17.7	8.01	6.21	4.19	2.33	1.53
IN.	3.40	14.49	11.22	7.51	4.41	19.95	19.70	9.23	6.93	4.83	2.69	1.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1993, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	41.4	106	127	132	106	88.9	89.1	75.2	50.1	25.9	18.2	25.2																
MAX	88.2	199	285	309	216	200	147	137	111	62.7	35.2	54.4																
(WY)	1969	1974	1976	1975	1982	1972	1993	1972	1974	1983	1968	1977																
MIN	9.08	27.9	33.4	32.1	35.2	28.8	49.5	28.3	14.6	12.6	11.2	10.9																
(WY)	1988	1977	1977	1979	1993	1992	1967	1992	1992	1992	1987	1987																

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1966 - 1993

	1992	1993	1966-1993
ANNUAL TOTAL	16623.2	23724	73.6
ANNUAL MEAN	45.4	65.0	121
HIGHEST ANNUAL MEAN			46.1
LOWEST ANNUAL MEAN			1910
HIGHEST DAILY MEAN	406	538	8.6
LOWEST DAILY MEAN	9.9	11	8.7
ANNUAL SEVEN-DAY MINIMUM	9.9	12	8.7
ANNUAL RUNOFF (AC-FT)	32970	47060	53290
ANNUAL RUNOFF (CFSM)	5.46	7.81	8.84
ANNUAL RUNOFF (INCHES)	74.32	106.07	120.13
10 PERCENT EXCEEDS	98	142	150
50 PERCENT EXCEEDS	28	42	48
90 PERCENT EXCEEDS	11	15	15

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.
 pH: October 1980 to September 1981, August 1990 to September 1992 (discontinued).
 WATER TEMPERATURE: October 1978 to current year.
 TURBIDITY: August 1990 to current year.
 SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor, turbidimeter with data recording interval dependent upon river stage.

REMARKS.--Turbidity values herein are recorded values and may not reflect actual extremes for the day. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 103 microsiemens Jan. 13, 1981 (cement spill); minimum, 9 microsiemens Dec. 25, 1980, Jan. 6, 1983, Feb. 23, 1986.
 pH: Maximum recorded, 9.8 units Jan. 13, 1981 (cement spill); minimum recorded, 6.3 units June 19, 1981.
 WATER TEMPERATURE: Maximum, 14.5°C several days in 1988, 1992, 1993; minimum, 0.0°C on several days during winter periods.
 TURBIDITY: Maximum recorded, 25 NTU Nov. 24, 1990; minimum recorded, 0.06 NTU Sept. 7, 13, 14, 1992.
 SEDIMENT CONCENTRATION: Maximum daily, 205 mg/L Dec. 25, 1980; minimum, 0 mg/L on many days.
 SEDIMENT DISCHARGE: Maximum daily, 765 tons Feb. 23, 1986; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 45 microsiemens Sept. 10; minimum, 11 microsiemens Mar. 15, 18, 22, 23, Apr. 3.
 WATER TEMPERATURE: Maximum recorded, 14.5°C Aug. 4, 5; minimum, 0.5°C Jan. 10, Feb. 16, 17.
 TURBIDITY: Maximum recorded, 6.0 NTU Apr. 3; minimum recorded, 0.07 NTU Nov. 15, 16.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	33	32	33	21	18	20	19	17	19	24	23	23
2	33	31	32	20	18	19	21	19	20	25	23	24
3	31	28	29	22	19	20	21	20	21	25	23	24
4	30	28	29	22	21	21	24	21	22	25	23	24
5	31	30	30	26	21	23	26	23	24	27	24	25
6	32	31	31	26	24	25	26	24	24	27	25	26
7	32	31	32	24	20	21	26	25	25	27	26	26
8	33	32	32	22	18	19	25	21	23	28	26	26
9	33	33	33	19	18	18	22	21	22	28	27	28
10	34	33	34	20	19	20	22	18	19	28	27	27
11	35	34	34	21	20	21	20	18	20	28	28	28
12	35	34	35	23	21	21	22	20	21	29	28	28
13	36	33	34	23	21	22	23	22	22	29	28	29
14	36	34	35	24	22	23	23	18	20	30	29	29
15	35	34	35	24	23	23	21	19	20	30	29	30
16	35	35	35	27	24	25	22	21	21	31	29	30
17	36	34	35	27	25	26	24	22	23	31	30	30
18	35	35	35	25	23	24	24	22	23	31	30	31
19	35	33	34	24	21	23	25	22	24	32	23	29
20	35	30	34	22	21	22	22	19	20	23	20	21
21	31	30	31	22	13	17	20	19	19	22	20	21
22	31	29	30	16	14	15	20	16	18	24	21	22
23	33	31	31	18	16	17	18	17	17	24	23	23
24	33	32	32	19	18	18	19	18	18	23	19	21
25	34	32	33	20	19	20	20	19	19	19	16	17
26	36	32	34	21	20	21	20	18	18	18	16	17
27	36	33	35	21	17	19	19	18	19	18	17	18
28	37	34	36	20	17	19	20	19	20	19	16	18
29	36	28	33	21	19	20	22	20	21	17	16	16
30	29	27	28	22	16	18	22	21	22	18	17	18
31	27	20	23	---	---	---	23	22	23	21	18	19
MONTH	37	20	32	27	13	21	26	16	21	32	16	24

SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR---Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	21	19	20	30	29	30	20	17	18	17	16	17
2	21	20	21	29	28	29	18	12	16	18	17	18
3	22	21	21	28	22	24	13	11	12	19	16	17
4	24	22	22	23	17	20	15	13	14	18	17	17
5	24	22	23	17	15	16	17	15	16	19	18	18
6	23	22	22	19	15	17	18	14	17	19	16	17
7	23	22	22	19	17	17	17	14	16	17	16	17
8	22	22	22	18	17	18	19	15	16	16	15	16
9	22	21	22	20	18	18	15	14	14	20	16	17
10	22	21	21	21	18	19	15	14	15	19	18	18
11	23	21	22	22	19	20	15	14	15	20	19	20
12	22	20	22	23	20	22	17	15	16	22	20	21
13	23	22	22	23	21	21	17	16	17	22	21	21
14	25	23	23	21	13	16	18	17	17	25	22	23
15	25	23	24	16	11	14	18	16	17	26	23	24
16	26	24	25	17	16	17	18	17	18	25	24	24
17	25	25	25	17	12	---	18	16	17	26	25	25
18	25	25	25	14	11	13	17	16	17	27	26	26
19	26	25	26	15	14	---	19	17	18	27	26	26
20	27	26	26	15	13	14	20	18	19	27	26	26
21	27	27	27	16	15	16	20	17	19	26	23	25
22	28	27	27	18	11	15	19	17	18	24	22	23
23	29	28	28	13	11	11	18	17	17	27	24	25
24	29	28	29	16	13	14	17	14	15	29	26	26
25	30	29	29	18	15	16	15	14	15	27	26	27
26	30	29	30	19	16	17	16	14	15	28	26	27
27	31	29	30	21	18	19	16	14	15	28	24	26
28	31	30	30	21	19	20	17	16	17	27	25	26
29	---	---	---	20	19	20	17	14	15	28	25	26
30	---	---	---	22	20	21	17	15	16	27	23	26
31	---	---	---	20	18	20	---	---	---	24	21	22
MONTH	31	19	24	30	11	---	20	11	16	29	15	22

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	25	22	24	31	28	28	32	31	31	39	38	39
2	26	23	24	29	28	28	33	31	32	40	38	39
3	26	23	24	30	29	29	34	32	33	40	39	39
4	27	25	26	30	29	30	34	33	33	40	39	39
5	26	22	24	31	30	30	35	33	34	40	39	39
6	25	22	24	31	30	31	35	33	34	41	39	40
7	23	20	21	32	31	31	35	34	34	40	39	40
8	24	20	22	34	31	32	35	34	35	40	39	40
9	26	20	22	34	32	32	36	34	35	41	40	41
10	22	21	21	34	32	32	36	35	35	45	41	41
11	22	19	20	35	33	33	36	35	36	44	41	41
12	21	19	20	35	33	34	37	35	36	43	40	41
13	23	20	21	36	32	34	37	35	36	42	39	40
14	23	22	22	36	32	34	37	36	36	44	39	41
15	23	22	22	37	36	36	37	36	36	42	39	40
16	25	22	23	37	33	34	37	35	36	42	39	40
17	25	24	24	34	33	34	38	36	37	42	40	40
18	28	25	25	36	34	35	38	37	38	43	40	41
19	35	26	29	36	32	35	39	37	38	43	40	41
20	35	27	30	34	32	33	39	38	38	42	40	41
21	32	24	28	33	32	32	38	37	38	42	40	40
22	26	21	23	33	24	27	39	38	38	43	40	41
23	24	21	22	25	22	23	39	36	37	43	40	42
24	26	23	23	25	23	24	37	36	37	43	40	41
25	27	24	25	27	25	26	38	36	37	43	40	41
26	26	25	25	28	27	27	38	37	37	43	40	41
27	28	25	26	29	28	29	38	37	38	43	40	41
28	27	26	26	30	27	29	38	37	38	44	40	41
29	27	26	27	28	26	27	38	37	38	43	41	42
30	30	27	28	30	28	29	39	38	38	43	41	42
31	---	---	---	31	30	30	39	38	39	---	---	---
MONTH	35	19	24	37	22	31	39	31	36	45	38	40

SANDY RIVER BASIN

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14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.0	3.5	3.5	3.0	2.5	3.0	6.0	5.0	5.5	7.5	6.5	7.0
2	4.0	3.5	4.0	4.0	3.0	3.5	6.0	5.5	5.5	8.5	7.0	8.0
3	4.0	3.5	3.5	3.5	3.0	3.0	5.5	5.0	5.5	8.0	7.5	8.0
4	4.0	3.5	3.5	3.0	3.0	3.0	6.0	5.0	5.5	7.5	6.5	7.0
5	4.5	3.5	4.0	4.0	3.0	3.5	6.0	5.0	5.5	9.0	7.0	8.0
6	5.0	4.0	4.5	5.0	3.0	4.0	6.0	5.0	5.5	8.5	7.0	7.5
7	4.5	4.0	4.0	5.0	3.5	4.0	7.5	5.0	6.5	7.0	6.0	6.5
8	4.5	4.0	4.5	5.0	4.0	4.5	7.5	6.5	7.0	7.5	6.0	7.0
9	5.0	4.5	4.5	5.0	3.5	4.5	6.5	5.0	5.5	9.0	6.5	7.5
10	5.0	4.0	4.5	5.0	4.0	4.5	5.5	4.5	5.0	11.0	8.5	9.5
11	5.0	4.0	4.5	4.5	3.5	4.0	5.5	4.0	4.5	10.5	8.5	9.5
12	5.0	4.0	4.5	4.5	3.5	4.0	6.0	4.5	5.5	10.5	9.5	10.0
13	5.0	4.0	4.5	5.0	4.0	4.5	5.5	5.0	5.0	11.0	8.5	9.5
14	4.5	3.5	4.0	5.0	4.0	4.5	6.5	4.5	6.0	11.0	9.0	10.0
15	4.0	1.5	3.0	4.0	3.0	3.5	7.0	6.0	6.5	11.0	9.0	9.5
16	1.5	.5	1.0	4.0	3.5	4.0	7.0	6.0	6.5	11.5	8.5	10.0
17	1.5	.5	1.0	4.5	4.0	---	7.0	6.5	6.5	12.5	9.0	10.5
18	2.0	1.0	1.5	4.5	4.0	4.5	6.5	5.5	6.0	12.5	10.5	11.5
19	2.0	1.0	1.5	5.5	4.0	---	7.0	5.0	6.0	12.5	10.0	11.0
20	2.5	1.5	2.0	5.5	4.5	5.0	8.0	6.5	7.5	11.5	9.5	10.5
21	2.5	2.0	2.5	6.5	4.5	5.5	8.0	6.5	7.5	10.5	9.5	10.0
22	3.0	2.0	2.5	5.5	5.0	5.0	8.0	6.5	7.0	10.0	8.5	9.5
23	2.5	2.0	2.5	5.0	4.5	4.5	7.0	6.0	6.5	11.5	8.5	9.5
24	2.5	1.5	2.0	5.5	4.0	4.5	7.0	6.0	6.5	12.0	9.5	10.5
25	2.5	1.5	2.0	5.5	3.5	4.5	7.0	6.0	6.5	10.5	9.5	10.0
26	2.5	1.5	2.0	6.0	4.0	5.0	6.0	5.5	6.0	12.0	9.0	10.0
27	3.0	1.5	2.0	6.0	4.5	5.5	7.5	5.5	6.5	---	---	---
28	3.5	2.0	2.5	6.0	4.5	5.5	7.5	6.0	6.5	---	---	---
29	---	---	---	5.5	5.0	5.5	8.0	7.0	7.5	---	---	---
30	---	---	---	5.5	4.5	5.0	7.5	7.0	7.5	---	---	---
31	---	---	---	6.0	5.0	5.5	---	---	---	---	---	---
MONTH	5.0	.5	3.0	6.5	2.5	---	8.0	4.0	6.0	---	---	---

SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued
 TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

SANDY RIVER BASIN

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14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	.19	.12	3.3	.66	---	---	.14	.14	.22	.15	.19	.12
2	.26	.12	1.1	.38	---	---	.14	.14	.22	.15	.26	.12
3	.40	.19	.38	.22	---	---	.21	.14	.15	.15	.48	.26
4	.19	.12	.30	.22	---	---	.21	.14	.15	.15	1.3	.26
5	.12	.11	.22	.15	---	---	.14	.14	.15	.15	1.6	.62
6	.12	.11	.16	.15	---	---	---	---	.16	.15	.48	.34
7	.12	.11	1.8	.16	---	---	---	---	.15	.15	.34	.26
8	.12	.12	1.2	.30	---	---	---	---	.15	.15	.26	.26
9	.12	.11	.44	.15	.21	.15	---	---	.22	.15	.26	.18
10	.11	.11	---	---	.92	.15	---	---	.22	.15	.26	.19
11	.11	.11	---	---	.29	.22	---	---	.15	.15	.25	.18
12	.14	.11	.22	.14	.22	.15	---	---	.15	.15	.19	.18
13	.18	.11	.15	.14	.22	.15	---	---	.15	.15	.19	.19
14	.11	.10	.14	.08	.71	.15	---	---	.15	.14	---	.19
15	.11	.10	.14	.07	.29	.22	.15	.14	.17	.14	---	---
16	.11	.10	.14	.07	.22	.15	.15	.14	---	---	---	---
17	.11	.11	.22	.08	.15	.15	.15	.14	---	---	2.8	.46
18	.32	.11	.29	.14	.15	.15	.15	.14	.13	.13	3.5	.60
19	.32	.11	.43	.14	.36	.15	.50	.15	.13	.13	.60	.40
20	.75	.10	---	---	.93	.22	.50	.36	.14	.13	.83	.39
21	.39	.24	---	---	.44	.22	.36	.21	.13	.13	.39	.32
22	.31	.10	---	---	---	---	.22	.21	.20	.13	3.0	.32
23	.10	.10	---	---	---	.36	.22	.14	.13	.13	5.9	1.0
24	.10	.10	---	---	.36	.29	.43	.15	.13	.13	1.0	.46
25	.10	.10	---	---	.29	.21	1.0	.36	.13	.13	.46	.38
26	.10	.10	---	---	.36	.28	.36	.29	.19	.12	.38	.31
27	.10	.09	---	---	.29	.21	.29	.21	.19	.12	.31	.24
28	.17	.09	---	---	.22	.14	1.0	.22	.19	.12	.24	.24
29	.81	.10	---	---	.22	.14	.57	.29	---	---	.24	.17
30	.81	.24	---	---	.21	.14	.29	.21	---	---	.24	.24
31	4.4	.39	---	---	.21	.14	.22	.21	---	---	.60	.17
MONTH	4.4	.09	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.60	.24	.36	.29	.31	.22	.16	.16	.24	.16	.17	.16
2	2.6	.31	.30	.29	.23	.22	.16	.16	.18	.16	.17	.16
3	6.0	.95	.44	.29	.23	.22	.16	.16	.18	.16	.17	.16
4	.95	.44	.30	.29	.23	.22	.17	.16	.18	.17	.17	.16
5	.44	.37	.30	.22	.45	.23	.17	.17	.17	.17	.17	.16
6	.67	.30	.51	.22	.37	.22	.17	.16	.17	.17	.17	.16
7	.55	.30	.36	.22	.51	.30	.17	.16	.17	.17	.18	.16
8	.65	.30	.51	.29	.30	.22	.17	.17	.17	.16	.18	.16
9	.72	.36	.30	.22	.59	.22	.17	.15	.17	.16	.18	.16
10	.43	.36	.30	.22	.37	.23	.17	.15	.17	.16	.17	.16
11	.36	.29	.30	.22	.44	.23	.16	.16	.17	.16	.17	.16
12	.36	.29	.37	.22	.30	.23	.16	.16	.16	.16	.16	.16
13	.29	.29	.30	.22	.24	.23	.24	.16	.16	.16	.17	.16
14	.29	.21	.23	.22	.24	.24	.22	.16	.16	.16	.16	.16
15	.43	.29	.23	.22	.24	.23	.16	.16	.16	.16	.16	.16
16	.29	.22	.23	.22	.24	.23	.30	.16	.16	.16	.16	.16
17	.29	.22	.24	.22	.24	.23	.23	.16	.17	.16	.16	.16
18	.29	.22	.24	.23	.24	.23	.17	.16	.17	.16	.16	.16
19	.30	.22	.38	.22	.24	.24	.30	.16	.17	.16	.16	.16
20	.43	.22	.30	.22	.24	.15	.23	.16	.38	.16	.16	.16
21	.36	.29	.37	.23	.37	.16	.23	.16	.45	.16	.16	.15
22	.29	.22	.37	.22	.51	.23	1.4	.21	.17	.16	.16	.15
23	.36	.22	.23	.22	.37	.23	.73	.30	.23	.16	.17	.15
24	.87	.29	.23	.22	.24	.23	.30	.22	.16	.16	.16	.16
25	.65	.36	.23	.23	.25	.16	.23	.23	.16	.16	.17	.16
26	.73	.29	.23	.22	.24	.16	.23	.16	.17	.16	.17	.16
27	.65	.36	.45	.23	.24	.16	.18	.16	.16	.16	.51	.16
28	.44	.29	.31	.22	.16	.15	.37	.16	.16	.16	.17	.16
29	.66	.36	.23	.22	.16	.16	.37	.22	.17	.16	.17	.16
30	.36	.29	.45	.23	.16	.16	.23	.16	.17	.16	.17	.16
31	---	---	.59	.31	---	---	.17	.16	.17	.16	---	---
MONTH	6.0	.21	.59	.22	.59	.15	1.4	.15	.45	.16	.51	.15

SANDY RIVER BASIN

14139000 BULL RUN RESERVOIR NUMBER ONE NEAR BULL RUN, OR

LOCATION.--Lat 45°28'50", long 122°04'50", in NW 1/4 SW 1/4 sec.16, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, in control house of Bear Creek Dam on Bull Run River, 8.2 mi northeast of Bull Run, and at mile 11.2.

DRAINAGE AREA.--74.6 mi².

PERIOD OF RECORD.--October 1928 to current year. Prior to October 1937, published as Bull Run Reservoir. October 1937 to September 1967, published as Lake Ben Morrow. Prior to October 1975, monthend contents only.

REVISED RECORDS.--WSP 814: 1935(M). WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Portland Water Bureau). Prior to Oct. 9, 1930, Oct. 1, 1962, to Dec. 31, 1975, nonrecording gage and Oct. 9, 1930, to Sept. 30, 1962, water-stage recorder at present site and datum.

REMARKS.--Midnight reading on Aug. 31 furnished by Portland Water Bureau. Lake is formed by concrete dam completed in March 1929 for water supply of city of Portland. Storage began about Apr. 29, 1929; first filling occurred May 15, 1929. Capacity, 26,930 acre-ft at crest of spillway, elevation, 1,036.0 ft; capacity increased in October 1954 to 30,140 acre-ft at elevation 1,044.0 ft by installation of three gates 40 ft wide and 8 ft high. No dead storage. Water is used for power generation by Portland General Electric Co. and municipal supply for city of Portland.

COOPERATION.--Capacity table furnished by Portland Water Bureau.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,600 acre-ft Mar. 31, 1931, elevation, 1,047.40 ft; minimum contents observed, 169 acre-ft Jan. 10, 1960, elevation, 887.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 30,760 acre-ft July 22, elevation, 1,045.44 ft (from Portland Water Bureau); minimum contents, 18,830 acre-ft Sept. 30, elevation, 1,012.80 ft.

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

870	0	970	8,050
890	213	990	12,370
910	1,130	1,010	17,950
930	2,680	1,030	24,680
950	4,900	1,048	31,860

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1014.87	1035.34	1034.88	1034.39	1034.65	1031.07	1034.99	---	---	---	---	1035.20
2	1013.93	1035.32	1034.39	1034.49	1035.09	1030.75	1035.11	---	---	---	---	1034.60
3	1015.57	1033.93	1034.63	1034.52	1034.47	1032.32	1037.48	---	---	---	---	1033.84
4	1016.86	1033.93	1034.44	1034.58	1034.76	1035.78	1035.51	---	---	---	---	1033.17
5	1017.90	1034.79	1034.82	1034.72	1035.08	1035.61	1035.35	---	---	---	---	1032.44
6	1016.99	1034.98	1034.53	1034.66	1034.70	1035.57	1034.55	---	---	---	---	1032.86
7	1017.77	1035.28	1034.59	1034.60	1034.72	1035.05	1034.26	---	---	---	---	1030.98
8	1018.51	1035.61	1033.98	1034.47	1034.83	1034.24	1035.10	---	---	---	---	1031.39
9	1016.65	1035.42	1033.97	1034.69	1035.01	1034.25	1034.73	---	---	---	---	1029.38
10	1017.30	1034.29	1034.27	1034.69	1034.68	1034.53	1035.33	---	---	---	---	1028.42
11	1017.90	1034.84	1034.18	1034.19	1034.88	1034.83	1035.03	---	---	---	---	1028.81
12	1016.15	1033.92	1034.14	1035.03	1034.68	1034.73	1034.46	---	---	---	---	1027.81
13	1016.85	1034.07	1034.84	1035.51	1034.58	1034.86	1034.23	---	---	---	---	1026.48
14	1017.42	1034.67	1034.48	1035.51	1034.71	1034.73	1034.34	---	---	---	---	1025.44
15	1015.35	1034.60	1034.29	1034.05	1034.65	1037.33	1034.49	---	---	---	---	1024.64
16	1014.94	1034.73	1034.42	1034.03	1034.31	1035.82	1034.35	---	---	---	---	1024.00
17	1015.57	1034.59	1034.67	1034.76	1034.50	1036.63	1034.71	---	---	---	---	1023.20
18	1016.15	1034.55	1034.70	1034.54	1034.65	1037.35	1034.23	---	---	---	---	1023.58
19	1014.62	1034.18	1034.61	1034.27	1034.81	1035.91	1034.23	---	---	---	---	1021.89
20	1015.41	1034.95	1034.32	1034.08	1034.24	1035.86	1034.49	---	---	---	---	1022.24
21	1016.68	1040.29	1034.52	1034.45	1034.22	1035.74	1035.62	---	---	---	---	1020.58
22	1017.87	1037.20	1035.91	1034.33	1034.27	1036.87	1038.37	---	---	---	---	1020.92
23	1016.38	1035.65	1035.73	1034.77	1034.61	1038.35	1040.60	---	---	---	---	1018.86
24	1017.17	1034.74	1035.40	1035.19	1034.53	1035.33	---	---	---	---	---	1019.21
25	1017.93	1034.43	1033.92	1034.32	1034.50	1035.28	---	---	---	---	---	1017.47
26	1016.15	1034.92	1034.65	1034.07	1034.54	1034.16	---	---	---	---	---	1017.84
27	1016.80	1034.87	1034.03	1034.29	1032.97	1034.31	---	---	---	---	---	1015.54
28	1015.96	1034.22	1034.83	1035.22	1031.12	1034.32	---	---	---	---	---	1014.27
29	1017.34	1034.47	1034.40	1034.36	---	1034.38	---	---	---	---	---	1014.64
30	1019.76	1035.43	1034.76	1034.21	---	1034.28	1042.75	---	---	---	---	1012.80
31	1027.43	---	1034.95	1034.49	---	1034.50	---	---	---	---	1037.16	---
MAX	1027.43	1040.29	1035.91	1035.51	1035.09	1038.35	---	---	---	---	---	1035.20
MIN	1013.93	1033.92	1033.92	1034.03	1031.12	1030.75	---	---	---	---	---	1012.80
(†)	23750	26710	26530	26360	25090	26360	29620	a29120	a30350	a30430	27380	18830
(‡)	+4580	+2960	-180	-170	-1270	+1270	+3260	-500	+1230	+80	-3050	-8550

CAL YR 1992 MAX 1044.98 MIN 990.28 AC-FT† +390
WTR YR 1993 MAX --- MIN --- AC-FT‡ -340

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

‡ Change in contents, in acre-feet.

a Based on data provided by Portland Water Bureau.

SANDY RIVER BASIN

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14139700 CEDAR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°27'30", long 122°01'50", in NE 1/4 sec.26, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 5.8 mi north of Brightwood and at mile 2.5.

DRAINAGE AREA.--7.93 mi².

PERIOD OF RECORD.--July to November 1964, June 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,960 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--28 years, 65.8 ft³/s, 112.76 in/yr, 47,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft³/s Dec. 22, 1964, gage height, 7.20 ft, from rating curve extended above 320 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.7 ft³/s Oct. 28, 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	*754	*4.02	Mar. 18	0600	549	3.71

Minimum discharge, 7.6 ft³/s Sept. 29, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	237	118	39	e54	e20	69	111	65	27	28	12
2	19	157	79	34	e46	e24	124	102	59	29	25	11
3	32	89	58	32	e42	e46	292	129	55	27	24	11
4	26	69	46	31	e38	e130	171	135	48	25	22	11
5	21	53	39	29	e36	218	103	98	71	24	21	11
6	19	42	35	e26	e36	135	88	139	74	23	20	10
7	17	107	31	e25	e38	106	77	157	140	22	20	10
8	16	198	63	e23	e37	89	86	219	96	21	19	10
9	15	168	59	e21	e39	74	150	138	85	21	18	9.9
10	14	95	103	e20	e43	65	171	95	73	20	17	9.7
11	13	70	79	e19	e39	53	157	73	110	20	17	9.7
12	12	67	58	e18	e36	45	118	60	97	19	16	9.6
13	16	55	47	e18	e32	43	102	52	72	19	16	9.4
14	13	45	90	e17	e30	143	96	45	59	21	15	9.4
15	12	38	77	e17	e28	326	89	40	74	20	15	9.4
16	12	33	58	e16	e24	193	79	35	59	25	16	9.1
17	13	31	49	e16	e25	231	102	32	48	35	16	9.0
18	13	35	41	e15	e23	398	101	30	42	27	15	8.8
19	15	57	39	e40	e23	207	82	30	38	33	14	8.7
20	17	53	119	68	e23	204	68	34	34	41	14	8.7
21	29	352	109	56	e22	123	77	41	34	37	14	8.7
22	25	359	216	45	e21	167	74	52	46	84	13	8.6
23	19	194	251	37	e19	367	79	38	55	97	19	8.3
24	17	101	128	50	e17	195	115	33	39	75	18	8.3
25	16	67	85	98	e16	113	167	34	34	61	16	8.2
26	15	50	129	95	e16	79	156	33	32	50	14	7.9
27	14	97	109	78	e16	62	119	40	38	42	13	7.9
28	14	95	87	112	e16	51	89	42	33	40	13	7.9
29	37	65	68	139	---	45	186	41	31	46	13	7.7
30	63	169	53	91	---	44	148	43	28	35	12	7.6
31	184	---	45	e66	---	43	---	66	---	31	12	---
TOTAL	766	3248	2568	1391	835	4039	3535	2217	1769	1097	525	278.5
MEAN	24.7	108	82.8	44.9	29.8	130	118	71.5	59.0	35.4	16.9	9.28
MAX	184	359	251	139	54	398	292	219	140	97	28	12
MIN	12	31	31	15	16	20	68	30	28	19	12	7.6
AC-FT	1520	6440	5090	2760	1660	8010	7010	4400	3510	2180	1040	552
CFSM	3.12	13.7	10.4	5.66	3.76	16.4	14.9	9.02	7.44	4.46	2.14	1.17
IN.	3.59	15.24	12.05	6.53	3.92	18.95	16.58	10.40	8.30	5.15	2.46	1.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1993, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	37.2	94.3	109	113	96.7	84.6	86.5	65.8	43.7	22.2	16.2	22.6																
MAX	86.5	166	232	218	196	181	130	136	115	53.9	38.1	51.4																
(WY)	1968	1978	1978	1975	1982	1972	1974	1969	1981	1983	1968	1977																
MIN	5.43	24.2	29.4	31.8	29.8	22.6	46.5	30.6	12.8	10.9	8.68	7.86																
(WY)	1988	1977	1977	1981	1993	1992	1967	1992	1992	1992	1970	1987																

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1966 - 1993

ANNUAL TOTAL	16144.0	22268.5		
ANNUAL MEAN	44.1	61.0		
HIGHEST ANNUAL MEAN			65.8	
LOWEST ANNUAL MEAN			105	1974
HIGHEST DAILY MEAN	412	Feb 20	41.8	1977
LOWEST DAILY MEAN	6.2	Sep 2	1020	Dec 2 1977
ANNUAL SEVEN-DAY MINIMUM	6.5	Aug 28	4.8	Oct 28 1987
ANNUAL RUNOFF (AC-FT)	32020		4.9	Oct 23 1987
ANNUAL RUNOFF (CFSM)	5.56			
ANNUAL RUNOFF (INCHES)	75.73			
10 PERCENT EXCEEDS	101		8.30	
50 PERCENT EXCEEDS	25		112.76	
90 PERCENT EXCEEDS	8.3		13	

e Estimated

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'38", long 122°06'20", in NE 1/4 NE 1/4 sec.31, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 6.2 mi northeast of Bull Run, and at mile 0.6.

DRAINAGE AREA.--15.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR OR-91-1: 1989.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 990 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges and those above 650 ft³/s, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--19 years, 108 ft³/s, 95.39 in/yr, 78,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,480 ft³/s Jan. 9, 1989, gage height, 8.85 ft, from rating curve extended above 1,200 ft³/s; minimum discharge, 6.7 ft³/s Oct. 12, 13, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,600 ft³/s and maximum (*), from rating curve extended above 650 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	*1,340	*6.54				
Minimum discharge, 18 ft ³ /s Sept. 24-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	365	238	87	118	40	121	207	136	48	64	25
2	30	257	178	78	100	49	184	186	124	50	59	25
3	54	174	134	72	88	87	468	211	111	46	55	25
4	47	138	108	68	80	204	306	224	96	43	51	24
5	39	110	91	61	75	299	203	182	118	41	47	24
6	34	89	80	55	74	223	167	229	127	39	45	24
7	30	168	72	53	77	186	145	268	243	38	43	23
8	28	307	109	51	80	161	153	350	193	36	41	23
9	26	302	122	47	86	137	225	250	161	34	39	22
10	25	202	192	46	94	121	262	184	136	33	37	22
11	23	151	177	44	91	104	254	139	179	32	36	22
12	22	137	136	42	86	89	219	112	176	31	35	22
13	25	117	111	40	79	84	192	97	137	31	34	21
14	22	100	154	39	73	192	182	82	111	32	33	21
15	e20	85	160	38	67	476	168	72	124	31	33	21
16	e19	74	130	37	59	310	152	64	103	39	36	21
17	e21	68	112	36	56	361	182	58	87	59	34	20
18	e20	70	92	35	55	714	185	53	78	51	32	20
19	e21	98	85	57	53	348	158	51	69	59	30	20
20	e27	100	189	110	51	324	136	57	62	73	30	20
21	e40	596	193	104	48	228	140	65	59	74	30	20
22	e40	618	328	92	46	272	134	80	75	146	29	19
23	28	354	466	79	43	625	139	66	92	189	37	19
24	26	218	265	92	41	337	188	60	74	159	37	19
25	25	152	186	156	39	219	262	61	67	130	33	19
26	24	116	220	164	37	160	260	57	61	107	30	18
27	22	157	215	144	36	126	213	67	69	90	28	18
28	23	177	184	175	36	104	167	70	61	85	28	18
29	45	139	149	247	---	91	272	74	56	96	28	18
30	91	260	120	188	---	86	252	81	51	82	27	18
31	236	---	102	146	---	84	---	127	---	70	26	---
TOTAL	1162	5899	5098	2683	1868	6841	6089	3884	3236	2074	1147	631
MEAN	37.5	197	164	86.5	66.7	221	203	125	108	66.9	37.0	21.0
MAX	236	618	466	247	118	714	468	350	243	189	64	25
MIN	19	68	72	35	36	40	121	51	51	31	26	18
AC-FT	2300	11700	10110	5320	3710	13570	12080	7700	6420	4110	2280	1250
CFSM	2.43	12.8	10.7	5.62	4.33	14.3	13.2	8.14	7.00	4.34	2.40	1.37
IN.	2.81	14.25	12.31	6.48	4.51	16.53	14.71	9.38	7.82	5.01	2.77	1.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1993, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
MEAN	53.3	163	184	174	172	144	147	102	72.4	33.5	23.5	34.1			
MAX	136	253	379	315	302	235	215	162	180	91.2	53.2	93.4			
(WY)	1976	1989	1978	1975	1982	1989	1976	1977	1981	1983	1978	1977			
MIN	8.31	40.1	50.4	58.3	54.7	53.8	89.6	47.1	15.4	14.8	13.3	10.3			
(WY)	1988	1977	1977	1979	1977	1992	1983	1992	1992	1992	1992	1987			

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1975 - 1993

ANNUAL TOTAL	29545.0	40612	108
ANNUAL MEAN	80.7	111	150
HIGHEST ANNUAL MEAN			1976
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	1000	714	1610
LOWEST DAILY MEAN	9.3	18	7.4
ANNUAL SEVEN-DAY MINIMUM	9.7	18	7.4
ANNUAL RUNOFF (AC-FT)	58600	80550	78330
ANNUAL RUNOFF (CFSM)	5.24	7.23	7.02
ANNUAL RUNOFF (INCHES)	71.37	98.10	95.39
10 PERCENT EXCEEDS	178	232	224
50 PERCENT EXCEEDS	47	80	72
90 PERCENT EXCEEDS	12	24	16

e Estimated

SANDY RIVER BASIN

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14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.

pH: November 1980 to September 1981, June 1990 to September 1992.

WATER TEMPERATURE: October 1978 to current year.

TURBIDITY: June 1990 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor, turbidimeter with data recording interval dependent upon river stage.

REMARKS.--Turbidity values herein are recorded values and may not reflect extremes for the day. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 56 microsiemens Oct. 31, 1988; minimum, 9 microsiemens Jan. 4, 1983.

pH: Maximum recorded, 8.0 units Aug. 17, Oct. 2, 1990, but may have been higher in water year 1990, 1992 during period of missing record; minimum recorded, 6.4 units Dec. 6, 1991, but may have been lower during period of missing record.

WATER TEMPERATURE: Maximum, 18.0°C June 23, 24, July 18, 19, 1992; minimum, 0.0°C on many days during winter periods.

TURBIDITY: Maximum recorded, 14 NTU Nov. 5, 1991, Sept. 24, 1992; minimum recorded, 0.10 NTU Jan. 8, 9, 1992.

SEDIMENT CONCENTRATION: Maximum daily, 212 mg/L Nov. 7, 1985; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 794 tons Nov. 7, 1985; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 39 microsiemens Sept. 26-29; minimum, 13 microsiemens Mar. 18.

WATER TEMPERATURE: Maximum, 14.5°C Aug. 4-6; minimum, 0.0°C Jan. 10, Feb. 16, 17.

TURBIDITY: Maximum recorded, 11 NTU Nov. 21, Sept. 24; minimum recorded, 0.16 NTU Oct. 15.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	27	26	27	17	15	17	19	17	18	24	23	24
2	27	27	27	18	16	17	20	18	19	25	24	25
3	27	26	26	18	17	18	21	20	20	25	25	25
4	26	25	25	19	18	19	21	20	21	26	25	25
5	26	25	25	20	19	19	22	21	22	26	25	26
6	26	25	25	21	20	20	23	22	22	27	26	27
7	29	25	26	21	19	20	23	22	23	27	26	26
8	27	26	26	19	16	18	23	19	22	27	26	26
9	27	26	27	17	16	17	23	19	21	27	26	27
10	28	27	27	18	17	18	23	21	22	27	27	27
11	28	27	28	19	18	18	22	21	22	28	27	28
12	29	28	28	19	18	19	23	22	22	28	27	28
13	29	27	28	19	19	19	24	22	23	28	28	28
14	28	28	28	20	19	19	24	21	22	29	28	29
15	---	---	---	20	19	20	22	21	21	29	28	29
16	---	---	---	21	20	21	22	21	22	29	29	29
17	---	---	---	21	21	21	---	---	---	30	29	29
18	---	---	---	21	21	21	24	22	23	30	29	30
19	---	---	---	21	20	20	24	23	24	30	22	28
20	---	---	---	20	19	20	23	20	22	22	20	21
21	---	---	---	20	14	17	22	21	21	21	20	21
22	---	---	---	17	14	16	21	18	20	22	21	22
23	29	28	29	18	16	17	20	18	18	23	22	23
24	29	29	29	19	18	19	21	19	20	24	21	23
25	30	29	29	20	19	20	22	20	21	22	19	21
26	30	29	29	21	20	21	22	19	20	21	20	20
27	30	29	29	21	18	20	21	19	20	21	20	20
28	30	29	29	19	18	19	22	21	21	21	19	21
29	30	26	29	20	19	20	22	21	22	20	18	19
30	27	24	25	20	17	18	23	22	23	21	19	20
31	24	15	22	---	---	---	23	23	23	21	20	20
MONTH	---	---	---	21	14	19	---	---	---	30	18	25

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	21	20	21	29	28	29	22	20	21	20	19	20
2	22	21	21	28	26	27	21	17	19	21	19	20
3	22	22	22	27	21	24	18	15	16	21	19	20
4	23	22	23	22	17	20	19	16	18	20	18	19
5	24	23	24	18	17	17	20	18	19	21	19	20
6	24	24	24	19	17	18	20	19	20	20	19	19
7	24	23	24	19	18	19	21	19	20	20	17	19
8	24	23	24	19	19	19	21	19	20	19	17	18
9	23	22	23	20	19	19	20	18	19	21	18	19
10	22	21	21	20	19	19	19	18	18	21	20	21
11	22	21	21	21	19	20	19	17	18	23	21	22
12	21	21	21	21	20	21	20	17	19	23	22	23
13	23	21	22	22	21	21	20	18	19	24	22	23
14	27	22	25	22	17	19	20	18	19	25	24	24
15	27	24	26	17	14	15	20	19	19	26	24	25
16	25	24	24	17	16	17	20	19	20	27	26	26
17	25	24	25	17	15	17	20	19	20	28	27	27
18	25	25	25	16	13	15	20	19	19	29	27	28
19	25	25	25	18	16	17	20	19	20	29	28	29
20	26	25	26	18	16	17	24	20	21	28	27	28
21	26	26	26	19	17	18	21	20	21	28	26	27
22	27	26	27	20	15	18	21	20	21	26	24	25
23	27	27	27	16	14	15	21	20	21	27	25	26
24	28	27	27	18	16	17	21	19	20	28	26	27
25	28	27	28	19	18	19	19	17	19	28	27	27
26	29	27	28	20	19	20	19	18	18	28	27	28
27	29	28	28	21	20	21	20	18	19	28	26	27
28	29	28	29	22	21	22	21	20	20	27	25	26
29	---	---	---	23	22	22	21	17	19	26	24	25
30	---	---	---	23	22	23	20	18	19	26	24	25
31	---	---	---	23	22	23	---	---	---	25	22	23
MONTH	29	20	25	29	13	20	24	15	19	29	17	24

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	23	22	22	30	29	30	28	27	28	36	35	36
2	23	22	23	30	29	29	29	28	28	37	36	36
3	24	23	23	31	29	30	30	28	29	37	36	37
4	25	23	24	31	30	31	31	29	30	37	36	37
5	25	23	24	31	30	31	31	30	31	37	36	37
6	24	22	23	32	30	31	32	30	31	37	37	37
7	22	20	20	31	30	31	32	30	31	38	37	37
8	21	20	21	32	31	32	32	30	31	38	37	38
9	22	20	21	32	31	32	33	31	32	38	37	38
10	23	21	22	33	31	32	33	32	33	38	37	38
11	23	20	21	33	32	32	33	32	33	38	36	37
12	22	21	21	34	32	33	34	33	33	38	37	37
13	23	21	22	34	33	33	34	32	33	38	37	37
14	24	23	23	34	32	33	34	33	34	38	37	37
15	24	22	23	34	33	33	35	33	34	38	37	37
16	24	22	23	34	31	33	35	34	34	38	37	38
17	25	24	24	32	28	30	35	34	34	38	37	38
18	26	25	25	30	28	29	36	34	35	38	37	38
19	27	25	26	31	28	29	36	35	36	38	37	38
20	28	26	27	28	26	27	37	35	36	38	37	37
21	28	27	28	27	25	26	36	35	36	38	37	38
22	28	24	27	26	21	24	37	36	36	38	37	38
23	26	23	24	22	21	21	37	34	35	38	37	38
24	26	25	26	22	21	22	34	33	34	38	37	38
25	27	26	26	23	22	22	34	33	34	38	38	38
26	28	26	27	25	23	24	35	34	35	39	38	38
27	27	25	26	25	24	25	35	34	34	39	38	39
28	28	26	27	26	25	25	35	34	35	39	38	39
29	29	27	28	25	23	24	35	34	35	39	38	38
30	30	28	29	26	25	25	35	35	35	38	38	38
31	---	---	---	28	26	26	36	35	35	---	---	---
MONTH	30	20	24	34	21	29	37	27	33	39	35	38

SANDY RIVER BASIN

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14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

SANDY RIVER BASIN

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14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	2.4	1.1	.83	.53	.31	.31	.62	.46	---	---
2	---	---	1.3	.67	.54	.39	.38	.31	.46	.39	---	---
3	---	---	.67	.53	.39	.31	.38	.31	.39	.31	---	---
4	---	---	.53	.46	.53	.30	.38	.23	.39	.31	---	---
5	---	---	.46	.39	.53	.31	.37	.23	.40	.24	---	---
6	---	---	.39	.39	.39	.31	---	---	.39	.31	---	---
7	---	---	1.3	.39	.31	.31	---	---	.39	.24	---	---
8	---	.24	1.5	.68	1.2	.31	---	---	.47	.31	---	---
9	.24	.23	1.0	.60	.76	.31	---	---	.55	.46	---	---
10	.24	.23	.60	.45	1.6	.38	---	---	.55	.46	---	---
11	.24	.23	.46	.38	.52	.37	---	---	.47	.39	---	---
12	.24	.23	.39	.39	.45	.30	---	---	.40	.32	---	---
13	.31	.24	.39	.31	.31	.30	---	---	.39	.32	---	---
14	.24	.23	.39	.31	1.0	.31	---	---	.32	.24	---	---
15	.23	.16	.32	.31	.52	.31	---	---	.32	.24	---	---
16	---	---	.32	.31	.38	.31	---	---	---	---	---	---
17	---	---	.39	.32	.45	.30	---	---	---	---	---	---
18	---	---	.39	.31	.30	.30	---	---	---	---	---	---
19	---	---	.68	.31	.37	.30	---	---	---	---	---	---
20	---	---	.39	.31	1.2	.37	---	.68	---	---	1.1	.65
21	---	---	11	.31	.53	.37	.75	.53	---	---	.65	.51
22	.38	.31	4.3	1.4	2.4	.45	.53	.46	---	---	1.7	.51
23	.31	.24	1.5	.90	2.3	.88	.46	.38	---	---	2.9	1.1
24	.24	.24	.90	.60	.88	.60	.67	.38	---	---	1.1	.58
25	.24	.24	.67	.46	.60	.45	1.2	.67	---	---	.65	.50
26	.24	.24	.53	.38	.75	.45	.76	.46	---	---	.51	.43
27	.24	.23	1.5	.38	.74	.45	.53	.46	---	---	.44	.37
28	.31	.23	.91	.38	.46	.38	3.2	.38	---	---	.44	.36
29	1.3	.24	.38	.38	.52	.38	2.2	.76	---	---	.44	.36
30	1.7	.23	2.2	.38	.45	.31	.83	.53	---	---	.37	.36
31	7.7	1.7	---	---	.45	.31	.53	.46	---	---	.58	.30
MONTH	---	---	11	.31	2.4	.30	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.65	.44	.45	.38	.60	.45	.39	.31	.32	.25	.25	.24
2	1.6	.44	.45	.38	.46	.38	.45	.31	.32	.25	.25	.24
3	1.7	.80	.59	.38	.45	.38	.38	.31	.39	.31	.25	.24
4	.80	.51	1.2	.38	.45	.38	.38	.31	.39	.25	.25	.24
5	.51	.44	.52	.24	.75	.38	.31	.31	.32	.25	.25	.24
6	.44	.36	.67	.38	1.7	.38	.31	.31	.32	.24	.25	.24
7	.44	.36	1.6	.38	1.6	.52	.32	.31	.31	.24	.25	.24
8	.58	.37	1.3	.52	.52	.45	.32	.31	.25	.24	.25	.24
9	.79	.44	.52	.45	.53	.38	.31	.31	.25	.24	.26	.24
10	.58	.44	.46	.38	.52	.38	.32	.24	.25	.24	.26	.25
11	.44	.36	.46	.38	.67	.45	.32	.24	.25	.24	---	---
12	.44	.36	.53	.38	.52	.38	.32	.24	.24	.24	---	---
13	.51	.36	.46	.38	.39	.38	.32	.24	.24	.24	---	---
14	.51	.36	.46	.38	.46	.38	.31	.24	.24	.24	---	---
15	.44	.37	.46	.38	.53	.38	.31	.24	.25	.24	---	---
16	.44	.36	.46	.38	.39	.38	.96	.31	.31	.24	---	---
17	.44	.37	.46	.38	.39	.31	.96	.38	.25	.24	---	---
18	.37	.36	.46	.38	.46	.32	.38	.31	.25	.24	---	---
19	.37	.29	.60	.38	.46	.38	.53	.31	.25	.24	---	---
20	.44	.36	.53	.45	.39	.32	.46	.31	.25	.24	---	---
21	.37	.37	.60	.45	.45	.38	.39	.31	.24	.24	---	---
22	.37	.37	.67	.45	1.2	.31	1.5	.31	.25	.24	---	---
23	.88	.29	.46	.38	.74	.38	.75	.46	.52	.24	---	---
24	.88	.38	.46	.38	.39	.32	.46	.38	.38	.24	---	---
25	1.2	.45	.46	.38	.39	.31	.45	.31	.31	.24	---	---
26	.66	.45	.46	.38	.46	.31	.32	.31	.97	.24	---	---
27	.45	.38	.67	.39	.46	.38	.32	.31	.24	.24	---	---
28	.45	.38	.60	.38	.38	.31	.46	.24	.31	.24	---	---
29	.96	.38	.53	.38	.38	.31	.46	.31	.46	.24	---	---
30	.52	.38	.75	.38	.39	.31	.32	.24	.24	.24	---	---
31	---	---	.96	.53	---	---	.32	.24	.25	.24	---	---
MONTH	1.7	.29	1.6	.24	1.7	.31	1.5	.24	.97	.24	---	---

SANDY RIVER BASIN

14139900 BULL RUN RESERVOIR NUMBER TWO NEAR BULL RUN, OR

LOCATION.--Lat 45°26'55", long 122°08'45", on line between secs.25 and 26, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on headworks dam on Bull Run River, 4.4 mi northeast of Bull Run, and at mile 6.5.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--December 1961 to current year. Prior to October 1975, monthend contents only.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Portland Water Bureau). Prior to Dec. 31, 1975, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth and rockfill dam with concrete spillway built by Portland Water Bureau. Storage began about Dec. 20, 1961; first filling occurred Dec. 24, 1961. Capacity, 20,990 acre-ft at crest of spillway, elevation, 860.0 ft. Dead storage negligible. Water is used as municipal supply for city of Portland and for power generation by Portland General Electric Co.

COOPERATION.--Capacity table furnished by Portland Water Bureau.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 23,660 acre-ft Dec. 22, 1964, elevation, 866.00 ft; no contents at times during low-flow periods.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,070 acre-ft Nov. 22, elevation, 862.43 ft; minimum contents, 18,880 acre-ft Oct. 23, elevation, 855.18 ft.

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

752	0	830	10,000
770	234	850	16,800
790	1,860	870	25,500
810	5,070		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	856.02	859.17	858.59	859.02	858.90	858.68	859.14	858.60	859.13	859.62	---	859.49
2	856.94	858.98	859.38	859.10	858.53	859.20	859.04	858.84	859.55	859.79	---	859.61
3	856.77	859.43	859.26	858.58	858.94	859.31	861.15	858.73	859.24	859.21	---	859.71
4	856.41	858.77	859.20	858.36	858.34	859.56	860.09	858.98	858.98	859.22	---	859.64
5	855.91	859.23	859.07	858.24	858.34	860.50	858.71	859.37	859.28	859.34	---	859.60
6	856.72	859.14	859.25	858.39	858.83	859.31	858.87	859.13	859.53	859.62	---	858.66
7	856.13	858.79	859.00	858.36	859.03	859.03	859.13	858.92	859.24	859.66	---	859.51
8	855.53	860.35	858.88	858.43	859.06	858.89	858.34	860.13	859.38	859.54	---	858.48
9	856.87	859.76	858.99	858.20	858.91	859.37	859.46	859.66	859.55	859.59	---	859.46
10	856.32	859.48	858.52	858.51	858.67	858.98	859.46	859.25	859.51	859.38	---	859.65
11	855.74	859.13	859.02	858.08	858.45	859.07	859.44	859.49	859.29	859.62	---	858.74
12	856.81	859.07	858.87	857.24	859.05	859.18	858.62	859.20	859.62	859.48	---	858.96
13	856.19	859.58	858.57	857.05	859.37	858.86	859.20	859.29	859.34	859.44	---	859.33
14	855.49	858.82	859.38	857.69	859.40	859.29	859.04	859.09	859.47	859.45	---	859.57
15	856.80	859.27	858.57	857.64	858.90	861.10	859.08	859.22	859.34	859.40	---	859.72
16	856.89	858.58	859.74	857.43	858.82	860.10	858.74	859.14	858.90	859.69	---	859.69
17	856.31	858.86	858.64	856.62	858.65	860.73	859.21	859.17	859.89	859.28	---	859.82
18	855.73	859.35	859.47	856.57	858.58	861.23	859.41	859.62	859.62	859.76	---	858.98
19	856.72	859.24	859.39	857.32	858.17	860.31	859.39	859.48	859.66	859.99	859.64	859.72
20	856.26	858.48	859.36	859.20	858.53	860.27	859.33	858.61	859.35	859.95	859.67	858.85
21	855.85	862.39	858.74	858.75	858.47	858.96	858.72	859.46	859.92	860.03	859.77	859.62
22	855.38	861.13	860.40	858.76	858.16	860.25	858.81	859.17	859.70	859.79	859.78	858.75
23	856.71	860.12	860.48	858.53	857.53	---	858.79	859.29	859.80	859.18	859.51	859.68
24	856.20	859.47	859.13	858.78	857.22	860.72	858.79	859.22	859.88	859.70	859.52	858.82
25	855.54	859.31	859.17	858.60	856.80	858.79	859.54	859.36	859.86	859.56	859.51	859.55
26	856.75	859.34	858.57	859.02	856.29	858.88	859.15	858.85	860.00	860.00	859.76	858.71
27	856.12	858.83	859.19	858.69	857.25	859.16	858.66	858.92	859.68	859.81	859.72	859.60
28	856.71	859.65	858.69	858.54	858.58	858.79	858.88	858.82	859.38	859.64	859.63	859.77
29	856.44	859.32	858.94	858.89	---	858.84	859.83	858.91	859.68	859.48	859.50	858.94
30	856.36	859.81	858.88	859.41	---	859.15	859.75	858.87	859.72	859.37	859.44	859.61
31	857.20	---	859.21	858.87	---	859.06	---	858.38	---	859.59	859.50	---
MAX	857.20	862.39	860.48	859.41	859.40	---	861.15	860.13	860.00	860.03	---	859.82
MIN	855.38	858.48	858.52	856.57	856.29	---	858.34	858.38	858.90	859.18	---	858.48
(†)	19770	20920	20650	20500	20380	20590	20890	20290	20880	20820	20780	20830
(‡)	+310	+1150	-270	-150	-120	+210	+300	-600	+590	-60	-40	+50

CAL YR 1992 MAX 862.39 MIN 854.50 AC-FT† -220
WTR YR 1993 MAX --- MIN --- AC-FT‡ +1370

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

SANDY RIVER BASIN

183

14140001 BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'15", long 122°10'40", in NE 1/4 SW 1/4 sec.34, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on left bank 1.8 mi downstream from Bull Run Reservoir Number Two, 2.7 mi northeast of Bull Run, and at mile 4.7.

DRAINAGE AREA.--107 mi².

PERIOD OF RECORD.--September 1907 to current year. Records for January 1895 to August 1907, published in WSP 370, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1288: 1910-11, 1913, 1920-23, 1926, 1929. WSP 1318: 1919(M). WSP 1568: 1952. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 567.90 ft above sea level (levels by Portland Water Bureau). Prior to July 27, 1909, nonrecording gage at site 1.5 mi upstream at different datum. July 27, 1909, to Sept. 30, 1959, water-stage recorder at site 2.5 mi upstream at different datums.

REMARKS.--Records good except those below 10 ft³/s and estimated daily discharges, which are fair. Flow regulated since 1915 by Bull Run Lake, capacity, 12,270 acre-ft, since 1929 by Bull Run Reservoir Number One (station 14139000), since 1958 by North Fork Reservoir, capacity, 1,030 acre-ft, and since 1961 by Bull Run Reservoir Number Two (station 14139900). All records given herein include flow diverted from Bull Run Reservoir Number Two for city of Portland, and that used by Portland General Electric Co. for power generation, which returns to Bull Run River downstream from station. Total diversion, 193,100 acre-ft of which 71,710 acre-ft were used for power generation and returned to Bull Run River.

COOPERATION.--Records of daily diversion furnished by Portland Water Bureau.

AVERAGE DISCHARGE.--86 years, 774 ft³/s, 98.23 in/yr, 560,800 acre-ft/yr, adjusted for storage in Bull Run Reservoir Number One since 1929 and Bull Run Reservoir Number Two since 1961.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 24,800 ft³/s Dec. 22, 1964, gage height, 17.21 ft, from rating curve extended above 8,800 ft³/s on basis of computation of peak flow over dam; minimum discharge, 1.1 ft³/s Oct. 4, 1974.

Combined flow, maximum discharge, 25,100 ft³/s Dec. 22, 1964; minimum daily, 11 ft³/s Nov. 16, 1987.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 7,520 ft³/s Nov. 21, gage height, 11.22 ft; minimum discharge, 3.1 ft³/s several days in October.

Combined flow, maximum discharge, 7,820 ft³/s Nov. 21; minimum daily, 142 ft³/s Oct. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	531	1920	e709	733	233	984	1830	597	304	395	263
2	150	1900	1020	e456	637	212	1450	1380	598	313	266	205
3	148	1260	797	e597	592	172	3080	1570	748	304	283	232
4	144	992	718	e486	569	669	2910	1360	630	298	298	252
5	153	416	521	e417	391	2380	1830	1290	709	299	280	249
6	164	483	513	e345	417	1950	1360	1480	818	288	273	244
7	162	1140	501	e319	388	1500	1150	1700	1280	247	238	253
8	161	1670	818	e316	411	1350	1320	1920	1300	241	209	267
9	155	2080	682	e310	492	857	1820	1910	909	251	244	254
10	156	1460	1380	e311	655	850	1880	1600	925	233	267	223
11	153	876	1030	e304	533	615	1890	1090	1020	221	249	225
12	164	1010	902	e252	396	578	1760	869	788	224	233	227
13	174	578	619	e245	389	589	1160	734	947	230	170	240
14	172	674	873	e231	369	1380	1210	718	737	206	202	232
15	165	425	1190	e222	506	3030	1100	484	807	194	207	207
16	153	578	508	e235	410	2700	1110	445	667	188	221	207
17	149	390	911	e226	360	2250	1110	397	394	181	222	212
18	149	346	409	e232	319	4330	1330	502	486	177	221	220
19	165	761	603	e236	314	2960	1120	498	425	195	221	220
20	147	725	1320	e444	310	2380	868	587	343	199	220	213
21	142	2530	1420	e770	306	1940	917	473	330	357	209	181
22	142	5450	e1700	654	305	1910	448	637	554	846	207	226
23	143	3000	e1770	500	324	5030	613	492	623	1300	207	223
24	153	1750	e1860	577	308	3470	1180	394	486	905	206	221
25	164	1080	e1410	1840	314	2100	1900	448	392	564	206	204
26	174	654	e1410	1340	315	1380	1940	570	409	488	205	208
27	165	1140	e1400	1100	296	845	1780	445	417	526	222	247
28	146	1150	e1080	1190	233	852	1280	485	553	492	225	245
29	143	874	e911	1810	---	676	1590	476	298	507	228	219
30	145	1450	e681	1170	---	615	1890	469	312	428	254	218
31	149	---	e407	962	---	658	---	1040	---	324	276	---
TOTAL	4797	37373	31284	18806	11592	50461	43980	28293	19502	11530	7364	6837
MEAN	155	1246	1009	607	414	1628	1466	913	650	372	238	228
MAX	174	5450	1920	1840	733	5030	3080	1920	1300	1300	395	267
MIN	142	346	407	222	233	172	448	394	298	177	170	181
AC-FT	9510	74130	62050	37300	22990	100100	87230	56120	38680	22870	14610	13560
MEAN†	234	1310	1000	601	389	1650	1530	895	681	372	187	85.0
CFSM†	2.19	12.3	9.36	5.62	3.63	15.4	14.3	8.36	6.36	3.48	1.75	0.79
IN.†	2.52	13.71	10.80	6.48	3.79	17.80	15.91	9.64	7.10	4.01	2.02	0.89
AC-FT†	14400	78240	61600	36980	21600	101600	90790	55020	40500	22890	11520	5060

CAL YR 1992 TOTAL 189181 MEAN 517 MAX 5450 MIN 89 AC-FT 375200 MEAN† 517 CFSM† 4.83 IN.† 65.80 AC-FT† 375400
WTR YR 1993 TOTAL 271819 MEAN 745 MAX 5450 MIN 142 AC-FT 539200 MEAN† 746 CFSM† 6.97 IN.† 94.69 AC-FT† 540200

e Estimated

† Adjusted for change in contents in Bull Run Reservoir Number One and Bull Run Reservoir Number Two.

SANDY RIVER BASIN

14141500 LITTLE SANDY RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°24'55", long 122°10'20", in NE 1/4 NE 1/4 sec.10, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on left bank 0.25 mi upstream from Portland General Electric Co. dam and tunnel from Sandy River, 3.0 mi east of Bull Run, and at mile 1.95.

DRAINAGE AREA.--22.3 mi².

PERIOD OF RECORD.--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1154: 1949. WSP 1248: Drainage area. WSP 1288: 1912, 1920-21(M), 1922-23, 1931, 1945. WSP 1318: 1920. WDR OR-82-2: 1972(P), 1974-76(P), 1978-81(P).

GAGE.--Water-stage recorder. Elevation of gage is 720 ft, from topographic map. May 23, 1911, to Apr. 29, 1913, nonrecording gage at site 0.85 mi downstream at different datum, 0.5 mi downstream from Sandy River diversion tunnel. July 1, 1919, to Sept. 30, 1931, water-stage recorder at site 0.1 mi downstream at different datum. Oct 1, 1931, to Nov. 3, 1967, at site 0.1 mi downstream at datum 712 ft above sea level. Nov. 4, 1967, to Aug. 8, 1971, water-stage recorder at site 0.1 mi downstream at datum 697.44 ft above sea level (Portland General Electric Co. bench mark).

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

AVERAGE DISCHARGE.--74 years (water years 1920-93), 144 ft³/s, 87.91 in/yr, 104,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft³/s; minimum discharge, 8 ft³/s Aug. 20, Sept. 16, 17, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	*1,670	*5.15	No other peak greater than base discharge.			
Minimum discharge, 15 ft ³ /s Sept. 26-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	374	307	123	141	49	175	245	196	62	67	23
2	33	386	239	108	121	63	240	244	171	66	61	23
3	101	201	182	103	109	109	564	261	155	63	56	22
4	72	152	145	99	98	259	369	290	133	58	51	22
5	51	119	123	89	94	375	248	227	177	55	47	21
6	42	92	108	80	94	255	212	307	191	52	45	21
7	35	208	97	75	97	211	196	342	436	48	43	20
8	32	336	122	73	97	184	202	460	293	46	42	20
9	30	284	138	66	100	154	261	302	224	43	39	19
10	27	189	226	62	110	134	280	226	190	42	38	19
11	25	149	218	60	101	117	260	181	204	40	37	18
12	24	157	173	56	94	102	235	153	198	39	35	18
13	32	132	140	53	85	97	219	141	158	39	34	18
14	28	108	199	52	78	241	218	119	135	42	34	18
15	24	90	193	51	74	524	211	104	162	43	34	18
16	23	77	158	49	61	339	200	93	142	56	41	18
17	26	73	141	47	63	472	238	85	118	114	41	17
18	25	85	119	45	61	876	240	78	102	85	33	17
19	25	111	112	56	61	453	209	76	91	87	31	17
20	27	109	201	133	60	419	172	87	83	111	31	17
21	56	791	192	107	56	277	189	96	79	104	31	17
22	54	816	479	101	53	359	184	116	97	180	30	17
23	38	431	759	90	50	762	177	87	140	232	36	16
24	32	241	343	112	47	418	217	78	96	195	40	16
25	29	167	232	183	44	276	276	82	84	158	35	16
26	28	128	291	186	43	212	269	80	77	125	31	15
27	26	184	273	162	42	173	236	97	87	102	29	15
28	27	219	236	189	42	148	191	102	81	92	27	15
29	50	162	199	289	---	132	359	111	76	113	27	15
30	96	358	165	218	---	125	315	112	67	87	25	15
31	232	---	143	171	---	126	---	188	---	74	24	---
TOTAL	1377	6929	6653	3288	2176	8441	7362	5170	4443	2653	1175	543
MEAN	44.4	231	215	106	77.7	272	245	167	148	85.6	37.9	18.1
MAX	232	816	759	289	141	876	564	460	436	232	67	23
MIN	23	73	97	45	42	49	172	76	67	39	24	15
AC-FT	2730	13740	13200	6520	4320	16740	14600	10250	8810	5260	2330	1080
CFSM	1.99	10.4	9.62	4.76	3.48	12.2	11.0	7.48	6.64	3.84	1.70	.81
IN.	2.30	11.56	11.10	5.48	3.63	14.08	12.28	8.62	7.41	4.43	1.96	.91

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1993, BY WATER YEAR (WY)

	MEAN	85.7	209	243	237	208	186	197	164	104	40.1	23.6	39.3
MAX	271	588	585	589	452	407	325	328	268	121	96.1	184	184
(WY)	1960	1956	1965	1953	1961	1932	1920	1945	1933	1983	1968	1927	1927
MIN	10.6	14.3	57.5	45.9	59.2	49.9	54.0	55.8	19.2	13.8	10.1	12.4	12.4
(WY)	1988	1930	1977	1937	1977	1941	1941	1947	1992	1940	1940	1938	1938

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1920 - 1993

	ANNUAL TOTAL	35202.3	50210	144	1974
ANNUAL MEAN	96.2	138	87.6	1944	
HIGHEST ANNUAL MEAN					
LOWEST ANNUAL MEAN					
HIGHEST DAILY MEAN	920	Feb 20	876	Mar 18	3500
LOWEST DAILY MEAN	9.1	Sep 3	15	Sep 26	8.0
ANNUAL SEVEN-DAY MINIMUM	9.5	Aug 28	15	Sep 24	9.0
ANNUAL RUNOFF (AC-FT)	69820		99590		104500
ANNUAL RUNOFF (CFSM)	4.31		6.17		6.47
ANNUAL RUNOFF (INCHES)	58.72		83.76		87.91
10 PERCENT EXCEEDS	219		278		300
50 PERCENT EXCEEDS	58		101		97
90 PERCENT EXCEEDS	13		25		18

LOCATION.--Lat 45°26'57", long 122°14'38", in SW 1/4 sec.30, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on left bank 0.1 mi downstream from Bull Run River, 0.2 mi downstream from Dodge Park, 400 ft below city of Portland water conduit crossing Sandy River, and at mile 18.4.

PERIOD OF RECORD.--April 1910 to September 1914, October 1929 to September 1966, May 1984 to current year.
Monthly discharge only for some periods, published in WSP 1318.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated since 1915 by Bull Run Lake, since 1929 by Bull Run Reservoir Number One (station 14139000), and since 1961 by Bull Run Reservoir Number Two (station 14139900). Some fluctuation caused by Bull Run powerplant of Portland General Electric Company. Portland Water Bureau diverted 141,500 acre-ft from Bull Run River during the 1992 water year, of which 19,490 acre-ft were used for power generation by Portland General Electric Company and returned to Bull Run River.

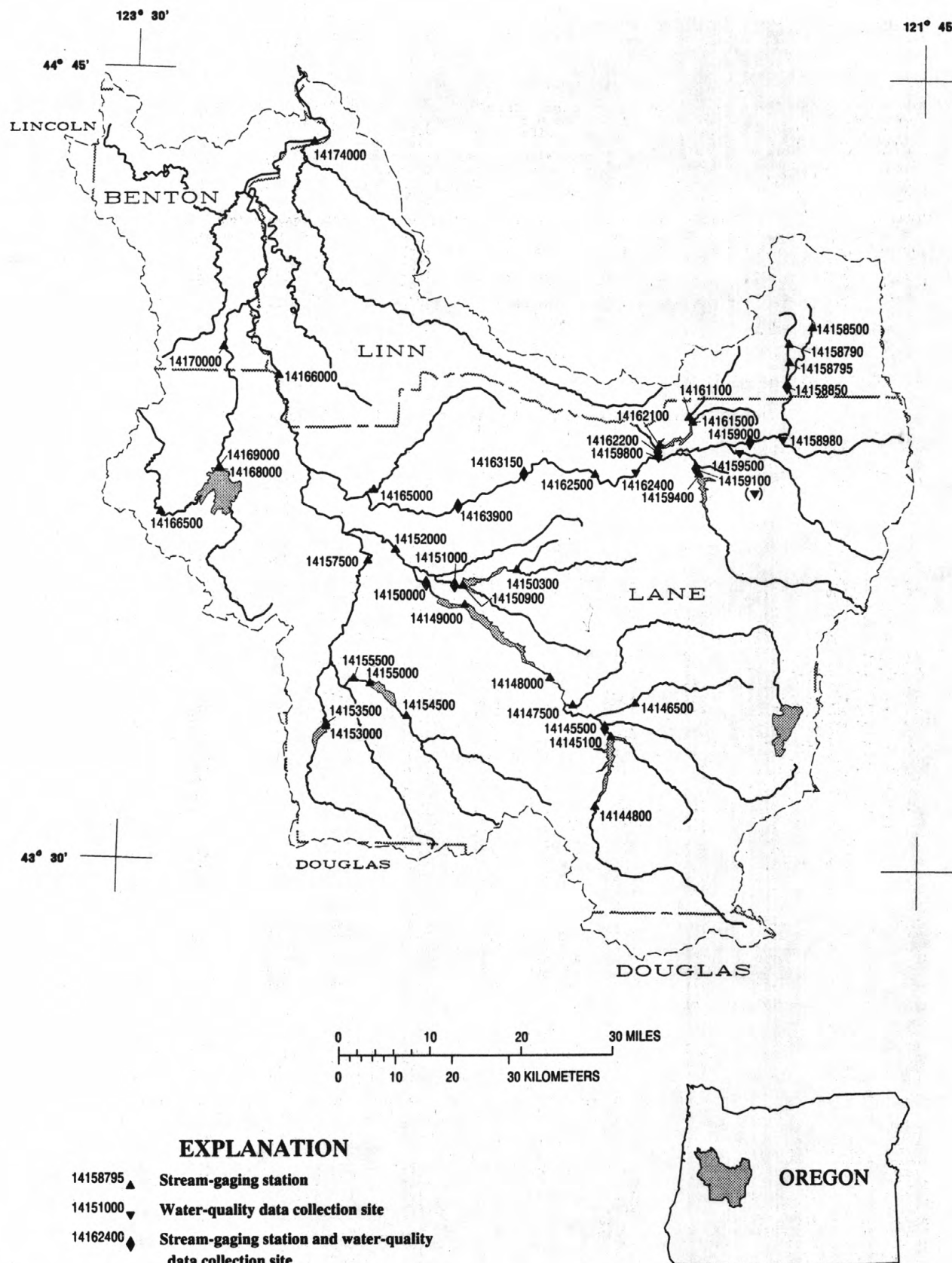
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,400 ft³/s Dec. 22, 1964, gage height, 22.3 ft, site and datum then in use; minimum discharge, 45 ft³/s Sept. 26, 1962, minimum daily, 63 ft³/s Oct. 12, Nov. 9, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1993, BY WATER YEAR (WY)

MEAN	696	3167	2672	2775	3191	2839	3246	2192	1475	664	437	424
MAX	1378	4611	4300	4265	6207	4200	4010	2920	2465	1212	620	812
(WY)	1986	1985	1992	1989	1986	1993	1988	1993	1985	1993	1993	1985
MIN	242	412	1568	1204	1196	1183	2155	998	479	390	308	319
(WY)	1988	1988	1987	1985	1993	1992	1986	1992	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1985 - 1993	
ANNUAL TOTAL	526351		743654			
ANNUAL MEAN	1438		2037		1971	
HIGHEST ANNUAL MEAN					2206	1991
LOWEST ANNUAL MEAN					1609	1992
HIGHEST DAILY MEAN	12800	Nov 22	12800	Nov 22	39900	Feb 23 1986
LOWEST DAILY MEAN	247	Aug 21	270	Oct 15	190	Oct 9 1990
ANNUAL SEVEN-DAY MINIMUM	264	Aug 28	306	Oct 13	232	Oct 15 1987
ANNUAL RUNOFF (AC-FT)	1044000		1475000		1428000	
10 PERCENT EXCEEDS	3160		4340		4100	
50 PERCENT EXCEEDS	864		1600		1420	
90 PERCENT EXCEEDS	297		377		345	



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LOCATION.--Lat 43°35'50", long 122°27'20", in NW 1/4 NE 1/4 sec.9, T.23 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 0.2 mi upstream from Windfall Creek, 8.3 mi upstream from Hills Creek Dam, 10.2 mi south of Oakridge, and at mile 240.8.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,556.83 ft above sea level (levels by Corps of Engineers). Prior to June 21, 1967, at site 0.5 mi upstream at different datums. June 22, 1967, to June 23, 1971, water-stage recorder at same site at datum 5.00 ft higher.

REMARKS.--Records fair. No regulation or diversion upstream from station. Continuous water-quality records for the period October 1956 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--35 years, 797 ft³/s, 41.99 in/yr, 577,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,800 ft³/s Dec. 22, 1964, gage height, 16.96 ft, from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 164 ft³/s Aug. 25, 26, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 17	2330	*6,870	*9.91	Apr. 3	1600	3,650	7.95
Mar. 23	1400	5,720	9.27				

Minimum discharge, 194 ft³/s Oct. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	1080	895	725	807	602	1330	1590	2630	641	402	331
2	208	1240	1770	642	782	664	1460	1620	2670	641	395	329
3	231	687	e1420	586	819	1010	3040	2080	2330	628	387	328
4	219	515	e1150	574	895	1210	3080	2200	2090	608	386	322
5	210	441	e970	548	1110	1320	2380	1870	1910	595	378	322
6	204	385	e860	502	1210	1390	1940	2060	1790	579	376	322
7	201	455	e800	489	1120	1570	1820	2060	1810	562	370	321
8	199	515	893	479	1090	1660	2000	1980	1730	554	372	314
9	200	541	1160	457	1100	1680	2570	1790	1580	536	369	312
10	200	465	1800	436	1080	1780	2620	1810	1500	528	363	310
11	199	415	1430	426	991	1810	2270	2050	1440	521	355	308
12	198	402	1030	414	985	1570	1900	2090	1340	514	357	310
13	198	405	841	412	913	1430	1680	2000	1230	509	353	305
14	198	393	753	474	827	1630	1540	1810	1170	506	358	303
15	199	374	732	505	761	2900	1590	1700	1140	526	430	303
16	200	358	692	501	690	4950	1550	1760	1080	503	415	316
17	200	352	709	494	642	6000	e1550	1870	1040	495	381	312
18	200	362	639	487	630	6340	e1710	1920	1020	485	366	308
19	198	434	595	558	789	4830	e1630	1910	1020	481	376	308
20	201	441	945	2030	953	3580	e1520	2220	996	483	423	306
21	281	1100	1010	1830	859	2670	e1470	2160	967	483	395	304
22	240	2150	877	1910	789	2300	e1540	1970	930	592	373	302
23	219	1170	735	1310	750	4750	e1530	1760	860	694	367	299
24	211	836	673	1060	703	3860	e1580	1710	797	531	358	297
25	206	679	624	1090	650	2710	e1630	2260	764	487	355	295
26	206	596	629	1070	612	2160	e1750	2000	753	465	350	294
27	206	800	876	1030	586	1780	1600	1800	745	447	346	292
28	216	992	1060	1060	576	1560	1550	1650	716	440	344	292
29	269	815	919	1010	---	1420	1580	1540	688	442	340	290
30	441	761	770	913	---	1300	1680	1510	661	420	338	287
31	536	---	743	851	---	1250	---	2080	---	411	335	---
TOTAL	7093	20159	29000	24873	23719	73686	55160	58830	39397	16307	11513	9239
MEAN	229	672	935	802	847	2377	1839	1898	1313	526	371	308
MAX	536	2150	1800	2030	1210	6340	3080	2260	2670	694	430	331
MIN	198	352	595	412	576	602	1330	1510	661	411	335	287
AC-FT	14070	39990	57520	49340	47050	146200	109400	116700	78140	32340	22840	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1993, BY WATER YEAR (WY)

MEAN	331	790	1162	1183	1121	1068	1060	1104	788	405	296	281
MAX	636	1805	3922	2730	2509	2842	1839	1898	1538	740	415	377
(WY)	1963	1974	1965	1970	1986	1972	1993	1993	1974	1971	1976	1971
MIN	210	268	271	273	271	432	518	407	262	234	183	199
(WY)	1988	1988	1977	1977	1977	1977	1988	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1959 - 1993

ANNUAL TOTAL	177374		368976			
ANNUAL MEAN	485		1011		797	
HIGHEST ANNUAL MEAN					1197	1972
LOWEST ANNUAL MEAN					360	1977
HIGHEST DAILY MEAN	2680	Apr 10	6340	Mar 18	23700	Dec 22 1964
LOWEST DAILY MEAN	171	Aug 26	198	Oct 12	171	Aug 26 1992
ANNUAL SEVEN-DAY MINIMUM	172	Aug 24	199	Oct 8	172	Aug 24 1992
ANNUAL RUNOFF (AC-FT)	351800		731900		577700	
ANNUAL RUNOFF (CFSM)	1.88		3.92		3.09	
ANNUAL RUNOFF (INCHES)	25.57		53.20		41.99	
10 PERCENT EXCEEDS	937		2000		1500	
50 PERCENT EXCEEDS	373		732		593	
90 PERCENT EXCEEDS	192		298		255	

e Estimated

WILLAMETTE RIVER BASIN

14145100 HILLS CREEK LAKE NEAR OAKRIDGE, OR

LOCATION.--Lat 43°42'30", long 122°25'25", in NW 1/4 sec.35, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, near right end of Hills Creek Dam on Middle Fork Willamette River, 600 ft downstream from Hills Creek, 3.5 mi southeast of Oakridge, and at mile 232.5.

DRAINAGE AREA.--389 mi².

PERIOD OF RECORD.--August 1961 to current year. Prior to October 1971, published as Hills Creek Reservoir near Oakridge.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway completed in 1961 by the Corps of Engineers; storage began August 1961. Total capacity is 355,600 acre-ft at elevation 1,543.0 ft, top of spillway gates, and usable capacity is 248,900 acre-ft between elevations 1,414.0 ft, minimum power pool, and 1,543.0 ft. Reservoir used for flood control and power generation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 354,200 acre-ft June 25, 1971, elevation, 1,542.52 ft; minimum contents, 104,800 acre-ft Jan. 2, 1969, elevation, 1,412.52 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 352,700 acre-ft June 2 elevation, 1,541.97 ft; minimum contents, 159,100 acre-ft Jan. 12, 13, elevation, 1,450.37 ft.

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

1,410	101,500	1,460	174,900	1,520	297,200
1,420	114,600	1,480	211,000	1,540	347,300
1,440	143,000	1,500	251,900	1,544	358,500

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1458.43	1457.24	1462.75	1455.35	1466.64	1474.06	1520.84	1534.23	1541.81	1541.17	1540.33	1536.67
2	1458.15	1459.02	1463.58	1454.96	1466.57	1474.75	1521.29	1534.56	1541.93	1541.20	1540.28	1536.37
3	1458.02	1459.73	1463.13	1454.47	1466.99	1476.06	1523.54	1535.56	1541.45	1541.23	1540.24	1535.95
4	1457.86	1460.17	1461.55	1453.99	1467.56	1477.74	1525.84	1536.78	1540.80	1541.23	1540.20	1535.48
5	1457.68	1460.45	1459.56	1453.42	1468.56	1479.56	1526.44	1537.58	1540.49	1541.22	1540.14	1535.01
6	1457.48	1460.64	1457.29	1452.74	1469.71	1481.37	1526.03	1538.59	1540.46	1541.23	1540.07	1534.55
7	1457.28	1461.01	1455.86	1452.14	1470.66	1483.37	1525.86	1539.08	1540.54	1541.23	1540.00	1533.91
8	1457.09	1461.53	1455.71	1452.08	1471.22	1485.45	1526.03	1539.10	1540.64	1541.23	1539.92	1533.04
9	1456.89	1462.02	1456.29	1452.08	1471.53	1487.46	1526.22	1539.05	1540.61	1541.21	1539.84	1532.14
10	1456.70	1462.19	1458.49	1451.52	1471.67	1489.65	1526.17	1539.16	1540.72	1541.17	1539.74	1531.25
11	1456.50	1462.22	1459.51	1450.67	1471.67	1491.80	1526.00	1539.31	1541.02	1541.16	1539.66	1530.33
12	1456.30	1462.24	1459.74	1450.37	1471.64	1493.52	1526.37	1539.48	1541.20	1541.16	1539.57	1529.43
13	1456.09	1462.16	1459.65	1450.55	1471.47	1495.00	1527.01	1539.54	1541.26	1541.16	1539.47	1528.50
14	1455.87	1461.91	1459.27	1450.98	1471.16	1496.74	1527.50	1539.70	1541.25	1541.18	1539.39	1527.58
15	1455.64	1461.64	1458.74	1451.49	1470.76	1500.25	1527.98	1540.11	1541.20	1541.19	1539.42	1526.63
16	1455.51	1461.32	1458.19	1451.99	1470.45	1505.87	1528.36	1540.53	1541.13	1541.20	1539.38	1525.71
17	1455.44	1461.02	1457.69	1452.48	1470.46	1512.09	1528.84	1541.05	1541.11	1541.20	1539.24	1524.76
18	1455.35	1460.71	1456.99	1452.94	1470.54	1517.06	1529.57	1541.36	1541.11	1541.20	1539.09	1523.79
19	1455.27	1460.59	1456.22	1453.48	1470.93	1518.73	1530.14	1541.44	1541.11	1541.20	1539.02	1522.82
20	1455.21	1460.43	1456.18	1457.91	1471.67	1518.75	1530.56	1541.31	1541.12	1541.22	1538.96	1521.83
21	1455.31	1461.83	1456.38	1460.66	1472.18	1518.40	1530.91	1541.24	1541.16	1541.23	1538.86	1520.83
22	1455.31	1465.41	1456.26	1463.41	1472.55	1518.09	1531.25	1541.16	1541.22	1541.48	1538.72	1520.49
23	1455.27	1466.28	1456.00	1464.57	1472.86	1520.63	1531.62	1541.11	1541.23	1541.29	1538.58	1520.31
24	1455.18	1466.08	1455.66	1465.12	1473.08	1520.90	1531.94	1541.15	1541.17	1540.89	1538.42	1520.14
25	1455.09	1465.62	1455.22	1465.79	1473.22	1519.29	1531.98	1541.36	1541.16	1540.44	1538.25	1519.98
26	1455.00	1465.06	1454.81	1466.10	1473.37	1518.43	1532.39	1541.12	1541.14	1540.28	1538.08	1519.81
27	1454.90	1464.94	1454.92	1466.48	1473.52	1518.50	1532.88	1540.99	1541.16	1540.30	1537.90	1519.43
28	1454.84	1465.14	1455.47	1467.57	1473.67	1518.67	1533.20	1541.09	1541.21	1540.33	1537.73	1518.42
29	1454.91	1464.75	1455.71	1467.89	---	1519.05	1533.53	1541.17	1541.23	1540.37	1537.55	1517.42
30	1455.33	1463.80	1455.64	1467.59	---	1519.54	1533.93	1541.27	1541.20	1540.36	1537.29	1516.40
31	1455.86	---	1455.52	1467.17	---	1520.14	---	1541.58	---	1540.35	1536.97	---
MAX	1458.43	1466.28	1463.58	1467.89	1473.67	1520.90	1533.93	1541.58	1541.93	1541.48	1540.33	1536.67
MIN	1454.84	1457.24	1454.81	1450.37	1466.57	1474.06	1520.84	1534.23	1540.46	1540.28	1536.97	1516.40
(†)	168000	181400	167500	187300	199000	297600	331600	351600	350600	348300	339400	288800
(‡)	-5100	+13400	-13900	+19800	+11700	+98600	+34000	+20000	-1000	-2300	-8900	-50600

CAL YR 1992 MAX 1509.41 MIN 1413.75 AC-FT† +56400

WTR YR 1993 MAX 1541.93 MIN 1450.37 AC-FT† +115700

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

‡ Change in contents, in acre-feet.

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°43'20", long 122°26'15", in NW 1/4 NE 1/4 sec.27, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 90 ft upstream from highway bridge, 0.4 mi upstream from Salt Creek, 1.1 mi downstream from Hills Creek Dam, 2.3 mi southeast of Oakridge, and at mile 231.4.

DRAINAGE AREA.--392 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1913 to September 1914, September 1935 to current year. Monthly discharge only September 1935, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1914.

GAGE.--Water-stage recorder. Datum of gage is 1,208.01 ft above sea level (levels by Corps of Engineers). Oct. 3, 1913, to Sept. 30, 1914, nonrecording gage and Sept. 1, 1935, to Aug. 18, 1960, water-stage recorder at sites 400 ft and 1,000 ft downstream, respectively, at different datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1961 by Hills Creek Lake (station 14145100). No diversions upstream from station.

AVERAGE DISCHARGE.--59 years, 1,142 ft³/s, 39.56 in/yr, 827,400 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s Dec. 28, 1945, gage height, 12.06 ft, site and datum then in use, from rating curve extended above 13,000 ft³/s; minimum observed discharge, 0.70 ft³/s Sept. 8-11, 13, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,150 ft³/s Mar. 24, gage height, 7.33 ft; minimum discharge, 185 ft³/s Jan. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	681	314	2350	1300	1700	494	807	1580	3620	696	490	751
2	516	314	2420	1290	1230	295	1350	1580	3910	638	494	745
3	399	319	2670	1290	840	301	1650	1590	4060	639	505	881
4	398	324	2900	1290	845	311	1650	1580	3790	640	503	951
5	400	324	2880	1290	845	315	2630	1570	3080	617	500	950
6	400	324	2900	1280	845	314	3230	1570	2540	589	503	944
7	396	325	2190	1220	846	313	2670	2200	2420	590	503	1150
8	394	326	1660	696	1130	316	2580	2680	2270	571	503	1470
9	396	411	1630	622	1390	320	3330	2500	2190	592	503	1480
10	395	511	1650	1020	1490	323	3890	2250	1850	592	504	1480
11	395	510	1670	1260	1490	326	3540	2370	1520	545	502	1480
12	395	508	1510	799	1480	328	2300	2370	1520	520	500	1480
13	404	630	1400	393	1480	332	1630	2360	1510	509	499	1480
14	412	714	1490	314	1480	331	1630	1990	1510	509	501	1480
15	415	712	1600	313	1440	773	1630	1540	1510	508	498	1500
16	344	709	1590	312	1250	1530	1620	1540	1430	510	561	1500
17	297	708	1590	309	836	2330	1630	1540	1270	513	618	1500
18	297	709	1590	307	784	3690	1580	1910	1190	497	618	1500
19	301	710	1580	490	796	4710	1600	2260	1170	480	618	1510
20	304	709	1580	1100	766	5000	1610	2870	1100	487	617	1520
21	299	716	1550	1320	782	4190	1610	2720	1050	497	615	1520
22	297	723	1540	1330	782	3610	1610	2540	978	508	613	768
23	297	1230	1390	1320	784	4050	1620	2230	972	1130	609	511
24	303	1500	1280	1320	783	5280	1950	2110	971	1190	608	501
25	317	1420	1280	1320	785	6120	2400	2600	847	1190	610	503
26	318	1350	1280	1600	715	4190	1940	2860	839	757	610	503
27	317	1330	1280	1410	665	2320	1600	2510	748	493	612	708
28	309	1390	1290	736	666	1850	1590	2010	726	493	613	1500
29	312	1570	1290	1350	---	1420	1590	1850	710	499	612	1490
30	310	2000	1290	1710	---	1080	1580	1850	736	494	694	1500
31	314	---	1300	1700	---	898	---	2580	---	493	754	---
TOTAL	11332	23340	53620	32011	28925	57660	60047	65710	52037	18986	17490	35256
MEAN	366	778	1730	1033	1033	1860	2002	2120	1735	612	564	1175
MAX	681	2000	2900	1710	1700	6120	3890	2870	4060	1190	754	1520
MIN	297	314	1280	307	665	295	807	1540	710	480	490	501
AC-FT	22480	46290	106400	63490	57370	114400	119100	130300	103200	37660	34690	69930
MEAN†	283	1003	1504	1355	1244	3464	2573	2444	1718	575	419	325
CFSM†	0.72	2.56	3.84	3.46	3.17	8.84	6.56	6.23	4.38	1.47	1.07	0.83
IN.†	0.83	2.86	4.43	3.98	3.30	10.19	7.32	7.19	4.89	1.69	1.23	0.92
AC-FT†	17380	59690	92500	83290	69070	213000	153100	150300	102200	35360	25790	19330

CAL YR 1992 TOTAL 223043 MEAN 609 MAX 2900 MIN 281 AC-FT 442400 MEAN† 687 CFSM† 1.75 IN.† 23.86 AC-FT† 498800
WTR YR 1993 TOTAL 456414 MEAN 1250 MAX 6120 MIN 295 AC-FT 905300 MEAN† 1409 CFSM† 3.59 IN.† 48.85 AC-FT† 1021000

† Adjusted for change in contents in Hills Creek Lake.

WILLAMETTE RIVER BASIN

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to current year.

INSTRUMENTATION.--Temperature recorder since October 1960.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.0°C Sept. 4, 1960; minimum, 1.5°C Jan. 4, 1961.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 17.0°C Oct. 1; minimum, 4.5°C several days in February.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	17.0	16.0	16.5	13.5	13.0	13.0	9.0	9.0	9.0	6.0	6.0	6.0
2	16.5	14.5	15.5	13.5	12.5	13.0	9.0	8.5	9.0	6.0	6.0	6.0
3	15.5	14.5	15.0	13.0	12.5	12.5	9.0	8.5	8.5	6.0	6.0	6.0
4	16.0	14.0	15.0	12.5	12.0	12.5	8.5	8.5	8.5	6.0	6.0	6.0
5	16.0	13.5	15.0	13.0	12.0	12.5	8.5	8.0	8.0	6.0	5.5	6.0
6	16.0	14.5	15.0	13.0	12.0	12.5	8.0	8.0	8.0	6.0	5.5	5.5
7	15.5	14.5	15.0	12.5	11.5	12.0	8.0	7.5	7.5	5.5	5.5	5.5
8	15.5	14.5	15.0	12.5	12.0	12.0	7.5	7.5	7.5	6.0	5.5	5.5
9	16.0	14.0	15.0	12.0	11.5	12.0	7.5	7.5	7.5	5.5	5.5	5.5
10	15.5	14.0	15.0	12.0	11.5	12.0	7.5	7.5	7.5	5.5	5.5	5.5
11	15.5	14.5	15.0	12.0	11.5	11.5	7.5	7.5	7.5	5.5	5.5	5.5
12	15.5	14.5	15.0	12.0	11.5	11.5	7.5	7.0	7.5	5.5	5.5	5.5
13	15.0	14.5	15.0	12.0	11.5	11.5	7.5	7.0	7.0	5.5	5.5	5.5
14	15.0	14.0	14.5	11.5	11.5	11.5	7.0	7.0	7.0	5.5	5.5	5.5
15	15.0	14.0	14.5	11.5	11.5	11.5	7.0	7.0	7.0	5.5	5.0	5.5
16	14.5	14.0	14.0	11.5	11.0	11.5	7.0	7.0	7.0	5.5	5.5	5.5
17	15.0	14.0	14.0	11.5	11.0	11.0	7.0	7.0	7.0	5.5	5.0	5.5
18	14.5	13.5	14.0	11.5	11.0	11.0	7.0	6.5	7.0	5.5	5.0	5.5
19	14.5	13.5	14.0	11.0	10.5	11.0	6.5	6.5	6.5	5.5	5.0	5.5
20	14.5	13.5	14.0	10.5	10.5	10.5	6.5	6.5	6.5	5.5	5.5	5.5
21	14.0	13.5	14.0	10.5	10.5	10.5	6.5	6.5	6.5	5.5	5.5	5.5
22	14.5	13.5	14.0	10.5	10.0	10.5	6.5	6.5	6.5	5.5	5.0	5.5
23	14.5	13.5	14.0	10.0	10.0	10.0	6.5	6.5	6.5	5.5	5.0	5.0
24	14.5	13.5	13.5	10.0	9.5	10.0	6.5	6.5	6.5	5.5	5.0	5.0
25	14.5	12.5	13.5	10.0	9.5	9.5	6.5	6.5	6.5	5.5	5.0	5.0
26	14.0	13.0	13.5	9.5	9.5	9.5	6.5	6.5	6.5	5.5	5.0	5.5
27	14.0	13.5	14.0	9.5	9.0	9.5	6.5	6.0	6.5	5.5	5.0	5.0
28	14.0	13.5	13.5	9.5	9.0	9.0	6.5	6.0	6.5	6.0	5.0	5.5
29	14.0	13.5	13.5	9.0	9.0	9.0	6.0	6.0	6.0	5.5	5.0	5.0
30	13.5	13.5	13.5	9.0	9.0	9.0	6.0	6.0	6.0	5.5	5.0	5.0
31	13.5	13.5	13.5	---	---	---	6.0	6.0	6.0	5.5	5.0	5.0
MONTH	17.0	12.5	14.5	13.5	9.0	11.0	9.0	6.0	7.0	6.0	5.0	5.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	5.0	5.0	5.0	5.0	5.0	7.0	6.0	6.5	7.5	7.0	7.5
2	5.5	5.0	5.0	5.5	5.0	5.0	7.0	6.5	7.0	7.5	7.0	7.5
3	5.5	5.0	5.5	6.0	5.0	5.5	7.0	6.5	6.5	8.0	7.0	7.5
4	5.5	5.5	5.5	6.0	5.5	5.5	7.0	6.5	7.0	7.5	7.0	7.5
5	5.5	5.5	5.5	6.5	5.0	5.5	7.5	7.0	7.0	8.0	7.0	7.5
6	6.0	5.5	5.5	6.5	5.0	5.5	8.0	7.5	7.5	8.0	7.0	7.5
7	6.0	5.5	5.5	6.5	5.0	5.5	8.0	7.5	7.5	8.5	7.5	8.0
8	5.5	5.5	5.5	6.5	5.0	5.5	7.5	7.5	7.5	8.5	8.0	8.0
9	5.5	5.5	5.5	5.5	5.0	5.5	8.0	7.5	7.5	8.5	8.0	8.0
10	5.5	5.5	5.5	6.0	5.0	5.5	8.0	7.5	8.0	8.5	8.0	8.0
11	6.0	5.5	5.5	7.0	5.5	6.0	8.0	7.5	7.5	9.0	8.0	8.5
12	5.5	5.5	5.5	6.0	5.5	5.5	7.5	7.0	7.5	9.0	8.0	8.5
13	6.0	5.5	5.5	6.0	5.0	5.5	7.0	7.0	7.0	9.0	8.0	8.5
14	5.5	5.5	5.5	6.0	5.5	5.5	7.5	7.0	7.0	8.5	7.5	8.0
15	5.5	5.0	5.5	6.5	5.5	5.5	7.0	7.0	7.0	8.5	7.0	8.0
16	5.5	5.0	5.0	6.5	6.0	6.0	7.0	7.0	7.0	8.0	7.0	7.5
17	5.5	5.0	5.0	7.0	6.0	6.5	7.5	7.0	7.0	8.5	7.0	7.5
18	5.0	5.0	5.0	7.0	6.5	7.0	7.5	7.0	7.0	9.0	7.5	8.0
19	5.0	5.0	5.0	7.0	6.5	7.0	7.5	7.0	7.0	9.0	8.0	8.5
20	5.0	4.5	5.0	7.5	7.0	7.0	7.5	7.0	7.0	9.5	8.5	9.0
21	5.0	4.5	5.0	7.5	7.0	7.5	7.5	7.0	7.5	9.0	8.5	9.0
22	5.0	4.5	5.0	7.5	7.0	7.0	7.5	7.0	7.5	9.5	8.5	9.0
23	5.0	4.5	5.0	7.5	7.0	7.0	7.5	7.0	7.5	9.5	8.5	9.0
24	5.0	4.5	4.5	7.0	7.0	7.0	8.0	7.5	7.5	9.0	8.0	8.5
25	5.0	4.5	4.5	7.5	7.0	7.0	8.0	7.5	7.5	9.5	8.0	9.0
26	5.0	4.5	5.0	7.5	7.0	7.0	8.0	7.5	7.5	10.0	9.0	9.5
27	5.5	4.5	5.0	7.5	6.5	7.0	8.0	7.0	7.5	9.5	9.0	9.5
28	5.5	5.0	5.0	7.0	6.5	7.0	7.5	7.0	7.5	9.0	8.5	9.0
29	---	---	---	7.0	6.5	6.5	8.0	7.0	7.5	9.0	8.5	9.0
30	---	---	---	7.0	6.5	7.0	8.0	7.0	7.5	9.0	8.5	9.0
31	---	---	---	6.5	6.0	6.5	---	---	---	10.0	8.5	9.5
MONTH	6.0	4.5	5.0	7.5	5.0	6.0	8.0	6.0	7.5	10.0	7.0	8.5

WILLAMETTE RIVER BASIN

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14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	10.0	10.5	9.5	8.0	9.0	10.0	9.0	9.5	---	---	---
2	10.5	10.0	10.5	9.5	8.0	9.0	10.0	9.0	9.5	---	---	---
3	11.0	10.5	10.5	9.5	8.5	9.0	10.0	9.0	9.5	---	---	---
4	10.5	10.5	10.5	9.0	8.5	9.0	10.0	9.0	9.5	---	---	---
5	10.5	9.5	10.0	9.0	8.5	9.0	10.0	9.0	9.5	---	---	---
6	10.0	9.5	10.0	9.0	8.0	9.0	10.0	9.0	9.5	---	---	---
7	10.5	10.0	10.0	9.5	8.5	9.0	10.0	9.0	9.5	---	---	---
8	10.0	9.5	10.0	10.0	8.5	9.0	10.0	8.5	9.5	---	---	---
9	10.0	9.5	10.0	9.0	8.5	9.0	10.0	8.5	9.5	---	---	---
10	10.0	8.5	9.5	9.5	8.5	9.0	10.0	---	---	---	---	---
11	9.5	9.0	9.0	9.0	8.0	9.0	---	---	---	---	---	---
12	9.5	8.5	9.0	9.0	8.5	9.0	---	---	---	---	---	---
13	10.0	9.0	9.5	9.5	8.5	8.5	---	---	---	---	---	---
14	9.5	9.0	9.5	9.0	8.5	9.0	---	---	---	---	---	---
15	9.5	9.0	9.5	9.0	8.5	9.0	---	---	---	---	---	---
16	9.5	9.0	9.0	9.5	8.5	9.0	---	---	---	12.5	12.0	12.5
17	9.5	8.5	9.0	9.0	8.5	9.0	---	---	---	13.0	12.0	12.5
18	9.5	8.5	9.0	9.5	8.5	9.0	---	---	---	12.5	12.5	12.5
19	9.5	8.5	9.0	9.0	8.5	9.0	---	---	---	13.0	12.5	12.5
20	9.5	8.5	9.0	9.5	8.5	9.0	---	---	---	13.0	12.5	13.0
21	9.5	8.5	9.0	9.5	8.5	9.0	---	---	---	13.0	12.5	13.0
22	9.5	8.5	9.0	9.0	8.5	9.0	---	---	---	13.0	10.5	11.5
23	9.5	8.5	9.0	10.0	9.0	10.0	---	---	---	12.0	10.5	11.0
24	9.5	8.5	9.0	10.0	9.5	10.0	---	---	---	11.5	10.5	11.0
25	9.5	8.0	9.0	10.0	9.5	10.0	---	---	---	11.5	11.0	11.0
26	9.5	8.0	9.0	10.5	9.0	9.5	---	---	---	11.5	11.0	11.0
27	9.5	8.0	9.0	9.5	9.0	9.5	---	---	---	13.5	11.0	12.0
28	9.0	8.5	9.0	9.5	8.5	9.0	---	---	---	13.5	13.5	13.5
29	9.5	8.5	9.0	10.0	8.5	9.0	---	---	---	14.0	13.5	13.5
30	9.5	8.5	9.0	9.5	9.0	9.0	---	---	---	14.0	13.5	13.5
31	---	---	---	9.5	9.0	9.5	---	---	---	---	---	---
MONTH	11.0	8.0	9.5	10.5	8.0	9.0	---	---	---	---	---	---

WILLAMETTE RIVER BASIN

14146500 SALMON CREEK NEAR OAKRIDGE, OR

LOCATION.--Lat 43°45'45", long 122°22'18", in NE 1/4 sec.7, T.21 S., R.4 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 190 ft upstream from Salmon Creek Falls, 0.1 mi upstream from Needle Creek, 4.6 mi east of Oakridge, and at mile 5.84.

DRAINAGE AREA.--117 mi², at measuring cable 0.25 mi downstream from gage.

PERIOD OF RECORD.--October 1909 to November 1909 (gage heights and one discharge measurement only), February 1913 to October 1919, October 1933 to September 1985, October 1986 to current year. Monthly periods, published in WSP 1318. Published as Kelsey River near Hazeldell and Salmon Creek near Hazeldell, 1909.

REVISED RECORDS.--WSP 794: 1934(M). WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M).
WSP 1248: 1915, 1918. WDR OR-71-1: 1968, 1969(M,P).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 1,462.36 ft above sea level. Prior to Oct. 1, 1914, nonrecording gage at several sites within 4 mi of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1.8 mi downstream at different datum. Nov. 5, 1933, to Oct. 27, 1964, water-stage recorder at site 0.8 mi downstream at datum 40.53 ft lower. Oct. 28, 1964, to Aug. 27, 1965, nonrecording gage at site 0.6 mi downstream at different datum.

REMARKS.--Records good. No regulation or diversion upstream from station. All records given herein are for measuring cable site.

AVERAGE DISCHARGE.--65 years (water years 1914-19, 1934-85, 1987-93), 423 ft³/s, 49.08 in/yr, 306,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s Dec. 22, 1964, gage height, 9.15 ft, from floodmark, site and datum then in use, from rating curve extended above 2,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 63 ft³/s Jan. 8, 1937.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	0700	*2,950	*4.82	Mar. 23	1730	1,930	3.99
Minimum discharge, 93 ft ³ /s Oct. 19, 20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	385	613	349	461	275	614	899	1150	288	225	159
2	104	578	1020	317	442	293	655	902	1270	285	219	159
3	121	341	823	294	448	390	1090	1130	1070	283	213	156
4	114	261	625	287	467	576	1210	1210	915	273	209	156
5	108	222	500	275	558	803	1100	1050	831	264	204	154
6	103	194	428	256	620	800	969	1160	789	258	203	155
7	101	271	385	246	608	849	998	1170	865	254	200	160
8	101	271	420	243	604	874	1080	1230	834	247	197	154
9	99	348	495	229	598	860	1240	1150	771	243	194	150
10	97	279	765	221	578	892	1200	1080	759	237	191	148
11	97	236	719	215	529	888	1100	1120	744	233	188	148
12	95	263	565	211	493	792	979	1060	746	229	185	146
13	95	287	466	207	456	720	912	967	690	230	182	146
14	95	281	434	218	418	764	868	889	634	230	182	143
15	95	265	441	218	390	1270	858	835	611	235	206	143
16	95	243	406	217	357	2110	820	831	563	229	200	143
17	99	230	401	217	335	2520	825	854	515	223	191	143
18	95	245	366	214	323	2840	892	863	484	220	185	140
19	95	264	336	229	357	2360	847	848	455	217	187	140
20	94	258	415	715	368	1810	790	925	e440	218	195	140
21	132	579	466	763	353	1420	774	915	e430	218	195	138
22	111	1180	459	765	339	1220	793	919	e410	322	184	138
23	103	779	407	610	323	1730	795	823	e380	453	179	135
24	100	548	376	546	308	1620	806	782	e360	342	177	135
25	98	428	349	614	288	1290	822	980	e340	302	173	135
26	97	365	359	620	276	1070	838	876	e330	281	172	135
27	97	464	423	588	269	894	788	844	e320	263	170	133
28	104	622	480	585	267	776	745	793	e320	254	167	133
29	124	516	447	562	---	706	868	753	e310	257	167	130
30	164	507	389	519	---	642	968	719	e300	240	163	130
31	200	---	367	484	---	601	---	904	---	231	159	---
TOTAL	3334	11760	15145	12034	11833	34655	27244	29481	18636	8059	5862	4325
MEAN	108	392	489	388	423	1118	908	951	621	260	189	144
MAX	200	1180	1020	765	620	2840	1240	1230	1270	453	225	160
MIN	94	194	336	207	267	275	614	719	300	217	159	130
AC-FT	6610	23330	30040	23870	23470	68740	54040	58480	36960	15990	11630	8580
CFM-IN.	.92	3.35	4.18	3.32	3.61	9.55	7.76	8.13	5.31	2.22	1.62	1.23
	1.06	3.74	4.82	3.83	3.76	11.02	8.66	9.37	5.93	2.56	1.86	1.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1993, BY WATER YEAR (WY)

MEAN	184	416	606	588	581	546	611	596	432	227	161	147
MAX	477	955	1886	1297	1282	1531	1090	1068	1070	636	240	201
(WY)	1951	1978	1965	1971	1982	1972	1919	1917	1917	1917	1917	1978
MIN	99.9	101	139	111	138	180	202	215	138	112	96.1	104
(WY)	1988	1937	1977	1937	1977	1941	1941	1934	1940	1940	1940	1992

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1914 - 1993
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ANNUAL TOTAL	92524		182368			
ANNUAL MEAN	253		500		423	
HIGHEST ANNUAL MEAN					681	1974
LOWEST ANNUAL MEAN					217	1941
HIGHEST DAILY MEAN	1460	Apr 10	2840	Mar 18	9000	Dec 23 1964
LOWEST DAILY MEAN	92	Sep 23	94	Oct 20	78	Jan 21 1937
ANNUAL SEVEN-DAY MINIMUM	93	Sep 17	95	Oct 14	91	Aug 26 1940
ANNUAL RUNOFF (AC-FT)	183500		361700		306200	
ANNUAL RUNOFF (CFSM)	2.16		4.27		3.61	
ANNUAL RUNOFF (INCHES)	29.42		57.98		49.08	
10 PERCENT EXCEEDS	468		979		824	
50 PERCENT EXCEEDS	200		360		318	
90 PERCENT EXCEEDS	99		135		135	

e Estimated

ANNUAL TOTAL	159928		322514			
ANNUAL MEAN	437		884		783	
HIGHEST ANNUAL MEAN					1201	1972
LOWEST ANNUAL MEAN					350	1977
HIGHEST DAILY MEAN	3460	Apr 10	6340	Mar 18	19300	Dec 23 1964
LOWEST DAILY MEAN	98	Sep 23	104	Oct 13	84	Oct 14 1937
ANNUAL SEVEN-DAY MINIMUM	100	Sep 17	105	Oct 10	93	Aug 19 1940
ANNUAL RUNOFF (AC-FT)	317200		639700		567500	
ANNUAL RUNOFF (CFSM)	1.78		3.59		3.18	
ANNUAL RUNOFF (INCHES)	24.18		48.77		43.27	
10 PERCENT EXCEEDS	916		1740		1620	
50 PERCENT EXCEEDS	314		693		564	
90 PERCENT EXCEEDS	105		155		150	

WILLAMETTE RIVER BASIN

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14149000 LOOKOUT POINT LAKE NEAR LOWELL, OR

LOCATION.--Lat 43°54'50", long 122°45'00", in SE 1/4 sec.13, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, in elevator house at right end of spillway section of dam on Middle Fork Willamette River, 1.5 mi east of Lowell, and at mile 206.9.

DRAINAGE AREA.--991 mi².

PERIOD OF RECORD.--November 1953 to current year. Prior to October 1971, published as Lookout Point Reservoir near Lowell.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers). Nov. 7, 1953, to Dec. 4, 1954, approximate elevations obtained from reference marks and Dec. 5, 1954, to Feb. 4, 1955, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1954 by Corps of Engineers. Planned storage began in November 1953. Total capacity is 455,800 acre-ft at elevation 929 ft, and usable capacity is 349,200 acre-ft between elevations 819 ft and 929 ft, top of spillway gates. Reservoir used for flood control, improvement of navigation, power generation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 464,900 acre-ft Dec. 26, 1964, elevation, 931.09 ft; minimum contents observed since first filling, 91,450 acre-ft Dec. 1, 1954, elevation, 811.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 453,200 acre-ft June 3, elevation, 928.38 ft; minimum contents, 117,200 acre-ft Dec. 28, elevation, 824.27 ft.

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

820	108,600	860	205,500	900	338,900
830	129,500	870	235,500	910	377,400
840	152,500	880	267,800	920	417,800
850	177,700	890	302,300	930	460,200

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	846.27	838.43	838.13	827.56	833.24	844.30	903.54	919.51	927.36	925.75	917.59	890.12
2	846.13	839.58	839.06	827.60	833.28	844.64	903.67	919.87	928.15	925.69	916.76	889.22
3	845.91	840.04	838.91	827.49	833.90	845.35	905.19	920.78	927.87	925.61	915.93	888.34
4	845.68	840.20	837.03	827.43	835.22	846.53	906.88	921.94	926.87	925.51	915.10	887.53
5	845.40	840.27	834.63	827.42	836.77	848.41	907.69	922.71	926.21	925.39	914.26	886.73
6	845.11	840.22	832.00	825.97	838.51	850.09	907.55	923.67	926.03	925.21	913.42	885.90
7	844.84	840.43	830.00	825.71	840.20	851.83	907.09	924.14	926.09	925.04	912.56	885.19
8	844.45	840.90	828.48	826.12	841.76	853.56	906.77	924.41	926.06	924.84	911.65	884.89
9	844.11	841.59	828.95	826.34	842.80	855.26	907.16	924.35	925.99	924.65	910.70	884.68
10	843.82	841.96	830.26	826.73	843.08	856.99	907.78	923.93	925.86	924.46	909.81	884.39
11	843.55	842.04	831.24	826.22	842.84	858.71	908.82	924.32	925.64	924.24	908.87	884.09
12	843.21	842.21	831.27	826.48	842.68	860.12	909.96	924.71	925.80	923.99	907.99	883.88
13	842.90	842.53	830.76	826.62	842.69	861.31	910.79	924.92	925.98	923.76	907.07	883.57
14	842.58	842.28	830.05	826.74	842.43	862.55	911.40	924.83	926.06	923.52	906.18	883.28
15	842.22	841.95	829.53	826.83	842.14	865.20	911.97	924.40	926.07	923.29	905.33	883.01
16	841.86	841.57	829.70	826.86	841.58	871.43	912.42	923.91	925.96	922.82	904.47	882.76
17	841.45	840.77	828.81	826.94	841.42	878.11	913.01	923.81	925.72	922.57	903.61	882.46
18	841.02	840.11	827.57	827.02	841.43	885.47	913.74	924.09	925.39	922.49	902.73	882.20
19	840.64	839.74	827.10	827.29	841.83	891.63	914.25	924.76	925.11	922.21	901.94	881.89
20	840.38	839.36	826.84	829.82	842.11	895.94	914.68	925.45	924.74	921.69	901.18	881.63
21	840.20	839.95	827.40	831.56	842.54	896.88	915.00	925.88	924.63	921.21	900.34	881.32
22	839.95	843.36	827.73	833.61	842.94	897.19	915.34	925.52	924.98	921.05	899.44	880.70
23	839.61	844.29	827.58	834.84	843.27	900.28	915.71	924.82	925.29	921.31	898.54	879.80
24	839.28	843.98	827.14	835.44	843.56	902.70	916.28	924.84	925.53	921.36	897.63	878.90
25	838.95	843.22	826.04	835.76	843.75	904.20	917.13	925.75	925.45	921.33	896.71	877.98
26	838.61	842.10	825.01	835.97	843.84	904.32	917.78	926.49	925.55	921.07	895.76	877.09
27	838.25	841.10	824.61	835.99	844.00	903.13	918.10	926.63	925.83	920.62	894.79	876.20
28	837.89	840.74	824.73	835.13	844.15	902.80	918.30	926.46	925.87	920.17	893.83	875.92
29	837.63	840.20	825.82	834.61	---	902.65	918.62	926.24	925.82	919.70	892.88	875.61
30	837.63	838.94	826.56	834.29	---	902.72	919.14	926.01	925.79	919.17	891.94	875.32
31	837.74	---	827.33	833.74	---	903.06	---	926.71	---	918.42	891.02	---
MAX	846.27	844.29	839.06	835.99	844.15	904.32	919.14	926.71	928.15	925.75	917.59	890.12
MIN	837.63	838.43	824.61	825.71	833.24	844.30	903.54	919.51	924.63	918.42	891.02	875.32
(†)	147100	149900	123700	137800	162700	350500	414300	446000	442100	411300	306000	252400
(‡)	-21000	+2800	-26200	+14100	+24900	+187800	+63800	+31700	-3900	-30800	-105300	-53600

CAL YR 1992 MAX 887.49 MIN 824.61 AC-FT† -4300
WTR YR 1992 MAX 928.15 MIN 824.61 AC-FT† +84300

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

WILLAMETTE RIVER BASIN

14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR

LOCATION.--Lat 43°56'45", long 122°50'10", in SE 1/4 NW 1/4 sec.5, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 0.6 mi upstream from Lost Creek, 2.0 mi northwest of Dexter, 2.6 mi downstream from Dexter Dam, and at mile 201.2.

DRAINAGE AREA.--1,001 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1946 to current year. Prior to October 1954, published as "at Lowell".

REVISED RECORDS.--WSP 1638: 1948(P).

GAGE.--Water-stage recorder. Datum of gage is 592.30 ft above sea level (levels by Corps of Engineers). Prior to Aug. 23, 1950, nonrecording gage and Aug. 23, 1950, to Sept. 30, 1954, at site 4.0 mi upstream at different datum, and June 9, 1955, to Feb. 18, 1977, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1953 by Lookout Point Lake (station 14149000), since 1955 by Dexter Lake (re-regulating), and since 1961 by Hills Creek Lake (station 14145100).

AVERAGE DISCHARGE.--47 years (water years 1947-93), 3,099 ft³/s, 2,245,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s Jan. 18, 1953, gage height, 12.46 ft, site and datum then in use, from rating curve extended above 33,000 ft³/s; minimum daily discharge, 100 ft³/s Nov. 25, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 13.9 ft Dec. 28, 1945, former site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,100 ft³/s June 3, gage height, 9.52 ft; minimum discharge, 934 ft³/s Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	1010	6050	2960	4350	1640	2370	4210	7630	2020	2990	2950
2	1100	1000	6050	2990	3380	1330	3390	4190	8320	2010	2990	2950
3	1100	1010	6360	2980	1980	1320	4160	4230	9560	2000	2960	2950
4	1090	1010	7630	2980	1270	1330	4300	4230	10300	2020	2940	2960
5	1090	1010	7720	2720	1230	1330	5810	4230	8660	2020	3000	2960
6	1080	1000	7650	4140	1210	1320	7780	4230	6630	2010	3020	2980
7	1080	1000	6470	2850	1210	1310	7760	5640	6360	2010	3020	2920
8	1080	1000	5570	1740	1500	1320	7690	7150	6190	2010	3030	2500
9	1080	1010	4370	1620	2440	1330	7720	7220	5950	2000	2990	2480
10	1080	1170	4330	1620	3020	1340	7850	7220	5500	2000	3010	2470
11	1080	1170	4260	2840	3630	1340	6740	5770	5500	1980	2980	2470
12	1080	1160	4220	1800	3600	1330	4790	5680	4740	1960	2950	2490
13	1080	1170	4230	1320	3410	1320	4220	5680	4140	1970	2950	2500
14	1090	1820	4220	1300	3410	1320	4200	5660	4130	1990	2960	2510
15	1090	1850	4220	1300	3390	2020	4130	5680	4120	1980	2960	2510
16	1090	1860	3410	1310	3420	2220	4130	5680	4110	1970	2970	2520
17	1080	2310	4610	1320	2430	2990	4060	4870	4110	1970	3000	2530
18	1070	2190	4840	1320	2140	4320	4100	4270	4100	1950	2980	2530
19	1060	2200	3720	1330	1950	4310	4140	4260	3880	1960	2950	2540
20	989	2130	3700	1950	1920	5270	4190	5040	3890	2480	3000	2550
21	988	2160	3650	3170	1860	8770	4200	5320	3110	2480	2980	2570
22	992	2150	3670	3160	1880	8520	4210	6820	2180	2480	2970	2560
23	981	3290	3650	3190	1860	6040	4200	6840	2080	2460	2980	2500
24	988	4210	3620	3240	1860	7780	4210	5410	2080	2460	3000	2500
25	1020	4170	4070	3840	1860	8630	4210	4480	2070	2460	2980	2500
26	1020	4160	4070	4330	1890	8560	4220	4970	2060	2460	2990	2500
27	1000	4160	4010	4340	1670	8330	4220	6010	2070	2440	2980	2510
28	998	4160	4010	4350	1650	5780	4210	6050	2080	2440	2970	2510
29	1010	4150	2690	4350	---	4700	4200	5600	2080	2440	2980	2520
30	1020	5260	2550	4350	---	3710	4210	5580	2070	2470	2980	2520
31	1010	---	2570	4360	---	2740	---	5610	---	2950	2950	---
TOTAL	32576	65950	142190	85070	65420	113570	145620	167830	139700	67850	92410	78460
MEAN	1051	2198	4587	2744	2336	3664	4854	5414	4657	2189	2981	2615
MAX	1100	5260	7720	4360	4350	8770	7850	7220	10300	2950	3030	2980
MIN	981	1000	2550	1300	1210	1310	2370	4190	2060	1950	2940	2470
AC-FT	64610	130800	282000	168700	129800	225300	288800	332900	277100	134600	183300	155600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	3124	4742	5436	4604	2509	2149	2004	2577	2354	1585	1946	2671																				
MAX	5266	8779	11300	13510	7634	7363	4854	5414	5072	2189	2981	3932																				
(WY)	1963	1965	1965	1965	1972	1972	1993	1993	1984	1993	1993	1972																				
MIN	1051	1843	1231	1050	668	525	437	526	816	1088	1083	1366																				
(WY)	1993	1988	1977	1977	1977	1977	1977	1977	1977	1978	1966	1992																				

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1962 - 1993

ANNUAL TOTAL	625453	1196646		
ANNUAL MEAN	1709	3278		
HIGHEST ANNUAL MEAN			2979	
LOWEST ANNUAL MEAN			4586	1972
HIGHEST DAILY MEAN	7720	Dec 5	10300	Jun 4
LOWEST DAILY MEAN	978	May 17	981	Oct 23
ANNUAL SEVEN-DAY MINIMUM	996	May 14	997	Oct 20
ANNUAL RUNOFF (AC-FT)	1241000		2374000	
10 PERCENT EXCEEDS	2870		5870	2158000
50 PERCENT EXCEEDS	1240		2960	5890
90 PERCENT EXCEEDS	1020		1090	2130
				1160

WILLAMETTE RIVER BASIN

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14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1955 to current year.

INSTRUMENTATION.--Temperature recorder since August 1955.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.5°C several days in September, 1992; minimum recorded, 2.5°C Feb. 6-8, 1989, but may have been lower during period of missing record Feb. 9 to Mar. 30, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.5°C Oct. 1, 3-5; minimum, 4.0°C Jan. 15, 17-19.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.5	18.0	18.5	14.5	14.5	14.5	9.5	9.5	9.5	6.0	5.5	5.5
2	18.0	18.0	18.0	15.0	14.0	14.5	9.5	9.5	9.5	5.5	5.5	5.5
3	18.5	17.5	18.0	14.5	13.5	14.0	9.5	9.0	9.0	5.5	5.5	5.5
4	18.5	17.0	17.5	14.0	14.0	14.0	9.0	8.5	8.5	5.5	5.5	5.5
5	18.5	17.0	17.5	14.5	13.5	14.0	8.5	8.5	8.5	5.5	5.5	5.5
6	---	---	---	14.5	13.5	14.0	8.5	8.5	8.5	5.5	5.0	5.5
7	---	---	---	14.5	13.5	14.0	8.5	8.0	8.0	5.0	5.0	5.0
8	---	---	---	14.0	13.5	13.5	8.0	8.0	8.0	5.0	4.5	5.0
9	---	---	---	14.0	13.0	13.5	8.0	7.5	8.0	5.5	4.5	5.0
10	18.0	16.5	17.0	13.5	12.5	13.0	8.0	7.5	7.5	5.0	4.5	4.5
11	18.0	16.5	17.0	13.0	12.5	12.5	7.5	7.5	7.5	4.5	4.5	4.5
12	18.0	16.0	17.0	13.5	12.5	13.0	7.5	7.5	7.5	5.0	4.5	4.5
13	17.5	16.5	17.0	13.0	12.0	12.5	7.5	7.5	7.5	4.5	4.5	4.5
14	17.5	16.0	16.5	12.5	12.0	12.5	7.5	7.0	7.5	5.0	4.5	4.5
15	16.5	15.5	16.0	12.5	12.0	12.5	---	---	---	4.5	4.0	4.5
16	16.5	15.5	16.0	12.5	12.0	12.0	---	---	---	5.0	4.5	4.5
17	17.0	15.5	16.0	12.5	12.0	12.0	7.0	6.5	7.0	4.5	4.0	4.5
18	16.5	15.5	16.0	12.5	12.0	12.0	7.0	6.5	6.5	4.5	4.0	4.5
19	17.0	15.5	16.0	12.0	11.5	12.0	6.5	6.5	6.5	4.5	4.0	4.5
20	16.0	15.5	15.5	12.0	11.5	11.5	6.5	6.5	6.5	5.0	4.5	4.5
21	16.0	15.5	15.5	11.5	11.0	11.5	6.5	6.5	6.5	4.5	4.5	4.5
22	16.5	15.5	16.0	11.5	11.0	11.0	6.5	6.5	6.5	5.0	4.5	4.5
23	17.0	15.5	16.0	11.5	11.0	11.0	6.5	6.5	6.5	4.5	4.5	4.5
24	16.5	15.0	15.5	11.0	10.5	11.0	6.5	6.5	6.5	4.5	4.5	4.5
25	16.0	15.5	15.5	10.5	10.5	10.5	6.5	6.0	6.0	5.0	4.5	5.0
26	16.0	15.0	15.5	10.5	10.0	10.0	6.5	6.0	6.0	5.0	4.5	5.0
27	16.0	15.0	15.5	10.5	10.0	10.0	6.0	6.0	6.0	5.0	4.5	5.0
28	15.5	15.0	15.5	10.5	10.0	10.0	6.0	6.0	6.0	5.0	5.0	5.0
29	15.0	15.0	15.0	10.0	9.5	10.0	6.0	6.0	6.0	5.5	5.0	5.0
30	15.0	14.5	14.5	9.5	9.5	9.5	6.0	5.5	6.0	5.0	5.0	5.0
31	14.5	14.5	14.5	---	---	---	6.0	5.5	6.0	5.5	5.0	5.0
MONTH	---	---	---	15.0	9.5	12.0	---	---	---	6.0	4.0	5.0

WILLAMETTE RIVER BASIN

14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.0	5.0	5.0	6.0	5.0	5.5	9.0	7.5	8.0	10.0	9.0	9.5
2	5.5	5.0	5.0	6.5	5.5	5.5	8.5	8.0	8.5	10.0	9.0	9.5
3	5.5	5.0	5.5	7.0	5.5	6.0	8.5	8.0	8.0	9.5	9.0	9.5
4	6.0	5.0	5.5	6.5	6.0	6.0	8.5	8.0	8.5	10.0	9.0	9.5
5	6.0	5.0	5.5	7.5	6.0	6.5	9.0	8.0	8.5	10.0	9.0	9.5
6	6.5	5.5	5.5	7.5	6.0	6.5	8.0	8.0	8.0	9.5	9.0	9.5
7	6.5	5.5	5.5	8.0	6.0	7.0	8.5	8.0	8.5	9.5	9.0	9.0
8	6.0	5.5	6.0	7.5	6.5	7.0	8.5	8.0	8.5	9.0	8.5	9.0
9	6.0	5.5	6.0	7.0	6.5	7.0	8.5	8.0	8.0	9.5	9.0	9.0
10	6.0	6.0	6.0	7.5	6.5	7.0	8.0	8.0	8.0	9.5	9.0	9.5
11	6.0	6.0	6.0	8.0	6.5	7.0	8.5	8.0	8.0	10.0	9.5	9.5
12	6.0	6.0	6.0	7.5	6.5	7.0	9.0	8.0	8.5	10.0	9.5	9.5
13	6.5	6.0	6.0	8.0	7.0	7.5	9.0	8.0	8.5	10.5	9.0	9.5
14	6.5	6.0	6.5	8.0	7.0	7.5	9.0	8.0	8.5	10.0	9.5	9.5
15	6.5	6.0	6.5	7.5	7.0	7.5	9.0	8.5	8.5	10.5	9.5	9.5
16	6.5	5.5	6.0	8.0	7.5	7.5	9.0	8.5	9.0	10.5	9.5	10.0
17	6.0	5.0	5.5	7.5	7.5	7.5	9.0	8.5	8.5	10.5	10.0	10.0
18	5.5	5.0	5.0	7.5	7.5	7.5	9.0	8.5	8.5	10.5	10.0	10.0
19	5.0	5.0	5.0	8.0	7.0	7.5	9.5	8.5	8.5	11.0	9.5	10.0
20	5.5	5.0	5.0	8.0	7.0	7.5	9.0	8.5	8.5	11.0	10.0	10.5
21	5.5	5.0	5.0	7.5	7.5	7.5	9.0	8.5	9.0	10.0	10.0	10.0
22	5.5	5.0	5.0	7.5	7.5	7.5	9.0	8.5	9.0	10.0	9.5	10.0
23	5.5	5.0	5.0	7.5	7.5	7.5	9.0	8.5	8.5	10.5	10.0	10.0
24	6.0	5.0	5.5	7.5	7.5	7.5	9.5	8.5	8.5	10.5	10.0	10.0
25	6.0	5.0	5.5	7.5	7.0	7.5	9.0	8.5	9.0	10.5	10.0	10.5
26	6.0	5.0	5.0	7.5	7.5	7.5	9.0	8.5	8.5	10.5	10.0	10.0
27	6.0	4.5	5.0	7.5	7.5	7.5	9.5	8.5	9.0	10.5	10.0	10.5
28	6.5	5.0	5.5	8.0	7.5	7.5	9.5	8.5	9.0	10.5	10.0	10.0
29	---	---	---	8.0	7.5	8.0	9.5	8.5	9.0	11.0	10.0	10.5
30	---	---	---	8.0	7.5	8.0	10.0	8.5	9.0	11.0	10.0	10.5
31	---	---	---	8.0	8.0	8.0	---	---	---	10.5	10.0	10.5
MONTH	6.5	4.5	5.5	8.0	5.0	7.0	10.0	7.5	8.5	11.0	8.5	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.5	10.0	10.5	14.0	12.5	13.0	14.5	13.5	14.0	16.0	15.0	15.5
2	10.5	10.0	10.5	13.5	12.5	13.0	14.5	13.5	14.0	16.0	15.0	15.5
3	11.0	10.0	10.5	14.0	12.5	13.0	14.5	13.5	14.0	16.5	15.5	16.0
4	11.5	11.0	11.0	14.0	12.5	13.0	14.5	13.5	14.0	16.5	15.5	16.0
5	11.5	11.0	11.0	14.0	12.5	13.0	15.0	13.5	14.0	16.5	16.0	16.0
6	11.5	11.0	11.0	14.5	12.5	13.0	15.0	13.5	14.0	16.5	16.0	16.0
7	11.0	11.0	11.0	14.5	12.5	13.0	14.5	14.0	14.0	16.5	16.0	16.0
8	11.5	11.0	11.0	14.5	12.5	13.5	15.0	14.0	14.0	17.0	15.5	16.0
9	11.5	11.0	11.5	14.5	12.5	13.5	15.0	14.0	14.0	17.0	15.5	16.0
10	11.5	11.0	11.0	14.5	13.0	13.5	14.5	14.0	14.5	17.0	16.0	16.5
11	11.5	11.0	11.0	14.5	13.0	13.5	15.0	14.0	14.5	16.5	16.0	16.0
12	12.0	10.5	11.0	14.0	13.0	13.5	15.0	14.0	14.5	17.0	15.5	16.0
13	12.0	10.5	11.5	14.0	13.0	13.5	15.0	14.0	14.5	17.0	16.0	16.0
14	12.0	11.0	11.5	14.0	13.0	13.5	14.5	14.0	14.5	17.0	16.0	16.5
15	12.0	11.5	11.5	14.0	13.0	13.5	14.5	14.0	14.0	17.0	16.0	16.5
16	12.5	11.5	12.0	14.0	13.0	13.0	14.5	14.0	14.0	17.0	16.0	16.5
17	12.5	12.0	12.0	14.0	12.5	13.0	15.0	13.5	14.0	17.0	16.0	16.5
18	13.0	12.0	12.5	14.5	12.5	13.5	15.0	14.0	14.5	16.5	16.0	16.0
19	12.5	12.0	12.5	13.5	12.5	13.0	15.0	14.5	14.5	16.5	16.0	16.0
20	12.5	12.0	12.0	14.0	13.0	13.5	14.5	14.5	14.5	16.5	15.5	16.0
21	12.5	12.0	12.0	13.5	13.0	13.5	15.5	14.0	14.5	16.5	15.5	16.0
22	12.5	11.5	12.0	13.5	13.0	13.0	15.5	14.0	14.5	16.5	15.5	16.0
23	13.5	11.5	12.0	14.0	13.0	13.0	15.0	14.0	14.5	16.5	15.5	16.0
24	13.5	11.5	12.5	14.0	13.0	13.5	15.5	14.5	14.5	16.5	15.5	16.0
25	14.0	12.0	13.0	13.5	13.0	13.5	15.5	14.5	14.5	16.5	15.5	16.0
26	13.5	12.0	12.5	14.5	13.0	13.5	15.5	14.5	15.0	16.5	15.5	16.0
27	13.0	12.0	12.5	14.5	13.0	13.5	15.5	14.5	15.0	16.5	15.5	16.0
28	13.5	12.0	12.5	13.5	13.0	13.5	15.5	14.5	15.0	16.5	15.5	16.0
29	14.0	12.5	13.0	14.0	13.0	13.5	15.5	14.5	15.0	17.0	16.0	16.0
30	14.0	12.5	13.0	14.0	13.0	13.5	16.0	14.5	15.0	17.0	16.0	16.0
31	---	---	---	14.5	13.0	13.5	16.0	15.0	15.5	---	---	---
MONTH	14.0	10.0	11.5	14.5	12.5	13.5	16.0	13.5	14.5	17.0	15.0	16.0

WILLAMETTE RIVER BASIN

199

14150300 FALL CREEK NEAR LOWELL, OR

LOCATION.--Lat 43°58'15", long 122°38'15", in SW 1/4 sec.25, T.18 S., R.1 E., Lane County, Hydrologic Unit 17090001, on right bank 0.1 mi downstream from North Fork, 8.0 mi northeast of Lowell, and at mile 14.4.

DRAINAGE AREA.--118 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 844.42 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Discharges for periods Feb. 19 to Mar. 2, Mar.8 to May 12, computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. No regulation or diversion upstream from station. Continuous water-quality records for the period August 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--30 years, 405 ft³/s, 46.62 in/yr, 293,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Apr. 27, 1990, gage height, 12.28 ft; minimum discharge, 15 ft³/s Aug. 30, 31, Sept. 1, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1100	*3,360	*6.27				
Minimum discharge, 19 ft ³ /s Oct. 12-16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	551	698	623	418	279	365	634	1420	141	85	41
2	21	474	1780	488	387	441	474	573	1470	145	81	41
3	48	183	939	407	390	664	1840	909	1000	142	77	40
4	51	117	554	400	399	976	1890	1310	750	133	74	39
5	32	99	394	357	454	1130	1370	927	696	125	70	39
6	26	78	311	321	477	803	1080	1060	679	119	67	39
7	23	191	282	301	422	658	1330	1160	899	113	67	39
8	22	349	585	358	390	550	1180	1540	833	110	67	38
9	21	554	1060	331	377	473	1250	1180	670	105	64	36
10	20	285	1630	295	360	472	1280	846	623	101	62	35
11	20	178	1180	265	316	432	1540	644	683	98	61	34
12	20	207	766	241	314	360	1370	498	841	95	59	35
13	20	193	580	230	295	323	1100	399	661	93	58	33
14	20	149	498	263	262	363	981	339	515	95	58	32
15	19	119	504	288	239	1230	857	297	454	122	78	31
16	19	99	439	283	215	2960	735	265	388	103	69	39
17	21	92	513	292	201	2690	764	241	337	94	65	44
18	21	113	429	286	195	3180	1100	221	300	87	59	35
19	20	288	373	437	296	2430	981	216	274	83	63	33
20	22	325	1020	2190	304	1800	778	321	251	87	85	32
21	70	1350	1160	1560	270	1250	649	312	237	91	84	31
22	54	2260	1140	1410	260	928	755	425	252	231	66	31
23	32	1150	876	965	279	1960	865	334	245	401	65	30
24	27	570	682	864	250	1730	944	275	209	215	65	29
25	24	357	539	1120	224	1150	868	403	194	160	57	28
26	23	261	630	1030	211	846	884	401	183	136	54	28
27	23	296	950	855	208	654	752	445	176	120	51	28
28	24	479	1190	781	215	522	616	508	168	112	47	27
29	38	358	909	666	---	440	706	457	156	119	46	27
30	199	463	647	546	---	392	758	411	147	101	44	26
31	242	---	621	473	---	357	---	951	---	90	43	---
TOTAL	1242	12188	23879	18926	8628	32443	30062	18502	15711	3967	1991	1020
MEAN	40.1	406	770	611	308	1047	1002	597	524	128	64.2	34.0
MAX	242	2260	1780	2190	477	3180	1890	1540	1470	401	85	44
MIN	19	78	282	230	195	279	365	216	147	83	43	26
AC-FT	2460	24170	47360	37540	17110	64350	59630	36700	31160	7870	3950	2020
CFSM	.34	3.44	6.53	5.17	2.61	8.87	8.49	5.06	4.44	1.08	.54	.29
IN.	.39	3.84	7.53	5.97	2.72	10.23	9.48	5.83	4.95	1.25	.63	.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	119	556	792	866	658	619	546	337	202	73.1	46.9	56.6																		
MAX	312	1389	2282	1849	1691	1326	1002	707	662	163	99.8	188																		
(WY)	1983	1974	1965	1972	1986	1972	1993	1991	1984	1983	1968	1986																		
MIN	18.8	82.8	60.6	102	91.8	108	220	98.6	53.8	45.7	21.1	24.3																		
(WY)	1988	1977	1977	1977	1977	1992	1987	1966	1966	1979	1992	1974																		

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1964 - 1993
ANNUAL TOTAL	84786	168559	
ANNUAL MEAN	232	462	
HIGHEST ANNUAL MEAN			405
LOWEST ANNUAL MEAN			644
HIGHEST DAILY MEAN	4200	3180	183
LOWEST DAILY MEAN	15	19	9900
ANNUAL SEVEN-DAY MINIMUM	16	20	15
ANNUAL RUNOFF (AC-FT)	168200	334300	293300
ANNUAL RUNOFF (CFSM)	1.96	3.91	3.43
ANNUAL RUNOFF (INCHES)	26.73	53.14	46.62
10 PERCENT EXCEEDS	581	1140	952
50 PERCENT EXCEEDS	97	297	211
90 PERCENT EXCEEDS	20	32	34

WILLAMETTE RIVER BASIN

14150900 FALL CREEK LAKE NEAR LOWELL, OR

LOCATION.--Lat 43°56'40", long 122°45'20", in SW 1/4 sec.1, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, in regulating tower near the center of Fall Creek Dam on Fall Creek, 2.2 mi northeast of Lowell, and at mile 7.2.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--January 1966 to current year. Prior to October 1971, published as Fall Creek Reservoir near Lowell.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1965 by Corps of Engineers; storage began January 1966. Total capacity is 125,100 acre-ft at elevation 834 ft and usable capacity is 115,500 acre-ft between elevation 728 ft and 834 ft. Reservoir used for flood control, conservation, and recreation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 123,200 acre-ft May 30, 31, 1972, May 19, 1991; maximum elevation, 832.98 ft May 31, 1972; minimum contents, no contents Nov. 7 to Dec. 6, 1969, Nov. 14-16, 1970, Nov. 18-25, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 120,200 acre-ft June 2, elevation, 831.34 ft; minimum contents, 3,660 acre-ft Dec. 12, 13, elevation, 708.87.

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

670.4	0	725	8,340	785	53,120
679	59	735	13,270	795	64,590
685	366	745	19,480	805	77,880
695	1,400	755	26,130	815	97,750
705	2,850	765	33,770	825	109,200
715	5,200	775	42,580	833	123,200

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	766.31	731.82	715.35	728.52	742.73	764.89	810.73	825.62	831.10	830.54	827.44	816.93
2	765.18	732.27	721.86	728.47	743.96	766.11	811.17	825.99	831.31	830.56	827.13	816.37
3	764.19	731.29	720.92	728.79	745.16	767.99	811.73	826.76	830.84	830.59	826.90	815.88
4	763.18	729.95	718.35	728.57	746.41	770.71	812.27	827.13	830.26	830.57	826.73	815.39
5	762.07	728.49	713.98	728.36	747.88	773.66	812.40	827.43	830.07	830.58	826.42	814.87
6	760.92	726.87	711.52	728.01	749.39	775.71	812.83	827.88	830.04	830.57	826.22	814.31
7	759.78	725.98	710.57	728.39	750.69	777.29	813.47	828.59	830.46	830.57	826.00	813.81
8	758.61	726.21	711.33	729.80	751.84	778.56	814.08	829.05	830.48	830.52	825.78	812.97
9	757.43	727.56	710.80	731.49	752.86	779.66	814.22	829.03	830.19	830.50	825.52	811.41
10	756.22	727.20	712.44	733.03	753.83	780.74	814.43	829.25	830.08	830.47	825.31	809.89
11	754.99	726.11	709.40	734.16	754.64	781.66	815.01	829.38	830.34	830.46	825.04	808.33
12	753.77	725.10	708.87	734.90	755.44	782.38	815.53	829.54	830.47	830.37	824.77	806.63
13	752.55	724.06	709.99	735.27	756.16	783.00	816.14	829.52	830.47	830.35	824.59	804.96
14	751.23	723.71	710.18	735.34	756.72	783.73	816.67	829.54	830.45	830.34	824.30	803.26
15	750.22	721.13	710.45	735.04	757.18	786.39	817.14	829.55	830.39	830.33	824.16	801.55
16	749.47	719.39	710.59	734.75	757.54	792.78	817.66	829.55	830.30	830.29	823.89	799.86
17	748.68	717.39	710.00	734.48	757.83	797.92	818.43	829.68	830.34	830.27	823.50	798.05
18	747.92	715.37	710.27	734.18	758.16	802.70	819.07	829.84	830.34	830.24	823.19	796.21
19	747.12	714.84	711.41	734.36	758.94	805.42	819.63	830.04	830.27	830.15	822.89	794.37
20	746.37	714.70	716.61	737.91	759.69	806.49	820.17	830.15	830.35	830.14	822.52	792.47
21	745.40	720.33	722.45	737.94	760.38	805.92	820.63	830.12	830.47	830.12	822.20	790.45
22	744.03	728.40	727.42	737.52	761.06	805.12	821.25	830.32	830.42	830.44	821.65	788.36
23	742.55	727.09	728.03	737.15	761.87	807.19	821.94	830.32	830.28	830.75	821.26	786.20
24	741.02	721.43	728.29	737.22	762.49	808.25	822.41	830.40	830.28	830.40	820.77	783.98
25	739.42	714.11	727.97	737.88	762.98	807.91	822.79	830.38	830.34	830.04	820.34	781.72
26	737.85	711.73	728.89	737.44	763.39	807.89	823.27	830.41	830.35	829.74	819.86	779.38
27	736.15	710.98	729.70	736.83	763.79	808.05	823.60	830.67	830.39	829.36	819.39	776.96
28	734.41	711.85	729.53	736.46	764.19	808.62	823.82	830.58	830.45	829.02	818.82	774.44
29	732.71	711.69	728.61	737.58	---	809.25	824.37	830.46	830.48	828.66	818.39	771.76
30	731.79	712.63	728.66	739.64	---	809.80	825.08	830.43	830.49	828.26	817.91	769.07
31	731.15	---	728.92	741.34	---	810.25	---	830.70	---	827.82	817.37	---
MAX	766.31	732.27	729.70	741.34	764.19	810.25	825.08	830.70	831.31	830.75	827.44	816.93
MIN	731.15	710.98	708.87	728.01	742.73	764.89	810.73	825.62	830.04	827.82	817.37	769.07
(†)	11180	4580	10050	17140	33120	85490	109300	119100	118700	114000	96510	37180
(‡)	-24710	-6600	+5470	+7090	+15980	+52370	+23810	+9800	-400	-4700	-17490	-59330

CAL YR 1992 MAX 819.77 MIN 708.87 AC-FT† +590
WTR YR 1993 MAX 831.31 MIN 708.87 AC-FT† +1290

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

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR

LOCATION.--Lat 43°56'40", long 122°46'25", in NW 1/4 SE 1/4 sec.2, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 10 ft upstream from highway bridge, 1.1 mi downstream from Fall Creek Dam, 2.3 mi southeast of town of Fall Creek, and at mile 6.1.

DRAINAGE AREA.--186 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to December 1911 (published as Big Fall Creek near Fall Creek; gage heights and discharge measurements only), September 1935 to current year.

REVISED RECORDS.--WSP 1094: 1946(M). WSP 1248: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 637.81 ft above sea level (Corps of Engineers bench mark). Oct. 1 to Dec. 31, 1911, nonrecording gage at site 0.25 mi downstream at different datum. Sept. 9, 1935, to Aug. 3, 1950, nonrecording gage on left bank at present site and datum. Aug. 4, 1950 to Aug. 27, 1982 water-stage recorder. Aug. 27, 1982 gage moved to right bank at present site and datum.

REMARKS.--Water-discharge records good except for estimated daily discharges which are poor. Discharges for period Sept. 20-30 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. Flow regulated since 1966 by Fall Creek Lake (station 14150900). No diversion upstream from station.

AVERAGE DISCHARGE.--58 years, 577 ft³/s, 42.13 in/yr, 418,000 acre-ft/yr, adjusted for storage in Fall Creek Lake since January 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Dec. 11, 1956, gage height, 18.80 ft, from rating curve extended above 9,700 ft³/s; minimum discharge, 1.5 ft³/s Oct. 7, 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s June 1, gage height, 5.58 ft; minimum discharge, 95 ft³/s Jan. 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	533	495	605	1110	163	187	164	469	2040	151	497	471
2	497	501	1000	e880	165	189	320	505	2140	149	381	471
3	476	499	1490	e720	180	189	1760	667	2020	150	283	472
4	472	495	1290	e740	179	192	1960	1400	1730	150	283	468
5	468	490	1320	692	165	196	1690	1020	1420	149	283	468
6	466	484	871	652	166	197	1140	1100	1230	149	283	468
7	464	478	625	e500	168	198	1130	1010	1160	149	281	468
8	461	477	714	e350	168	176	1080	1570	1310	149	281	758
9	460	482	1590	158	169	160	1520	1580	1310	149	283	1200
10	456	506	1880	98	170	160	1460	956	1070	149	283	1200
11	453	515	1980	151	171	160	1470	781	839	148	282	1210
12	452	509	1220	199	173	160	1320	623	1100	147	280	1210
13	448	500	767	272	173	161	1010	616	969	147	280	1200
14	462	495	754	443	174	162	891	533	784	147	281	1200
15	346	487	757	587	175	168	841	445	736	147	280	1210
16	263	480	696	589	175	186	630	428	659	147	332	1200
17	263	499	889	587	175	371	501	269	461	147	381	1200
18	263	509	675	589	175	815	889	200	440	147	381	1200
19	261	522	459	611	179	1180	846	215	440	148	379	1220
20	260	545	473	1730	181	1540	635	427	292	148	442	1170
21	378	561	502	2080	184	2020	550	535	225	149	479	1220
22	491	1090	525	2080	190	1830	538	491	421	150	476	1220
23	486	1790	1090	1560	192	984	582	524	501	369	476	1210
24	482	1970	921	1260	189	1390	765	436	244	626	476	1200
25	478	1810	868	1290	187	1740	804	699	224	558	476	1190
26	473	790	690	1500	186	1170	703	689	200	498	475	1200
27	483	582	1220	e1000	186	780	702	709	187	498	473	1220
28	494	583	1710	e850	186	320	655	961	186	497	472	1220
29	488	587	1520	626	---	162	503	859	171	497	472	1210
30	482	590	1000	161	---	162	444	771	152	496	472	1200
31	480	---	983	162	---	162	---	1460	---	498	472	---
TOTAL	13439	20321	31084	24227	4944	17467	27503	22948	24661	7803	11675	30554
MEAN	434	677	1003	782	177	563	917	740	822	252	377	1018
MAX	533	1970	1980	2080	192	2020	1960	1580	2140	626	497	1220
MIN	260	477	459	98	163	160	164	200	152	147	280	468
AC-FT	26660	40310	61660	48050	9810	34650	54550	45520	48920	15480	23160	60600
MEAN†	31.7	567	1092	897	464	1415	1317	900	815	175	92.2	21.3
CFSM†	0.17	3.05	5.87	4.82	2.49	7.61	7.08	4.84	4.38	0.94	0.50	0.11
IN.†	0.20	3.40	6.77	5.56	2.60	8.77	7.90	5.58	4.89	1.09	0.57	0.13
AC-FT†	1950	33710	67130	55140	25790	87020	78360	55320	48520	10780	5670	1270

CAL YR 1992 TOTAL 121013 MEAN 331 MAX 1980 MIN 37 AC-FT 240000 MEAN† 331 CFSM† 1.78 IN.† 24.26 AC-FT† 240600
WTR YR 1993 TOTAL 236626 MEAN 648 MAX 2140 MIN 98 AC-FT 469300 MEAN† 650 CFSM† 3.49 IN.† 47.45 AC-FT† 470600

e Estimated

† Adjusted for change in contents in Fall Creek Lake.

WILLAMETTE RIVER BASIN

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1950 to current year.

INSTRUMENTATION.--Temperature recorder since August 1950.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.0°C July 28, 1958; minimum, 0.0°C Dec. 23, 24, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.5°C Oct. 1-4; minimum, 3.5°C several days in January.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.5	18.5	18.5	13.5	12.5	13.0	7.5	7.0	7.0	5.5	5.5	5.5
2	18.5	18.5	18.5	12.5	12.5	12.5	8.0	7.5	7.5	5.5	5.0	5.5
3	18.5	18.5	18.5	12.5	12.0	12.5	8.0	7.5	7.5	5.5	5.0	5.0
4	18.5	18.0	18.5	12.5	12.0	12.0	7.5	6.0	7.0	5.0	5.0	5.0
5	18.0	18.0	18.0	12.5	12.0	12.0	6.5	6.0	6.0	5.0	5.0	5.0
6	18.0	18.0	18.0	12.5	12.5	12.5	6.0	5.0	5.5	5.0	4.5	4.5
7	18.0	18.0	18.0	12.5	12.0	12.5	5.5	5.0	5.0	4.5	4.5	4.5
8	18.0	17.5	18.0	12.5	12.0	12.0	5.0	5.0	5.0	4.5	4.0	4.5
9	18.0	17.5	17.5	12.5	10.5	11.0	5.5	5.0	5.5	4.5	4.0	4.0
10	18.0	17.5	17.5	11.0	10.0	10.5	7.0	5.5	6.5	4.0	3.5	4.0
11	18.0	17.5	17.5	10.5	9.5	10.0	7.0	6.5	7.0	4.0	4.0	4.0
12	17.5	17.5	17.5	9.5	9.0	9.5	7.0	6.5	7.0	4.0	3.5	3.5
13	17.5	17.5	17.5	9.5	9.5	9.5	6.5	6.5	6.5	4.0	3.5	4.0
14	17.5	17.0	17.5	10.0	9.5	9.5	6.5	6.0	6.5	4.0	3.5	4.0
15	17.0	16.5	17.0	10.0	9.5	10.0	6.5	6.0	6.5	4.0	3.5	3.5
16	17.0	16.5	16.5	10.0	9.5	9.5	6.5	6.0	6.5	3.5	3.5	3.5
17	16.5	16.0	16.5	10.0	9.5	10.0	6.0	5.5	6.0	3.5	3.5	3.5
18	16.5	16.0	16.5	10.0	9.5	10.0	5.5	5.0	5.5	3.5	3.5	3.5
19	16.5	16.0	16.5	10.0	9.5	10.0	5.0	5.0	5.0	4.0	3.5	3.5
20	16.5	16.0	16.0	9.5	8.5	9.0	5.5	5.0	5.0	4.0	4.0	4.0
21	16.5	16.0	16.0	9.0	8.0	8.5	6.0	5.5	5.5	5.0	4.0	4.5
22	16.0	16.0	16.0	8.5	8.5	8.5	6.0	6.0	6.0	5.5	5.0	5.0
23	16.0	16.0	16.0	8.5	8.5	8.5	6.5	6.0	6.5	5.5	5.5	5.5
24	16.0	15.5	16.0	8.5	8.0	8.0	6.0	6.0	6.0	5.5	5.0	5.0
25	16.0	16.0	16.0	8.0	7.0	7.5	6.0	6.0	6.0	5.5	5.5	5.5
26	16.0	15.5	16.0	7.5	7.0	7.0	6.0	6.0	6.0	6.0	5.5	6.0
27	16.0	15.5	15.5	7.5	7.0	7.0	6.0	6.0	6.0	6.0	5.5	6.0
28	15.5	15.5	15.5	7.5	7.5	7.5	6.0	6.0	6.0	6.0	6.0	6.0
29	15.5	15.5	15.5	7.5	7.5	7.5	6.0	6.0	6.0	6.0	6.0	6.0
30	15.5	14.5	15.0	7.5	7.0	7.5	6.0	6.0	6.0	6.5	6.0	6.0
31	14.5	13.0	13.5	---	---	---	6.0	5.5	6.0	6.5	5.5	6.0
MONTH	18.5	13.0	17.0	13.5	7.0	10.0	8.0	5.0	6.0	6.5	3.5	4.5

WILLAMETTE RIVER BASIN

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14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.5	5.5	6.0	5.5	5.5	5.5	9.5	9.0	9.0			
2	6.5	5.5	6.0	6.0	5.5	5.5	9.5	8.0	8.5			
3	6.0	5.5	5.5	6.0	5.5	5.5	8.0	8.0	8.0			
4	6.5	5.5	5.5	6.0	5.5	6.0	8.5	8.0	8.0			
5	6.0	6.0	6.0	6.5	5.5	6.0	8.5	8.5	8.5			
6	6.5	6.0	6.5	6.5	5.0	5.5	8.5	8.5	8.5			
7	6.5	5.5	6.0	6.5	5.0	5.5	8.5	8.5	8.5			
8	6.5	6.5	6.5	6.5	5.0	5.5	8.5	8.5	8.5			
9	7.0	6.5	6.5	6.0	5.5	5.5	8.5	8.5	8.5			
10	6.5	6.5	6.5	6.0	5.5	5.5	9.0	8.5	8.5			
11	7.0	6.5	6.5	6.5	5.5	6.0	9.0	8.5	9.0			
12	7.0	6.5	6.5	6.0	5.5	5.5	9.0	9.0	9.0			
13	7.0	6.5	6.5	6.0	5.5	6.0	9.0	9.0	9.0			
14	7.0	6.5	6.5	6.5	5.5	6.0	9.0	9.0	9.0			
15	7.0	6.5	6.5	6.0	5.5	6.0	9.0	9.0	9.0			
16	7.0	6.0	6.5	---	---	---	9.0	9.0	9.0			
17	6.5	6.0	6.5	---	---	---	9.0	9.0	9.0			
18	6.5	6.0	6.0	6.5	6.0	6.5	9.0	9.0	9.0			
19	6.0	5.5	6.0	6.5	6.0	6.0	9.0	9.0	9.0			
20	6.0	5.5	6.0	6.5	6.0	6.5	9.0	9.0	9.0			
21	5.5	5.5	5.5	6.5	6.0	6.5	9.5	9.0	9.0			
22	6.0	5.5	5.5	7.0	6.5	6.5	9.0	9.0	9.0			
23	5.5	5.5	5.5	7.0	6.5	7.0	9.0	9.0	9.0			
24	5.5	5.0	5.5	7.0	6.5	7.0	9.5	9.0	9.0			
25	6.0	5.0	5.5	7.5	7.0	7.0	9.0	9.0	9.0			
26	6.0	5.0	5.5	7.5	7.0	7.5	9.5	9.0	9.0			
27	6.0	5.0	5.5	7.5	7.5	7.5	9.5	9.0	9.0			
28	6.0	5.0	5.5	9.5	7.5	8.5	9.5	9.0	9.0			
29	---	---	---	10.0	8.5	9.0	9.5	9.0	9.5			
30	---	---	---	9.5	8.5	9.0	---	---	---			
31	---	---	---	9.5	8.5	9.0	---	---	---			
MONTH	7.0	5.0	6.0	---	---	---	---	---	---			

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1				---	---	---	12.5	12.5	12.5	12.5	12.0	12.0
2				---	---	---	14.0	12.5	13.0	12.5	12.0	12.0
3				---	---	---	14.0	13.5	14.0	12.5	12.0	12.5
4				---	---	---	14.5	13.5	14.0	12.5	12.0	12.5
5				---	---	---	14.5	13.5	14.0	12.5	12.0	12.5
6				---	---	---	14.5	14.0	14.0	13.0	12.5	12.5
7				---	---	---	14.5	14.0	14.0	13.0	12.5	12.5
8				---	---	---	14.5	14.0	14.5	13.0	12.0	12.5
9				---	---	---	15.0	14.0	14.5	12.5	12.0	12.0
10				15.0	14.0	14.5	15.0	14.0	14.5	12.5	12.0	12.5
11				15.0	14.0	14.5	15.0	14.0	14.5	12.5	12.5	12.5
12				15.0	14.0	14.5	15.0	14.0	14.5	12.5	12.5	12.5
13				14.5	14.0	14.5	15.0	14.0	14.5	13.0	12.5	12.5
14				15.5	14.0	14.5	15.0	14.5	14.5	13.0	13.0	13.0
15				15.0	14.0	14.5	15.0	14.5	14.5	13.0	13.0	13.0
16				15.5	14.0	14.5	15.0	14.0	14.5	---	13.0	13.0
17				15.5	14.5	15.0	14.5	13.5	14.0	13.5	13.0	13.5
18				15.5	14.0	15.0	14.5	14.0	14.0	13.5	13.0	13.5
19				15.0	14.5	15.0	14.5	14.0	14.0	13.5	13.5	13.5
20				15.5	14.5	15.0	14.0	11.5	13.0	14.5	13.5	13.5
21				15.5	14.5	15.0	12.0	11.5	11.5	14.0	13.5	14.0
22				15.5	14.5	15.0	12.0	11.5	11.5	14.0	14.0	14.0
23				15.0	11.0	13.0	12.0	11.5	11.5	14.5	14.0	14.5
24				11.5	11.0	11.5	12.0	11.5	11.5	15.0	14.5	15.0
25				11.5	11.5	11.5	12.0	11.5	11.5	15.5	15.0	15.0
26				12.0	11.5	12.0	12.0	11.5	12.0	16.0	15.5	16.0
27				12.0	11.5	12.0	12.0	11.5	12.0	16.5	16.0	16.5
28				12.0	11.5	12.0	12.0	11.5	12.0	17.0	16.5	17.0
29				12.5	12.0	12.0	12.5	11.5	12.0	17.5	17.0	17.5
30				12.5	12.0	12.0	12.5	12.0	12.0	18.0	17.5	17.5
31				12.5	12.0	12.5	12.5	12.0	12.0	---	---	---
MONTH				---	---	---	15.0	11.5	13.0	---	12.0	13.5

WILLAMETTE RIVER BASIN

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR

LOCATION.--Lat 43°59'55", long 122°54'20", in SW 1/4 SW 1/4 sec.14, T.18 S., R.2 W., Lane County, Hydrologic Unit 17090001, on right bank 25 ft downstream from highway bridge at Jasper, 0.1 mi downstream from Hills Creek, and at mile 195.0.

DRAINAGE AREA.--1,340 mi².

PERIOD OF RECORD.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1907-8, 1910-12, 1914-16, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 513.45 ft above sea level. September 1905 to February 1912 and July 1913 to March 1917, nonrecording gage at approximately same site at datum about 1.5 ft higher Oct. 22, 1952, to Sept. 30, 1953, nonrecording gage at site 25 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1953 by Lookout Point Lake (station 14149000), since 1961 by Hills Creek Lake (station 14145100), and since 1966 by Fall Creek Lake (station 14150900). Continuous water-quality records for the period October 1953 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--50 years (water years 1906-11, 1914-16, 1953-93), 4,050 ft³/s, 2,934,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft³/s Nov. 23, 1909, gage height, 17.4 ft, datum then in use, from graph based on gage readings, from rating curve extended above 42,000 ft³/s; minimum discharge, 366 ft³/s Dec. 5, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,300 ft³/s June 4, gage height, 8.25 ft; minimum discharge, 1,310 ft³/s Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1640	1880	7170	5240	4980	2250	3060	5180	12000	2220	3520	3450
2	1660	1840	8130	4740	4100	2110	4090	5190	13200	2200	3440	3440
3	1650	1740	8600	4360	2730	2250	7700	5530	13600	2190	3280	3440
4	1640	1710	9630	4720	1920	2370	8430	6590	14100	2200	3270	3440
5	1640	1690	9680	4330	1810	2440	8990	6110	11900	2200	3300	3440
6	1630	1660	9080	5330	1790	2280	10400	6210	8810	2180	3330	3460
7	1620	1710	7610	4030	1770	2150	10300	7520	8240	2170	3330	3400
8	1620	1780	6860	2720	2020	2060	10100	10100	8100	2170	3340	3230
9	1620	1870	7350	2370	2980	1960	11000	10100	7810	2160	3310	3750
10	1610	1970	7990	2230	3530	1960	11200	9250	6990	2160	3320	3730
11	1610	1940	7580	3380	4130	1910	10200	7240	6710	2140	3300	3740
12	1610	1930	6430	2500	4190	1850	7500	6740	6400	2110	3260	3770
13	1610	1910	5700	1950	3990	1820	6370	6640	5560	2120	3260	3780
14	1630	2560	5540	2060	3930	1870	6040	6490	5250	2150	3270	3770
15	1560	2620	5510	2240	3890	3130	5890	6350	5140	2140	3300	3780
16	1450	2610	4750	2240	3900	4810	5570	6290	4990	2120	3340	3800
17	1440	3070	6070	2250	2980	5620	5390	5430	4770	2120	3420	3820
18	1430	3000	6130	2230	2630	7700	5990	4680	4690	2100	3390	3820
19	1420	3130	4770	2300	2550	7460	5960	4660	4470	2100	3400	3840
20	1360	3200	4990	5250	2530	8130	5640	5640	4340	2610	3460	3800
21	1450	3480	5260	6890	2510	12400	5430	5990	3570	2660	3530	3880
22	1600	4660	5250	7130	2640	12000	5430	7560	2780	2780	3500	3870
23	1570	5870	5670	6130	2670	8580	5480	7650	2740	3010	3490	3800
24	1570	6780	5310	5570	2580	10600	5700	6190	2480	3200	3530	3780
25	1600	6510	5540	6050	2500	12000	5780	5420	2400	3110	3490	3770
26	1600	5300	5430	6720	2480	11000	5710	5890	2350	3020	3500	3790
27	1580	5020	6240	6500	2230	10100	5630	6960	2350	3000	3490	3800
28	1600	5080	7330	6240	2180	6800	5490	7540	2340	3000	3470	3820
29	1620	5040	5760	5750	---	5430	5320	6950	2310	3020	3480	3800
30	1740	6110	4790	5110	---	4400	5230	6720	2270	3030	3480	3780
31	1780	---	4970	5040	---	3460	---	8120	---	3460	3450	---
TOTAL	49160	97670	201120	133600	82140	162900	205020	206930	182660	76850	105250	110790
MEAN	1586	3256	6488	4310	2934	5255	6834	6675	6089	2479	3395	3693
MAX	1780	6780	9680	7130	4980	12400	11200	10100	14100	3460	3530	3880
MIN	1360	1660	4750	1950	1770	1820	3060	4660	2270	2100	3260	3230
AC-FT	97510	193700	398900	265000	162900	323100	406700	410400	362300	152400	208800	219800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1993, BY WATER YEAR (WY)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	3983	6353	7509	6289	3797	3444	3031	3185	2926	1933	2399	3545															
MAX	5392	12730	14630	11480	9460	10550	6834	6675	6746	2562	3395	4823															
(WY)	1985	1985	1978	1976	1972	1972	1993	1993	1984	1969	1993	1984															
MIN	1586	2618	1517	1327	787	1111	729	844	1187	1248	1766	1830															
(WY)	1993	1988	1977	1977	1977	1977	1977	1973	1977	1978	1984	1968															

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1967 - 1993

ANNUAL TOTAL	840920	1614090	
ANNUAL MEAN	2298	4422	4035
HIGHEST ANNUAL MEAN			6215
LOWEST ANNUAL MEAN			1877
HIGHEST DAILY MEAN	9680	Dec 5	14100
LOWEST DAILY MEAN	1090	May 24	1360
ANNUAL SEVEN-DAY MINIMUM	1160	May 22	1440
ANNUAL RUNOFF (AC-FT)	1668000		3202000
10 PERCENT EXCEEDS	4980		7700
50 PERCENT EXCEEDS	1750		3740
90 PERCENT EXCEEDS	1380		1780
			2923000
			7980
			3050
			1530
			20900
			536
			555
			Apr 30 1977
			Apr 24 1977
			Feb 27 1986
			1972
			1977

14153000 COTTAGE GROVE LAKE NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°43'00", long 123°02'55", in NE 1/4 sec.28, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, in east abutment of dam on Coast Fork Willamette River 5.8 mi south of Cottage Grove, and at mile 29.7.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1942 to current year. Prior to October 1971, published as Cottage Grove Reservoir near Cottage Grove.

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam with concrete spillway completed by Corps of Engineers in 1942; storage began Oct. 31, 1942. Capacity, 32,930 acre-ft between elevation 719.0 ft, outlet conduit, and 791.0 ft, crest of spillway. Dead storage negligible. Reservoir used for flood control and improvement of navigation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,750 acre-ft Dec. 24, 1964, elevation, 794.23 ft; minimum contents since first filling, no contents Sept. 26 to Oct. 19, 1966, and Nov. 14, 15, Nov. 20 to Dec. 8, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,140 acre-ft July 23, elevation, 790.31 ft; minimum contents, 3,150 acre-ft Dec. 19, elevation, 750.05 ft.

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

710.9	0	755	4,860	780	21,460
730	151	760	7,150	785	26,370
740	926	765	9,970	790	31,780
745	1,840	770	13,260	793	35,270
750	3,140	775	17,070		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	769.73	755.18	751.97	751.27	756.63	768.62	779.05	785.77	789.94	789.79	789.72	786.24
2	769.24	755.34	752.21	751.13	756.48	769.62	779.34	786.05	789.75	789.86	789.60	786.02
3	768.77	755.12	750.96	751.19	756.28	769.94	780.37	786.62	789.47	789.91	789.48	785.81
4	768.28	754.64	750.62	751.55	756.12	769.75	781.59	786.99	789.10	789.95	789.35	785.58
5	767.77	753.89	750.66	751.19	756.25	769.61	780.55	787.21	789.34	789.97	789.21	785.36
6	767.25	753.28	750.68	750.59	756.69	769.61	779.80	787.37	789.31	789.99	789.11	785.15
7	766.72	753.32	751.15	750.80	757.13	769.61	779.94	787.58	789.44	790.00	789.08	784.94
8	766.19	753.54	752.28	751.97	757.55	769.93	780.38	787.76	789.80	790.06	789.04	784.71
9	765.64	753.80	751.44	752.26	758.01	770.35	780.28	787.88	789.98	790.07	788.99	784.49
10	765.09	753.59	751.70	752.34	758.43	770.85	780.44	788.08	789.94	790.07	788.94	784.22
11	764.54	753.20	750.92	752.20	758.87	771.25	780.68	788.21	789.90	790.06	788.89	783.93
12	763.97	752.83	750.85	751.90	759.50	771.58	780.92	788.37	789.84	790.06	788.83	783.65
13	763.41	752.51	750.87	751.68	760.02	771.96	781.23	788.45	789.87	790.07	788.78	783.33
14	762.83	752.25	750.82	751.82	760.44	772.41	781.55	788.67	789.90	790.08	788.75	782.97
15	762.24	752.11	750.61	752.13	760.78	772.65	781.80	788.80	789.92	790.08	788.76	782.62
16	761.66	751.96	750.87	752.13	761.05	772.62	782.11	789.01	789.89	790.07	788.75	782.27
17	761.06	751.79	750.52	751.98	761.27	772.94	782.63	789.19	789.86	790.06	788.68	781.91
18	760.46	751.62	750.11	751.73	761.53	773.64	782.98	789.34	789.81	790.05	788.63	781.56
19	759.84	752.01	750.31	752.05	762.28	773.50	783.24	789.49	789.83	790.03	788.66	781.20
20	759.27	752.55	751.15	755.85	763.13	773.81	783.46	789.52	789.83	790.03	788.58	780.78
21	758.74	753.02	751.25	755.44	763.99	774.17	783.62	789.58	789.83	790.04	788.43	780.33
22	758.16	753.45	751.37	754.55	765.04	774.39	783.83	789.67	789.83	790.20	788.26	779.85
23	757.54	752.92	751.27	753.91	765.96	775.92	784.05	789.79	789.80	790.29	788.08	779.34
24	756.87	752.61	751.15	754.22	766.39	776.89	784.28	789.95	789.75	790.17	787.89	778.83
25	756.17	752.68	750.78	754.08	766.55	777.24	784.50	789.94	789.73	790.04	787.69	778.32
26	755.62	752.56	750.63	754.36	766.92	777.38	784.76	789.91	789.72	790.00	787.49	777.79
27	755.33	752.65	751.53	754.33	767.45	777.43	784.92	790.02	789.73	789.99	787.29	777.28
28	755.04	752.65	752.99	754.47	767.94	777.59	785.14	790.03	789.71	790.00	787.08	776.75
29	754.87	752.36	752.33	755.15	---	777.91	785.36	790.02	789.72	790.00	786.88	776.22
30	755.19	752.59	750.70	756.22	---	778.25	785.53	790.07	789.75	789.95	786.67	775.69
31	755.16	---	751.61	756.70	---	778.68	---	790.18	---	789.83	786.46	---
MAX	769.73	755.34	752.99	756.70	767.94	778.68	785.53	790.18	789.98	790.29	789.72	786.24
MIN	754.87	751.62	750.11	750.59	756.12	768.62	779.05	785.77	789.10	789.79	786.46	775.69
(†)	4930	3970	3640	5580	11840	20250	26920	31990	31500	31590	27900	17650
(‡)	-8480	-960	-330	+1940	+6260	+8410	+6670	+5070	-490	+90	-3690	-10250

CAL YR 1992 MAX 788.41 MIN 749.67 AC-FT† +610
WTR YR 1993 MAX 790.29 MIN 750.11 AC-FT† +4,240

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

WILLAMETTE RIVER BASIN

14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR

LOCATION.--Lat 43°43'15", long 123°02'55", in NE 1/4 sec.28, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank at bridge 0.3 mi downstream from Cottage Grove Dam, 5.5 mi south of Cottage Grove, and at mile 29.4.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--January 1939 to current year. Prior to October 1944, published as "near Cottage Grove."

REVISED RECORDS.--WSP 1448: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 711.00 ft above sea level (Corps of Engineers bench mark). Jan. 1 to Oct. 12, 1939, nonrecording gage and Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder at several sites and datums 0.8 mi downstream.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1942 by Cottage Grove Lake (station 14153000). Small diversions for irrigation upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--54 years, 266 ft³/s, 34.73 in/yr, 192,700 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,910 ft³/s Dec. 24, 1964, gage height, 11.83 ft; no flow July 5-7, 1945, and for part of Aug. 24, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,530 ft³/s June 1, gage height, 6.62 ft; minimum discharge, 44 ft³/s Nov. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	145	291	764	258	87	166	186	1350	69	115	143
2	191	145	424	532	258	89	251	127	1190	62	115	143
3	190	145	574	428	260	495	702	178	932	62	115	143
4	188	173	290	429	244	686	496	454	836	62	116	143
5	188	206	176	500	192	596	1450	416	676	62	116	142
6	187	165	150	457	127	461	1160	453	718	62	97	142
7	186	67	151	323	112	395	575	423	514	62	60	140
8	185	67	288	227	108	240	460	434	298	62	60	140
9	183	97	942	310	90	166	871	413	325	62	61	140
10	183	147	936	306	90	137	745	314	403	62	62	160
11	181	146	837	304	83	138	722	272	403	62	62	166
12	181	127	649	304	76	127	578	227	380	62	62	166
13	181	110	480	272	75	89	468	222	293	62	62	182
14	178	86	369	240	76	107	373	145	251	62	61	196
15	178	62	345	241	77	348	373	79	241	63	60	196
16	176	62	283	283	78	827	304	79	244	63	71	196
17	175	62	496	308	79	945	272	79	214	63	78	196
18	173	61	468	308	79	970	430	86	208	63	77	195
19	173	61	313	337	80	936	420	104	161	64	77	193
20	171	61	401	974	81	644	367	193	161	63	120	212
21	171	160	708	1280	83	492	317	164	163	62	143	235
22	168	588	621	1490	87	464	287	132	164	62	143	237
23	168	453	488	982	147	468	287	94	164	131	143	252
24	166	263	370	600	213	476	338	85	164	176	143	251
25	164	134	358	597	252	476	380	241	131	155	143	249
26	134	134	292	444	170	441	406	233	122	90	143	249
27	72	96	305	441	86	386	393	211	123	67	143	248
28	72	123	674	361	86	302	310	376	123	65	143	247
29	72	125	989	200	---	181	258	351	91	65	143	247
30	94	128	942	98	---	136	244	343	77	84	143	245
31	145	---	686	190	---	110	---	806	---	116	143	---
TOTAL	5065	4399	15296	14530	3647	12415	14403	7920	11120	2327	3220	5794
MEAN	163	147	493	469	130	400	480	255	371	75.1	104	193
MAX	191	588	989	1490	260	970	1450	806	1350	176	143	252
MIN	72	61	150	98	75	87	166	79	77	62	60	140
AC-FT	10050	8730	30340	28820	7230	24630	28570	15710	22060	4620	6390	11490
MEAN†	25.5	131	488	500	243	537	592	338	362	76.6	43.9	20.8
CFSM†	0.25	1.26	4.69	4.81	2.34	5.16	5.69	3.25	3.48	0.74	0.42	0.20
IN.†	0.28	1.40	5.41	5.55	2.43	5.96	6.35	3.75	3.89	0.85	0.49	0.22
AC-FT†	1570	7770	30010	30760	13490	33040	35240	20780	21570	4710	2700	1240

CAL YR 1992 TOTAL 50418 MEAN 138 MAX 989 MIN 39 AC-FT 100000 MEAN† 139 CFSM† 1.34 IN.† 18.14 AC-FT† 100600
WTR YR 1993 TOTAL 100136 MEAN 274 MAX 1490 MIN 60 AC-FT 198600 MEAN† 280 CFSM† 2.69 IN.† 36.56 AC-FT† 202800

† Adjusted for change in contents, in Cottage Grove Lake.

14154500 ROW RIVER ABOVE PITCHER CREEK, NEAR DORENA, OR

LOCATION.--Lat 43°44'10", long 122°52'20", in NE 1/4 sec.24, T.21 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank 0.5 mi upstream from Pitcher Creek, 1.2 mi northwest of Dorena, and at mile 13.2.

DRAINAGE AREA.--211 mi².

PERIOD OF RECORD.--September 1935 to current year. Prior to October 1949, published as "at Star."

GAGE.--Water-stage recorder. Datum of gage is 856.16 ft above sea level. Sept. 16, 1935, to Oct. 17, 1938, nonrecording gage at site 450 ft upstream at datum 1.00 ft higher.

REMARKS.--Records good. Slight regulation caused by upstream logponds. No diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--58 years, 592 ft³/s, 38.10 in/yr, 428,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s Dec. 22, 1964, gage height, 18.19 ft, from rating curve extended above 12,000 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s Sept. 24, 25, 1951, Oct. 7, 8, 1958.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1230	*7,980	*9.54	No other peak greater than base discharge.			
Minimum discharge, 25 ft ³ /s several days during October.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	765	815	973	678	483	495	636	2520	159	104	44
2	27	1230	2200	707	627	753	668	610	2090	158	96	43
3	45	442	1530	559	691	1350	2640	1240	1890	156	89	42
4	72	262	849	532	794	1520	2850	2310	1540	143	83	40
5	46	251	576	493	987	1610	2120	1570	1580	134	78	40
6	37	182	439	439	969	1400	1500	1640	1520	126	75	40
7	32	381	453	416	811	1330	1320	1700	1550	119	74	40
8	30	692	1090	651	760	1140	1510	1850	1480	114	74	39
9	28	872	1970	618	752	983	2160	1580	1130	108	69	37
10	27	508	3100	509	658	972	2130	1190	1040	104	66	36
11	27	316	2040	427	549	931	2010	959	983	100	64	35
12	26	260	1220	369	552	737	1660	777	1190	98	61	36
13	25	272	908	341	498	635	1390	657	958	94	60	36
14	25	232	746	462	421	687	1350	554	748	97	61	35
15	25	185	893	e650	372	1800	1180	486	635	107	80	34
16	25	150	720	e630	325	3690	1030	450	558	103	102	34
17	26	128	796	e610	292	3990	1050	430	478	92	85	42
18	27	128	644	e590	277	4950	1680	412	417	88	71	39
19	26	256	532	e590	468	3170	1490	398	375	84	72	37
20	26	374	1360	e4780	663	2420	1140	602	338	85	78	35
21	88	1410	1610	2900	513	1760	927	503	310	90	88	34
22	88	3350	1330	2900	465	1300	864	596	314	256	75	34
23	50	1520	932	1730	526	3230	938	525	300	772	67	33
24	39	776	831	1260	456	2500	1170	456	259	413	68	32
25	35	497	697	1560	392	1560	1070	704	235	278	61	31
26	33	388	641	1520	359	1110	1050	804	216	214	57	30
27	31	524	1140	1320	348	847	920	789	209	178	54	30
28	30	1000	1940	1240	361	672	773	805	203	154	52	29
29	64	629	1380	1020	---	563	725	779	184	158	50	29
30	446	571	948	825	---	495	734	704	170	133	48	28
31	543	---	944	738	---	457	---	1930	---	115	46	---
TOTAL	2074	18551	35274	32359	15564	49045	40544	28646	25420	5030	2208	1074
MEAN	66.9	618	1138	1044	556	1582	1351	924	847	162	71.2	35.8
MAX	543	3350	3100	4780	987	4950	2850	2310	2520	772	104	44
MIN	25	128	439	341	277	457	495	398	170	84	46	28
AC-FT	4110	36800	69970	64180	30870	97280	80420	56820	50420	9980	4380	2130
CFSM	.32	2.93	5.39	4.95	2.63	7.50	6.41	4.38	4.02	.77	.34	.17
IN.	.37	3.27	6.22	5.70	2.74	8.65	7.15	5.05	4.48	.89	.39	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

	MEAN	159	759	1140	1152	1089	1012	832	555	277	76.9	38.3	46.5
MAX	1152	2569	4114	2606	2321	2168	2161	1333	847	236	107	259	
(WY)	1951	1974	1965	1971	1986	1972	1937	1963	1993	1983	1976	1978	
MIN	12.8	19.2	58.0	86.0	81.1	159	290	116	52.1	26.3	15.0	15.7	
(WY)	1988	1937	1977	1977	1977	1992	1941	1987	1987	1940	1940	1951	

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1936 - 1993

	ANNUAL TOTAL	124572	255789	
ANNUAL MEAN	340	701	592	
HIGHEST ANNUAL MEAN			1008	1974
LOWEST ANNUAL MEAN			233	1977
HIGHEST DAILY MEAN	3980	Apr 10	4950	Mar 18
LOWEST DAILY MEAN	12	Aug 29	25	Oct 1
ANNUAL SEVEN-DAY MINIMUM	13	Aug 26	26	Oct 11
ANNUAL RUNOFF (AC-FT)	247100		507400	429100
ANNUAL RUNOFF (CFSM)	1.61		3.32	2.81
ANNUAL RUNOFF (INCHES)	21.96		45.10	38.14
10 PERCENT EXCEEDS	915		1610	1420
50 PERCENT EXCEEDS	131		497	278
90 PERCENT EXCEEDS	22		36	27

e Estimated

WILLAMETTE RIVER BASIN

14155000 DORENA LAKE NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°47'10", long 122°57'15", in SE 1/4 sec.32, T.20 S., R.2 W., Lane County, Hydrologic Unit 17090002, on left end of Dorena Dam on Row River, 5.0 mi east of Cottage Grove, and at mile 7.61.

DRAINAGE AREA.--265 mi².

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1971, published as Dorena Reservoir near Cottage Grove.

REVISED RECORDS.--WRD OR-78-1: 1969.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete outlet and spillway, completed in 1949 by Corps of Engineers; controlled storage began Oct. 11, 1949. Capacity, 77,580 acre-ft between elevations 739.0 ft, sill of outlet gates, and 835.0 ft, crest of spillway. Dead storage, 18 acre-ft below elevation 739.0 ft. Reservoir used for flood control and improvement of navigation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 95,550 acre-ft Dec. 23, 1964, elevation, 844.03 ft; minimum contents observed since first filling, 159 acre-ft Dec. 14, 1970, elevation, 743.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 72,450 acre-ft June 2, elevation, 832.22 ft; minimum contents, 7,120 acre-ft Jan. 2, elevation, 770.54 ft.

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

760	2,810	785	15,850	810	39,380	835	77,600
765	4,560	790	19,580	815	45,620	840	87,320
770	6,840	795	23,780	820	52,480		
775	9,540	800	28,490	825	60,060		
780	12,530	805	33,700	830	68,470		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	812.01	780.01	771.45	770.94	780.85	797.69	814.46	825.34	832.21	831.52	832.01	827.84
2	810.81	782.23	774.25	770.65	780.85	799.34	814.93	825.78	832.01	831.55	831.97	827.63
3	809.64	781.74	773.79	770.99	780.84	800.35	816.73	826.78	831.63	831.58	831.89	827.41
4	808.47	780.25	772.51	770.98	781.18	800.55	819.59	826.84	830.98	831.59	831.77	827.20
5	807.24	778.69	772.11	770.70	781.66	800.26	818.32	826.89	831.03	831.60	831.63	826.99
6	805.96	777.05	771.82	770.55	782.08	800.14	816.75	827.04	830.98	831.58	831.50	826.77
7	804.86	776.72	772.05	770.92	782.28	800.22	816.86	827.40	831.29	831.57	831.43	826.54
8	804.36	777.59	774.12	773.04	782.59	800.67	817.60	827.99	831.61	831.54	831.34	826.32
9	803.63	778.71	774.16	773.49	782.79	801.26	817.56	828.17	831.46	831.50	831.24	826.04
10	802.38	777.62	777.07	773.20	782.86	802.03	817.71	828.39	831.41	831.46	831.14	825.61
11	801.13	775.78	775.67	773.34	783.05	802.81	817.89	828.69	831.62	831.43	831.04	825.15
12	799.82	773.61	772.36	773.22	783.81	803.18	818.13	828.99	831.86	831.39	830.93	824.70
13	798.51	772.67	772.59	773.04	784.52	803.67	818.42	829.11	831.70	831.34	830.82	824.17
14	797.16	772.70	772.70	773.52	785.29	804.29	818.79	829.32	831.55	831.30	830.75	823.58
15	795.81	772.51	772.72	773.62	786.00	804.83	819.11	829.76	831.53	831.27	830.70	822.98
16	794.42	772.17	772.55	773.33	786.56	807.23	819.47	830.14	831.61	831.22	830.62	822.38
17	793.02	772.14	772.71	773.26	787.06	811.22	820.07	830.47	831.72	831.17	830.45	821.77
18	791.61	772.39	771.41	773.03	787.55	813.65	820.64	830.73	831.75	831.11	830.30	821.17
19	790.16	773.50	770.68	773.21	788.68	813.76	820.84	831.01	831.74	831.06	830.18	820.55
20	788.80	774.64	772.08	782.69	790.32	813.56	821.05	831.44	831.71	831.01	830.09	819.88
21	787.55	777.41	772.16	783.29	791.56	812.21	821.39	831.50	831.78	830.96	829.96	819.10
22	786.28	783.04	771.82	783.77	792.66	810.45	821.81	831.69	831.92	831.30	829.77	818.34
23	784.89	780.35	771.95	780.57	793.80	813.81	822.30	831.86	831.94	831.95	829.62	817.54
24	783.41	777.14	772.41	778.99	794.50	813.92	822.97	831.99	831.87	831.79	829.43	816.71
25	781.80	774.95	772.19	779.53	794.92	811.84	823.25	832.04	831.75	831.87	829.25	815.90
26	780.52	773.04	772.04	779.36	795.45	811.61	823.56	832.07	831.72	831.96	829.06	815.08
27	779.75	772.86	773.67	778.91	796.08	811.78	823.76	832.09	831.70	832.02	828.88	814.26
28	778.97	773.07	773.65	778.84	796.72	812.35	824.07	832.04	831.68	832.08	828.67	813.41
29	778.30	771.96	771.25	779.22	---	812.78	824.45	831.97	831.63	832.11	828.45	812.58
30	778.82	771.94	770.92	780.01	---	813.30	824.94	831.94	831.56	832.11	828.25	811.79
31	779.10	---	771.22	780.69	---	813.85	---	832.04	---	832.07	828.06	---
MAX	812.01	783.04	777.07	783.77	796.72	813.92	824.94	832.09	832.21	832.11	832.01	827.84
MIN	778.30	771.94	770.68	770.55	780.84	797.69	814.46	825.34	830.98	830.96	828.06	811.79
(†)	11970	7850	7470	12960	25340	44130	59960	72130	71260	72180	65110	41540
(‡)	-31370	-4120	-380	+5490	+12380	+18790	+15830	+12170	-870	+920	-7070	-23570

CAL YR 1992 MAX --- MIN --- AC-FT† -380
WTR YR 1993 MAX 832.21 MIN 770.55 AC-FT‡ -1,800

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

WILLAMETTE RIVER BASIN

209

14155500 ROW RIVER NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°47'35", long 122°59'25", in NE 1/4 sec.36, T.20 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank 1.7 mi upstream from Mosby Creek, 2.1 mi downstream from Dorena Dam, 3.5 mi east of Cottage Grove, and at mile 5.5.

DRAINAGE AREA.--270 mi².

PERIOD OF RECORD.--January 1939 to current year. Prior to October 1947, published as "near Dorena."

GAGE.--Water-stage recorder. Datum of gage is 685.24 ft above sea level (levels by Corps of Engineers). Jan. 5 to Oct. 12, 1939, nonrecording gage at site 180 ft upstream at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1949 by Dorena Lake (station 14155000). No diversion upstream from station.

AVERAGE DISCHARGE.--54 years, 741 ft³/s, 37.27 in/yr, 536,900 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s Dec. 28, 1945, gage height, 18.20 ft; minimum discharge, 0.20 ft³/s Sept. 25 to Oct. 7, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,200 ft³/s Mar. 18, gage height, 7.48 ft; minimum discharge, 106 ft³/s Nov. 17-20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	889	586	1060	1400	690	218	251	504	3440	203	170	226
2	879	602	1840	1030	690	218	499	453	3360	147	170	226
3	870	712	1930	724	730	1170	1870	680	2970	147	192	226
4	865	886	1320	761	724	1710	1260	2630	2740	147	214	226
5	859	868	774	746	864	2050	3590	1760	2120	147	214	226
6	846	801	610	656	893	1710	3080	1820	2100	147	199	226
7	717	581	552	534	796	1470	1570	1750	1810	144	167	226
8	314	581	757	432	723	1090	1310	1740	1650	141	167	226
9	429	708	2540	680	745	828	2590	1750	1640	141	167	277
10	760	997	2980	708	701	720	2450	1200	1390	141	167	365
11	747	972	3060	555	582	663	2360	838	1080	141	167	405
12	751	947	2510	546	441	651	1870	663	1210	141	167	405
13	743	603	1120	516	391	517	1550	652	1340	141	167	458
14	737	273	918	481	264	501	1370	493	1070	144	167	507
15	726	268	1070	686	217	1780	1260	199	803	144	167	504
16	716	268	952	725	216	3110	1030	207	619	144	202	504
17	710	172	1010	663	200	2140	898	218	493	144	234	499
18	702	106	1150	663	199	4110	1530	255	470	144	235	499
19	693	106	845	687	203	3640	1620	255	470	144	235	499
20	687	181	1270	2570	207	3050	1220	238	416	144	234	537
21	678	682	2010	3420	210	3000	910	558	314	144	234	595
22	671	2010	1810	3550	218	2680	755	516	268	150	234	596
23	655	2890	1190	3470	284	1450	765	453	343	290	232	610
24	645	2040	929	2200	352	2810	838	465	379	637	230	606
25	637	1210	907	1680	400	3290	1040	765	379	241	230	603
26	558	904	845	1860	300	1430	997	850	291	161	230	600
27	295	659	1120	1710	218	821	935	929	251	157	230	597
28	295	1030	2650	1470	218	564	710	1070	251	157	230	593
29	291	961	2570	1070	---	448	625	1000	251	158	230	592
30	359	700	1410	695	---	324	546	929	251	163	230	587
31	581	---	1300	631	---	255	---	2460	---	177	229	---
TOTAL	20305	24304	45009	37519	12676	48418	41299	28300	34169	5371	6341	13246
MEAN	655	810	1452	1210	453	1562	1377	913	1139	173	205	442
MAX	889	2890	3060	3550	893	4110	3590	2630	3440	637	235	610
MIN	291	106	552	432	199	218	251	199	251	141	167	226
AC-FT	40270	48210	89280	74420	25140	96040	81920	56130	67770	10650	12580	26270
MEAN†	145	741	1450	1300	676	1870	1640	1110	1120	188	89.6	45.4
CFSM†	0.54	2.74	5.37	4.81	2.50	6.93	6.07	4.11	4.15	0.70	0.33	0.17
IN.†	0.62	3.06	6.17	5.55	2.60	7.97	6.79	4.74	4.64	0.80	0.38	0.19
AC-FT†	8900	44090	88900	79910	37520	114830	97750	68300	66900	11570	5510	2700

CAL YR 1992 TOTAL 158521 MEAN 433 MAX 3200 MIN 84 AC-FT 314400 MEAN† 434 CFSM† 1.61 IN.† 21.87 AC-FT† 315000
WTR YR 1993 TOTAL 316957 MEAN 868 MAX 4110 MIN 106 AC-FT 628700 MEAN† 866 CFSM† 3.21 IN.† 43.52 AC-FT† 626900

† Adjusted for change in contents in Dorena Lake.

LOCATION.--Lat 43°58'50", long 122°57'55", in NW 1/4 sec.29, T.18 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank at downstream side of bridge on State Highway 58, 2.5 mi southeast of Goshen, and at mile 6.4.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 473.80 ft above sea level. Aug. 23, 1905, to Feb. 7, 1912, nonrecording gage at site 600 ft upstream at different datum.

AVERAGE DISCHARGE.--49 years (water years 1906-11, 1951-93), 1,597 ft³/s, 1,157,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,510 ft³/s Jan. 20, gage height, 10.35 ft; minimum discharge, 219 ft³/s Aug. 10.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1150	1030	1630	4360	1270	721	908	1150	7540	448	320	379
2	1140	1150	3180	2850	1230	1050	1350	994	7580	329	311	379
3	1150	1050	3530	2170	1230	2190	4970	1200	6320	329	303	379
4	1140	1210	2400	2800	1260	3440	4880	3930	5630	314	333	379
5	1130	1240	1340	2610	1310	3560	6870	3380	4890	306	331	379
6	1120	1200	979	2070	1350	3010	6140	3180	4530	297	331	379
7	1110	818	1000	1630	1150	2610	3890	3310	3890	294	255	379
8	633	852	1390	1410	1050	2000	3100	3300	3200	283	238	379
9	557	957	5360	1750	984	1510	5330	3180	2990	276	233	392
10	951	1420	6620	1710	983	1270	5320	2540	2810	273	224	499
11	987	1350	6140	1380	847	1130	5230	1870	2480	265	222	601
12	987	1270	4570	1230	731	1050	4330	1420	2500	260	223	602
13	985	1060	2790	1130	694	844	3470	1290	2540	259	223	630
14	974	514	2000	1050	499	764	2970	1150	2100	260	224	752
15	964	434	1940	1330	385	2330	2850	524	1700	260	232	759
16	955	416	1830	1500	339	6760	2410	465	1400	258	249	760
17	948	384	2550	1400	309	6760	2350	434	1150	252	329	760
18	935	241	2670	1350	292	8390	3350	434	1060	252	330	760
19	919	284	1910	1440	637	7160	3410	435	987	249	375	760
20	916	508	2320	6240	794	5560	2810	613	919	250	381	774
21	918	888	4440	7820	1100	4950	2210	813	803	257	442	914
22	911	3500	3890	8470	1430	4630	1900	889	711	312	432	914
23	893	3990	2730	6810	1400	4470	1950	691	730	540	414	949
24	873	2840	1980	4780	1280	4740	2130	640	767	1020	406	954
25	856	1680	1820	3290	1190	5550	2520	1170	736	698	399	954
26	830	1130	1620	3200	995	3190	2550	1450	648	369	395	954
27	445	890	2150	2970	663	2290	2420	1510	555	304	390	952
28	405	1000	5470	2550	610	1680	1910	1890	549	271	390	946
29	424	1250	5820	2150	---	1190	1600	1990	523	283	385	944
30	550	969	4300	1260	---	934	1350	1890	473	271	384	931
31	1040	---	4510	1120	---	783	---	4390	---	314	383	---
TOTAL	27796	35525	94879	85830	26012	96516	96478	52122	72711	10353	10087	20493
MEAN	897	1184	3061	2769	929	3113	3216	1681	2424	334	325	683
MAX	1150	3990	6620	8470	1430	8390	6870	4390	7580	1020	442	954
MIN	405	241	979	1050	292	721	908	434	473	249	222	379
AC-FT	55130	70460	188200	170200	51590							

MEAN	815	1966	3416	3435	2708	2294	1585	1014	584	272	439	590
MAX	3119	6305	9820	7239	6891	5716	4020	3285	2424	588	1115	1057
(WY)	1951	1974	1965	1956	1961	1957	1963	1963	1993	1957	1955	1978
MIN	204	121	196	200	203	385	459	247	129	159	140	171
(WY)	1959	1953	1977	1977	1977	1992	1987	1987	1987	1979	1992	1957

WATER YEARS 1951 - 1993

ANNUAL TOTAL	333505		628802			
ANNUAL MEAN	911		1723		1589	
HIGHEST ANNUAL MEAN					2701	1956
LOWEST ANNUAL MEAN					512	1977
HIGHEST DAILY MEAN	6620	Dec 10	8470	Jan 22	31500	Dec 24 1964
LOWEST DAILY MEAN	131	Aug 11	222	Aug 11	86	Nov 28 1952
ANNUAL SEVEN-DAY MINIMUM	135	Aug 6	226	Aug 9	90	Nov 24 1952
ANNUAL RUNOFF (AC-FT)	661500		1247000		1151000	
10 PERCENT EXCEEDS	2150		4410		4270	
50 PERCENT EXCEEDS	557		1060		742	
90 PERCENT EXCEEDS	142		310		203	

WILLAMETTE RIVER BASIN

211

14157500 COAST FORK WILLAMETTE RIVER NEAR GOSHEN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1991 to April 1992, December 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, NOVEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 27...	1150	9.0	7570	41	838	75
DEC 11...	1615	7.0	3660	17	168	91
JAN 27...	1150	8.5	624	5	8.4	78
28...	1540	10.0	1250	16	54	93
FEB 19...	1315	9.5	2200	52	308	89
19...	1625	10.0	2380	55	353	95
20...	0730	9.5	2060	28	155	96
APR 22...	1225	11.0	1780	8	38	94

WATER-QUALITY DATA, DECEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 22...	1515	7.5	3540	8	76	88
JAN 26...	1320	9.0	3120	6	51	84
FEB 24...	1110	6.0	1270	37	127	88
MAR 18...	0855	10.0	9110	51	1250	71
APR 07...	1025	10.0	3730	8	81	95
MAY 06...	1520	12.0	3330	8	72	85
JUN 07...	1605	--	3960	8	85	86

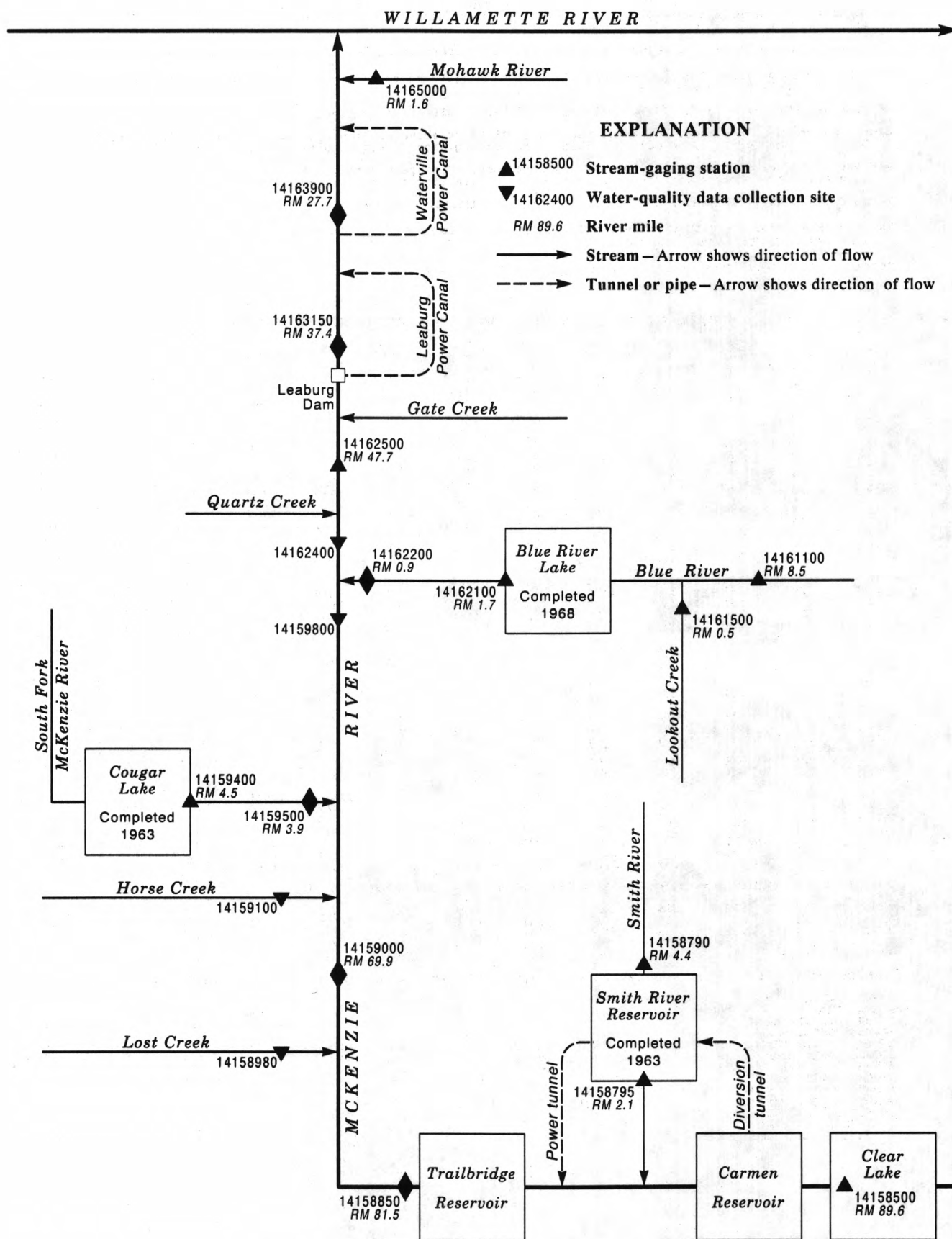


Figure 18--Schematic diagram showing gaging stations and diversions in the McKenzie River Basin.

WILLAMETTE RIVER BASIN

213

14158500 MCKENZIE RIVER AT OUTLET OF CLEAR LAKE, OR

LOCATION.--Lat 44°21'40", long 121°59'40", in SE 1/4 sec.8, T.14 S., R.7 E., Linn County, Hydrologic Unit 17090004, Willamette National Forest, on west bank of Clear Lake in narrow channel, 150 ft upstream from outlet and at mile 89.6.

DRAINAGE AREA.--92.4 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--June 1912 to September 1915, October 1947 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1949. WSP 1318: 1915(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,015.32 ft above sea level (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, nonrecording gage at site 1.0 mi north at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sinkholes in lava rock along south edge of lake upstream from station.

AVERAGE DISCHARGE.--49 years, 454 ft³/s, 66.74 in/yr, 328,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft³/s Dec. 23, 1964, gage height, 8.15 ft; minimum discharge, 116 ft³/s Oct. 27, 28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s Mar. 23, gage height, 5.19 ft; minimum discharge, 116 ft³/s Oct. 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	139	390	237	273	201	844	929	645	459	356	267
2	128	142	410	229	271	199	860	877	647	452	352	265
3	128	153	411	225	268	199	980	921	632	446	348	264
4	127	171	418	224	264	203	1060	977	620	441	344	262
5	126	177	420	216	263	207	965	913	625	437	340	261
6	125	176	417	209	261	215	898	896	621	434	336	265
7	125	177	408	206	258	236	887	902	619	431	332	265
8	124	179	407	203	254	259	906	899	625	429	327	264
9	124	183	396	197	253	281	992	870	618	427	323	262
10	124	187	396	193	252	302	994	860	614	425	319	260
11	123	193	389	191	249	321	938	895	616	422	315	258
12	123	202	377	189	249	333	884	901	617	419	311	257
13	122	205	369	186	247	342	853	886	609	417	308	255
14	122	220	365	185	245	365	831	858	599	414	305	254
15	121	236	361	183	242	441	823	834	591	411	303	252
16	120	246	356	181	238	504	817	816	582	408	302	250
17	120	252	356	178	234	868	817	810	569	406	299	249
18	120	255	345	175	232	1200	829	810	557	401	295	247
19	119	258	340	178	233	1180	805	801	545	398	294	246
20	119	256	340	197	231	1050	782	792	533	396	293	245
21	120	274	333	200	231	986	779	780	522	392	290	243
22	119	301	323	207	227	978	797	755	522	393	286	241
23	118	300	313	216	221	1340	808	721	518	389	284	239
24	118	313	304	224	218	1360	830	693	508	383	283	238
25	117	327	296	227	214	1140	840	706	500	380	280	238
26	117	336	290	232	209	1040	850	701	493	377	278	237
27	116	354	285	247	206	982	828	683	488	374	277	236
28	117	364	274	265	203	928	805	666	484	372	275	234
29	119	364	263	273	---	902	830	644	477	369	272	233
30	124	374	256	276	---	866	1020	627	469	365	270	232
31	130	---	248	274	---	827	---	635	---	361	269	---
TOTAL	3783	7314	10856	6623	6746	20255	26152	25058	17065	12628	9466	7519
MEAN	122	244	350	214	241	653	872	808	569	407	305	251
MAX	130	374	420	276	273	1360	1060	977	647	459	356	267
MIN	116	139	248	175	203	199	779	627	469	361	269	232
AC-FT	7500	14510	21530	13140	13380	40180	51870	49700	33850	25050	18780	14910
CFSM	1.32	2.64	3.79	2.31	2.61	7.07	9.43	8.75	6.16	4.41	3.30	2.71
IN.	1.52	2.94	4.37	2.67	2.72	8.15	10.53	10.09	6.87	5.08	3.81	3.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1993, BY WATER YEAR (WY)

	MEAN	250	372	535	504	513	496	584	682	570	389	302	253
MAX	428	828	1209	999	986	1205	872	1178	1202	737	499	392	
(WY)	1951	1951	1965	1974	1961	1972	1993	1949	1974	1950	1974	1974	
MIN	122	141	209	191	180	224	341	319	203	173	149	132	
(WY)	1993	1988	1977	1977	1977	1977	1955	1992	1992	1977	1992	1992	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1913 - 1993

ANNUAL TOTAL	96993	153465	454	
ANNUAL MEAN	265	420	683	1972
HIGHEST ANNUAL MEAN			241	1977
LOWEST ANNUAL MEAN			3100	Dec 23 1964
HIGHEST DAILY MEAN	687	Apr 18	116	Oct 27 1992
LOWEST DAILY MEAN	116	Oct 27	117	Oct 22 1992
ANNUAL SEVEN-DAY MINIMUM	117	Oct 22	117	Oct 22 1992
ANNUAL RUNOFF (AC-FT)	192400	304400	328800	
ANNUAL RUNOFF (CFSM)	2.87	4.55	4.91	
ANNUAL RUNOFF (INCHES)	39.05	61.78	66.74	
10 PERCENT EXCEEDS	414	867	787	
50 PERCENT EXCEEDS	248	313	392	
90 PERCENT EXCEEDS	129	176	210	

WILLAMETTE RIVER BASIN

14158790 SMITH RIVER ABOVE SMITH RIVER RESERVOIR, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°20'05", long 122°02'45", in SW 1/4 SW 1/4 sec.24, T.14 S., R.6 E., Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 200 ft upstream from Smith River Reservoir, 0.7 mi downstream from Browder Creek, 10 mi north of town of Belknap Springs, and at mile 4.4.

DRAINAGE AREA.--16.2 mi².

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

REVISED RECORDS.--WDR OR 80-2: 1978(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,610.00 ft above sea level (levels by Eugene Water and Electric Board). Prior to Sept. 10, 1964, at datum 1.56 ft higher.

REMARKS.--Records fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--33 years, 88.9 ft³/s, 74.59 in/yr, 64,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,160 ft³/s Dec. 22, 1964, gage height, 11.9 ft, from floodmark, from rating curve extended above 560 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.2 ft³/s Oct. 13, 1991, result of log jam.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	834	7.58	Mar. 23	0930	1,040	7.82
Mar. 17	2330	*1,060	*7.84				

Minimum discharge, 3.4 ft³/s Oct. 1, 2, 11-16, 20.DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	175	195	38	75	35	209	277	160	e37	e16	6.6
2	3.8	130	236	35	70	34	297	268	157	e33	e16	6.4
3	6.4	59	163	36	65	52	661	371	139	e36	e15	6.3
4	4.9	43	127	35	61	105	449	340	131	e33	e14	6.3
5	4.0	35	103	32	62	168	302	271	139	e30	e14	6.1
6	3.7	29	87	31	68	181	252	288	130	e28	e13	6.1
7	3.5	50	75	30	74	228	254	265	141	e27	e12	5.9
8	3.5	74	71	30	73	251	319	270	133	e26	e12	5.8
9	3.5	66	62	28	70	233	385	237	121	e24	e12	5.7
10	3.5	50	119	e28	69	213	330	253	116	e23	e12	5.6
11	3.4	50	109	28	67	187	255	273	117	e22	e11	5.5
12	3.4	134	88	26	66	156	204	256	117	e21	e11	5.4
13	3.5	122	77	25	63	136	175	233	102	e21	e10	5.4
14	3.4	102	83	25	61	254	160	207	91	e19	e10	5.3
15	3.4	81	85	24	58	714	175	191	88	e18	e10	5.2
16	3.5	65	77	24	53	623	173	187	79	e18	e9.9	5.2
17	3.6	66	72	23	50	784	196	194	71	e18	e9.9	5.2
18	3.5	74	63	23	48	938	211	200	e67	e20	e9.5	5.2
19	3.5	76	59	32	50	624	193	185	e63	e18	e9.2	5.1
20	3.7	66	60	126	49	543	182	193	e58	e17	e8.9	5.1
21	6.2	350	56	96	48	372	202	189	e53	e20	e8.7	5.0
22	4.7	417	52	71	43	380	233	171	e53	e19	e8.5	5.0
23	4.0	226	49	60	42	875	250	143	e72	e29	e8.3	4.8
24	3.8	155	50	65	40	507	313	131	e60	e32	e8.2	4.8
25	3.7	117	47	117	38	318	316	169	e59	e26	7.9	4.8
26	3.7	95	48	120	36	236	287	149	e55	e24	7.6	4.8
27	3.5	163	48	107	35	193	247	153	e49	e23	7.4	4.6
28	4.1	186	46	107	35	169	214	143	e45	e21	7.2	4.6
29	11	141	43	102	---	158	311	126	e42	e20	7.1	4.6
30	34	141	41	91	---	146	344	122	e41	e20	6.9	4.6
31	102	---	41	83	---	150	---	144	---	e18	6.8	---
TOTAL	255.8	3538	2532	1698	1569	9963	8099	6599	2749	741	320.0	161.0
MEAN	8.25	118	81.7	54.8	56.0	321	270	213	91.6	23.9	10.3	5.37
MAX	102	417	236	126	75	938	661	371	160	37	16	6.6
MIN	3.4	29	41	23	35	34	160	122	41	17	6.8	4.6
AC-FT	507	7020	5020	3370	3110	19760	16060	13090	5450	1470	635	319
CFSM	.51	7.28	5.04	3.38	3.46	19.8	16.7	13.1	5.66	1.48	.64	.33
IN.	.59	8.12	5.81	3.90	3.60	22.88	18.60	15.15	6.31	1.70	.73	.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1993, BY WATER YEAR (WY)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	22.6	116	148	130	132	116	145	154	76.1	17.1	6.86	7.56																					
MAX	75.9	218	404	293	309	321	270	318	260	51.5	11.7	23.5																					
(WY)	1969	1985	1965	1970	1961	1993	1993	1971	1974	1971	1968	1978																					
MIN	3.33	7.57	9.88	13.5	12.8	41.2	50.3	28.1	8.63	5.23	3.22	3.74																					
(WY)	1988	1988	1977	1977	1977	1992	1967	1992	1992	1992	1992	1992																					

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1961 - 1993

ANNUAL TOTAL	19783.7	38224.8	
ANNUAL MEAN	54.1	105	88.9
HIGHEST ANNUAL MEAN			136
LOWEST ANNUAL MEAN			38.5
HIGHEST DAILY MEAN	527	938	2590
LOWEST DAILY MEAN	2.6	3.4	2.5
ANNUAL SEVEN-DAY MINIMUM	2.7	3.4	2.6
ANNUAL RUNOFF (AC-FT)	39240	75820	64430
ANNUAL RUNOFF (CFSM)	3.34	6.46	5.49
ANNUAL RUNOFF (INCHES)	45.43	87.78	74.59
10 PERCENT EXCEEDS	138	254	211
50 PERCENT EXCEEDS	26	58	52
90 PERCENT EXCEEDS	3.2	5.1	5.0

e Estimated

WILLAMETTE RIVER BASIN

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14158795 SMITH RIVER RESERVOIR NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°18'20", long 122°02'40", in SW 1/4 SW 1/4 sec.36, T.14 S., R.6 E., Linn County, Hydrologic Unit 17090004, Willamette National Forest, in intake tower near left end of Smith River Dam on Smith River, 800 ft upstream from Bunchgrass Creek, 8 mi north of town of Belknap Springs, and at mile 2.1.

DRAINAGE AREA.--18.2 mi².

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

REVISED RECORDS.--WDR OR-86-2: 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Eugene Water and Electric Board).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway completed in 1963 by Eugene Water and Electric Board; storage began Mar. 18, 1963. Total capacity is 15,000 acre-ft at elevation 2,605.0 ft, top of spillway gates, and usable capacity is 9,900 acre-ft between elevations 2,525.0 ft, minimum power pool, and 2,605.0 ft. Storage of 5,100 acre-ft, below elevation 2,525.0 ft, not normally available for release. Water used for power generation. Figures herein represent total contents and are furnished by Eugene Water and Electric Board.

COOPERATION.--Elevations and area-volume curves furnished by Eugene Water and Electric Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 15,200 acre-ft Dec. 22, 1964, elevation, 2,606.5 ft; minimum contents, 5,700 acre-ft Apr. 11, 14, 1964, elevation, 2,532.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,760 acre-ft Nov. 1, elevation, 2,603.90 ft; minimum contents, 11,410 acre-ft Mar. 10, elevation, 2,582.60 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	2,601.17	14,300	--
Oct. 31.....	2,602.39	14,510	-210
Nov. 30.....	2,597.86	13,760	-750
Dec. 31.....	2,593.20	13,010	-750
CAL YR 1992.....	--	--	-700
Jan. 31.....	2,585.49	11,780	-1,230
Feb. 28.....	2,585.79	11,830	+50
Mar. 31.....	2,596.57	13,550	+1,720
Apr. 30.....	2,599.07	13,950	+400
May 31.....	2,599.15	13,960	+10
June 30.....	2,599.34	13,990	+30
July 31.....	2,599.39	14,000	+10
Aug. 31.....	2,599.06	13,950	-50
Sept. 30.....	2,599.34	13,990	+40
WTR YR 1993.....	--	--	-310

WILLAMETTE RIVER BASIN

14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°16'05", long 122°02'55", in T.15 S., R.6 E., (unsurveyed), Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.4 mi downstream from Trail Bridge Dam, 0.5 mi upstream from Anderson Creek, 5 mi north of town of Belknap Springs, and at mile 81.5.

DRAINAGE AREA.--184 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,980.00 ft above sea level (levels by Eugene Water and Electric Board). Prior to Oct. 11, 1963, at datum 5.60 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1963 by Smith River Reservoir (station 14158795). Diurnal fluctuations by powerplants and by Trail Bridge re-regulating reservoir upstream. Water is diverted from McKenzie River in SW 1/4 sec.20, T.14 S., R.7 E., to Smith River Reservoir and returned to river upstream from station. Continuous water-quality records for the period November 1976 to September 1985 have been collected at this location.

AVERAGE DISCHARGE.--34 years, 1,007 ft³/s, 74.32 in/yr, 729,200 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Dec. 22, 1964, gage height, 12.45 ft, from rating curve extended above 3,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 185 ft³/s Feb. 3, 1963; minimum daily, 425 ft³/s Nov. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,100 ft³/s Mar. 21, gage height, 10.97 ft; minimum discharge, 465 ft³/s Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	509	789	1060	780	798	697	1660	1800	1320	980	810	687
2	507	747	1220	785	806	717	1730	1750	1320	971	815	687
3	505	623	1080	753	813	694	2200	1830	1320	954	813	682
4	505	615	1000	702	817	723	2070	1880	1270	919	794	650
5	508	616	1010	692	811	879	1910	1750	1310	907	795	655
6	508	623	1000	752	789	918	1820	1770	1310	908	777	658
7	505	668	961	783	783	957	1830	1780	1290	917	778	660
8	503	704	996	744	789	1050	1860	1760	1290	922	776	672
9	504	716	1040	659	789	1030	1970	1720	1260	918	755	689
10	503	694	1080	662	792	1020	1940	1650	1240	914	757	682
11	500	686	1020	663	790	964	1900	1760	1250	908	755	661
12	477	791	1020	647	787	901	1800	1710	1250	879	741	648
13	483	784	953	625	774	902	1720	1710	1240	862	741	648
14	495	768	919	628	772	974	1650	1650	1210	872	744	646
15	494	733	916	639	771	1770	1640	1630	1210	896	739	647
16	494	708	956	638	757	1870	1640	1580	1160	895	727	645
17	492	743	908	638	716	2240	1620	1550	1130	864	730	648
18	491	776	904	630	700	2670	1590	1580	1170	868	729	645
19	490	811	905	618	728	2330	1630	1550	1160	864	725	645
20	492	764	881	621	741	2270	1570	1540	1110	876	709	645
21	491	1080	872	870	742	2060	1610	1510	1080	872	715	644
22	488	1310	867	861	737	2000	1630	1500	1100	864	719	647
23	490	1040	864	839	724	2770	1640	1450	1130	863	713	628
24	487	1030	878	806	691	2450	1720	1410	1090	862	706	622
25	486	945	887	786	667	2120	1760	1430	1070	858	685	622
26	487	888	846	877	651	1920	1730	1410	1040	841	683	640
27	489	916	834	844	660	1830	1700	1400	1010	842	685	643
28	488	1020	831	854	674	1750	1650	1390	1010	841	696	644
29	508	996	813	863	---	1650	1710	1320	1000	836	694	643
30	566	976	800	859	---	1590	1810	1290	982	802	693	631
31	642	---	773	842	---	1530	---	1370	---	793	689	---
TOTAL	15587	24560	29094	22960	21069	47246	52710	49430	35332	27368	22888	19564
MEAN	503	819	939	741	752	1524	1757	1595	1178	883	738	652
MAX	642	1310	1220	877	817	2770	2200	1880	1320	980	815	689
MIN	477	615	773	618	651	694	1570	1290	982	793	683	622
AC-FT	30920	48710	57710	45540	41790	93710	104600	98040	70080	54280	45400	38810
MEAN†	499	806	926	721	753	1552	1765	1595	1178	883	738	653
CFSM†	2.71	4.38	5.03	3.92	4.09	8.43	9.59	8.67	6.40	4.80	4.01	3.55
IN.†	3.13	4.89	5.81	4.52	4.26	9.73	10.70	9.99	7.15	5.53	4.62	3.96
AC-FT†	30710	47960	56960	44310	41840	95430	105000	98050	70110	54290	45350	38850

CAL YR 1992 TOTAL 272334 MEAN 744 MAX 1450 MIN 477 AC-FT 540200 MEAN† 743 CFSM† 4.04 IN.† 54.99 AC-FT† 539500
WTR YR 1993 TOTAL 367808 MEAN 1008 MAX 2770 MIN 477 AC-FT 729500 MEAN† 1007 CFSM† 5.47 IN.† 74.32 AC-FT† 729200

† Adjusted for change in contents in Smith River Reservoir.

WILLAMETTE RIVER BASIN

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14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1985.

WATER TEMPERATURE: November 1976 to September 1985, July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Dual conductivity-temperature recorder November 1976 to September 1980. Water-quality mini-monitor October 1980 to September 1985, data logger July 1992 to September 1993.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 67 microsiemens Nov. 9, 10, 1977; minimum recorded, 35 microsiemens Dec. 15, 1977.

WATER TEMPERATURE: Maximum recorded, 12.0°C Aug. 1, 1977; minimum, 2.0°C Dec. 24, 25, 1983.

EXTREMES FOR PERIOD.--

July to September 1992: Maximum, 11.5°C Aug. 25; minimum, 7.5°C Sept. 28.

Water year 1993: Maximum, 9.5°C several days June to September; minimum, 3.5° C several days January and February.

TEMPERATURE, WATER (DEG. C), JULY 1992 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER		
1	9.5	8.5	9.5	10.5	9.0	10.0	9.5	8.5	9.0
2	9.5	8.5	9.5	10.5	9.0	10.0	9.5	8.5	9.0
3	10.0	8.5	9.5	10.5	9.0	10.0	9.5	8.5	9.5
4	10.0	8.5	9.5	10.0	9.0	10.0	9.5	8.5	9.5
5	10.0	8.5	9.5	10.5	9.0	10.0	9.5	8.5	9.0
6	9.5	8.5	9.5	10.0	9.0	10.0	9.5	8.5	9.0
7	9.5	8.5	9.5	10.0	9.0	10.0	9.0	8.5	9.0
8	10.0	8.5	9.5	10.0	9.0	9.5	9.5	8.0	9.0
9	10.0	8.5	9.5	10.0	8.5	9.5	9.0	8.5	9.0
10	10.0	8.5	9.5	10.0	9.0	9.5	9.0	8.0	9.0
11	10.0	9.0	9.5	10.0	9.0	9.5	9.0	8.5	9.0
12	10.0	9.0	9.5	10.0	9.0	9.5	9.0	8.5	9.0
13	10.0	9.0	9.5	10.0	9.0	9.5	9.0	8.0	8.5
14	10.0	9.0	9.5	10.0	9.0	9.5	9.0	8.0	8.5
15	10.0	9.0	9.5	10.0	9.0	10.0	9.0	8.0	8.5
16	10.0	9.0	9.5	10.0	9.0	10.0	8.5	8.0	8.5
17	10.0	9.0	9.5	10.0	9.0	10.0	9.0	8.0	8.5
18	10.0	9.0	10.0	10.5	9.0	10.0	9.0	8.0	8.5
19	10.5	9.0	10.0	10.5	9.0	10.0	9.0	8.0	8.5
20	10.0	9.0	10.0	10.0	9.0	9.5	9.0	8.0	8.5
21	10.5	9.5	10.0	10.0	9.0	9.5	9.0	8.0	8.5
22	10.0	9.0	9.5	10.0	8.5	9.5	9.0	8.0	8.5
23	10.0	9.0	9.5	10.0	8.5	9.5	9.0	8.0	8.5
24	10.0	8.5	9.5	9.5	8.5	9.0	9.0	8.0	8.5
25	10.0	9.0	9.5	11.5	9.0	10.0	8.5	8.0	8.5
26	10.0	9.0	9.5	10.0	8.0	9.0	8.5	8.0	8.5
27	10.0	9.0	10.0	9.5	8.5	9.0	8.5	8.0	8.5
28	10.0	9.0	9.5	9.5	8.5	9.0	8.5	8.0	8.5
29	10.0	9.0	10.0	9.5	8.5	9.0	8.5	7.5	8.5
30	10.5	9.0	10.0	9.5	8.5	9.0	8.5	8.0	8.5
31	10.5	9.0	10.0	9.5	8.5	9.0	---	---	---
MONTH	10.5	8.5	9.5	11.5	8.0	9.5	9.5	7.5	8.5

WILLAMETTE RIVER BASIN

14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

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14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	8.0	8.0	9.5	8.5	9.0	9.0	8.0	8.5	9.0	8.0	8.5
2	8.0	7.5	8.0	9.0	8.5	9.0	9.0	8.0	8.5	9.0	8.0	8.5
3	8.0	7.5	8.0	9.0	8.5	9.0	9.0	8.5	9.0	9.0	8.0	8.5
4	8.0	7.5	8.0	9.0	8.5	9.0	9.0	8.5	9.0	9.0	8.0	8.5
5	8.0	7.5	8.0	9.0	8.5	9.0	9.0	8.0	9.0	9.0	8.0	8.5
6	8.0	7.5	8.0	9.0	8.0	9.0	9.5	8.5	9.0	9.0	8.0	8.5
7	8.0	7.5	8.0	9.0	8.5	9.0	9.5	8.5	9.0	9.0	8.0	8.5
8	8.0	7.5	8.0	9.0	8.5	9.0	9.5	8.5	9.5	9.5	8.5	9.0
9	8.0	7.5	8.0	9.0	8.5	9.0	9.5	8.5	9.5	9.5	8.5	8.5
10	8.0	7.5	8.0	9.0	8.5	9.0	9.5	8.5	9.5	9.0	8.0	8.5
11	8.0	7.5	8.0	9.5	8.5	9.0	9.5	8.5	9.5	9.0	8.0	8.5
12	8.0	7.5	8.0	9.0	8.0	9.0	9.5	8.5	9.5	9.0	8.0	8.5
13	8.5	7.5	8.0	9.0	8.0	9.0	9.5	8.5	9.5	8.5	8.0	8.5
14	8.5	8.0	8.0	9.0	8.0	8.5	9.5	8.5	9.5	8.5	8.0	8.5
15	8.5	8.0	8.0	9.0	8.0	8.5	9.5	8.5	9.0	8.5	8.0	8.5
16	8.5	8.0	8.5	8.5	8.0	8.5	9.5	8.5	9.0	8.5	8.0	8.5
17	8.5	8.0	8.5	8.5	8.0	8.5	9.0	8.5	9.0	8.5	7.5	8.0
18	9.0	8.0	8.5	8.5	7.5	8.5	9.5	8.0	9.0	8.5	7.5	8.0
19	9.0	8.0	8.5	8.5	8.0	8.5	9.5	8.5	9.0	8.5	7.5	8.0
20	9.0	8.0	9.0	8.5	8.0	8.5	9.5	8.5	9.0	8.0	7.5	8.0
21	9.0	8.5	9.0	8.5	8.0	8.5	9.0	8.0	9.0	8.0	7.5	8.0
22	9.0	8.0	8.5	8.5	7.5	8.0	9.0	8.0	9.0	8.0	7.5	8.0
23	9.0	8.0	9.0	8.5	7.5	8.0	9.0	8.0	9.0	8.0	7.0	7.5
24	9.0	8.0	8.5	8.5	7.5	8.0	9.0	8.0	8.5	8.0	7.0	7.5
25	9.0	8.0	8.5	8.5	7.5	8.0	9.0	8.0	8.5	7.5	7.0	7.5
26	9.5	8.5	9.0	8.5	7.5	8.0	9.0	8.0	8.5	7.5	7.0	7.5
27	9.0	8.5	9.0	8.5	7.5	8.5	8.5	8.0	8.5	7.5	7.0	7.5
28	9.0	8.5	9.0	8.5	8.0	8.5	9.0	8.0	8.5	8.0	7.0	7.5
29	9.0	8.5	9.0	8.5	8.0	8.5	8.5	8.0	8.5	8.0	7.0	7.5
30	9.0	8.5	9.0	8.5	7.5	8.5	9.0	8.0	8.5	8.0	7.0	7.5
31	---	---	---	8.5	8.0	8.5	9.0	8.0	8.5	---	---	---
MONTH	9.5	7.5	8.5	9.5	7.5	8.5	9.5	8.0	9.0	9.5	7.0	8.0

WILLAMETTE RIVER BASIN

14158980 LOST CREEK NEAR MCKENZIE BRIDGE, OR

LOCATION.--Lat 44°11'03", long 122°03'32", in SE 1/4 SE 1/4 sec.10, T.16 S., R.6 E., Lane County, Hydrologic Unit 17090004, on right bank, 0.8 mi southwest of Belknap Springs, 5.5 miles east of the community of McKenzie Bridge, and at mile 0.65.

DRAINAGE AREA.--Not determined.

PERIOD OF DAILY RECORD.--

Water Temperature: July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Temperature recorder since July 1992.

EXTREMES FOR CURRENT PERIOD.--

July to September 1992: Maximum, 9.5°C many days in July and August; minimum, 7.0°C many days in July to September.

Water Year 1993: Maximum, 10.0°C several days in May; minimum, 6.0°C several days in January, February, and September.

TEMPERATURE, WATER (DEG. C), JULY 1992 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY			AUGUST			SEPTEMBER			
1	9.0	7.0	8.0	9.5	7.0	8.0	9.0	7.5	8.0
2	9.0	7.0	8.0	9.5	7.0	8.0	9.0	7.0	8.0
3	9.5	7.0	8.0	9.5	7.0	8.0	9.0	7.5	8.0
4	8.5	7.5	7.5	9.5	7.5	8.0	8.5	7.5	8.0
5	8.5	7.0	7.5	9.5	7.0	8.0	8.5	7.5	8.0
6	8.5	7.0	7.5	8.5	7.0	8.0	8.5	7.0	7.5
7	9.0	7.0	7.5	8.5	7.5	8.0	8.5	7.0	7.5
8	9.0	7.0	8.0	9.0	7.0	8.0	8.5	7.0	7.5
9	9.5	7.0	8.0	9.5	7.0	8.0	9.0	7.0	8.0
10	9.5	7.0	8.0	9.5	7.0	8.0	9.0	7.5	8.0
11	9.5	7.0	8.0	9.5	7.5	8.0	9.0	7.5	8.0
12	9.5	7.0	8.0	8.0	7.5	8.0	8.0	7.5	7.5
13	9.5	7.0	8.0	9.5	7.5	8.0	8.5	7.0	7.5
14	9.5	7.0	8.0	9.5	7.5	8.5	8.0	7.0	7.5
15	9.5	7.0	8.0	9.0	7.5	8.0	8.0	7.0	7.5
16	9.5	7.0	8.0	9.5	7.5	8.0	8.5	7.0	7.5
17	9.0	7.0	8.0	9.5	7.5	8.0	8.5	7.0	8.0
18	9.5	7.5	8.0	9.5	7.5	8.0	8.5	7.0	8.0
19	9.5	7.0	8.0	9.5	7.5	8.0	8.5	7.5	8.0
20	8.0	7.5	7.5	9.5	7.5	8.0	8.5	7.0	8.0
21	9.5	7.5	8.0	8.0	7.0	7.5	9.0	7.5	8.0
22	8.0	7.5	7.5	8.0	7.5	7.5	9.0	7.5	8.0
23	8.0	7.0	7.5	9.0	7.5	8.0	8.5	7.5	8.0
24	9.0	7.0	8.0	9.0	7.0	7.5	8.0	7.5	7.5
25	9.5	7.0	8.0	9.0	7.0	8.0	8.0	7.5	7.5
26	9.5	7.0	8.0	9.0	7.0	8.0	8.5	7.0	7.5
27	9.5	7.0	8.0	9.0	7.0	8.0	8.5	7.0	7.5
28	9.5	7.0	8.0	9.0	7.5	8.0	8.5	7.0	7.5
29	9.5	7.0	8.0	9.0	7.0	8.0	8.5	7.5	8.0
30	9.5	7.0	8.0	9.0	7.0	8.0	8.5	7.5	8.0
31	9.5	7.5	8.0	9.0	7.5	8.0	---	---	---
MONTH	9.5	7.0	8.0	9.5	7.0	8.0	9.0	7.0	8.0

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	8.5	7.5	8.0	8.0	7.5	8.0	7.5	7.5	7.5	7.0	7.0	7.0
2	7.5	7.5	7.5	8.0	7.5	8.0	7.5	7.0	7.0	6.5	7.0	7.0
3	8.0	7.5	7.5	8.0	7.0	7.5	7.0	6.5	6.5	6.5	7.0	7.0
4	8.0	7.5	7.5	8.0	7.5	7.5	6.5	6.5	6.5	6.5	7.0	7.0
5	8.0	7.0	7.5	8.0	7.0	7.5	7.0	6.5	6.5	7.0	6.5	7.0
6	8.0	7.0	7.5	8.0	7.5	7.5	7.0	7.0	7.0	6.5	6.5	6.5
7	8.0	7.0	7.5	8.0	7.5	8.0	7.0	6.5	7.0	7.0	6.5	6.5
8	8.0	7.0	7.5	7.5	7.0	7.5	7.0	6.5	7.0	7.0	6.5	7.0
9	8.0	7.5	7.5	7.5	7.0	7.5	7.0	6.5	7.0	6.5	6.5	6.5
10	8.0	7.0	7.5	7.0	6.5	7.0	7.5	7.0	7.0	7.0	6.0	6.5
11	8.0	7.0	7.5	7.5	6.5	7.0	7.0	7.0	7.0	7.0	6.5	7.0
12	8.0	7.0	7.5	8.0	7.5	7.5	7.5	7.0	7.0	7.0	6.5	7.0
13	8.0	7.0	7.5	7.5	7.0	7.5	7.0	7.0	7.0	7.0	6.5	7.0
14	7.5	6.5	7.0	7.5	7.0	7.5	7.5	7.0	7.0	7.0	6.5	7.0
15	8.0	6.5	7.0	7.5	7.0	7.0	7.5	7.0	7.0	7.0	6.5	7.0
16	8.0	7.0	7.5	7.5	7.0	7.5	7.0	6.5	7.0	7.5	7.0	7.0
17	8.0	7.0	7.5	8.0	7.5	7.5	7.0	6.5	6.5	7.0	6.5	7.0
18	8.5	7.5	7.5	7.5	7.5	7.5	7.0	6.5	7.0	7.0	6.5	7.0
19	8.0	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
20	8.0	7.0	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.5	7.0	7.0
21	8.0	7.5	7.5	7.5	7.0	7.5	7.0	6.5	7.0	7.5	7.0	7.0
22	8.0	7.5	7.5	7.5	6.5	7.0	7.0	7.0	7.0	7.5	6.5	7.0
23	8.0	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.5	6.5	7.0
24	8.0	7.0	7.5	7.0	6.5	7.0	7.0	7.0	7.0	7.5	7.0	7.0
25	8.0	7.0	7.5	7.0	7.0	7.0	7.0	6.5	7.0	7.5	7.0	7.5
26	8.0	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.5	7.0	7.0
27	8.0	7.0	7.5	7.5	7.0	7.5	7.0	6.5	7.0	7.5	7.0	7.0
28	8.0	7.5	7.5	7.5	7.0	7.5	7.5	7.0	7.0	7.5	7.0	7.5
29	8.0	7.5	7.5	7.0	6.5	7.0	7.5	7.0	7.0	7.5	7.0	7.5
30	8.0	7.5	7.5	7.5	7.0	7.0	7.0	6.5	7.0	7.5	7.0	7.0
31	8.0	7.5	7.5	---	---	---	7.0	6.5	7.0	7.5	7.0	7.0
MONTH	8.5	6.5	7.5	8.0	6.5	7.5	7.5	6.5	7.0	7.5	6.0	7.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.5	7.0	7.0	7.5	7.0	7.0	8.0	7.5	8.0	8.5	7.5	8.0
2	7.5	7.0	7.5	8.0	7.0	7.5	9.0	7.5	8.0	9.5	8.0	8.5
3	7.5	7.0	7.5	8.0	7.0	7.5	9.0	7.5	8.0	8.5	7.5	8.0
4	7.5	7.0	7.0	7.5	7.0	7.5	8.0	7.5	7.5	9.0	7.5	8.0
5	7.5	7.0	7.5	8.0	7.0	7.5	8.5	7.5	8.0	9.5	7.5	8.5
6	7.5	7.0	7.5	8.5	7.0	7.5	8.0	7.5	7.5	8.5	8.0	8.0
7	7.5	7.0	7.0	8.5	7.0	7.5	9.0	7.5	8.0	8.0	7.5	8.0
8	7.5	7.0	7.5	8.5	7.0	7.5	8.5	7.5	8.0	9.0	8.0	8.0
9	8.0	7.5	7.5	8.0	7.0	7.5	8.5	7.5	8.0	9.5	7.5	8.5
10	8.0	7.0	7.5	8.0	7.5	7.5	8.0	7.0	7.5	10.0	8.0	8.5
11	8.0	7.0	7.5	8.5	7.0	7.5	8.5	7.0	7.5	9.5	8.0	8.5
12	8.0	7.5	7.5	8.0	7.0	7.5	8.5	7.5	8.0	9.0	8.0	8.5
13	7.5	7.0	7.0	8.5	7.5	8.0	8.0	7.5	7.5	10.0	8.0	8.5
14	7.5	6.5	7.0	8.0	7.5	8.0	8.5	7.0	8.0	9.5	8.0	8.5
15	7.0	6.5	7.0	8.0	7.5	7.5	8.5	7.5	8.0	10.0	8.0	8.5
16	6.5	6.0	6.5	8.0	7.5	7.5	8.5	7.5	8.0	10.0	8.0	8.5
17	7.0	6.0	6.5	8.0	7.5	8.0	8.0	7.5	8.0	10.0	8.0	9.0
18	7.5	6.5	7.0	8.0	7.5	8.0	8.5	7.5	8.0	10.0	8.5	9.0
19	7.5	7.0	7.0	8.5	7.5	8.0	9.0	7.0	8.0	10.0	8.0	8.5
20	7.5	7.0	7.0	8.5	7.5	8.0	8.5	7.5	8.0	9.0	8.0	8.5
21	7.0	6.0	6.5	8.5	7.0	7.5	8.5	7.5	8.0	8.5	8.0	8.5
22	7.5	6.5	7.0	8.0	7.5	8.0	8.0	7.5	8.0	10.0	8.0	8.5
23	7.5	7.0	7.0	8.0	7.5	8.0	8.0	7.5	8.0	10.0	8.0	8.5
24	7.5	6.5	7.0	8.0	7.5	7.5	9.0	7.5	8.0	9.5	8.0	8.5
25	7.5	6.0	7.0	8.5	7.0	7.5	8.5	7.5	8.0	8.5	8.5	8.5
26	7.5	6.5	7.0	8.5	7.5	8.0	8.5	7.5	8.0	9.0	8.0	8.5
27	7.5	6.5	7.0	8.5	7.5	8.0	9.5	7.5	8.0	9.0	8.0	8.5
28	7.5	6.5	7.0	8.5	7.0	8.0	8.5	7.5	8.0	9.0	8.0	8.5
29	---	---	---	8.5	7.5	8.0	9.0	8.0	8.0	9.5	8.0	8.5
30	---	---	---	8.5	7.5	8.0	9.5	8.0	8.0	8.5	8.0	8.5
31	---	---	---	8.5	7.5	8.0	---	---	---	8.5	8.0	8.5
MONTH	8.0	6.0	7.0	8.5	7.0	7.5	9.5	7.0	8.0	10.0	7.5	8.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.5	8.0	8.0	9.5	8.0	8.5	9.5	7.5	8.0	8.5	7.5	7.5
2	9.0	8.0	8.5	8.5	8.0	8.0	9.5	7.5	8.0	8.5	7.5	7.5
3	9.5	8.0	8.5	9.0	7.5	8.0	9.5	7.5	8.0	8.5	7.5	7.5
4	8.5	8.0	8.5	9.0	8.0	8.0	9.5	7.5	8.0	8.5	7.0	7.5
5	8.5	8.0	8.5	9.5	7.5	8.0	9.0	7.5	8.0	8.5	7.5	7.5
6	8.0	8.0	8.0	9.5	7.5	8.0	9.0	7.5	8.0	8.5	7.5	7.5
7	8.5	8.0	8.0	9.5	7.5	8.0	9.0	7.5	8.0	8.0	7.0	7.5
8	9.5	8.0	8.5	9.5	7.5	8.5	9.0	7.5	8.0	8.0	7.0	7.5
9	8.5	8.0	8.0	9.5	7.5	8.0	9.0	7.5	8.0	8.0	7.0	7.5
10	9.0	8.0	8.0	9.5	7.5	8.0	9.0	7.0	8.0	8.0	7.0	7.5
11	8.0	8.0	8.0	9.0	7.5	8.0	9.0	7.5	8.0	8.0	7.0	7.0
12	9.0	7.5	8.0	9.0	7.5	8.0	9.0	7.5	8.0	7.5	6.5	7.0
13	9.0	7.5	8.0	8.5	8.0	8.0	9.0	7.5	8.0	7.5	6.5	7.0
14	9.0	8.0	8.5	8.5	8.0	8.0	7.5	7.5	7.5	7.5	6.5	7.0
15	9.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	6.5	7.0
16	9.5	8.0	8.5	9.0	8.0	8.0	7.5	7.5	7.5	7.5	6.5	7.0
17	9.5	8.0	8.5	8.5	8.0	8.0	8.5	7.0	7.5	7.5	6.5	7.0
18	9.5	8.0	8.5	9.5	7.5	8.0	8.5	7.0	7.5	7.5	6.5	7.0
19	9.5	8.0	8.5	8.5	8.0	8.0	8.5	7.5	7.5	7.5	6.5	7.0
20	9.5	8.0	8.5	8.5	8.0	8.0	7.5	7.5	7.5	7.5	6.5	7.0
21	8.0	8.0	8.0	8.5	8.0	8.0	8.5	7.0	7.5	7.5	6.0	6.5
22	8.0	8.0	8.0	8.0	8.0	8.0	8.5	7.0	7.5	7.5	6.0	6.5
23	9.0	7.5	8.0	8.5	8.0	8.0	8.0	7.0	7.5	7.5	6.0	6.5
24	9.5	7.5	8.0	9.0	7.5	8.0	8.0	7.0	7.5	7.5	6.0	6.5
25	9.5	8.0	8.5	8.5	7.5	8.0	8.0	6.5	7.0	7.5	6.5	7.0
26	9.5	8.0	8.5	9.0	7.5	8.0	8.0	7.0	7.5	8.0	6.5	7.0
27	9.0	8.0	8.0	9.5	7.5	8.0	8.5	7.0	7.5	8.0	6.5	7.0
28	9.0	8.0	8.0	9.5	7.5	8.0	8.0	7.0	7.5	7.5	6.5	7.0
29	9.5	8.0	8.0	8.5	7.5	8.0	8.5	7.0	7.5	8.0	6.5	7.0
30	9.0	8.0	8.5	9.0	7.5	8.0	8.5	7.0	7.5	8.0	7.0	7.0
31	---	---	---	9.0	7.5	8.0	8.5	7.5	8.0	---	---	---
MONTH	9.5	7.5	8.0	9.5	7.5	8.0	9.5	6.5	7.5	8.5	6.0	7.0
YEAR	10.0	6.0	7.5									

WILLAMETTE RIVER BASIN

14159000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR

LOCATION.--Lat 44°10'45", long 122°07'45", on line between NE 1/4 and NW 1/4 sec.18, T.16 S., R.6 E., Lane County, Hydrologic Unit 17090004, Willamette National Forest, on left bank 1.0 mi upstream from Glen Creek, 1.7 mi east of town of McKenzie Bridge, and at mile 69.9.

DRAINAGE AREA.--348 mi² at cableway 1.2 mi upstream, where all discharge measurements are made.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1910 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

REVISED RECORDS.--WSP 1248: 1911-16, 1920-25. WSP 1448: 1919. WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,419.04 ft above sea level. Prior to June 2, 1932, nonrecording gage at several sites within 2 mi of present site at various datums.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since March 1963 by Smith River Reservoir (Carmen-Smith Project) 12 mi upstream (station 14158795). No diversion upstream from station. All records given herein are for measuring site. Continuous water-quality records for the period November 1976 to September 1985 have been collected at this location.

AVERAGE DISCHARGE.--83 years (water years 1911-93), 1,675 ft³/s, 1,214,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft³/s Dec. 22, 1964, gage height, 10.36 ft, from rating curve extended above 7,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 758 ft³/s Oct. 13, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,110 ft³/s Mar. 18, gage height, 4.34 ft; minimum discharge, 758 ft³/s Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	812	1490	1780	1390	1460	1150	2700	2940	2170	1660	1380	1190
2	812	1430	2140	1350	1450	1180	2940	2840	2200	1660	1380	1190
3	812	1110	1860	1270	1440	1210	4090	3060	2180	1640	1380	1180
4	813	1040	1700	1240	1430	1340	3740	3140	2130	1600	1360	1150
5	815	1010	1650	1260	1430	1640	3320	2920	2160	1570	1360	1150
6	812	1010	1610	1280	1430	1700	3120	2970	2170	1580	1340	1150
7	810	1080	1550	1270	1430	1770	3160	2990	2230	1580	1320	1150
8	802	1200	1610	1160	1430	1890	3240	3080	2240	1580	1320	1150
9	795	1260	1670	1140	1430	1860	3480	2970	2160	1580	1310	1170
10	791	1180	1810	1140	1430	1850	3430	2810	2140	1570	1310	1160
11	791	1110	1750	1120	1420	1790	3290	2930	2140	1560	1300	1160
12	783	1330	1670	1080	1410	1650	3090	2810	2150	1530	1290	1140
13	776	1340	1590	1070	1390	1620	2920	2760	2110	1500	1280	1140
14	788	1270	1560	1070	1370	1830	2770	2640	2060	1500	1280	1140
15	793	1200	1610	1060	1360	3830	2750	2580	2050	1510	1280	1140
16	791	1140	1550	1060	1330	4140	2730	2510	1980	1520	1270	1140
17	791	1170	1540	1050	1270	4680	2730	2470	1920	1490	1260	1140
18	778	1270	1510	1020	1220	5750	2740	2480	1940	1480	1260	1140
19	769	1340	1470	1050	1250	4700	2740	2440	1930	1480	1260	1120
20	777	1270	1540	1530	1260	4360	2650	2440	1880	1480	1260	1110
21	798	1920	1560	1590	1260	3740	2680	2410	1840	1490	1250	1110
22	790	2600	1560	1540	1250	3490	2720	2360	1870	1500	1250	1100
23	782	1890	1580	1480	1220	5130	2730	2280	1900	1500	1240	1100
24	793	1720	1580	1450	1180	4390	2910	2210	1840	1480	1230	1100
25	784	1580	1530	1630	1140	3630	3010	2310	1800	1470	1210	1090
26	772	1470	1510	1660	1120	3250	2950	2260	1760	1440	1190	1090
27	769	1540	1510	1600	1110	3020	2810	2220	1710	1430	1190	1100
28	777	1740	1500	1600	1110	2860	2690	2190	1700	1430	1190	1110
29	810	1650	1470	1620	---	2670	2910	2110	1700	1430	1190	1110
30	976	1620	1430	1580	---	2570	3080	2060	1670	1390	1190	1110
31	1160	---	1410	1520	---	2490	---	2170	---	1380	1190	---
TOTAL	25122	41980	49810	40880	37030	87180	90120	80360	59730	47010	39520	34030
MEAN	810	1399	1607	1319	1322	2812	3004	2592	1991	1516	1275	1134
MAX	1160	2600	2140	1660	1460	5750	4090	3140	2240	1660	1380	1190
MIN	769	1010	1410	1020	1110	1150	2650	2060	1670	1380	1190	1090
AC-FT	49830	83270	98800	81090	73450	172900	178800	159400	118500	93240	78390	67500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1110	1595	2128	2131	2036	1972	1982	2027	1724	1385	1202	1112																		
MAX	1395	2720	4367	3370	3382	3973	3004	3041	3033	2053	1670	1449																		
(WY)	1983	1985	1965	1970	1982	1972	1993	1972	1974	1974	1972	1972																		
MIN	810	1015	1082	1052	1027	1303	1403	1288	1032	927	859	837																		
(WY)	1993	1988	1977	1977	1977	1992	1967	1992	1992	1992	1992	1992																		

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1964 - 1993

	1992	1993	1964-1993
ANNUAL TOTAL	452739	632772	
ANNUAL MEAN	1237	1734	1699
HIGHEST ANNUAL MEAN			2377
LOWEST ANNUAL MEAN			1203
HIGHEST DAILY MEAN	2910	5750	13800
LOWEST DAILY MEAN	769	769	769
ANNUAL SEVEN-DAY MINIMUM	781	781	781
ANNUAL RUNOFF (AC-FT)	898000	1255000	1231000
10 PERCENT EXCEEDS	1760	2920	2550
50 PERCENT EXCEEDS	1160	1490	1520
90 PERCENT EXCEEDS	823	1060	1030

WILLAMETTE RIVER BASIN

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14159000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1985.

WATER TEMPERATURE: November 1976 to September 1985, July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Dual conductivity-temperature recorder November 1976 to September 1985. CR10 datalogger July 1992 to September 1993.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 78 microsiemens Jan. 1, 1977; minimum, 22 microsiemens Nov. 25, 1977.

WATER TEMPERATURE: Maximum recorded, 13.5°C Aug. 1, 3, 1977; minimum, 1.5°C Dec. 24, 1983.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

July to September 1992: Maximum, 13.0°C several days in July and August; minimum, 6.5°C Sept. 27, 28.

Water Year 1993: Maximum, 12.0°C Aug. 3, 4, 6, 7; minimum recorded, 4.0°C Jan. 18, Feb. 16, 17.

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY				AUGUST			SEPTEMBER		
1	11.5	8.5	9.5	12.5	9.5	10.5	12.0	9.0	10.0
2	12.0	8.0	9.5	13.0	9.5	10.5	12.0	9.0	10.0
3	12.5	8.5	10.0	13.0	9.0	10.5	11.5	9.0	10.0
4	10.5	9.0	9.5	12.5	9.5	10.5	10.0	9.0	9.5
5	11.0	9.0	9.5	12.5	9.0	10.5	11.0	9.0	9.5
6	10.0	8.5	9.0	11.0	9.0	10.0	11.0	8.0	9.0
7	12.0	7.5	9.5	11.0	9.5	10.0	10.5	7.5	9.0
8	12.0	8.5	9.5	12.0	9.0	10.0	10.0	8.5	9.0
9	12.5	8.5	10.0	12.5	8.5	10.0	11.0	8.5	9.5
10	12.5	8.5	10.0	12.5	9.0	10.5	11.0	8.5	9.5
11	12.5	9.0	10.0	12.5	9.5	10.5	11.5	8.5	9.5
12	12.5	9.0	10.0	10.0	9.5	10.0	10.0	8.5	9.0
13	12.5	9.0	10.0	13.0	9.5	10.5	10.5	8.0	9.0
14	12.5	8.5	10.0	13.0	9.5	10.5	9.5	7.0	8.5
15	12.5	9.0	10.0	12.5	9.5	10.5	9.5	8.0	8.5
16	13.0	9.0	10.5	13.0	9.5	10.5	10.5	7.5	8.5
17	12.0	9.0	10.0	13.0	9.5	10.5	11.0	8.0	9.0
18	12.5	9.5	10.5	13.0	9.5	10.5	11.0	8.0	9.0
19	13.0	9.0	10.5	12.5	9.5	10.5	10.5	8.5	9.5
20	11.0	9.5	10.0	12.5	9.5	10.5	11.0	8.0	9.0
21	13.0	9.5	10.5	10.5	9.0	9.5	11.0	8.5	9.5
22	10.0	9.0	9.5	9.5	9.0	9.5	11.0	8.5	9.5
23	10.5	9.0	9.5	11.5	9.0	10.0	10.5	8.5	9.5
24	12.5	8.5	10.0	11.5	8.5	9.5	9.0	8.5	9.0
25	12.5	9.0	10.0	12.5	8.5	10.0	9.5	8.0	9.0
26	13.0	9.0	10.5	12.5	8.5	10.0	10.0	7.5	8.5
27	12.5	9.0	10.5	12.0	8.5	9.5	10.0	6.5	8.5
28	13.0	9.0	10.5	12.0	9.0	10.0	10.0	6.5	8.5
29	13.0	9.0	10.5	11.5	8.5	9.5	10.0	7.0	8.5
30	13.0	9.0	10.5	11.5	8.5	9.5	10.5	7.0	8.5
31	13.0	9.5	10.5	11.5	9.0	10.0	---	---	---
MONTH	13.0	7.5	10.0	13.0	8.5	10.0	12.0	6.5	9.0

WILLAMETTE RIVER BASIN

141590000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

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141590000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.0	8.0	8.5	11.5	9.0	9.5	11.5	8.5	9.5	11.0	8.5	9.5
2	9.5	8.0	8.5	10.0	9.0	9.5	11.5	8.5	9.5	11.0	8.5	9.5
3	10.0	8.0	8.5	11.0	8.5	9.5	12.0	9.0	10.0	11.5	8.5	9.5
4	9.0	8.0	8.5	11.5	9.0	9.5	12.0	9.0	10.0	11.5	8.5	9.5
5	9.0	8.0	8.5	11.5	8.5	9.5	11.5	9.0	10.0	11.0	8.5	9.5
6	8.5	8.0	8.5	11.5	8.5	9.5	12.0	9.0	10.0	11.5	9.0	9.5
7	9.0	8.0	8.5	11.5	8.5	9.5	12.0	9.0	10.0	11.0	9.0	9.5
8	10.0	8.0	8.5	11.5	8.5	9.5	11.5	9.0	10.0	11.5	9.0	10.0
9	9.0	8.0	8.5	11.5	8.5	9.5	11.5	9.0	10.0	11.5	9.0	9.5
10	10.0	8.0	9.0	11.5	8.5	9.5	11.5	9.0	10.0	11.0	9.0	9.5
11	8.5	8.0	8.0	11.0	8.5	9.5	11.5	9.0	10.0	11.0	9.0	9.5
12	10.0	8.0	8.5	11.0	8.5	9.5	11.5	9.0	10.0	10.5	8.5	9.0
13	10.5	8.0	9.0	9.5	8.5	9.0	11.5	9.0	10.0	10.5	8.0	9.0
14	10.5	8.5	9.0	10.0	8.5	9.0	10.0	9.0	9.5	10.5	8.0	9.0
15	10.0	8.5	9.0	9.0	8.5	9.0	9.5	9.0	9.5	10.0	8.5	9.0
16	11.0	8.5	9.0	10.0	8.5	9.0	9.5	9.0	9.0	10.0	8.5	9.0
17	11.0	8.5	9.5	9.5	8.5	9.0	11.0	9.0	9.5	10.0	8.0	9.0
18	11.5	8.5	9.5	11.0	8.0	9.0	11.5	9.0	9.5	10.0	8.0	9.0
19	11.5	8.5	9.5	9.0	8.5	8.5	10.5	9.5	9.5	9.5	8.0	8.5
20	11.5	9.0	9.5	9.5	8.5	9.0	9.5	9.0	9.0	9.5	7.5	8.5
21	9.5	9.0	9.0	9.5	8.5	9.0	11.0	9.0	9.5	9.5	7.5	8.0
22	9.0	8.5	9.0	9.0	8.5	8.5	11.5	8.5	9.5	10.0	7.5	8.5
23	11.0	8.5	9.0	9.5	8.5	8.5	10.5	9.0	9.5	9.5	7.5	8.0
24	11.0	8.5	9.5	10.5	8.5	9.0	10.0	8.5	9.0	9.5	7.5	8.0
25	11.5	8.5	9.5	9.5	8.5	8.5	10.5	8.0	9.0	9.5	7.5	8.5
26	11.5	9.0	10.0	11.0	8.0	9.0	10.5	8.0	9.0	10.0	8.0	8.5
27	10.5	9.0	9.5	11.5	8.5	9.5	11.0	8.5	9.5	10.0	8.0	8.5
28	10.0	9.0	9.0	10.5	8.5	9.0	11.0	8.5	9.5	9.5	8.0	8.5
29	11.0	8.5	9.5	10.5	8.5	9.0	11.0	8.5	9.5	10.0	8.0	8.5
30	11.0	8.5	9.5	11.0	8.0	9.0	11.0	8.5	9.5	10.0	8.0	8.5
31	---	---	---	11.5	8.5	9.5	11.0	8.5	9.5	---	---	---
MONTH	11.5	8.0	9.0	11.5	8.0	9.0	12.0	8.0	9.5	11.5	7.5	9.0

WILLAMETTE RIVER BASIN

14159100 HORSE CREEK NEAR MCKENZIE BRIDGE, OR

LOCATION.--Lat 44°09'45", long 122°09'05", in SW 1/4 sec.24, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, on right bank, 30 ft downstream from bridge on Horse Creek road, 1.0 mi southeast of McKenzie Bridge, and at mile 3.4.

DRAINAGE AREA.--140 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: February 1963 to September 1969, June 1983 to September 1984, July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Temperature recorder February 1963 to September 1969, June 1983 to September 1984, July 1992 to September 1993.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 17.0°C July 6, 1968; minimum, 1.0°C Jan. 31, Feb. 1, 1969.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

July to September 1992: Maximum, 15.5°C Aug. 14; minimum, 6.5°C Sept. 14.

Water Year 1993: Maximum recorded, 14.0°C Aug. 3-6; minimum recorded, 1.5°C Jan. 10, Feb. 16, 17, 21, 25.

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1992

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

WILLAMETTE RIVER BASIN

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14159100 HORSE CREEK NEAR MCKENZIE BRIDGE, OR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

14159100 HORSE CREEK NEAR MCKENZIE BRIDGE, OR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

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14159400 COUGAR LAKE NEAR RAINBOW, OR

LOCATION.--Lat 44°07'40", long 122°14'25", in SE 1/4 SE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, Willamette National Forest, in intake tower near left end of Cougar Dam on South Fork McKenzie River, 2.7 mi south of Rainbow, and at mile 4.5.

DRAINAGE AREA.--207 mi².

PERIOD OF RECORD.--October 1963 to current year. Prior to October 1971, published as Cougar Reservoir near Rainbow.

GAGE.--Water-stage recorder. Datum gage is sea level (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam with concrete spillway completed in 1963 by the Corps of Engineers; storage began September 1963. Total capacity is 219,100 acre-ft at elevation 1,699 ft, maximum pool, and usable capacity is 164,800 acre-ft between elevations 1,516 ft, minimum power pool, and 1,699 ft. Lake used for flood control and power generation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 215,900 acre-ft Apr. 28, 1990, elevation, 1,696.51 ft; minimum contents, 33,690 acre-ft Oct. 31 to Nov. 2, 1965, elevation, 1,475.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 208,900 acre-ft June 1, elevation, 1,690.89 ft; minimum contents, 63,300 acre-ft Jan. 6, elevation, 1,531.04 ft.

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

1,510	50,920	1,650	162,300
1,550	75,940	1,696	215,300
1,600	114,800		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1576.76	1553.30	1544.83	1536.00	1543.91	1579.47	1656.64	1684.80	1690.71	1690.14	1685.42	1658.06
2	1574.99	1554.73	1546.62	1534.23	1545.30	1580.14	1657.96	1685.05	1690.60	1690.19	1684.82	1657.10
3	1573.19	1555.21	1546.39	1532.41	1546.93	1581.37	1660.19	1686.23	1690.00	1690.22	1684.22	1656.18
4	1571.37	1555.42	1544.95	1531.65	1548.58	1583.55	1660.01	1687.42	1689.51	e1690.23	1683.61	1655.35
5	1569.52	1555.50	1542.88	1531.53	1550.63	1586.56	1659.50	1688.02	1689.40	e1690.24	1682.98	1654.56
6	1567.64	1555.49	1540.44	1531.25	1552.95	1589.57	1659.42	1688.92	1689.66	e1690.20	1682.34	1653.78
7	1565.75	1556.01	1538.56	1531.74	1555.18	1593.01	1659.82	1689.44	1690.45	e1690.15	1681.68	1653.25
8	1563.84	1556.85	1537.89	1532.16	1557.37	1596.52	1660.42	1689.67	1690.75	e1690.15	1681.01	1652.93
9	1562.50	1557.27	1537.39	1532.50	1559.88	1599.88	1661.17	1689.72	1690.42	e1690.16	1680.36	1652.34
10	1561.53	1556.98	1538.62	1532.75	1561.50	1603.45	1661.65	1690.07	1690.11	e1690.30	1679.72	1651.07
11	1560.56	1556.62	1539.38	1533.00	1563.33	1606.80	1662.72	1690.15	1690.07	e1690.35	1679.07	1649.77
12	1559.57	1556.93	1539.12	1533.24	1565.02	1609.47	1664.28	1689.97	1690.10	e1690.30	1678.41	1648.47
13	1558.56	1556.34	1538.23	1533.45	1566.52	1611.80	1665.57	1689.76	1689.99	e1690.25	1677.74	1647.14
14	1557.55	1554.84	1537.29	1533.71	1567.83	1614.67	1666.63	1689.58	1690.11	e1690.41	1677.08	1645.81
15	1556.52	1553.10	1536.42	1533.91	1569.00	1622.47	1667.74	1689.54	1690.30	e1690.47	1676.44	1644.47
16	1555.49	1551.16	1535.40	1534.10	1570.04	1634.04	1668.76	1689.55	1690.36	1690.50	1675.60	1643.10
17	1554.99	1549.22	1534.30	1534.34	1570.98	1644.28	1669.93	1689.75	1690.34	1690.38	1674.56	1641.72
18	1554.53	1547.29	1533.76	1534.56	1571.87	1655.52	1671.32	1690.17	1690.17	1690.24	1673.48	1640.31
19	1554.16	1545.72	1534.03	1534.69	1572.86	1662.24	1672.49	1690.35	1690.08	1690.11	1672.47	1638.90
20	1553.81	1543.94	1535.59	1536.34	1573.79	1664.31	1673.41	1690.50	1690.08	1690.04	1671.42	1637.48
21	1553.58	1545.76	1537.03	1537.05	1574.68	1662.03	1674.32	1690.38	1690.16	1689.95	1670.38	1636.04
22	1553.27	1550.58	1538.08	1537.38	1575.41	1657.85	1675.35	1690.11	1690.29	1690.09	1669.28	1634.58
23	1552.92	1551.49	1538.77	1536.93	1576.11	1658.57	1676.48	1689.92	1690.38	1690.02	1668.19	1633.11
24	1552.56	1551.00	1539.28	1536.46	1576.74	1657.97	1677.96	1689.93	1690.37	1689.61	1667.04	1631.61
25	1552.18	1549.81	1539.62	1537.09	1577.31	1655.02	1679.58	1690.48	1690.29	1689.15	1665.91	1630.08
26	1551.82	1548.27	1540.23	1537.82	1577.87	1652.86	1680.54	1690.63	1690.21	1688.67	1664.76	1628.56
27	1551.44	1547.63	1541.08	1538.23	1578.38	1651.74	1681.10	1690.52	1690.18	1688.17	1663.59	1627.03
28	1551.10	1547.79	1541.16	1538.69	1578.88	1651.69	1681.91	1690.51	1690.15	1687.65	1662.42	1625.46
29	1550.90	1547.17	1540.17	1539.94	---	1652.65	1683.48	1690.32	1690.13	1687.14	1661.22	1623.89
30	1551.18	1545.91	1538.95	1541.54	---	1653.64	1684.55	1690.29	1690.13	1686.59	1660.12	1622.30
31	1551.75	---	1537.58	1542.83	---	1654.89	---	1690.72	---	1686.01	1659.09	---
MAX	1576.76	1557.27	1546.62	1542.83	1578.88	1664.31	1684.55	1690.72	1690.75	1690.50	1685.42	1658.06
MIN	1550.90	1543.94	1533.76	1531.25	1543.91	1579.47	1656.64	1684.80	1689.40	1686.01	1659.09	1622.30
(†)	77160	73110	67510	71020	97340	167500	201100	208600	207900	202900	172000	134800
(‡)	-19940	-4050	-5600	+3510	+26320	+70160	+33600	+7500	-700	-5000	-30900	-37200

CAL YR 1992 MAX 1665.00 MIN 1532.62 AC-FT† +3160
WTR YR 1993 MAX 1690.75 MIN 1531.25 AC-FT† +37700

e Estimated

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR

LOCATION.--Lat 44°08'10", long 122°14'50", in NE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 0.2 mi upstream from Cougar Creek, 0.6 mi downstream from Cougar Dam, 2.1 mi south of Rainbow, and at mile 3.9.

DRAINAGE AREA.--208 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,236.42 ft above sea level (Federal Highway Administration bench mark). Oct. 1 to Nov. 4, 1947, nonrecording gage at site 40 ft upstream at datum 0.80 ft higher.

REMARKS.--Water-discharge records good except for flows below 300 ft³/s, which are fair. Flow regulated since 1963 by Cougar Lake (station 14159400), usable capacity, 165,000 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--46 years, 846 ft³/s, 55.23 in/yr, 612,900 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s Dec. 11, 1956, gage height, 8.66 ft, from rating curve extended above 8,100 ft³/s; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 17 ft³/s Nov. 18, 1965; minimum daily, 85 ft³/s Apr. 26-28, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Dec. 28, 1945, gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream at datum 0.80 ft higher; gage height at present site and datum, about 9.3 ft, computed by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,050 ft³/s Mar. 22, gage height, 4.79 ft; minimum discharge, 222 ft³/s Mar. 9, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	867	316	1520	1080	500	267	333	1550	e1680	442	667	757
2	865	317	1520	1070	378	273	703	e1560	e1940	423	663	741
3	869	316	1520	1070	307	280	1530	e1550	e1940	423	662	716
4	866	313	1520	772	306	270	2670	e1560	e1760	423	661	673
5	865	312	1510	534	304	269	2340	e1550	e1440	422	661	643
6	865	312	1490	551	297	271	1890	e1560	e1160	421	666	643
7	867	313	1240	336	296	266	1770	e1750	e1020	412	668	516
8	868	316	1080	341	291	264	1840	e2080	e1290	397	670	407
9	676	419	1090	345	289	241	1970	e1920	e1540	338	656	542
10	536	522	1090	348	288	226	1990	e1670	e1480	309	648	878
11	532	523	1090	345	271	234	1470	e1810	e1340	338	649	880
12	528	528	1090	342	253	229	931	e1920	e1290	380	651	880
13	525	806	1090	346	249	230	946	e1860	e1230	329	651	881
14	526	1020	1080	335	250	238	950	e1690	e949	307	649	880
15	525	1030	1080	344	260	251	947	e1500	e864	307	649	887
16	522	1030	1080	342	260	281	943	e1460	e840	380	767	892
17	385	1040	1080	344	260	638	942	e1390	e850	423	863	897
18	315	1040	810	341	284	947	947	e1260	e860	428	867	907
19	312	1040	559	436	313	1610	941	e1370	763	423	855	909
20	315	1030	569	888	314	2760	936	e1510	649	423	867	909
21	316	1040	571	1080	311	4070	913	e1670	612	423	862	911
22	314	1110	571	1080	307	4620	938	e1750	611	434	870	915
23	312	1140	571	1070	295	3450	939	e1500	610	588	870	915
24	313	1130	571	1060	291	3590	932	e1260	608	658	877	914
25	313	1130	571	1050	286	3960	924	e1190	607	656	872	920
26	314	1130	571	1050	280	3040	1240	e1310	575	654	875	924
27	316	1120	573	1050	278	2160	1300	e1420	532	655	883	924
28	316	1120	837	1040	270	1410	1010	e1350	515	661	882	935
29	316	1120	1090	726	---	775	909	e1290	482	660	882	936
30	317	1360	1090	503	---	654	1270	e1150	457	657	825	933
31	317	---	1090	505	---	472	---	e1180	---	667	778	---
TOTAL	16093	23943	31214	20724	8288	38246	37364	47590	30494	14461	23566	24665
MEAN	519	798	1007	669	296	1234	1245	1535	1016	466	760	822
MAX	869	1360	1520	1080	500	4620	2670	2080	1940	667	883	936
MIN	312	312	559	335	249	226	333	1150	457	307	648	407
AC-FT	31920	47490	61910	41110	16440	75860	74110	94390	60480	28680	46740	48920
MEAN†	195	730	916	726	770	2374	1810	1657	1005	385	258	197
CFSM†	0.94	3.51	4.40	3.49	3.70	11.4	8.70	7.97	4.83	1.85	1.24	0.95
IN.†	1.08	3.92	5.08	4.02	3.86	13.16	9.71	9.19	5.39	2.14	1.43	1.06
AC-FT†	11980	43440	56310	44620	42760	146000	107700	101900	59780	23680	15840	11720

CAL YR 1992 TOTAL 186133 MEAN 509 MAX 1520 MIN 267 AC-FT 369200 MEAN† 513 CFSM† 2.47 IN.† 33.58 AC-FT† 372400
WTR YR 1993 TOTAL 316648 MEAN 868 MAX 4620 MIN 226 AC-FT 628100 MEAN† 920 CFSM† 4.42 IN.† 60.03 AC-FT† 665800

e Estimated

† Adjusted for change in contents in Cougar Lake.

WILLAMETTE RIVER BASIN

231

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1955 to current year.

INSTRUMENTATION.--Temperature recorder since July 1955.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C July 28, 1958; minimum, 0.5°C Jan. 20-23, 1962.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 16.0°C Oct. 5; minimum, 3.0°C Jan. 19, 20.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	15.0	14.5	15.0	12.5	12.0	12.5	7.5	7.5	7.5	5.0	5.0	5.0
2	15.0	15.0	15.0	12.5	11.5	12.0	7.5	7.0	7.5	5.0	5.0	5.0
3	15.0	14.5	15.0	12.0	11.5	12.0	7.5	7.0	7.0	5.0	5.0	5.0
4	15.5	14.5	15.0	12.0	11.5	11.5	7.0	6.5	7.0	5.0	5.0	5.0
5	16.0	14.5	15.0	12.0	11.5	11.5	7.0	6.5	6.5	5.0	4.5	4.5
6	15.5	15.0	15.0	12.0	11.5	11.5	6.5	6.5	6.5	4.5	4.5	4.5
7	15.0	14.5	15.0	12.0	11.0	11.5	6.5	6.5	6.5	4.5	4.5	4.5
8	15.5	14.5	15.0	11.5	11.0	11.0	6.5	6.0	6.0	4.5	4.5	4.5
9	15.0	14.5	14.5	11.5	11.0	11.0	6.0	6.0	6.0	4.5	4.0	4.5
10	14.5	14.0	14.5	11.0	11.0	11.0	6.0	6.0	6.0	4.5	4.0	4.0
11	14.5	14.0	14.5	11.5	10.5	11.0	6.0	6.0	6.0	4.0	4.0	4.0
12	14.5	14.0	14.0	11.0	10.0	10.5	6.0	6.0	6.0	4.0	4.0	4.0
13	---	---	---	11.0	10.0	10.5	6.0	6.0	6.0	4.0	3.5	4.0
14	---	14.0	14.0	11.0	10.5	11.0	6.0	6.0	6.0	4.0	3.5	4.0
15	15.0	14.0	14.5	11.0	10.5	10.5	6.0	6.0	6.0	4.0	3.5	4.0
16	14.5	14.0	14.0	11.0	10.0	10.5	6.0	5.5	6.0	4.5	4.0	4.0
17	14.5	13.5	14.0	10.5	10.0	10.5	6.0	5.5	5.5	4.0	3.5	4.0
18	14.0	13.0	13.5	10.5	10.0	10.0	5.5	5.5	5.5	3.5	3.5	3.5
19	14.5	13.0	13.5	10.0	10.0	10.0	5.5	5.5	5.5	3.5	3.0	3.5
20	14.0	13.5	13.5	10.0	9.5	10.0	5.5	5.5	5.5	3.5	3.0	3.0
21	13.5	13.0	13.5	9.5	9.5	9.5	5.5	5.5	5.5	3.5	3.5	3.5
22	14.5	13.0	13.5	9.5	9.0	9.0	6.0	5.5	5.5	3.5	3.5	3.5
23	14.5	13.0	13.5	9.0	8.5	9.0	5.5	5.5	5.5	3.5	3.5	3.5
24	13.5	13.0	13.0	9.0	8.5	8.5	5.5	5.5	5.5	3.5	3.5	3.5
25	13.5	13.0	13.0	8.5	8.0	8.5	5.5	5.0	5.5	4.0	3.5	3.5
26	13.5	13.0	13.0	8.5	8.0	8.0	5.5	5.0	5.0	4.0	3.5	4.0
27	14.0	13.0	13.0	8.0	8.0	8.0	5.5	5.0	5.0	4.0	3.5	4.0
28	13.0	12.5	13.0	8.0	7.5	8.0	5.0	5.0	5.0	4.0	4.0	4.0
29	13.0	12.5	13.0	8.0	7.5	7.5	5.0	5.0	5.0	4.0	4.0	4.0
30	13.0	12.5	13.0	7.5	7.5	7.5	5.0	5.0	5.0	4.0	4.0	4.0
31	12.5	12.5	12.5	---	---	---	5.0	5.0	5.0	4.0	4.0	4.0
MONTH	---	---	---	12.5	7.5	10.0	7.5	5.0	6.0	5.0	3.0	4.0

WILLAMETTE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.5	4.0	4.0	4.5	4.0	4.5	5.5	5.0	5.0	6.5	5.5	6.0
2	4.5	4.0	4.0	4.5	4.0	4.5	5.5	5.5	5.5	6.5	5.5	6.5
3	4.5	4.0	4.5	5.0	4.5	4.5	6.0	5.5	6.0	6.5	5.5	6.0
4	4.5	4.0	4.5	4.5	4.5	4.5	6.0	5.5	6.0	6.5	6.0	6.5
5	4.5	4.0	4.5	5.5	4.5	4.5	6.0	5.5	6.0	6.5	6.0	6.5
6	4.5	4.5	4.5	5.5	4.5	5.0	6.0	5.5	6.0	7.0	6.0	6.5
7	5.0	4.5	4.5	5.5	4.5	5.0	6.0	5.5	5.5	7.0	6.0	6.5
8	5.0	4.5	4.5	6.0	4.5	5.0	6.0	5.5	6.0	7.0	6.5	6.5
9	4.5	4.5	4.5	5.5	4.5	5.0	6.0	5.5	6.0	7.0	6.5	6.5
10	5.0	4.5	4.5	5.0	4.5	5.0	6.5	6.0	6.0	7.0	6.0	6.5
11	5.0	4.5	5.0	5.5	4.5	4.5	6.0	5.0	5.5	7.0	6.0	6.5
12	5.0	5.0	5.0	5.0	4.5	4.5	6.0	6.0	6.0	7.0	6.0	6.5
13	5.0	5.0	5.0	5.5	4.5	4.5	6.0	5.5	6.0	7.0	6.5	6.5
14	5.5	5.0	5.0	5.0	4.5	4.5	6.0	5.5	6.0	7.0	6.5	6.5
15	5.5	5.0	5.0	5.0	5.0	5.0	6.5	5.5	6.0	7.0	6.0	6.5
16	5.0	4.5	5.0	5.5	5.0	5.0	6.0	5.5	6.0	7.0	6.5	6.5
17	5.0	4.0	4.5	5.0	5.0	5.0	6.0	5.5	6.0	7.0	6.0	6.5
18	5.0	4.5	4.5	5.5	5.0	5.0	6.0	5.5	6.0	7.0	6.0	6.5
19	4.5	4.5	4.5	5.5	5.0	5.0	6.5	5.5	6.0	7.0	6.5	7.0
20	4.5	4.5	4.5	5.5	5.0	5.5	6.5	5.5	6.0	7.0	6.0	7.0
21	4.5	4.0	4.5	5.5	5.0	5.5	6.0	5.5	6.0	7.0	6.5	7.0
22	4.5	4.0	4.5	6.0	5.5	5.5	6.0	6.0	6.0	7.0	6.5	7.0
23	4.5	4.5	4.5	6.0	5.5	5.5	6.0	5.5	6.0	7.0	6.5	7.0
24	5.0	4.0	4.5	6.0	5.5	6.0	6.5	6.0	6.0	7.5	6.0	7.0
25	5.0	4.0	4.5	6.0	5.5	6.0	6.5	5.5	6.0	7.5	6.5	7.0
26	5.0	4.0	4.5	6.0	5.5	5.5	6.5	6.0	6.0	7.0	7.0	7.0
27	5.0	4.0	4.5	6.0	5.5	5.5	6.5	5.5	6.0	7.5	6.5	7.0
28	5.0	4.0	4.5	6.0	5.0	5.5	6.5	5.5	6.0	7.5	6.5	7.0
29	---	---	---	5.5	5.0	5.5	6.5	5.5	6.0	7.5	6.5	7.0
30	---	---	---	5.5	5.5	5.5	6.5	5.5	6.0	7.5	6.5	7.0
31	---	---	---	5.5	5.0	5.0	---	---	---	7.5	6.5	7.0
MONTH	5.5	4.0	4.5	6.0	4.0	5.0	6.5	5.0	6.0	7.5	5.5	6.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.5	7.0	7.5	9.5	7.5	8.5	9.5	8.5	9.0	10.5	10.0	10.0
2	7.5	6.5	7.0	9.5	7.0	8.0	9.5	8.5	9.0	10.5	10.0	10.5
3	7.5	7.0	7.5	9.0	7.5	8.5	10.0	8.5	9.0	10.5	9.5	10.0
4	8.0	6.5	7.5	9.5	7.5	8.5	9.5	8.0	9.0	11.0	9.5	10.0
5	7.5	7.0	7.5	9.5	7.0	8.5	9.5	8.0	9.0	11.0	10.0	10.5
6	7.5	7.0	7.5	9.5	7.5	8.5	9.5	7.5	9.0	11.0	9.5	10.5
7	8.0	7.0	7.5	9.5	7.0	8.5	10.0	8.0	9.5	11.0	10.0	10.5
8	8.0	7.0	7.5	9.5	7.5	8.5	9.5	8.5	9.5	11.0	10.0	10.5
9	8.0	7.0	7.5	10.0	7.5	8.5	10.0	8.0	9.5	11.5	10.0	10.5
10	8.0	7.0	7.5	10.0	7.0	8.5	10.0	8.0	9.5	11.0	10.5	11.0
11	8.0	7.5	7.5	10.0	7.0	8.5	10.0	9.0	9.5	11.5	10.0	11.0
12	8.0	7.0	7.5	9.5	7.5	8.5	10.0	8.5	9.5	11.5	10.0	11.0
13	8.5	7.5	8.0	9.0	7.0	8.0	10.0	9.0	9.5	11.5	10.5	11.0
14	8.5	7.0	7.5	9.0	7.0	8.0	9.5	9.0	9.5	11.5	10.5	11.0
15	8.0	7.0	8.0	9.0	8.0	8.5	9.5	9.0	9.5	11.5	11.0	11.0
16	8.5	8.0	8.0	9.0	8.0	8.5	9.5	9.0	9.5	11.5	11.0	11.5
17	8.5	8.0	8.0	9.0	8.0	8.5	10.0	9.5	9.5	11.5	11.0	11.5
18	8.5	7.5	8.0	9.5	8.0	8.5	10.0	9.0	9.5	12.0	11.0	11.5
19	9.0	7.0	8.0	9.5	7.5	8.5	10.0	9.0	9.5	12.0	11.0	11.5
20	9.0	7.5	8.0	9.0	8.0	8.5	10.0	9.5	9.5	12.0	11.5	11.5
21	9.0	7.5	8.0	9.0	8.0	8.5	10.0	9.5	10.0	12.0	11.5	12.0
22	8.5	8.0	8.0	9.0	8.5	8.5	10.0	9.5	10.0	12.0	11.5	12.0
23	9.0	7.5	8.0	9.0	8.0	8.5	10.0	9.0	9.5	12.5	11.5	12.0
24	9.0	8.0	8.5	9.5	8.5	9.0	10.0	9.5	10.0	12.5	11.5	12.0
25	9.0	7.0	8.0	9.5	8.5	9.0	10.5	9.0	10.0	12.5	12.0	12.0
26	9.0	7.0	8.5	9.5	8.5	9.0	10.0	9.0	10.0	12.5	12.0	12.0
27	9.0	7.5	8.0	9.5	8.5	9.0	10.5	9.5	10.0	12.5	12.0	12.5
28	9.0	7.5	8.5	9.0	8.5	9.0	10.5	9.5	10.0	12.5	12.0	12.5
29	9.0	7.5	8.5	9.5	8.5	9.0	10.5	9.5	10.0	13.0	12.0	12.5
30	9.5	7.5	8.5	9.5	8.5	9.0	10.5	9.5	10.0	13.0	12.5	12.5
31	---	---	---	9.5	8.5	9.0	10.5	9.5	10.0	---	---	---
MONTH	9.5	6.5	8.0	10.0	7.0	8.5	10.5	7.5	9.5	13.0	9.5	11.5

WILLAMETTE RIVER BASIN

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14159800 MCKENZIE RIVER ABOVE BLUE RIVER, OR

LOCATION.--Lat 44°09'10", long 122°19'58", in NW 1/4 NE 1/4 sec.28, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank, 0.5 mi upstream from Blue River, and 0.2 mi east of the town of Blue River, and at mile 57.5.

DRAINAGE AREA.--Not determined.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Temperature recorder since July 1992.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

July to September 1992: Maximum, 15.0°C several days in July and August; minimum recorded, 8.5°C Aug. 24, 25.

Water year 1993: Maximum, 14.5°C Aug. 6; minimum, 2.5°C Jan. 10.

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER		
1	14.0	9.5	11.5	14.0	10.5	12.5	13.5	10.0	11.5
2	13.5	9.5	11.5	14.5	10.0	12.5	13.5	10.0	11.5
3	14.0	9.5	11.5	14.5	10.0	12.0	13.5	10.0	11.5
4	12.5	10.0	11.0	14.5	10.0	12.0	11.5	10.5	11.0
5	12.0	10.0	11.0	14.5	9.5	12.0	12.5	10.5	11.0
6	13.0	9.5	11.0	13.0	10.0	11.5	12.5	9.5	11.0
7	14.0	9.0	11.5	12.0	10.5	11.0	12.0	9.0	10.5
8	14.0	9.5	11.5	14.0	9.5	11.5	11.5	10.0	10.5
9	14.5	9.5	11.5	14.0	9.5	11.5	13.0	10.0	11.5
10	14.0	9.5	12.0	14.5	9.5	12.0	12.5	10.0	11.5
11	14.5	10.0	12.0	14.5	10.0	12.0	13.0	10.5	11.5
12	14.5	10.0	12.0	12.0	10.5	11.0	12.0	10.5	11.0
13	14.5	10.0	12.0	15.0	10.0	12.5	12.0	9.5	11.0
14	14.5	10.0	12.0	15.0	10.5	13.0	11.5	9.0	10.0
15	15.0	9.5	12.0	14.5	10.5	12.5	11.0	10.0	10.5
16	15.0	10.0	12.5	15.0	10.5	12.5	12.5	9.5	11.0
17	14.0	10.0	12.0	15.0	10.5	12.5	13.0	10.0	11.5
18	14.5	11.0	12.5	15.0	10.5	12.5	12.5	10.0	11.0
19	15.0	10.0	12.5	14.5	10.5	12.5	13.0	10.5	11.5
20	13.5	10.5	12.0	14.0	10.0	12.0	13.0	10.0	11.5
21	14.5	10.5	12.5	11.5	10.0	10.5	13.5	10.5	11.5
22	12.5	10.5	11.0	11.0	10.0	10.5	13.0	10.5	12.0
23	12.5	10.0	11.0	13.0	9.5	11.0	12.5	11.0	11.5
24	14.0	9.0	11.5	13.0	8.5	10.5	11.5	10.5	11.0
25	14.5	9.5	12.0	13.0	8.5	11.0	12.0	10.5	11.0
26	15.0	10.0	12.5	13.0	9.0	11.0	12.5	10.0	11.0
27	15.0	10.0	12.5	13.0	9.0	11.0	12.0	10.0	11.0
28	15.0	10.0	12.5	13.5	9.5	11.5	12.0	10.0	11.0
29	15.0	10.0	12.5	13.0	9.0	11.0	12.0	10.0	11.0
30	15.0	10.0	12.5	13.0	9.5	11.0	12.5	10.5	11.5
31	15.0	10.5	12.5	13.0	10.0	11.5	---	---	---
MONTH	15.0	9.0	12.0	15.0	8.5	11.5	13.5	9.0	11.0

WILLAMETTE RIVER BASIN

14159800 MCKENZIE RIVER ABOVE BLUE RIVER, OR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

14161100 BLUE RIVER BELOW TIDBITS CREEK, NEAR BLUE RIVER, OR

LOCATION.--Lat 44°13'05", long 122°15'50", in SE 1/4 NE 1/4 sec.36, T.15 S., R.4 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.2 mi downstream from Tidbits Creek, 5.5 mi northeast of town of Blue River, and at mile 8.5.

DRAINAGE AREA.--45.8 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,386.90 ft above sea level (Corps of Engineers bench mark).

REMARKS.--Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period September 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--30 years, 249 ft³/s, 73.81 in/yr, 180,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Dec. 22, 1964, gage height, 15.32 ft, from floodmarks, from rating curve extended above 2,800 ft³/s on basis of slope-area measurement of peak flow; minimum daily discharge, 6.0 ft³/s Oct. 27-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	*3,210	*8.08	Mar. 17	1130	3,180	8.06

Minimum discharge, 11 ft³/s Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	605	526	175	311	147	628	430	333	77	44	21
2	11	420	934	158	298	168	1650	378	387	76	41	20
3	21	186	519	148	306	339	1040	599	327	73	39	20
4	22	130	357	148	315	715	677	693	286	68	38	20
5	16	103	282	135	404	855	566	507	294	64	37	19
6	14	84	236	125	464	786	578	495	282	61	35	19
7	14	175	205	120	455	783	642	514	331	58	34	18
8	13	296	282	117	411	711	733	658	319	56	33	17
9	13	287	329	108	379	617	842	548	274	55	32	17
10	13	190	646	102	360	677	697	442	253	53	31	17
11	13	153	501	102	332	532	536	387	250	51	31	17
12	12	367	345	97	337	414	454	330	266	50	30	16
13	13	279	276	94	325	392	407	294	228	49	29	16
14	13	207	280	93	290	1290	418	260	196	49	29	16
15	13	164	313	90	257	2170	375	236	179	49	31	16
16	13	136	270	89	224	2020	485	221	161	47	31	16
17	13	137	246	89	202	2650	531	213	145	47	32	16
18	13	187	207	86	187	1870	447	206	132	45	28	16
19	14	248	187	196	217	1210	384	194	122	43	28	16
20	14	219	323	866	237	935	e380	209	114	48	28	16
21	21	1290	326	588	216	665	372	204	111	48	28	16
22	21	1420	312	477	192	1320	438	201	140	101	27	15
23	17	643	297	341	178	1270	559	174	150	118	26	15
24	16	381	273	365	163	773	772	158	126	85	27	15
25	15	278	240	608	150	538	677	205	113	71	25	15
26	15	223	259	554	142	419	579	201	104	64	24	14
27	14	408	282	458	139	353	489	211	97	58	24	14
28	14	572	268	477	137	317	398	232	92	54	23	14
29	27	361	251	436	---	292	541	203	87	54	22	13
30	162	374	218	374	---	280	563	192	82	49	21	13
31	416	---	197	337	---	351	---	240	---	47	21	---
TOTAL	1017	10523	10187	8153	7628	25859	17918	10035	5981	1868	929	493
MEAN	32.8	351	329	263	272	834	597	324	199	60.3	30.0	16.4
MAX	416	1420	934	866	464	2650	1650	693	387	118	44	21
MIN	11	84	187	86	137	147	372	158	82	43	21	13
AC-FT	2020	20870	20210	16170	15130	51290	35540	19900	11860	3710	1840	978
CFSM	.72	7.66	7.17	5.74	5.95	18.2	13.0	7.07	4.35	1.32	.65	.36
IN.	.83	8.55	8.27	6.62	6.20	21.00	14.55	8.15	4.86	1.52	.75	.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	66.4	335	491	484	419	381	350	255	126	39.6	21.6	26.3																		
MAX	180	731	1471	1033	934	995	597	521	320	90.9	51.9	82.2																		
(WY)	1969	1974	1965	1970	1986	1972	1993	1971	1974	1983	1968	1978																		
MIN	6.42	43.1	33.0	48.3	65.0	84.6	147	70.7	27.3	17.7	9.51	8.62																		
(WY)	1988	1988	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987																		

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1964 - 1993

	1992	1993	1964-1993
ANNUAL TOTAL	53667.1	100591	
ANNUAL MEAN	147	276	
HIGHEST ANNUAL MEAN			249
LOWEST ANNUAL MEAN			404
HIGHEST DAILY MEAN	1420	2650	106
LOWEST DAILY MEAN	7.7	11	10000
ANNUAL SEVEN-DAY MINIMUM	7.7	13	6.0
ANNUAL RUNOFF (AC-FT)	106400	199500	6.1
ANNUAL RUNOFF (CFSM)	3.20	6.02	180300
ANNUAL RUNOFF (INCHES)	43.59	81.70	5.43
10 PERCENT EXCEEDS	327	612	73.81
50 PERCENT EXCEEDS	65	196	565
90 PERCENT EXCEEDS	9.5	16	141

e Estimated

LOCATION.--Lat 44°12'35", long 122°15'20", in T.15 or 16 S., R.5 E. (unsurveyed), Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 6.0 mi northeast of town of Blue River, and at mile 0.5.

PERIOD OF RECORD.--August 1949 to September 1955, September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,377.76 ft above sea level (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period August 1950 to September 1955 and September 1963 to September 1981 have been collected at this location.

AVERAGE DISCHARGE.--36 years (water years 1950-55, 1964-93), 122 ft³/s, 68.55 in/yr, 88,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s Dec. 22, 1964, gage height, 8.88 ft, from rating curve extended above 1,300 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 4.8 ft³/s Sept. 16, 17, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2000	1,110	5.21	Mar. 18	0030	*1,220	*5.37
Minimum discharge, 6.3 ft ³ /s Oct. 20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	199	239	99	165	61	177	245	155	40	23	14
2	7.9	184	432	86	151	68	274	223	177	40	22	14
3	9.7	74	289	79	148	114	614	281	159	38	21	13
4	9.1	49	211	77	151	215	498	296	147	36	20	13
5	8.2	38	167	68	183	342	368	257	150	35	20	13
6	7.9	30	131	62	210	317	315	263	146	33	20	13
7	7.7	48	110	59	210	314	261	180	33	20	13	
8	7.4	78	160	56	201	326	325	318	174	32	20	12
9	7.3	85	205	52	195	299	364	289	155	30	19	12
10	7.3	61	293	50	190	326	398	265	143	29	19	12
11	7.1	50	262	48	177	308	372	240	139	28	19	12
12	7.1	98	194	45	172	248	308	209	134	28	18	12
13	6.9	88	152	44	159	215	264	190	118	28	18	12
14	6.9	69	141	43	143	293	227	163	103	28	18	11
15	6.9	55	136	42	126	784	225	145	95	27	18	11
16	6.9	47	124	41	111	854	209	134	84	26	18	11
17	7.0	53	117	40	101	923	222	130	76	26	19	11
18	6.9	84	101	38	93	1080	251	125	68	25	18	11
19	6.7	103	93	71	110	702	238	115	63	25	18	11
20	6.8	94	191	286	105	566	214	126	60	28	18	11
21	10	451	204	276	98	415	205	124	57	27	18	11
22	8.7	601	203	254	88	353	233	117	65	45	17	10
23	7.4	319	184	194	82	644	263	99	61	46	17	10
24	6.9	208	157	209	75	503	340	87	55	36	17	10
25	6.7	149	134	330	69	362	353	122	52	32	16	9.7
26	6.7	115	140	304	64	282	323	112	49	29	16	9.7
27	6.5	169	149	259	61	229	284	110	47	27	16	9.6
28	6.9	214	152	257	59	191	243	106	45	26	15	9.6
29	12	168	146	245	---	167	288	95	43	27	15	9.3
30	48	175	127	213	---	148	294	91	41	25	15	9.1
31	116	---	113	188	---	141	---	119	---	24	14	---
TOTAL	385.2	4156	5457	4115	3697	11796	9003	5457	3041	959	562	340.0
MEAN	12.4	139	176	133	132	381	300	176	101	30.9	18.1	11.3
MAX	116	601	432	330	210	1080	614	318	180	46	23	14
MIN	6.5	30	93	38	59	61	177	87	41	24	14	9.1
AC-FT	764	8240	10820	8160	7330	23400	17860	10820	6030	1900	1110	674
CFSM	.52	5.75	7.30	5.51	5.48	15.8	12.5	7.30	4.21	1.28	.75	.47
IN.	.59	6.42	8.42	6.35	5.71	18.21	13.90	8.42	4.69	1.48	.87	.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

MEAN	36.9	148	225	236	210	172	169	135	75.2	26.0	15.1	15.6
(MAX)	179	322	794	591	449	420	300	255	212	46.6	22.2	40.5
(WY)	1951	1978	1965	1953	1986	1972	1993	1950	1950	1983	1976	1978
MIN	5.46	10.0	19.9	25.1	27.0	48.2	69.8	39.2	17.3	12.2	8.26	6.81
(WY)	1988	1953	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1950 - 1993
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ANNUAL TOTAL	24861.9		48968.2					
ANNUAL MEAN	67.9		134			122		
HIGHEST ANNUAL MEAN						182		1972
LOWEST ANNUAL MEAN						49.2		1977
HIGHEST DAILY MEAN	601	Nov 22	1080	Mar 18	4890		Dec 22	1964
LOWEST DAILY MEAN	6.5	Oct 27	6.5	Oct 27	5.1		Sep 15	1981
ANNUAL SEVEN-DAY MINIMUM	6.7	Sep 17	6.9	Oct 14	5.2		Oct 22	1987
ANNUAL RUNOFF (AC-FT)	49310		97130		88080			
ANNUAL RUNOFF (CFSM)	2.82		5.57		5.04			
ANNUAL RUNOFF (INCHES)	38.38		75.59		68.55			
10 PERCENT EXCEEDS	176		306		271			
50 PERCENT EXCEEDS	35		93		74			
90 PERCENT EXCEEDS	7.4		10		12			

WILLAMETTE RIVER BASIN

14162100 BLUE RIVER LAKE NEAR BLUE RIVER, OR

LOCATION.--Lat 44°10'20", long 122°19'40", in SE 1/4 SE 1/4 sec.16, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, in intake tower near left end of Blue River Dam on Blue River, 1.4 mi north of town of Blue River, and at mile 1.7.

DRAINAGE AREA.--87.3 mi².

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1971, published as Blue River Reservoir near Blue River.

REVISED RECORDS.--WDR OR-92-1: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1968 by Corps of Engineers; storage began October 1968. Total capacity is 89,520 acre-ft at elevation 1,357 ft, maximum pool, and usable capacity is 85,550 acre-ft between elevations 1,180 ft, minimum flood control pool, and 1,357 ft, maximum pool. Reservoir used for flood control. Figures given herein represent total contents. Corps of Engineers (0700 hr) record used for Nov. 30, Dec. 31, May 31 to compute monthend data.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 86,260 acre-ft Apr. 28, 1990, elevation, 1,353.63 ft; minimum contents observed since first filling in 1968, 305 acre-ft Dec. 7, 1973, elevation, 1,125.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents recorded, 83,670 acre-ft July 17, elevation, 1,350.90 ft; minimum contents recorded, 3,620 acre-ft Oct. 29, elevation, 1,177.29 ft, but may have been less during period of missing record.

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

1,120	136	1,160	1,880	1,250	19,260
1,130	437	1,180	3,970	1,290	36,960
1,140	764	1,200	7,030	1,340	73,710
1,150	1,210	1,220	11,040	1,354	86,620

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1189.93	1201.15	---	---	1218.04	1262.37	1322.59	1344.05	---	1349.99	1350.38	1338.61
2	1189.45	---	---	---	1219.26	1263.78	1324.16	1344.34	1350.61	1349.89	1350.25	1337.42
3	1189.16	---	---	---	1219.87	1266.48	1327.82	1345.32	1350.23	1349.77	1350.11	1336.25
4	1188.94	---	---	---	1220.91	1271.35	1326.77	1345.91	1349.88	1349.64	1349.95	1335.05
5	1188.55	---	---	---	1223.78	1278.00	1325.80	1346.33	1349.77	1349.50	1349.80	1333.85
6	1188.10	---	---	---	1225.02	1283.32	1325.87	1347.16	1349.59	1349.49	1349.63	1332.65
7	1187.60	---	---	---	1225.03	1288.22	1326.68	1348.08	1349.84	1349.58	1349.46	1331.43
8	1187.09	---	---	---	1224.81	1292.58	1326.94	1349.14	1350.10	1349.66	1349.28	1330.22
9	1186.57	---	---	---	1224.82	1296.15	1327.14	1349.26	1349.96	1349.73	1349.11	1329.00
10	1186.02	---	---	---	1224.52	1299.78	1327.94	1349.39	1349.81	1349.79	1348.93	1327.76
11	1185.48	---	---	---	1227.35	1302.45	1328.79	1349.51	1349.81	1349.84	1348.74	1326.52
12	1184.92	---	---	---	1232.10	1303.68	1329.32	1349.43	1349.84	1349.88	1348.56	1325.27
13	1184.36	---	---	1182.48	1236.22	1304.33	1329.73	1349.16	1349.68	1349.94	1348.36	1323.98
14	1183.78	---	---	1184.92	1239.35	1306.24	1330.34	1349.06	1349.75	1349.98	1348.19	1322.66
15	1183.19	---	---	1186.99	1241.89	1310.83	1331.18	1349.11	1350.05	1350.03	1348.01	1321.35
16	1182.60	---	---	1188.96	1244.01	1315.93	1331.84	1349.13	1350.26	1350.08	1347.73	1320.03
17	1182.00	---	---	1190.85	1245.73	1324.36	1332.67	1349.33	1350.38	1350.13	1347.35	1318.70
18	1181.38	---	---	1192.61	1247.37	1331.53	1334.02	1349.73	1350.46	1350.15	1346.94	1317.37
19	1180.73	---	---	1196.39	1249.36	1333.13	1335.05	1350.13	1350.49	1350.18	1346.58	1316.02
20	1180.09	---	---	1207.96	1251.36	1332.57	1335.71	1350.33	1350.48	1350.23	1346.21	1314.63
21	1179.84	---	---	1207.23	1253.23	1328.96	1336.47	1350.31	1350.46	1350.30	1345.83	1313.21
22	1179.76	---	---	1204.33	1254.73	1324.60	1337.58	---	1350.58	1350.66	1345.43	1311.79
23	1179.42	---	---	1197.25	1256.12	1327.25	1338.49	---	1350.66	1350.72	1345.04	1310.35
24	1179.06	---	---	1199.94	1257.31	1325.85	1339.38	---	1350.68	1350.46	1344.64	1308.91
25	1178.65	---	---	1204.78	1258.40	1320.75	1339.78	---	1350.65	1350.33	1344.23	1307.44
26	1178.24	---	---	1202.88	1259.38	1318.60	1340.18	---	1350.56	1350.43	1343.80	1305.98
27	1177.82	---	---	1201.95	1260.29	1318.25	1340.98	---	1350.45	1350.53	1343.24	1304.46
28	1177.45	---	---	1204.06	1261.23	1318.53	1341.59	---	1350.38	1350.61	1342.59	1302.93
29	1177.43	---	---	1207.36	---	1319.39	1342.82	---	1350.29	1350.68	1341.93	1301.37
30	1178.86	---	---	1211.11	---	1320.31	1343.67	---	1350.12	1350.64	1340.96	1299.81
31	1186.38	---	---	1214.95	---	1321.25	---	---	---	1350.52	1339.79	---
MAX	1189.93	---	---	---	1261.23	1333.13	1343.67	---	---	1350.72	1350.38	1338.61
MIN	1177.43	---	---	---	1218.04	1262.37	1322.59	---	---	1349.49	1339.79	1299.81
(†)	4860	5320	4070	9920	23230	58200	76980	83290	82930	83310	73520	42970
(‡)	-600	+460	-1250	+5850	+13310	+34970	+18780	+6310	-360	+380	-9790	-30550
CAL YR 1992	MAX	---	MIN	---	AC-FT†	+10						
WTR YR 1993	MAX	---	MIN	---	AC-FT†	+37510						

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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14162200 BLUE RIVER AT BLUE RIVER, OR

LOCATION.--Lat 44°09'45", long 122°19'55", in NW 1/4 SE 1/4 sec.21, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank 0.3 mi upstream from Simmonds Creek, 0.7 mi north of town of Blue River, 0.8 mi downstream from Blue River Dam, and at mile 0.9.

DRAINAGE AREA.--87.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,056.53 ft above sea level (Corps of Engineers bench mark). Prior to Aug. 25, 1966, nonrecording gage at datum 0.80 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since October 1968 by Blue River Lake (station 14162100). No diversion upstream from station. Discharge not adjusted for storage or release from Blue River Lake as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--27 years (water years 1967-93), 449 ft³/s, 325,300 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,270 ft³/s Feb. 23, 1968, gage height, 8.93 ft; minimum discharge, 0.80 ft³/s Oct. 8, 10, 11, 1968; minimum daily, 3.7 ft³/s Oct. 8, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,410 ft³/s Mar. 22, gage height, 7.93 ft; minimum discharge, 13 ft³/s Dec. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	358	782	395	314	56	138	673	662	183	127	511
2	51	912	1920	320	440	48	591	615	793	171	127	509
3	51	528	1720	284	506	45	1710	704	790	171	127	509
4	50	213	767	295	469	46	2380	995	689	171	127	509
5	50	213	643	305	415	46	1700	784	600	171	127	508
6	50	212	480	239	671	40	1060	616	598	99	128	505
7	50	212	402	212	784	43	814	619	544	58	128	505
8	49	217	407	213	748	43	1090	870	513	58	127	505
9	49	296	1190	212	679	50	1380	1000	593	58	127	504
10	49	400	1050	211	679	56	1300	808	546	58	127	502
11	49	395	1080	182	289	214	1110	695	513	58	127	501
12	49	396	767	161	48	407	899	694	513	58	127	499
13	50	721	630	96	49	490	763	675	513	58	127	505
14	49	838	512	53	50	492	587	538	337	58	127	509
15	49	668	680	54	50	1920	501	424	206	58	127	509
16	49	334	261	56	51	1930	501	408	206	58	167	506
17	48	138	27	52	51	995	503	310	206	58	204	505
18	48	143	26	51	52	1620	506	209	206	58	204	504
19	48	149	26	54	53	1940	508	209	206	58	204	502
20	47	377	29	686	54	2220	509	322	206	58	204	511
21	42	791	29	1230	54	2710	440	408	206	58	204	514
22	40	1630	488	1220	54	2940	396	408	206	58	204	513
23	40	2560	1480	1170	56	1700	682	408	206	177	204	511
24	38	2170	1500	578	56	2340	1020	350	206	242	204	509
25	38	929	1440	947	56	3010	1120	314	206	165	204	508
26	38	515	681	1260	56	1660	947	314	206	47	204	505
27	38	618	588	977	56	836	618	340	206	46	261	512
28	38	966	659	791	56	514	545	365	182	52	300	515
29	38	892	564	651	---	240	547	365	184	52	300	513
30	39	547	579	462	---	158	712	365	206	100	424	511
31	43	---	474	335	---	138	---	405	---	127	513	---
TOTAL	1418	19338	21881	13752	6896	28947	25577	16210	11454	2902	5912	15229
MEAN	45.7	645	706	444	246	934	853	523	382	93.6	191	508
MAX	51	2560	1920	1260	784	3010	2380	1000	793	242	513	515
MIN	38	138	26	51	48	40	138	209	182	46	127	499
AC-FT	2810	38360	43400	27280	13680	57420	50730	32150	22720	5760	11730	30210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	247	663	956	796	406	395	334	339	259	349	459	237													
MAX	611	1459	2189	1371	1166	1766	853	676	549	626	765	536													
(WY)	1985	1974	1978	1972	1982	1972	1993	1971	1984	1979	1971	1972													
MIN	45.7	39.4	63.1	68.1	32.6	12.0	12.0	35.0	63.9	89.1	191	47.9													
(WY)	1993	1988	1977	1977	1977	1977	1977	1973	1973	1984	1993	1992													

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1969 - 1993

ANNUAL TOTAL	99725	169516	455	
ANNUAL MEAN	272	464	727	1972
HIGHEST ANNUAL MEAN			192	1977
LOWEST ANNUAL MEAN			3900	Jan 22 1971
HIGHEST DAILY MEAN	2560	Nov 23	3010	Mar 25
LOWEST DAILY MEAN	26	Dec 18	26	Dec 18
ANNUAL SEVEN-DAY MINIMUM	38	Oct 24	38	Oct 24
ANNUAL RUNOFF (AC-FT)	197800		336200	
10 PERCENT EXCEEDS	684		1010	329400
50 PERCENT EXCEEDS	76		337	970
90 PERCENT EXCEEDS	46		49	296
				51

WILLAMETTE RIVER BASIN
14162200 BLUE RIVER AT BLUE RIVER, OR--Continued
WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1966 to current year.

INSTRUMENTATION.--Temperature recorder since August 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.0°C July 6, 1968; minimum, 0.0°C Jan. 5-9, 1974, Dec. 23, 24, 1983.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 16.5°C Oct. 1, 3-6; minimum, 2.0°C Jan. 10, 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	16.0	16.0	10.5	10.0	10.0	6.5	6.5	6.5	4.5	4.5	4.5
2	16.0	16.0	16.0	10.5	10.0	10.5	7.5	6.5	7.0	4.5	4.5	4.5
3	16.5	16.0	16.5	10.5	10.0	10.5	7.0	5.5	6.5	4.5	4.5	4.5
4	16.5	15.5	16.0	10.0	9.5	10.0	5.5	4.5	5.5	4.5	4.0	4.5
5	16.5	15.5	16.0	9.5	9.5	9.5	4.5	4.5	4.5	4.0	4.0	4.0
6	16.5	15.5	16.0	10.0	9.5	9.5	4.5	4.0	4.5	4.0	3.5	3.5
7	16.0	15.5	15.5	9.5	9.5	9.5	5.0	4.5	4.5	3.5	3.0	3.0
8	16.0	15.0	15.5	10.0	9.5	9.5	6.0	5.0	5.0	3.0	2.5	3.0
9	16.0	15.0	15.5	10.0	9.0	9.5	5.5	5.5	5.5	2.5	2.5	2.5
10	16.0	15.0	15.5	9.0	8.5	9.0	6.5	5.5	6.5	2.5	2.0	2.0
11	16.0	15.0	15.5	8.5	8.5	8.5	6.5	6.5	6.5	2.5	2.5	2.5
12	16.0	15.0	15.0	8.5	8.0	8.0	6.5	6.5	6.5	3.0	2.5	2.5
13	15.5	15.0	15.0	9.0	8.0	8.5	6.5	6.0	6.5	3.0	2.0	2.5
14	15.5	14.5	15.0	9.0	8.5	8.5	6.5	6.0	6.0	3.5	2.5	3.0
15	15.0	14.5	14.5	8.5	8.5	8.5	6.5	6.5	6.5	3.5	2.5	3.0
16	14.5	13.5	14.0	8.5	8.0	8.5	6.5	5.5	6.0	3.5	3.0	3.0
17	14.5	14.0	14.0	8.0	8.0	8.0	6.0	5.0	5.5	4.0	3.0	3.5
18	14.5	14.0	14.0	8.0	8.0	8.0	---	---	---	4.0	3.0	3.5
19	15.0	14.0	14.0	8.0	8.0	8.0	6.0	5.5	5.5	4.0	3.5	3.5
20	14.0	14.0	14.0	8.0	8.0	8.0	6.5	5.5	6.0	4.5	3.5	4.0
21	14.0	13.5	14.0	8.0	7.5	8.0	6.5	6.0	6.0	5.0	3.5	4.5
22	14.5	13.5	14.0	8.0	7.5	8.0	---	---	---	5.5	5.0	5.0
23	14.5	13.5	13.5	8.5	7.5	8.0	5.5	5.0	5.5	6.0	5.0	5.5
24	14.5	13.0	13.5	7.5	7.0	7.5	6.0	5.5	6.0	6.0	5.5	5.5
25	14.5	13.5	13.5	7.0	6.5	7.0	6.0	5.5	5.5	6.5	5.5	6.0
26	14.5	13.0	13.5	6.5	6.0	6.0	5.5	5.5	5.5	7.0	6.0	6.5
27	14.5	13.0	13.5	6.0	6.0	6.0	5.5	5.5	5.5	7.0	6.0	6.0
28	13.5	13.5	13.5	7.0	6.0	6.5	5.5	5.0	5.5	6.5	6.0	6.5
29	13.5	13.0	13.0	7.0	6.5	7.0	5.5	5.0	5.5	7.5	6.0	6.5
30	13.0	12.0	12.5	6.5	6.5	6.5	5.5	5.5	5.5	7.5	6.0	6.5
31	12.0	10.5	11.0	---	---	---	5.5	4.5	5.0	7.5	6.0	6.5
MONTH	16.5	10.5	14.5	10.5	6.0	8.5	---	---	---	7.5	2.0	4.5

WILLAMETTE RIVER BASIN

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14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	8.0	8.0	8.0	10.0	9.0	9.5	10.0	9.5	10.0	10.5	10.0	10.5
2	8.5	8.0	8.5	9.5	9.0	9.5	10.0	9.5	10.0	10.5	10.5	10.5
3	8.5	8.5	8.5	9.5	9.0	9.5	10.0	9.5	9.5	10.5	10.5	10.5
4	8.5	8.5	8.5	10.0	9.0	9.5	10.0	9.5	9.5	11.0	10.5	10.5
5	8.5	8.5	8.5	10.0	9.0	9.5	10.5	9.5	9.5	11.0	11.0	11.0
6	8.5	8.5	8.5	11.0	9.0	9.5	10.5	9.5	10.0	11.0	10.5	11.0
7	8.5	8.5	8.5	10.5	---	9.5	10.0	9.5	9.5	11.0	11.0	11.0
8	8.5	8.5	8.5	11.0	9.0	10.0	10.0	9.5	10.0	11.5	11.0	11.0
9	8.5	8.5	8.5	11.0	9.0	9.5	10.0	9.5	9.5	11.5	11.0	11.0
10	8.5	8.5	8.5	11.0	9.0	10.0	10.0	9.5	10.0	11.5	11.0	11.5
11	8.5	8.5	8.5	10.5	9.5	9.5	10.5	9.5	10.0	11.5	11.5	11.5
12	9.0	8.5	8.5	10.5	9.5	9.5	10.0	9.5	9.5	11.5	11.5	11.5
13	9.0	8.5	9.0	10.0	9.5	9.5	10.0	9.5	9.5	11.5	11.5	11.5
14	9.5	9.0	9.0	10.0	9.5	9.5	9.5	9.5	9.5	11.5	11.5	11.5
15	9.0	9.0	9.0	9.5	9.5	9.5	9.5	9.5	9.5	11.5	11.5	11.5
16	9.5	8.5	9.0	10.0	9.5	9.5	9.5	9.5	9.5	12.0	11.5	12.0
17	9.5	9.0	9.0	10.0	9.5	9.5	10.0	9.5	10.0	12.0	12.0	12.0
18	9.5	9.0	9.0	10.5	9.5	10.0	10.0	9.5	10.0	12.0	12.0	12.0
19	9.5	9.0	9.0	10.5	9.5	9.5	10.0	9.5	10.0	12.0	12.0	12.0
20	9.5	9.0	9.0	10.0	9.5	9.5	9.5	9.5	9.5	12.5	12.0	12.0
21	9.0	9.0	9.0	10.0	9.5	9.5	10.0	9.5	10.0	12.5	12.5	12.5
22	9.0	9.0	9.0	9.5	9.5	9.5	10.0	9.5	10.0	12.5	12.5	12.5
23	9.5	9.0	9.0	9.5	9.5	9.5	10.0	10.0	10.0	12.5	12.5	12.5
24	9.5	9.0	9.5	9.5	9.5	9.5	10.0	9.5	10.0	13.0	12.5	13.0
25	9.5	9.0	9.5	10.0	9.5	9.5	10.0	9.5	10.0	13.0	13.0	13.0
26	9.5	9.0	9.5	11.5	9.5	10.0	10.0	9.5	10.0	13.0	13.0	13.0
27	9.5	9.0	9.0	11.0	9.5	10.0	10.0	9.5	10.0	13.5	13.0	13.5
28	10.0	9.0	9.5	11.0	9.5	10.0	10.0	10.0	10.0	13.5	13.5	13.5
29	10.5	9.0	9.5	10.5	9.5	10.0	10.5	10.0	10.0	14.0	13.5	14.0
30	9.5	9.0	9.5	10.0	9.5	9.5	10.5	10.0	10.0	14.5	14.0	14.0
31	---	---	---	10.0	9.5	9.5	10.5	10.5	10.5	---	---	---
MONTH	10.5	8.0	9.0	11.5	---	9.5	10.5	9.5	10.0	14.5	10.0	12.0

WILLAMETTE RIVER BASIN

14162400 MCKENZIE RIVER AT FINN ROCK, OR

LOCATION.--Lat 44°07'45", long 122°22'47", in SE 1/4 SW 1/4 sec.31, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank, 200 ft upstream from bridge, 0.2 mi southwest of Finn Rock Post Office, and at mile 54.2.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1983 to September 1984, July 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Temperature recorder April 1983 to September 1984, July 1992 to September 1993.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 17.5°C July 31, Aug. 2, 3, 1992; minimum, 2.5°C Jan. 10, 1993.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

July to September 1992: Maximum, 17.5°C July 31, Aug. 2, 3; minimum recorded, 9.5°C several days in July and August.

Water Year 1993: Maximum, 14.5°C Aug. 5, 6; minimum, 2.5°C Jan.10.

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER		
1	13.0	9.5	11.0	17.0	14.0	15.5	14.5	11.0	12.5
2	13.0	9.5	11.0	17.5	14.0	15.5	14.5	11.0	12.5
3	13.5	9.5	11.5	17.5	14.0	15.5	14.5	11.0	12.5
4	12.5	10.0	11.0	16.5	13.5	15.0	13.0	12.0	12.5
5	11.5	10.0	10.5	16.5	13.0	15.0	13.5	11.5	12.5
6	12.0	9.5	11.0	16.0	13.0	14.5	13.5	11.0	12.0
7	13.0	9.5	11.0	15.0	14.0	14.5	13.0	10.0	11.5
8	13.5	9.5	11.5	16.5	13.0	14.5	13.0	11.0	12.0
9	13.5	9.5	11.5	16.5	13.0	14.5	14.0	11.0	12.5
10	13.5	10.0	11.5	17.0	13.0	15.0	14.0	11.5	12.5
11	13.5	10.0	12.0	16.0	13.5	14.5	14.5	11.5	13.0
12	14.0	10.0	12.0	14.0	12.5	13.0	13.5	11.5	12.5
13	14.0	10.5	12.0	16.5	11.5	14.0	13.5	11.0	12.0
14	14.0	10.0	12.0	16.5	12.0	14.5	12.5	10.5	11.5
15	14.0	10.0	12.0	16.0	12.0	14.0	12.5	11.0	12.0
16	14.0	10.5	12.5	16.0	12.0	14.0	14.0	11.0	12.5
17	14.0	10.5	12.5	16.5	12.0	14.0	14.5	11.5	12.5
18	14.0	11.0	12.5	16.5	12.0	14.0	14.0	11.0	12.5
19	14.5	11.0	12.5	16.0	11.5	13.5	14.0	11.5	13.0
20	13.5	11.5	12.5	15.5	11.0	13.0	14.5	11.5	13.0
21	14.0	11.5	12.5	13.0	10.5	11.5	15.0	12.0	13.0
22	13.0	11.5	12.0	12.0	11.0	11.0	15.0	12.0	13.0
23	13.0	11.5	12.0	14.0	10.5	12.0	14.0	12.0	13.0
24	14.5	11.0	12.5	13.5	9.5	11.5	13.0	12.0	12.5
25	15.5	11.5	13.5	14.0	9.5	12.0	13.5	12.0	12.5
26	16.0	12.5	14.0	14.0	10.0	12.0	14.0	11.5	12.5
27	16.0	12.5	14.5	14.0	10.0	12.0	13.5	11.5	12.5
28	16.5	12.5	14.5	14.0	10.5	12.5	13.5	11.0	12.5
29	17.0	13.0	15.0	14.0	10.0	12.0	13.5	11.5	12.5
30	17.0	13.5	15.0	14.0	10.0	12.0	14.0	11.5	13.0
31	17.5	13.5	15.5	14.0	11.0	12.0	---	---	---
MONTH	17.5	9.5	12.5	17.5	9.5	13.5	15.0	10.0	12.5

WILLAMETTE RIVER BASIN

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14162400 MCKENZIE RIVER AT FINN ROCK, OR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

14162500 MCKENZIE RIVER NEAR VIDA, OR

LOCATION.--Lat 44°07'30", long 122°28'10", in NE 1/4 NE 1/4 sec.5, T.17 S., R.3 E., Lane County, Hydrologic Unit 17090004, on right bank 0.4 mi downstream from Mason Creek, 5.4 mi east of Vida, and at mile 47.7.

DRAINAGE AREA.--930 mi² at cableway 0.4 mi downstream, where all discharge measurement are made.

PERIOD OF RECORD.--July 1910 to March 1911 (published as "at Martins Rapids, near Vida"), September 1924 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 855.71 ft above sea level (levels by Eugene Water and Electric Board). July 1, 1910, to Mar. 31, 1911, nonrecording gage at site 3 mi downstream at different datum. Sept. 1, 1924, to Nov. 16, 1928, nonrecording gage at site 20 ft upstream at datum 0.15 ft lower. Nov. 17, 1928, to Sept. 23, 1968, water-stage recorder at present site on left bank at datum 0.15 ft lower.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). No diversion upstream from station. All records given herein are for measuring site. Continuous water-quality records for the period June 1961 to September 1985 have been collected at this location.

AVERAGE DISCHARGE.--69 years (water years 1925-93), 4,014 ft³/s, 2,908,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,400 ft³/s Dec. 28, 1945, gage height, 17.70 ft, site and datum then in use, from rating curve extended above 32,000 ft³/s; minimum discharge, 1,260 ft³/s Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1923 reached a stage of 17.2 ft, from floodmarks, discharge, 62,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,800 ft³/s Mar. 18, gage height, 6.03 ft; minimum discharge, 1,330 ft³/s Oct. 18-20, 27-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2000	3120	5410	4040	3520	2110	4350	6860	6630	2890	2520	2750
2	2010	3690	8080	3800	3430	2260	5490	6600	7330	2850	2520	2720
3	2030	2620	6950	3600	3410	2590	10100	7300	6880	2820	2500	2690
4	2040	2010	5320	3420	3370	3070	11500	8100	6320	2740	2480	2620
5	2030	1920	4890	3070	3380	3800	9990	7270	5920	2690	2470	2560
6	2020	1860	4520	2980	3690	3650	8310	7190	5620	2590	2460	2560
7	2020	2070	4110	2610	3800	3640	8010	7530	5700	2500	2430	2450
8	2020	2360	4390	2530	3750	3690	8300	8590	5910	2470	2420	2270
9	1860	2640	5790	2410	3640	3620	9360	8250	5910	2400	2410	2310
10	1630	2710	6240	2370	3610	3640	9360	7220	5750	2330	2380	2770
11	1630	2550	5940	2300	3170	3700	8780	7290	5590	2330	2380	2790
12	1600	2860	5080	2180	2800	3570	7250	7210	5610	2360	2370	2770
13	1590	3390	4530	2100	2720	3520	6630	6970	5310	2290	2350	2760
14	1590	3720	4310	2020	2620	3740	6140	6420	4720	2230	2350	2750
15	1580	3450	4490	2010	2550	8640	5910	5900	4360	2220	2350	2750
16	1580	3040	4040	1990	2440	11500	5790	5700	4260	2260	2450	2760
17	1480	2790	3760	1970	2340	11100	5840	5510	4070	2330	2650	2770
18	1350	2980	3440	1930	2270	14000	6250	5310	4020	2310	2650	2770
19	1330	3280	3010	2160	2410	12800	6050	5360	3920	2300	2680	2760
20	1340	3420	3880	5140	2450	12500	5700	5690	3710	2300	2640	2770
21	1410	5400	3970	6060	2430	12800	5530	6000	3570	2340	2690	2770
22	1400	9070	4230	5900	2380	13000	5710	6110	3600	2500	2660	2770
23	1360	7510	5160	5400	2330	13700	6080	5640	3630	2890	2640	2770
24	1360	6370	4980	4720	2260	13200	6810	5160	3460	2930	2630	2750
25	1350	4690	4760	5570	2160	12700	7070	5430	3370	2800	2600	2740
26	1350	3890	4050	6020	2110	10300	7170	5450	3300	2600	2570	2740
27	1340	4200	4060	5430	2060	7900	6590	5470	3190	2550	2600	2740
28	1330	5170	4480	5220	2050	6570	5870	5410	3080	2540	2640	2770
29	1380	4800	4520	4740	---	5160	6080	5170	3020	2550	2650	2770
30	1730	4550	4350	4010	---	4680	6880	4870	2950	2530	2720	2760
31	2090	---	4170	3720	---	4260	---	5460	---	2520	2780	---
TOTAL	50830	112130	146910	111420	79150	221410	212900	196440	140710	77960	78640	80930
MEAN	1640	3738	4739	3594	2827	7142	7097	6337	4690	2515	2537	2698
MAX	2090	9070	8080	6060	3800	14000	11500	8590	7330	2930	2780	2790
MIN	1330	1860	3010	1930	2050	2110	4350	4870	2950	2220	2350	2270
AC-FT	100800	222400	291400	221000	157000	439200	422300	389600	279100	154600	156000	160500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	2760	4644	6162	5806	4634	4489	4268	4435	3635	2709	2794	2611	3596	8718	12370	9295	8772	11210	7097	6567	6604	3529	3510	3358	2611
MAX	1985	1985	1978	1971	1982	1972	1993	1969	1974	1974	1971	1972	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
(WY)	1985	1985	1978	1971	1982	1972	1993	1969	1974	1974	1971	1972	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
MIN	1640	1925	1865	1752	1542	2351	2671	2268	2180	2138	1907	2019	1640	1925	1865	1752	1542	2351	2671	2268	2180	2138	1907	2019	1640
(WY)	1993	1988	1977	1977	1977	1992	1977	1992	1973	1991	1992	1992	1993	1988	1977	1977	1977	1992	1977	1992	1973	1991	1992	1992	1993

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1969 - 1993
ANNUAL TOTAL	1007330	1509430	4078
ANNUAL MEAN	2752	4135	5823
HIGHEST ANNUAL MEAN			2447
LOWEST ANNUAL MEAN			1972
HIGHEST DAILY MEAN	9180	Apr 10	14000
LOWEST DAILY MEAN	1330	Oct 19	1330
ANNUAL SEVEN-DAY MINIMUM	1350	Oct 23	1350
ANNUAL RUNOFF (AC-FT)	1998000	2994000	2954000
10 PERCENT EXCEEDS	4500	7200	6980
50 PERCENT EXCEEDS	2340	3370	3220
90 PERCENT EXCEEDS	1840	2030	2280

WILLAMETTE RIVER BASIN

14163150 MCKENZIE RIVER BELOW LEABURG DAM, NEAR LEABURG, OR

LOCATION.--Lat 44°07'26", long 122°37'35", in NE 1/4 NE 1/4 sec.1, T.17 S., R.1 E. (revised), Lane County, Hydrologic Unit 17090004, on right bank 1.4 mi downstream from Leaburg Dam, 3.0 mi northeast of Leaburg, and at mile 37.4.

DRAINAGE AREA.--1,030 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 710 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). Diversion upstream from station through the Leaburg Power canal.

AVERAGE DISCHARGE.--4 years, 2,149 ft³/s, 1,557,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,300 ft³/s Apr. 27, 1990, gage height, 14.40 ft; minimum discharge, 457 ft³/s Aug. 29, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,200 ft³/s Mar. 18, gage height, 10.88 ft; minimum discharge, 730 ft³/s Aug. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	793	1640	3970	2900	2190	848	2790	5580	6180	963	949	1020
2	785	2240	7130	2510	1950	873	4040	5250	6880	931	950	1020
3	803	1120	5750	2240	1790	1230	9710	6050	6350	926	949	1020
4	802	880	3890	2090	1750	1800	11100	7080	5730	921	945	1020
5	805	835	3360	1600	1860	2680	9250	6120	5360	919	946	1020
6	799	820	2930	1440	2300	2460	7260	6000	5020	922	944	1020
7	791	899	2490	1000	2420	2350	6890	6380	5120	922	944	1020
8	902	847	3050	957	2270	2340	7070	7550	5300	922	943	1030
9	812	967	4880	842	2060	2110	8290	7170	5250	925	948	1020
10	794	949	5480	830	2030	2100	8420	6020	5040	933	952	1030
11	797	818	5020	827	1520	2070	8080	5960	4880	930	963	1030
12	794	1100	3950	821	1140	1920	6420	5780	4930	936	958	1020
13	798	1500	3200	825	1130	1910	5640	5480	4570	932	953	1020
14	817	1960	2900	828	1020	2230	5050	4970	3640	926	951	1030
15	811	1530	3060	814	916	7530	4760	4400	2650	935	826	1020
16	813	1130	2600	819	833	11600	4520	4470	2490	944	766	1030
17	823	855	2250	817	822	11100	4630	5460	2290	947	782	1020
18	812	1100	1910	872	827	15100	5260	5660	2210	937	883	1030
19	808	1610	1490	1200	876	12800	5010	5640	2080	939	1070	1030
20	814	1700	3010	4540	859	12100	4540	5460	1830	951	1070	1030
21	828	4390	3260	5440	847	12200	4270	5270	1680	959	1080	1030
22	830	10000	3450	5230	830	12300	4490	5360	1740	976	1080	1030
23	830	e6730	4240	4510	839	13500	4980	4870	1740	1050	1080	1030
24	822	e5470	3870	3830	847	12700	5870	4310	1560	1030	1090	1020
25	817	e2570	e3380	4740	832	12000	6090	4610	1430	950	1070	1030
26	827	2170	2890	5100	820	9260	6160	4600	1350	954	1030	1030
27	905	2560	3040	4300	820	6540	5530	4610	1250	966	1030	1020
28	963	3630	3690	4070	828	5260	4680	4560	1130	950	1030	1130
29	886	3220	3590	3680	---	3820	4830	4300	1110	955	1030	1040
30	878	3010	3240	2870	---	3180	5630	4010	1010	942	1030	1040
31	827	---	3080	2470	---	2700	---	4720	---	941	1020	---
TOTAL	25586	68250	110050	75012	37226	190611	181260	167700	101800	29334	30262	30880
MEAN	825	2275	3550	2420	1329	6149	6042	5410	3393	946	976	1029
MAX	963	10000	7130	5440	2420	15100	11100	7550	6880	1050	1090	1130
MIN	785	818	1490	814	820	848	2790	4010	1010	919	766	1020
AC-FT	50750	135400	218300	148800	73840	378100	359500	332600	201900	58180	60020	61250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	1990	1991	1992	1993
MEAN	751	2391	3060	2946
MAX	926	3840	4455	4044
(WY)	1992	1992	1992	1990
MIN	610	741	1269	1380
(WY)	1990	1990	1990	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1990 - 1993

ANNUAL TOTAL	566140	1047971	2149	
ANNUAL MEAN	1547	2871	2871	1993
HIGHEST ANNUAL MEAN			1760	1992
LOWEST ANNUAL MEAN			21600	Apr 28 1990
HIGHEST DAILY MEAN	10000	Nov 22	478	Dec 29 1989
LOWEST DAILY MEAN	785	Oct 2	486	Dec 24 1989
ANNUAL SEVEN-DAY MINIMUM	797	Oct 1	1557000	
ANNUAL RUNOFF (AC-FT)	1123000	2079000	4810	
10 PERCENT EXCEEDS	3140	6070	1180	
50 PERCENT EXCEEDS	1090	1610	622	
90 PERCENT EXCEEDS	827	827		

e Estimated

WILLAMETTE RIVER BASIN

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14163150 MCKENZIE RIVER BELOW LEABURG DAM, NEAR LEABURG, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1992 to September 1993 (discontinued).

INSTRUMENTATION.--Temperature recorder since July 1992.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

June to September 1992: Maximum, 18.0°C July 31, Aug. 1-3; minimum recorded, 10.0°C June 16.

Water Year 1993: Maximum, 15.0°C June 19, 20, 26; minimum, 2.0°C Jan.10.

TEMPERATURE, WATER (DEG. C), JUNE TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	14.5	11.0	12.5	18.0	16.0	16.5	14.5	13.5	14.0
2	---	---	---	14.5	12.5	13.5	18.0	16.0	16.5	14.5	13.5	14.0
3	---	---	---	14.5	13.0	13.5	18.0	16.0	17.0	14.5	13.5	14.5
4	---	---	---	14.5	13.0	13.5	17.5	15.0	16.0	14.5	13.0	14.0
5	---	---	---	13.5	12.0	12.5	17.0	15.5	16.0	14.0	12.5	13.0
6	---	---	---	14.0	11.5	12.5	17.0	15.0	15.5	14.0	12.0	13.0
7	---	---	---	14.5	11.5	13.0	16.0	15.0	15.5	13.0	12.0	12.5
8	---	---	---	14.5	12.0	13.0	16.5	14.5	15.5	13.0	12.0	12.5
9	---	---	---	14.5	12.5	13.5	16.5	15.0	15.5	14.0	12.5	13.0
10	---	---	---	14.5	13.0	14.0	17.5	15.5	16.5	14.0	13.0	14.0
11	13.5	11.0	12.0	15.0	13.0	14.0	17.5	16.0	17.0	14.5	13.5	14.0
12	12.0	10.5	11.0	15.0	13.0	14.0	17.5	14.0	15.5	14.5	13.0	13.5
13	12.0	10.5	11.0	15.0	13.0	14.0	16.5	13.5	14.5	13.0	12.0	12.5
14	12.5	10.5	11.5	15.0	13.0	14.0	16.5	16.0	16.5	13.0	11.5	12.0
15	12.5	10.5	11.5	15.5	13.0	14.0	16.5	15.5	16.5	12.5	12.0	12.0
16	11.0	10.0	10.5	15.5	13.5	14.5	16.5	15.5	16.0	13.5	11.5	12.5
17	13.5	11.0	12.0	15.5	13.5	14.5	16.5	15.5	16.0	14.0	13.0	13.5
18	14.5	12.5	13.0	15.0	14.0	14.5	17.0	16.0	16.5	14.0	13.0	13.5
19	15.0	13.0	14.0	16.0	13.5	14.5	16.5	15.0	16.0	14.0	13.0	13.5
20	15.0	13.0	14.0	16.0	13.5	14.5	16.0	14.5	15.5	14.0	13.0	13.5
21	15.5	13.5	14.5	15.0	13.0	13.5	15.0	12.5	14.0	14.5	13.5	14.0
22	15.5	14.0	14.5	14.5	13.0	13.5	12.5	12.0	12.5	15.0	14.0	14.5
23	15.5	13.5	14.5	13.5	12.0	13.0	14.0	12.0	13.0	14.5	13.5	14.0
24	15.5	13.5	14.0	15.5	12.5	13.5	14.0	12.5	13.5	14.5	13.0	13.5
25	14.5	12.0	13.0	16.5	14.0	15.0	13.5	12.5	13.0	13.5	12.5	13.0
26	15.0	12.0	13.0	16.5	14.5	15.5	14.0	13.0	13.5	13.5	12.5	13.0
27	15.0	12.5	14.0	17.0	14.5	15.5	14.0	13.0	13.5	14.0	12.5	13.5
28	14.5	11.5	13.0	17.0	15.0	16.0	14.0	13.5	14.0	13.5	12.5	13.0
29	13.0	11.5	12.0	17.5	15.5	16.5	14.0	13.0	13.5	13.5	12.5	13.0
30	13.0	11.5	12.0	17.5	16.0	17.0	14.0	12.5	13.5	14.0	13.0	13.5
31	---	---	---	18.0	16.0	17.0	14.0	13.0	13.5	---	---	---
MONTH	---	---	---	18.0	11.0	14.0	18.0	12.0	15.0	15.0	11.5	13.5

WILLAMETTE RIVER BASIN

14163150 MCKENZIE RIVER BELOW LEABURG DAM, NEAR LEABURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

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14163150 MCKENZIE RIVER BELOW LEABURG DAM, NEAR LEABURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.5	11.0	11.0	14.5	12.5	13.5	14.5	12.5	13.5	13.0	11.0	12.0
2	12.0	10.5	11.0	14.5	12.5	13.0	14.5	13.0	13.5	13.0	11.5	12.0
3	12.5	10.5	11.5	13.5	11.5	12.5	14.5	13.0	13.5	13.0	11.5	12.5
4	12.0	10.5	11.5	14.0	12.0	13.0	14.5	13.0	14.0	13.0	11.5	12.5
5	12.0	10.5	11.5	14.5	12.5	13.5	14.5	13.0	13.5	13.5	11.5	12.5
6	11.5	11.0	11.0	14.5	12.0	13.5	14.5	13.0	14.0	13.5	12.0	13.0
7	12.0	10.5	11.0	14.0	12.0	13.0	14.5	12.0	13.0	13.5	12.5	13.0
8	13.0	10.5	11.5	14.5	13.0	13.5	14.0	12.0	13.0	13.5	13.0	13.5
9	12.0	10.5	11.0	14.5	13.0	13.5	13.5	12.0	13.0	13.5	12.5	13.0
10	12.5	10.5	11.5	14.5	13.0	13.5	13.5	11.5	12.5	13.5	12.5	13.0
11	12.0	10.5	11.0	14.5	12.0	13.0	13.5	12.0	12.5	13.5	12.0	12.5
12	13.0	10.0	11.0	13.5	11.5	12.5	13.5	12.0	12.5	13.5	12.0	12.5
13	13.0	10.5	11.5	13.0	11.5	12.0	13.5	11.5	12.5	13.0	11.5	12.0
14	14.0	11.0	12.5	13.0	11.5	12.0	13.5	11.0	12.0	13.0	11.5	12.5
15	13.5	11.5	12.0	13.0	11.5	12.0	12.0	11.0	11.5	13.0	12.0	12.5
16	14.0	11.0	12.5	13.0	11.5	12.0	12.0	11.0	11.0	13.0	12.0	12.5
17	14.5	11.5	13.0	13.0	12.0	12.5	13.0	10.5	11.5	13.0	11.5	12.5
18	14.5	11.5	13.0	14.0	11.5	12.5	13.5	11.5	12.5	13.0	11.5	12.5
19	15.0	11.5	13.0	14.0	11.5	12.5	13.5	12.0	12.5	13.0	11.5	12.0
20	15.0	12.0	13.5	12.5	11.5	12.0	13.0	11.0	11.5	12.5	11.0	12.0
21	14.5	11.5	12.5	12.5	12.0	12.0	13.0	10.5	11.5	12.5	11.0	12.0
22	11.5	10.5	11.0	13.0	11.5	11.5	13.0	11.0	12.0	12.5	11.0	12.0
23	13.5	10.5	11.5	12.5	11.0	11.5	13.0	11.5	12.0	12.5	11.0	12.0
24	14.0	10.5	12.5	13.0	11.0	12.0	12.0	10.5	11.0	12.5	11.0	12.0
25	14.5	12.0	13.0	13.0	11.5	12.0	11.5	10.0	11.0	13.0	11.5	12.0
26	15.0	12.5	13.5	14.0	11.0	12.0	12.0	10.5	11.0	13.0	12.0	12.5
27	14.5	12.0	13.0	14.5	12.5	13.5	12.5	10.5	11.5	13.0	12.0	12.5
28	13.0	11.5	12.5	14.5	12.0	13.0	12.5	11.0	11.5	13.0	12.0	13.0
29	14.0	11.5	12.5	13.0	12.0	12.5	12.5	11.0	11.5	13.5	12.0	13.0
30	14.0	11.5	13.0	13.5	11.5	12.5	12.5	11.0	12.0	13.5	12.0	13.0
31	---	---	---	14.0	12.0	13.0	12.5	11.0	12.0	---	---	---
MONTH	15.0	10.0	12.0	14.5	11.0	12.5	14.5	10.0	12.5	13.5	11.0	12.5

WILLAMETTE RIVER BASIN

14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR

LOCATION.--Lat 44°04'13", long 122°46'12", in NW 1/4 NE 1/4 sec.26, T.17 S., R.1 W., Lane County, Hydrologic Unit 17090004, on right bank 0.8 mi downstream from Walterville Power Canal Diversion, 1.7 mi east of Walterville, and at mile 27.7.

DRAINAGE AREA.--1,081 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 600 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). Diversion upstream from station through the Walterville Power Canal.

AVERAGE DISCHARGE.--4 years, 2,271 ft³/s, 1,645,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,600 ft³/s Apr. 28, 1990, gage height, 11.68 ft; minimum discharge, 420 ft³/s Nov. 8, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,300 ft³/s Mar. 18, gage height, 9.73 ft; minimum discharge, 780 ft³/s Jan. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	908	1810	3750	2840	1900	899	2760	5540	5570	1100	1060	1050
2	914	1920	7190	2380	1730	890	3770	5180	6500	1090	1060	1040
3	946	1520	6130	2040	1630	1110	9770	5900	5860	1100	1060	1040
4	908	1520	3960	1960	1570	1550	11900	7250	5220	1080	1070	1030
5	896	1460	3250	1380	1570	2570	10300	6290	4770	1090	1100	1050
6	900	1450	2740	1270	1860	2260	7880	6100	4380	1120	1060	1040
7	898	1570	2360	922	2030	2100	7270	6460	4380	1090	1070	1050
8	1010	1510	2750	884	1950	2040	7360	7770	4530	1050	1070	1440
9	967	1560	5060	889	1760	2430	8800	7540	4510	1050	1060	1370
10	841	1560	5750	893	1710	3860	8930	6220	4330	1060	1060	1350
11	838	1500	5330	887	1390	4270	8900	5950	4120	1060	1080	1040
12	830	1580	4110	875	1030	4100	6960	5780	4210	1070	1060	1030
13	818	2530	3180	885	919	4020	6150	5490	3840	1050	1070	1040
14	863	3970	2780	927	950	4220	5940	4920	3240	1070	1070	1060
15	1480	3640	2860	890	877	8480	6950	4290	2740	1070	950	1040
16	1520	2590	2550	913	849	12600	7150	3980	2550	1090	892	1040
17	1590	1630	2140	899	844	12100	7150	3890	2300	1070	867	1030
18	1490	1560	1830	897	855	16300	7920	3520	2240	1050	983	1040
19	1470	1680	1190	1030	909	14300	7680	e3500	2110	1050	1180	1040
20	1490	1610	2570	4240	863	13000	7130	e3900	1880	1080	1170	1040
21	1550	3790	3070	5800	857	13000	6810	e4300	1710	1070	1160	1040
22	1500	9590	3160	5520	854	13100	6970	e4400	e1690	1110	1160	1050
23	1450	7380	4090	4590	860	14200	6910	e3900	1670	1110	1170	1050
24	1430	5710	3690	3780	841	13800	7280	e3350	1500	1050	1160	1050
25	1430	3730	3320	4630	843	13000	7580	e3650	1380	1050	1150	1040
26	1430	2320	2730	5260	854	10400	6860	e3640	1320	1050	1160	1040
27	1440	2180	2750	4360	857	7020	5730	3630	1210	1100	1110	1040
28	1470	3310	3620	4050	874	5650	4800	3600	1100	1140	1040	1160
29	1590	3030	3550	3570	---	3930	4810	3360	1140	1070	1030	1060
30	1610	2680	3140	2680	---	3280	5580	3030	1110	1060	1040	1050
31	1610	---	3010	2220	---	2800	---	3740	---	1060	1040	---
TOTAL	38087	81890	107610	74361	34036	213279	214000	150070	93110	33360	33212	32450
MEAN	1229	2730	3471	2399	1216	6880	7133	4841	3104	1076	1071	1082
MAX	1610	9590	7190	5800	2030	16300	11900	7770	6500	1140	1180	1440
MIN	818	1450	1190	875	841	890	2760	3030	1100	1050	867	1030
AC-FT	75550	162400	213400	147500	67510	423000	424500	297700	184700	66170	65880	64360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1101	2883	2921	2783	1841	3284	4359	3089	1952	1123	1013	894
MAX	1312	4450	4698	3893	2480	6880	7133	4841	3104	1196	1071	1082
(WY)	1992	1992	1992	1990	1990	1993	1993	1993	1993	1993	1993	1993
MIN	683	1363	1249	1181	1216	1408	3333	1615	1119	1076	964	648
(WY)	1990	1990	1990	1992	1993	1992	1991	1992	1992	1993	1990	1990

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1990 - 1993

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
ANNUAL TOTAL	644472	1105465	2271	3029	1957	20200	499	516	1645000	4560	1490	851
ANNUAL MEAN	1761	3029	2271	3029	1957	20200	499	516	1645000	4560	1490	851
HIGHEST ANNUAL MEAN												
LOWEST ANNUAL MEAN												
HIGHEST DAILY MEAN	9870	16300	20200	499	516	1645000	4560	1490	851			
LOWEST DAILY MEAN	818	818	499	516	1645000	4560	1490	851				
ANNUAL SEVEN-DAY MINIMUM	876	852	516	1645000	4560	1490	851					
ANNUAL RUNOFF (AC-FT)	1278000	2193000	1645000	4560	1490	851						
10 PERCENT EXCEEDS	3630	6960	4560	1490	851							
50 PERCENT EXCEEDS	1190	1630	1490	851								
90 PERCENT EXCEEDS	892	909	851									

e Estimated

WILLAMETTE RIVER BASIN

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14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1992 to September 1993 (discontinued).

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE:

June to September 1992: Maximum, 19.5°C Aug. 11, 14, 18; minimum, 11.0°C June 12-17.

Water Year 1993: Maximum, 16.0°C Aug. 2-6; minimum, 2.0°C Feb. 17.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	16.5	14.0	15.0	14.5	12.0	13.0	18.5	16.5	17.5	16.5	13.0	14.5
2	16.5	13.5	14.5	16.0	13.5	14.5	19.0	16.5	17.5	16.5	13.5	15.0
3	17.0	13.5	15.0	16.5	13.5	14.5	19.0	16.5	17.5	16.5	14.0	15.0
4	16.5	13.5	15.0	16.0	13.5	14.5	17.5	15.0	16.5	15.0	13.5	14.5
5	16.5	13.0	14.5	15.0	12.5	13.5	18.5	15.0	16.5	14.5	13.0	13.5
6	16.5	13.0	14.5	14.5	12.5	13.0	17.5	15.5	16.0	14.5	12.0	13.5
7	16.5	13.5	14.5	15.0	13.0	14.0	16.5	15.0	15.5	14.0	12.0	13.0
8	16.5	13.0	14.5	15.0	13.0	14.0	17.0	14.5	15.5	13.5	12.0	12.5
9	16.0	13.0	14.0	16.0	13.0	14.5	18.0	15.5	16.5	15.0	12.0	13.0
10	15.5	13.0	14.0	16.0	13.5	14.5	18.5	15.5	17.0	15.0	13.0	14.0
11	13.5	11.5	13.0	16.5	14.0	15.0	19.5	16.0	17.5	15.5	13.5	14.0
12	12.5	11.0	11.5	16.5	14.0	15.0	17.0	15.0	16.5	14.5	12.5	13.5
13	12.0	11.0	11.5	16.5	14.0	15.0	17.5	14.0	15.5	14.0	12.0	13.0
14	13.0	11.0	12.0	16.5	14.0	15.0	19.5	15.0	17.0	13.0	11.5	12.0
15	13.0	11.0	12.0	16.5	14.0	15.0	19.0	16.0	17.0	13.0	11.5	12.0
16	12.0	11.0	11.5	17.0	14.0	15.5	19.0	15.5	17.0	14.0	11.5	12.5
17	14.5	11.0	12.5	16.5	14.5	15.5	19.0	15.0	17.0	15.0	12.5	13.5
18	16.0	12.5	14.0	17.0	14.5	15.5	19.5	15.5	17.0	15.0	12.5	13.5
19	16.5	13.5	15.0	17.0	14.5	15.5	19.0	15.5	17.0	15.0	13.0	13.5
20	17.0	14.0	15.0	16.0	14.5	15.5	18.5	15.0	16.0	15.0	13.0	14.0
21	17.5	14.0	15.5	15.5	13.5	14.5	16.0	13.5	14.5	16.0	13.5	14.5
22	18.0	14.5	16.0	14.5	13.0	14.0	13.5	12.0	13.0	16.0	13.5	14.5
23	17.5	15.0	16.0	14.0	12.5	13.0	15.0	12.0	13.0	15.0	13.5	14.0
24	17.0	14.5	15.5	15.5	13.0	14.0	16.0	12.5	14.0	14.5	13.0	13.5
25	15.0	13.5	14.5	17.0	14.0	15.5	16.0	12.5	13.5	13.5	12.5	13.0
26	15.5	13.0	14.0	17.5	15.0	16.0	16.0	12.5	14.0	14.0	12.5	13.0
27	16.0	14.0	15.0	18.0	15.5	16.5	16.0	13.0	14.0	14.5	12.5	13.5
28	14.5	12.0	14.0	18.0	15.5	16.5	16.0	13.0	14.0	14.5	12.5	13.0
29	14.0	12.0	12.5	18.5	15.5	17.0	15.5	13.0	14.0	14.0	12.5	13.0
30	14.0	12.0	13.0	19.0	16.0	17.5	15.5	12.5	13.5	14.5	12.5	13.5
31	---	---	---	19.0	17.0	17.5	15.0	13.0	14.0	---	---	---
MONTH	18.0	11.0	14.0	19.0	12.0	15.0	19.5	12.0	15.5	16.5	11.5	13.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.0	4.5	5.0	5.0	4.5	5.0	8.0	8.0	8.0	10.0	8.0	9.0
2	6.0	5.0	5.5	6.0	4.5	5.5	8.0	7.5	8.0	11.0	8.5	9.5
3	6.0	5.5	6.0	7.5	6.0	6.5	8.0	8.0	8.0	11.0	9.0	9.5
4	6.0	5.5	6.0	7.0	6.5	6.5	8.0	7.5	8.0	9.5	8.0	9.0
5	6.5	6.0	6.0	8.0	6.5	7.0	8.5	7.0	7.5	10.0	8.5	9.0
6	7.0	6.0	6.5	7.5	7.0	7.5	8.0	7.0	7.5	10.0	9.0	9.5
7	6.5	5.5	6.0	8.0	7.0	7.5	9.5	7.5	8.5	9.0	8.0	8.0
8	6.5	6.0	6.5	8.0	7.5	7.5	9.0	8.0	8.5	9.5	8.0	9.0
9	7.0	6.5	6.5	8.0	7.0	7.5	8.5	7.5	8.0	10.5	8.0	9.0
10	6.5	6.0	6.5	8.0	7.0	7.5	8.0	7.5	8.0	11.0	9.0	10.0
11	6.5	6.0	6.5	7.5	7.0	7.5	8.0	7.0	7.5	11.0	9.5	10.5
12	7.0	6.5	6.5	7.5	6.5	7.0	9.0	7.5	8.0	10.5	9.5	9.5
13	7.0	6.5	6.5	7.5	7.0	7.0	9.0	7.5	8.0	11.0	9.0	10.0
14	6.5	5.5	6.0	7.5	7.5	7.5	9.0	7.5	8.0	11.0	9.0	10.0
15	6.0	4.5	5.5	7.5	7.0	7.5	9.0	8.0	8.5	11.5	9.5	10.5
16	4.5	2.5	3.5	7.5	6.5	7.0	9.0	8.0	8.5	11.5	9.5	11.0
17	3.5	2.0	2.5	7.5	7.0	7.0	9.0	8.0	8.5	12.0	10.0	11.0
18	4.5	3.0	4.0	7.5	7.0	7.5	9.0	7.5	8.5	12.0	10.0	11.5
19	4.5	4.0	4.5	8.0	7.0	7.5	10.0	7.5	9.0	12.0	---	---
20	5.5	4.0	4.5	8.0	7.0	7.5	10.0	8.5	9.0	---	---	---
21	4.5	3.0	4.0	8.0	6.5	7.0	9.5	8.5	9.0	---	---	---
22	4.5	3.0	4.0	7.5	7.0	7.0	9.5	8.5	9.0	---	---	---
23	5.0	4.5	5.0	7.5	7.0	7.5	8.5	8.0	8.5	---	---	---
24	6.0	4.5	5.0	7.5	7.0	7.0	9.5	8.0	9.0	---	---	---
25	5.0	4.0	4.5	7.5	6.5	7.0	9.5	8.5	8.5	---	---	---
26	5.0	3.5	4.0	8.0	7.0	7.5	9.0	8.0	8.5	11.0	9.5	10.5
27	5.5	4.0	4.5	8.0	7.0	7.5	10.0	8.0	9.0	11.0	10.0	10.5
28	6.0	4.0	5.0	8.5	6.5	7.5	10.0	8.5	9.0	10.5	10.0	10.0
29	---	---	---	8.5	7.5	8.0	10.0	8.5	9.5	11.5	9.5	10.5
30	---	---	---	8.0	7.0	7.5	10.0	8.5	9.5	11.5	10.5	10.5
31	---	---	---	8.0	7.5	8.0	---	---	---	11.0	10.0	10.5
MONTH	7.0	2.0	5.0	8.5	4.5	7.0	10.0	7.0	8.5	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.5	9.5	10.0	14.5	13.0	13.5	15.5	13.0	14.5	14.0	12.5	13.0
2	10.5	9.5	10.0	14.0	12.5	13.5	16.0	14.0	14.5	14.0	12.5	13.0
3	11.0	9.5	10.5	13.5	12.0	12.5	16.0	14.0	15.0	14.0	12.5	13.0
4	11.0	9.5	10.5	13.5	12.0	13.0	16.0	14.0	15.0	14.5	13.0	13.5
5	11.0	9.5	10.0	14.5	12.5	13.5	16.0	14.0	15.0	14.5	13.0	13.5
6	10.5	9.5	10.0	14.0	12.5	13.5	16.0	14.0	15.0	14.5	13.0	13.5
7	10.5	9.5	10.0	14.5	12.5	13.5	15.0	12.5	14.0	15.0	13.5	14.0
8	11.5	9.5	10.5	15.0	13.0	14.0	15.0	13.0	14.0	15.0	13.5	14.0
9	11.5	9.5	10.5	15.0	13.0	14.0	15.5	13.0	14.0	15.0	13.0	14.0
10	11.5	10.0	10.5	15.0	13.0	14.0	15.0	13.0	13.5	14.5	13.0	13.5
11	11.0	9.5	10.0	14.0	12.0	13.5	14.5	13.0	14.0	13.5	12.5	13.0
12	11.5	9.0	10.0	13.5	11.5	12.5	15.0	13.0	14.0	13.5	12.0	13.0
13	11.5	9.5	10.5	12.5	11.5	12.0	14.5	13.0	13.5	13.0	11.5	12.0
14	12.5	10.5	11.5	13.0	11.5	12.0	14.0	12.0	13.5	13.0	11.5	12.0
15	12.5	11.0	11.5	13.0	11.5	12.5	13.0	12.0	12.0	13.5	12.0	12.5
16	12.5	10.5	11.5	13.5	11.5	12.0	12.0	11.0	12.0	13.0	12.0	12.5
17	13.0	11.5	12.5	14.0	11.5	13.0	13.5	11.0	12.5	13.0	11.5	12.5
18	13.5	12.0	13.0	14.0	11.5	13.0	14.5	13.0	13.5	13.0	11.5	12.0
19	13.5	11.5	12.5	14.0	11.5	13.0	14.5	13.0	14.0	12.5	11.0	12.0
20	13.5	12.5	13.0	13.0	11.5	12.5	13.5	11.5	13.0	11.5	11.0	11.0
21	---	---	---	13.5	12.0	12.5	13.5	11.5	12.5	12.0	10.5	11.0
22	---	---	---	12.5	11.0	12.0	14.5	13.0	13.5	12.0	10.5	11.5
23	12.5	10.0	11.0	12.5	11.0	11.5	14.0	12.5	13.5	12.0	11.0	11.5
24	12.5	11.5	12.0	13.0	12.0	12.0	13.0	11.5	12.0	12.5	11.0	11.5
25	14.0	12.5	13.0	12.5	11.5	12.5	12.5	11.0	12.0	12.5	11.0	11.5
26	14.0	13.0	13.5	14.0	11.5	12.5	13.0	11.5	12.0	13.5	11.5	12.5
27	14.0	12.0	13.0	15.0	13.0	14.0	13.5	12.0	12.5	13.0	12.5	12.5
28	13.0	12.0	12.0	14.0	12.0	13.0	13.5	12.0	12.5	13.5	12.0	12.5
29	13.5	11.5	12.5	14.0	12.0	13.0	13.5	12.0	12.5	13.5	12.5	13.0
30	13.5	12.5	13.0	14.0	12.5	13.0	14.0	12.0	13.0	13.5	12.5	13.0
31	---	---	---	14.5	12.5	13.5	13.5	12.5	13.0	---	---	---
MONTH	---	---	---	15.0	11.0	13.0	16.0	11.0	13.5	15.0	10.5	12.5

14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR

LOCATION.--Lat 44°05'34", long 122°57'20", in SE 1/4 NW 1/4 sec.17, T.17 S., R.2 W., Lane County, Hydrologic Unit 17090004, on left bank 50 ft downstream from bridge, 1.3 mi northeast of Springfield, and at mile 1.59.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--September 1935 to September 1952, October 1963 to current year. Prior to October 1935 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1939. WSP 1738: Drainage area. WDR OR-86-2: 1985(m).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 442.47 ft above sea level. Oct. 1, 1935, to Sept. 30, 1952, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Many diversions for irrigation upstream from station. Continuous water-quality records for the period October 1963 to September 1969 and April 1983 to September 1984 have been collected at this location.

AVERAGE DISCHARGE.--47 years (water years 1936-52, 1963-93), 524 ft³/s, 40.19 in/yr, 379,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s Dec. 22, 1964, gage height, 22.60 ft; minimum discharge, 8.2 ft³/s Sept. 9, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached at stage of 22.9 ft, from floodmark, probably affected by backwater from McKenzie River, discharge, 9,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1100	*3,730	*10.98	Mar. 23	1630	3,510	10.59

Minimum discharge, 23 ft³/s Oct. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	320	896	1040	709	520	677	964	1510	232	104	48
2	23	237	1600	1020	655	719	726	882	1570	229	100	47
3	36	139	1110	1010	614	881	2090	1050	1300	226	94	46
4	50	103	798	1110	581	912	2430	1180	1080	213	89	44
5	35	96	635	1100	555	893	e1800	1030	1250	197	85	44
6	30	79	555	979	530	797	1600	1090	1180	188	83	44
7	28	83	541	911	502	716	1410	1080	1070	180	82	44
8	25	140	796	860	483	653	1450	1180	966	173	85	44
9	25	194	1450	791	471	594	1670	1120	868	165	84	41
10	25	152	1640	699	436	564	1900	966	834	140	79	38
11	25	119	1300	639	424	522	2220	853	793	146	77	38
12	25	206	1230	596	498	485	1850	779	845	143	74	40
13	24	176	965	566	463	458	1590	712	740	142	72	41
14	24	138	849	547	425	485	1360	637	664	141	72	41
15	24	115	786	537	401	1050	1250	576	604	142	79	40
16	24	101	708	518	371	2080	1130	532	561	141	85	40
17	24	95	919	507	353	2630	1150	498	515	133	84	40
18	24	101	912	489	340	3580	1360	455	475	132	76	40
19	24	278	772	e570	484	2900	1310	427	442	119	75	40
20	24	413	1070	e1500	509	2320	1140	478	419	129	81	40
21	40	550	e1360	1260	537	1940	1030	437	390	147	83	40
22	43	1780	1370	1240	597	1840	967	443	413	280	79	40
23	33	1080	1240	1110	636	3090	1030	393	400	256	70	40
24	31	688	1080	1320	583	2710	1170	354	345	194	74	39
25	29	484	938	1410	527	e2000	1190	480	319	165	68	36
26	29	385	990	1310	489	e1500	1250	503	299	151	64	36
27	29	363	1200	1160	463	1230	1190	462	289	136	61	36
28	29	436	1280	1070	445	1020	1050	538	282	125	58	33
29	34	377	1080	959	---	850	1110	509	261	152	57	33
30	152	593	1040	858	---	772	1050	472	245	130	55	33
31	211	---	1140	778	---	702	---	700	---	114	50	---
TOTAL	1202	10021	32250	28464	14081	41413	41150	21780	20929	5161	2379	1206
MEAN	38.8	334	1040	918	503	1336	1372	703	698	166	76.7	40.2
MAX	211	1780	1640	1500	709	3580	2430	1180	1570	280	104	48
MIN	23	79	541	489	340	458	677	354	245	114	50	33
AC-FT	2380	19880	63970	56460	27930	82140	81620	43200	41510	10240	4720	2390
CFSM	.22	1.89	5.88	5.19	2.84	7.55	7.75	3.97	3.94	.94	.43	.23
IN.	.25	2.11	6.78	5.98	2.96	8.70	8.65	4.58	4.40	1.08	.50	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

	114	604	1097	1207	1103	879	593	352	206	77.9	39.1	41.1
MEAN	114	604	1097	1207	1103	879	593	352	206	77.9	39.1	41.1
MAX	719	1653	3197	2464	2379	1975	1545	759	752	190	91.4	111
(WY)	1951	1951	1965	1965	1986	1972	1937	1991	1984	1983	1968	1968
MIN	19.2	26.5	52.6	84.0	126	281	242	118	54.3	34.3	14.7	18.9
(WY)	1988	1937	1977	1977	1977	1965	1942	1966	1966	1940	1966	1967

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1936 - 1993

ANNUAL TOTAL	116578	220036	
ANNUAL MEAN	319	603	
HIGHEST ANNUAL MEAN			524
LOWEST ANNUAL MEAN			847
HIGHEST DAILY MEAN	2400	Feb 20	1972
LOWEST DAILY MEAN	13	Aug 27	1977
ANNUAL SEVEN-DAY MINIMUM	13	Aug 26	1966
ANNUAL RUNOFF (AC-FT)	231400	436400	379300
ANNUAL RUNOFF (CFSM)	1.80	3.41	2.96
ANNUAL RUNOFF (INCHES)	24.52	46.24	40.19
10 PERCENT EXCEEDS	911	1310	1330
50 PERCENT EXCEEDS	163	483	255
90 PERCENT EXCEEDS	20	40	30

e Estimated

WILLAMETTE RIVER BASIN

14165500 MCKENZIE RIVER AT COBURG, OR

LOCATION.--Lat 44°06'45", long 123°02'45", in NE 1/4 NE 1/4 sec.9, T.17 S., R.3 W., Lane County, Hydrologic Unit 17090004, on left bank at downstream side of Armitage Bridge, 2 mi southeast of Coburg, and at mile 7.1.

DRAINAGE AREA.--1,337 mi².

PERIOD OF RECORD.--November 1991 to April 1992, February to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, WATER YEAR NOVEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 27...	1030	8.5	15000	102	4130	62
DEC 11...	1450	--	10500	24	680	69
JAN 28...	1330	9.0	4920	6	80	84
FEB 20...	0955	8.5	7400	28	559	76
20...	1525	9.0	7000	22	416	73
APR 23...	0855	9.0	5470	6	89	90

WATER-QUALITY DATA, WATER YEAR DECEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 30...	1335	7.0	6000	6	97	56
FEB 24...	1045	5.0	4270	23	265	93
MAR 21...	0945	7.0	19000	27	1380	61
APR 07...	1120	9.0	11700	6	190	88
20...	1155	10.0	8710	6	141	80
MAY 06...	1230	11.0	10100	8	219	69
JUN 07...	1510	11.5	8250	7	156	59

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

WILLAMETTE RIVER BASIN

255

14166000 WILLAMETTE RIVER AT HARRISBURG, OR

LOCATION.--Lat 44°16'14", long 123°10'21", in NW 1/4 NE 1/4 sec.16, T.15 S., R.4 W., Linn County, Hydrologic Unit 17090003, on right bank 75 ft north of intersection of First Street and Kesling Street in Harrisburg and at mile 161.0.

DRAINAGE AREA.--3,420 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to current year. Gage-height records collected at same site in 1927-28, 1931, 1934, are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 288.39 ft above sea level. Oct 1 to Nov. 14, 1944, nonrecording gage at bridge 1,110 ft upstream at different datum. Nov. 15, 1944, to Aug. 15, 1973, at site 1,100 ft upstream at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by 8 reservoirs upstream from station. Many small diversions upstream from station for irrigation. Continuous water-quality records for the period June 1961 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--49 years, 11,860 ft³/s, 8,593,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft³/s Dec. 29, 1945, gage height, 19.69 ft, from rating curve extended above 115,000 ft³/s; minimum discharge, 1,990 ft³/s Oct. 30, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 20.5 ft was reached in December 1861, and 20.1 ft in February 1890 (information from Corps of Engineers). Flood of Jan. 1, 1943, reached a stage of 19.1 ft from National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,200 ft³/s Mar. 19, gage height, 10.60 ft; minimum discharge, 3,480 ft³/s Oct. 27, 28, gage height, 1.09 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4720	6080	15800	17500	11800	6290	10100	16000	28900	5910	6120	6130
2	4760	7130	21600	15100	10900	7230	10700	15300	34900	5750	6110	6140
3	4870	6530	24600	12800	9520	8020	21900	15600	32900	5680	5890	6120
4	4860	5430	21000	13500	8370	10900	35400	21300	32600	5580	5840	6070
5	4790	5190	18400	13100	7830	12100	33800	21600	29400	5460	5810	6020
6	4760	5040	16700	12400	8000	11600	32900	19600	24700	5340	5860	6030
7	4720	4860	e15200	10800	8050	10500	29000	21000	21700	5190	5820	6000
8	4540	5300	e14400	e9500	7900	9710	26100	25300	20300	5120	5840	5580
9	4210	5770	e18000	e8400	8500	8830	31100	26900	19500	5040	5810	5950
10	4140	6220	25500	e7600	8970	8330	32700	23800	18200	4900	5730	6270
11	4240	6120	26600	e7200	9480	8060	33900	20100	16900	4870	5680	6560
12	4220	6200	21200	e7300	8990	7770	27700	18100	17000	4840	5610	6620
13	4180	6380	16600	e6700	8650	7460	22400	17300	15500	4790	5590	6580
14	4160	6840	e14500	e6800	8180	7290	20300	16400	14100	4760	5590	6670
15	4230	6840	e13800	6760	7840	11000	18900	14800	12600	4790	5730	6690
16	3930	6590	e13100	6930	7610	28100	17800	14000	12000	4730	5760	6750
17	3970	6330	e13200	6860	6990	32100	16800	13300	11200	4810	6090	6800
18	3850	6480	e15900	6730	6320	39300	19200	11600	10600	4790	6080	6810
19	3730	6800	e14500	6690	6740	41300	20000	11200	10300	4710	6300	6840
20	3720	7980	12100	14400	7200	35200	18200	12100	9830	4980	6320	6850
21	3840	8340	16300	28700	7530	37500	16500	13400	9040	5340	6450	6930
22	4040	18900	16900	29600	8300	37800	15800	15200	7990	5740	6370	6990
23	3930	e21000	16600	26500	8220	37500	16000	15200	7860	6310	6260	6970
24	3850	e20000	15100	21400	7860	37600	17600	13700	7490	6900	6270	6910
25	3850	e14500	14400	18400	7380	40100	18900	12400	7120	6720	6200	6880
26	3830	12300	13600	20700	7050	35000	19200	13800	6870	6140	6170	6900
27	3650	11000	14500	19300	6470	26600	18700	14400	6610	5860	6130	6900
28	3490	11600	20200	17600	6180	21200	16800	15800	6420	5740	6170	6970
29	3670	12400	21600	16600	---	15600	15800	15600	6290	5870	6160	6900
30	4320	11900	17900	13400	---	12500	16100	14700	6030	5760	6140	6900
31	5220	---	17300	12300	---	11100	---	17500	---	5940	6160	---
TOTAL	130290	266050	537100	421570	226830	623590	650300	517000	464850	168360	186060	196730
MEAN	4203	8868	17330	13600	8101	20120	21680	16680	15490	5431	6002	6558
MAX	5220	21000	26600	29600	11800	41300	35400	26900	34900	6900	6450	6990
MIN	3490	4860	12100	6690	6180	6290	10100	11200	6030	4710	5590	5580
AC-FT	258400	527700	1065000	836200	449900	1237000	1290000	1025000	922000	333900	369000	390200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	7904	14730	21230	19860	14280	13230	11090	9779	7801	4861	5300	6893													
MAX	10970	30850	42980	36750	26870	36070	21680	16680	16150	6283	7117	8986													
(WY)	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980													
MIN	4203	4924	3848	3695	2859	5168	4823	4009	3658	3883	4249	4305													
(WY)	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980													

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1969 - 1993

ANNUAL TOTAL	2467890	4388730	11410
ANNUAL MEAN	6743	12020	17800
HIGHEST ANNUAL MEAN			17800
LOWEST ANNUAL MEAN			5233
HIGHEST DAILY MEAN	26600	Dec 11	71800
LOWEST DAILY MEAN	3390	May 24	2340
ANNUAL SEVEN-DAY MINIMUM	3520	May 24	2410
ANNUAL RUNOFF (AC-FT)	4895000	8705000	8263000
10 PERCENT EXCEEDS	14300	23000	24200
50 PERCENT EXCEEDS	4840	8020	7990
90 PERCENT EXCEEDS	3880	4850	4540

e Estimated

WILLAMETTE RIVER BASIN

14166000 WILLAMETTE RIVER AT HARRISBURG, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1991 to April 1992, December 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, WATER YEAR DECEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 12...	1055	8.5	22900	32	1980	60
JAN 27...	1500	9.5	6000	4	65	75
JAN 29...	0730	8.5	8360	13	293	--
FEB 20...	1135	9.5	14300	46	1780	70
APR 22...	1510	11.5	8800	9	214	75
APR 23...	1530	11.0	8180	6	133	--

WATER-QUALITY DATA, WATER YEAR DECEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 11...	1240	8.0	26400	39	2780	57
FEB 24...	0810	5.0	8270	26	581	89
MAR 21...	1135	8.5	38300	43	4450	62
APR 07...	1310	10.0	28900	18	1400	51
APR 20...	1330	--	18300	10	494	56
MAY 06...	1000	12.0	18900	7	357	71
JUN 07...	1250	13.0	21600	17	991	36

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

WILLAMETTE RIVER BASIN

257

14166500 LONG TOM RIVER NEAR NOTI, OR

LOCATION.--Lat 44°03'00", long 123°25'30", in SE 1/4 NW 1/4 sec.33, T.17 S., R.6 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi upstream from Southern Pacific Railroad bridge, 0.8 mi downstream from Noti Creek, 1.3 mi southeast of Noti, and at mile 37.4.

DRAINAGE AREA.--89.3 mi².

PERIOD OF RECORD.--October 1935 to current year.

REVISED RECORDS.--WSP 1318: 1936(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.05 ft above sea level (levels by National Weather Service). Prior to Nov. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Slight regulation caused by logpond upstream from Noti. No diversion upstream from station.

AVERAGE DISCHARGE.--58 years, 226 ft³/s, 34.33 in/yr, 163,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s Dec. 22, 1955, gage height, 20.17 ft; minimum discharge, 0.04 ft³/s Aug. 13, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 22	1730	*1,550	*11.43				
Minimum discharge, 7.8 ft ³ /s Oct. 15, 16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	123	183	462	239	212	285	303	322	78	41	25
2	15	75	451	385	220	275	355	286	299	76	38	23
3	15	51	325	318	206	307	644	300	263	74	36	22
4	14	42	208	433	195	320	725	338	231	73	33	21
5	12	43	154	475	186	303	528	298	252	71	32	21
6	11	37	134	395	176	278	426	285	289	68	31	24
7	11	35	128	334	167	256	386	270	251	66	32	24
8	10	40	186	297	166	235	376	284	219	65	33	22
9	10	62	443	268	168	214	478	266	186	62	32	22
10	9.9	61	880	231	155	203	866	251	180	62	31	20
11	10	49	842	205	156	189	988	231	175	61	43	19
12	9.9	52	446	190	162	175	749	218	166	60	52	20
13	9.8	54	301	180	154	165	587	211	149	57	43	19
14	9.2	47	220	173	144	186	487	196	138	57	31	18
15	8.4	42	192	164	139	347	458	186	131	58	34	18
16	8.3	39	180	155	132	637	410	177	125	57	37	22
17	9.3	37	258	152	128	1140	425	168	118	57	32	21
18	10	37	325	145	127	1250	516	156	112	59	29	20
19	10	52	282	165	163	854	470	153	105	56	34	20
20	11	87	351	955	175	620	414	166	106	54	71	21
21	19	139	453	1220	212	481	376	158	100	44	56	20
22	20	358	442	1430	282	419	352	150	117	57	41	20
23	15	219	348	1030	307	756	360	139	115	57	37	20
24	13	141	284	693	286	722	426	131	100	57	35	19
25	11	102	246	541	258	537	461	160	93	54	31	18
26	11	81	218	447	235	436	469	174	88	51	30	17
27	11	77	235	388	216	377	449	157	85	49	27	18
28	14	84	345	348	203	332	397	176	84	47	26	18
29	27	74	401	307	---	301	360	189	81	53	26	17
30	103	92	346	277	---	284	331	185	80	49	24	16
31	116	---	392	258	---	272	---	253	---	45	23	---
TOTAL	574.8	2432	10199	13021	5357	13083	14554	6615	4760	1834	1101	605
MEAN	18.5	81.1	329	420	191	422	485	213	159	59.2	35.5	20.2
MAX	116	358	880	1430	307	1250	988	338	322	78	71	25
MIN	8.3	35	128	145	127	165	285	131	80	44	23	16
AC-FT	1140	4820	20230	25830	10630	25950	28870	13120	9440	3640	2180	1200
CFSM	.21	.91	3.68	4.70	2.14	4.73	5.43	2.39	1.78	.66	.40	.23
IN.	.24	1.01	4.25	5.42	2.23	5.45	6.06	2.76	1.98	.76	.46	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

	MEAN	40.0	201	450	566	544	412	254	127	65.8	30.3	17.0	17.4
MAX	300	708	1425	1260	1093	923	684	340	164	65.2	35.5	31.4	
(WY)	1948	1974	1956	1956	1949	1938	1937	1963	1937	1937	1993	1978	
MIN	8.00	16.6	23.8	25.2	62.5	131	57.2	54.6	24.7	6.20	3.61	7.42	
(WY)	1988	1937	1977	1977	1977	1992	1977	1977	1977	1977	1977	1967	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1936 - 1993

ANNUAL TOTAL	45648.4	74135.8	
ANNUAL MEAN	125	203	
HIGHEST ANNUAL MEAN		226	
LOWEST ANNUAL MEAN		424	1974
HIGHEST DAILY MEAN	1310	1430	5850
LOWEST DAILY MEAN	3.0	8.3	.04
ANNUAL SEVEN-DAY MINIMUM	4.5	9.3	.06
ANNUAL RUNOFF (AC-FT)	90540	147000	163500
ANNUAL RUNOFF (CFSM)	1.40	2.27	2.53
ANNUAL RUNOFF (INCHES)	19.02	30.88	34.33
10 PERCENT EXCEEDS	310	448	571
50 PERCENT EXCEEDS	67	154	92
90 PERCENT EXCEEDS	8.0	19	15

WILLAMETTE RIVER BASIN

14168000 FERN RIDGE LAKE NEAR ELMIRA, OR

LOCATION.--Lat 44°07'15", long 123°18'00", near center of sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, in control house at spillway section of dam across Long Tom River and Coyote Creek, 4.5 mi northeast of Elmira, and at mile 25.7.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin (see REMARKS).

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1971, published as Fern Ridge Reservoir near Elmira.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Lake is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers; storage began Nov. 13, 1941. Total capacity (new capacity table put into use Oct. 1, 1992 based on Dec. 1992 resurvey), 107,400 acre-ft at elevation 375.1 ft, maximum pool elevation. Usable capacity, 93,350 acre-ft between elevations 340.0 ft, sill of outlet gate, and 373.5 ft, normal maximum operating pool level. Reservoir used for flood control and improvement of navigation. Since November 1951, most of flow of Amazon Creek has been diverted in SE 1/4 sec.29, T.17 S., R.4 W., and discharged into Fern Ridge Lake; drainage area at point of diversion, 21.3 mi².

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,500 acre-ft Dec. 27, 1955, elevation, 375.83 ft; minimum contents since first filling in 1942, 163 acre-ft Nov. 11, 1950, elevation, 344.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 94,020 acre-ft May 31, elevation, 373.58 ft; minimum contents, 2,960 acre-ft Nov. 16, elevation, 352.99 ft.

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

349	439	356	6,810	364	30,560	372	81,180
350	835	358	10,680	366	40,480	374	97,590
352	2,090	360	15,830	368	52,350	375	106,400
354	4,030	362	22,410	370	65,980		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	370.63	362.38	354.32	353.39	357.79	365.28	371.95	373.44	373.51	373.42	372.49	371.94
2	370.61	361.76	354.21	353.22	358.06	365.56	372.10	373.45	373.50	373.42	372.43	371.92
3	370.58	361.09	353.91	353.39	358.31	365.87	372.10	373.48	373.48	373.40	372.41	371.90
4	370.54	360.43	353.78	353.68	358.53	366.16	372.13	373.44	373.48	373.39	372.37	371.87
5	370.51	359.69	353.71	353.33	358.73	366.41	372.17	373.49	373.51	373.37	372.34	371.85
6	370.43	358.91	353.70	353.21	358.91	366.62	372.26	373.41	373.43	373.35	372.31	371.83
7	370.28	358.07	353.81	353.26	359.07	366.80	372.38	373.39	373.40	373.32	372.29	371.81
8	370.05	357.22	354.28	353.30	359.26	366.95	372.58	373.39	373.46	373.29	372.27	371.78
9	369.83	356.35	354.06	353.55	359.44	367.08	372.59	373.42	373.51	373.26	372.25	371.76
10	369.60	355.43	354.77	353.81	359.61	367.23	372.65	373.44	373.50	373.23	372.23	371.73
11	369.39	354.40	354.50	353.99	359.79	367.32	372.66	373.47	373.46	373.19	372.21	371.69
12	369.17	353.41	353.80	354.08	359.96	367.42	372.72	373.50	373.41	373.16	372.20	371.63
13	368.95	353.05	353.54	354.11	360.12	367.51	372.84	373.52	373.43	373.15	372.17	371.63
14	368.69	353.02	353.41	354.14	360.27	367.69	372.95	373.51	373.44	373.12	372.16	371.60
15	368.47	353.00	353.26	354.30	360.35	367.98	372.95	373.51	373.44	373.09	372.17	371.58
16	368.20	353.02	353.32	354.57	360.45	368.56	372.95	373.49	373.45	373.05	372.15	371.55
17	367.95	353.09	353.62	354.89	360.55	369.15	372.99	373.49	373.47	373.02	372.13	371.53
18	367.69	353.13	353.66	355.04	360.69	369.57	372.96	373.46	373.49	372.99	372.12	371.50
19	367.44	353.41	353.38	355.36	361.08	369.63	372.99	373.49	373.49	372.96	372.22	371.48
20	367.19	353.47	353.27	356.40	361.47	369.49	373.02	373.45	373.50	372.93	372.24	371.45
21	366.89	353.80	353.32	357.44	362.12	369.32	373.12	373.43	373.51	372.94	372.23	371.41
22	366.58	353.70	353.22	359.30	362.88	369.45	373.19	373.44	373.51	372.94	372.22	371.39
23	366.26	353.66	353.12	359.77	363.53	370.01	373.30	373.48	373.49	372.91	372.19	371.37
24	365.94	353.62	353.10	359.51	364.00	370.47	373.35	373.52	373.46	372.85	372.17	371.34
25	365.60	353.63	353.03	358.80	364.35	370.77	373.41	373.55	373.46	372.83	372.14	371.32
26	365.23	353.58	353.11	357.80	364.61	371.00	373.45	373.54	373.45	372.78	372.12	371.30
27	364.72	353.69	353.37	356.85	364.83	371.20	373.48	373.48	373.45	372.73	372.10	371.27
28	364.21	353.70	353.35	356.51	365.03	371.35	373.53	373.48	373.44	372.70	372.06	371.25
29	363.80	353.69	353.45	356.63	---	371.49	373.52	373.50	373.44	372.64	372.00	371.22
30	363.42	354.03	353.49	357.09	---	371.63	373.47	373.55	373.43	372.60	372.00	371.20
31	362.94	---	353.67	357.47	---	371.77	---	373.55	---	372.54	371.98	---
MAX	370.63	362.38	354.77	359.77	365.03	371.77	373.53	373.55	373.51	373.42	372.49	371.94
MIN	362.94	353.00	353.03	353.21	357.79	365.28	371.95	373.39	373.40	372.54	371.98	371.20
(†)	26030	4060	3660	9540	35430	79380	93100	93770	92760	85460	81020	79970
(‡)	*-44670	-21970	-400	+5880	+25890	+43950	+13720	+670	-1010	-7300	-4440	-6050

CAL YR 1992 MAX 373.48 MIN 352.61 AC-FT† **960
WTR YR 1993 MAX 373.55 MIN 353.00 AC-FT† **4270

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

‡ Change in contents, in acre-feet.

* Computed on basis of revised capacity table put into use Oct. 1, 1992.

WILLAMETTE RIVER BASIN

259

14169000 LONG TOM RIVER NEAR ALVADORE, OR

LOCATION.--Lat 44°07'25", long 123°17'55", in SW 1/4 NE 1/4 sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi downstream from Fern Ridge Dam, 1.7 mi west of Alvadore, and at mile 25.5.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin.

PERIOD OF RECORD.--August 1939 to current year. Prior to October 1943, published as "at Smithfield," and October 1943 to September 1959, as "below Fern Ridge Dam, near Smithfield." Prior to October 1985, published figures included diversion from Fern Ridge Reservoir into Coyote Creek channel (station 14169001).

REVISED RECORDS.--WSP 1248: 1940-41, 1948.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above sea level (levels by Corps of Engineers). Prior to Sept. 21, 1939, nonrecording gage and Sept. 21, 1939, to Sept. 30, 1943, water-stage recorder at site 2.5 mi downstream at datum 11.09 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions for irrigation upstream from station. Approximately 7 ft³/s diverted from Fern Ridge Reservoir into Coyote Creek channel. Discharge not adjusted for storage or release from Fern Ridge Lake as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951, most of flow of Amazon Creek has been diverted into Fern Ridge Lake.

AVERAGE DISCHARGE.--50 years (water years 1944-93), 512 ft³/s, 370,900 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Jan. 1, 1943, gage height, 15.12 ft, site and datum then in use; minimum daily discharge, 2 ft³/s Aug. 7, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,020 ft³/s Mar. 19, gage height, 6.36 ft; minimum discharge, 18 ft³/s Nov. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	1290	520	1790	62	54	50	658	1650	85	208	72
2	85	1280	961	1320	64	55	303	420	1490	93	168	72
3	85	1250	911	934	64	55	2020	824	1280	93	141	72
4	85	1220	533	1330	64	55	1890	839	966	86	121	72
5	85	1190	359	1660	66	55	1250	449	1610	92	85	72
6	254	1160	311	1220	63	55	692	1010	1560	92	71	72
7	558	1140	311	889	57	56	428	667	994	113	53	72
8	841	1100	528	797	57	57	478	484	374	131	53	72
9	816	1030	1470	627	57	57	1440	366	250	131	53	72
10	799	934	2380	458	58	57	1760	305	509	131	53	72
11	792	898	2780	402	58	57	2130	266	632	134	53	72
12	786	677	1980	403	58	57	1440	272	548	134	53	72
13	773	263	950	403	58	57	857	280	223	147	53	72
14	761	65	679	405	58	57	694	301	189	148	53	72
15	840	51	580	336	58	54	945	301	182	148	53	72
16	888	34	513	268	59	685	891	309	149	148	53	72
17	854	28	755	268	60	1500	1030	292	83	148	53	72
18	834	28	904	269	60	1850	1290	269	68	148	53	72
19	809	39	898	422	61	2360	824	221	82	148	54	72
20	883	93	886	1560	61	2370	730	448	85	148	53	72
21	949	272	1130	2090	63	1760	449	301	85	148	53	72
22	930	590	1170	1730	56	621	434	88	148	147	53	72
23	912	415	905	2440	51	209	391	53	211	185	63	72
24	889	241	690	2440	52	210	546	62	200	209	72	71
25	878	138	610	2480	53	211	648	372	122	208	72	72
26	981	135	476	2340	53	147	644	551	81	208	72	71
27	1240	91	584	1980	53	50	615	753	77	208	72	71
28	1220	95	1080	1080	53	50	549	633	76	208	72	71
29	1200	96	1230	480	---	50	706	549	76	207	72	71
30	1240	146	1300	60	---	50	730	449	76	208	72	71
31	1310	---	1680	62	---	51	---	1410	---	209	72	---
TOTAL	23662	15989	30064	32943	1637	13012	26854	14202	14076	4643	2282	2154
MEAN	763	533	970	1063	58.5	420	895	458	469	150	73.6	71.8
MAX	1310	1290	2780	2480	66	2370	2130	1410	1650	209	208	72
MIN	85	28	311	60	51	50	50	53	68	85	53	71
AC-FT	46930	31710	59630	65340	3250	25810	53260	28170	27920	9210	4530	4270
CAL YR 1992	TOTAL	98455	MEAN	269	MAX	2780	MIN	19	AC-FT	195300		
WTR YR 1993	TOTAL	181518	MEAN	497	MAX	2780	MIN	28	AC-FT	360000		

WILLAMETTE RIVER BASIN

14170000 LONG TOM RIVER AT MONROE, OR

LOCATION.--Lat 44°18'50", long 123°17'45", in NE 1/4 sec.33, T.14 S., R.5 W., Benton County, Hydrologic Unit 17090003, on left bank in canalized river channel at Monroe, 110 ft upstream from bridge on State Highway 99W, 0.1 mi downstream from Shafer Creek, and at mile 6.8.

DRAINAGE AREA.--391 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1920 to July 1921, October 1921 to April 1926, November 1926 to May 1927, October 1927 to current year. Prior to October 1930, published as "near Monroe."

REVISED RECORDS.--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 270.57 ft above sea level. Prior to Nov. 24, 1944, nonrecording gage at various sites ranging from present site to 1.5 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Water-discharge records good except for flows below 100 ft³/s, which are fair. Discharges for period July 12 to Aug. 17 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions upstream from station.

AVERAGE DISCHARGE.--70 years (water years 1922-25, 1928-93), 747 ft³/s, 541,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s Jan. 2, 1943, gage height, 17.14 ft, site and datum then in use, from graph based on gage readings, includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum discharge observed prior to regulation, 7 ft³/s Sept. 29, Oct. 1, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,730 ft³/s Jan. 22, gage height, 8.05 ft; minimum discharge, 37 ft³/s Nov. 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	1370	553	2480	278	266	340	936	2420	63	192	54
2	84	1320	1520	1920	270	368	440	648	2270	96	175	55
3	82	1280	1340	1340	257	368	2270	930	1930	103	124	54
4	88	1250	785	1880	242	342	3010	1300	1350	109	118	57
5	88	1220	489	2260	233	304	1870	755	2010	102	85	62
6	141	1180	416	1850	218	276	1200	1080	2490	93	70	64
7	359	1140	436	1240	207	262	786	1050	1550	122	66	63
8	755	1110	625	1070	205	246	659	751	827	128	59	59
9	735	1060	1880	926	208	234	2020	569	319	129	54	58
10	717	938	3440	712	201	231	2790	497	657	132	49	58
11	707	895	3470	637	201	223	3130	420	740	123	48	57
12	701	771	2690	591	229	206	2500	411	832	123	50	66
13	696	392	1420	535	214	199	1460	422	369	131	54	63
14	686	103	959	530	200	240	1140	421	305	141	57	60
15	719	67	781	515	192	577	1260	421	277	140	63	59
16	822	63	643	410	182	1510	1390	411	264	150	61	59
17	793	41	1110	438	173	3250	1370	401	189	156	58	61
18	773	39	1460	425	170	3210	2080	377	159	156	51	66
19	752	50	1210	618	285	3060	1490	321	153	143	54	68
20	778	102	1280	2990	337	2980	1140	520	162	138	69	69
21	908	209	1560	3530	549	2510	832	438	142	145	91	66
22	892	690	1780	3950	783	1400	766	287	171	167	75	67
23	874	580	1300	3300	541	1250	776	161	290	195	65	67
24	856	349	970	3070	391	835	912	158	245	230	64	66
25	845	204	791	2950	323	638	1050	356	210	219	64	67
26	841	170	665	2790	282	546	1020	671	141	208	64	68
27	1200	150	747	2570	261	371	959	959	131	179	62	67
28	1200	121	1580	1620	244	322	792	929	115	186	63	69
29	1200	126	1710	1060	---	294	952	883	104	196	63	83
30	1240	153	1810	346	---	283	986	716	99	189	61	82
31	1400	---	2290	305	---	289	---	1620	---	190	54	---
TOTAL	22015	17143	41710	48858	7876	27090	41390	19819	20921	4582	2283	1914
MEAN	710	571	1345	1576	281	874	1380	639	697	148	73.6	63.8
MAX	1400	1370	3470	3950	783	3250	3130	1620	2490	230	192	83
MIN	82	39	416	305	170	199	340	158	99	63	48	54
AC-FT	43670	34000	82730	96910	15620	53730	82100	39310	41500	9090	4530	3800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1993, BY WATER YEAR (WY)

	756	947	1746	2119	1606	917	481	244	96.2	44.5	76.8	206
MEAN	756	947	1746	2119	1606	917	481	244	96.2	44.5	76.8	206
MAX	1895	3437	5355	6222	4032	2761	2277	1193	697	148	524	960
(WY)	1948	1951	1956	1956	1961	1957	1963	1993	1993	1951	1955	1955
MIN	27.1	91.5	55.5	43.5	44.1	136	54.5	50.3	28.6	23.0	20.0	12.4
(WY)	1942	1953	1977	1977	1977	1978	1987	1987	1987	1965	1944	1943

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1942 - 1993

ANNUAL TOTAL	139340	255601	767	1517	1956
ANNUAL MEAN	381	700	177	16400	1977
HIGHEST ANNUAL MEAN					
LOWEST ANNUAL MEAN					
HIGHEST DAILY MEAN	3470	Dec 11	3950	Jan 22	1943
LOWEST DAILY MEAN	21	Jul 10	39	Nov 18	1944
ANNUAL SEVEN-DAY MINIMUM	29	Aug 15	53	Aug 8	1944
ANNUAL RUNOFF (AC-FT)	276400	507000	556000		
10 PERCENT EXCEEDS	1120	1830	2360		
50 PERCENT EXCEEDS	142	369	233		
90 PERCENT EXCEEDS	31	63	36		

WILLAMETTE RIVER BASIN

14170000 LONG TOM RIVER AT MONROE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1991 to April 1992, November 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, WATER YEAR NOVEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV						
05...	1155	--	939	48	122	--
27...	1425	9.5	1130	119	362	97
DEC						
12...	0935	8.0	578	53	83	100
JAN						
27...	1345	8.5	335	47	43	98
28...	1615	10.5	868	63	148	96
FEB						
19...	1550	10.0	1700	132	606	95
20...	1250	9.5	2170	88	516	95
20...	1645	9.5	2140	83	480	94
APR						
22...	1650	14.0	216	6	3.5	93

WATER-QUALITY DATA, WATER YEAR NOVEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV						
24...	1110	7.0	335	120	109	99
DEC						
23...	1100	7.0	1380	68	253	97
JAN						
26...	1535	8.5	2760	39	291	96
FEB						
24...	1440	6.0	380	46	47	92
MAR						
18...	1040	11.5	3080	40	333	91
APR						
07...	1410	14.0	789	14	30	100
20...	1615	--	1170	10	32	97
MAY						
06...	1040	17.5	1180	13	41	84
JUN						
07...	1355	18.0	1590	17	73	87

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

WILLAMETTE RIVER BASIN

14174000 WILLAMETTE RIVER AT ALBANY, OR

LOCATION.--Lat 44°38'20", long 123°06'20", in SW 1/4 sec.6, T.11 S., R.3 W., Linn County, Hydrologic Unit 17090003, on right bank 5 ft upstream from bridge on U.S. Highway 20 (Ellsworth Street) in Albany, 0.2 mi downstream from Calapooia River, and at mile 119.31.

DRAINAGE AREA.--4,840 mi², approximately.

PERIOD OF RECORD.--November 1878 to April 1888 (fragmentary), January to June 1892, November 1892 to September 1894, December 1894 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M). WSP 1318 (monthly and annual figures only): 1894, 1897, 1901-3, 1907-8, 1910, 1916, 1918-19, 1923, 1927.

GAGE.--Water-stage recorder. Datum of gage is 167.18 ft above sea level. Prior to Sept. 27, 1906, nonrecording gage at site 0.2 mi upstream at datum 5.00 ft higher. Sept. 27, 1906, to Nov. 12, 1934, nonrecording gage at site 300 ft upstream at datum 5.00 ft higher. Nov. 14, 1934, to Sept. 30, 1962, at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by nine reservoirs upstream from station (see elsewhere in this report). Albany power canal diverts water from South Santiam River at Lebanon and discharges into Calapooia River near mouth; small diversions for irrigation and municipal water supply.

AVERAGE DISCHARGE.--99 years (water years 1894, 1896-93), 14,320 ft³/s, 40.18 in/yr, 10,370,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266,000 ft³/s Jan. 14, 1881, gage height, 37.8 ft, present datum; minimum discharge, 1,840 ft³/s Sept. 1, 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 4, 1861, reached a stage of 41.0 ft, discharge, 340,000 ft³/s, from rating curve extended above 220,000 ft³/s. Flood of Feb. 4, 1890, reached a stage of 38.9 ft, discharge, 291,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,800 ft³/s Mar. 19, gage height, 17.48 ft; minimum discharge, 4,550 ft³/s Oct. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4820	7070	16600	24800	14900	8300	13900	20000	26600	6880	6810	6640
2	4830	8460	23100	22900	14200	9700	13600	19000	36200	6690	6850	6640
3	4930	8780	29800	19200	12900	10600	18600	18400	38900	6540	6670	6600
4	4960	7500	26500	19000	11400	13100	35400	22100	36500	6470	6460	6550
5	4900	6750	22200	21600	10400	14700	40500	25600	35100	6340	6400	6490
6	4850	6470	19800	19300	10200	15300	38100	23100	35400	6170	6400	6490
7	4920	6200	18200	17600	10200	13900	34400	23700	30000	6000	6390	6490
8	5160	6300	16800	14600	10000	12900	30300	25200	26000	5880	6350	6390
9	5070	6770	20500	12800	10100	11800	32300	27900	23200	5790	6360	6060
10	4870	7280	31800	11900	10600	10900	40000	27200	21800	5680	6270	6390
11	4910	7460	40300	11000	11000	10500	42700	24100	20500	5570	6220	6800
12	4920	7220	35400	11100	11100	10000	41700	21000	20000	5540	6180	6960
13	4920	7350	26400	9790	10700	9550	33100	19700	19200	5530	6130	7040
14	4870	7010	20600	9020	10200	9240	27800	18800	17400	5500	6130	7050
15	4860	7320	18400	8970	9710	11300	24800	17700	15700	5490	6210	7110
16	4930	6990	17500	9180	9290	23400	23700	16300	14600	5480	6320	7150
17	4800	6700	17600	9320	8890	39700	22700	15700	13600	5480	6370	7180
18	4770	6690	21200	9340	7940	44700	24600	14300	12700	5560	6650	7200
19	4600	6880	19300	9260	7970	49400	26800	13200	12200	5490	6690	7210
20	4600	7980	16800	17500	9350	48600	24500	13100	11600	5420	6890	7250
21	4760	8830	20200	34800	10800	42700	21900	14600	11100	5870	6900	7260
22	4890	14500	23600	42400	13800	41900	20400	15400	10000	6260	7010	7380
23	4960	23800	22200	43200	13500	43300	20000	16500	9400	6840	6900	7390
24	4830	21900	20800	35400	11800	45500	21200	15900	9230	7500	6830	7350
25	4760	19100	18700	28300	10600	43800	22700	14200	8650	7880	6790	7310
26	4750	15400	17700	26800	9750	42000	23800	15200	8210	7440	6720	7290
27	4830	12800	17900	26300	9100	35100	23800	16200	7870	6860	6660	7290
28	4780	12400	22100	23800	8370	27700	21900	17700	7610	6630	6670	7300
29	4920	13500	28100	21600	---	21700	20300	18600	7360	6610	6670	7320
30	5290	13500	25900	18800	---	17600	20400	17900	7140	6650	6680	7320
31	6120	---	23000	16100	---	15400	---	18400	---	6540	6650	---
TOTAL	152380	298910	699000	605680	298770	754290	805900	586700	553770	192580	203190	208900
MEAN	4915	9964	22550	19540	10670	24330	26860	18930	18460	6212	6555	6963
MAX	6120	23800	40300	43200	14900	49400	42700	27900	38900	7880	7010	7390
MIN	4600	6200	16600	8970	7940	8300	13600	13100	7140	5420	6130	6060
AC-FT	302200	592900	1386000	1201000	592600	1496000	1599000	1164000	1098000	382000	403000	414400
CFSM	1.02	2.06	4.66	4.04	2.20	5.03	5.55	3.91	3.81	1.28	1.35	1.44
IN.	1.17	2.30	5.37	4.66	2.30	5.80	6.19	4.51	4.26	1.48	1.56	1.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1969	8881	11780	1985	4915	1993
1970	17250	40850	1985	5425	1988
1971	27770	55390	1982	4150	1977
1972	26470	45070	1971	3901	1977
1973	20190	38630	1986	3208	1978
1974	17540	43270	1972	6808	1978
1975	13960	26860	1993	5630	1977
1976	11090	18930	1993	4733	1973
1977	8684	18460	1993	4091	1987
1978	5290	7333	1969	4084	1978
1979	5549	7313	1971	4375	1992
1980	7113	8985	1972	4347	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1969 - 1993

ANNUAL TOTAL	3103160	5360070	14130
ANNUAL MEAN	8479	14690	22550
HIGHEST ANNUAL MEAN			5831
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	40300	Dec 11	114000
LOWEST DAILY MEAN	3700	Jun 7	2570
ANNUAL SEVEN-DAY MINIMUM	3750	Jun 1	2680
ANNUAL RUNOFF (AC-FT)	6155000	10630000	10240000
ANNUAL RUNOFF (CFSM)	1.75	3.03	2.92
ANNUAL RUNOFF (INCHES)	23.85	41.20	39.67
10 PERCENT EXCEEDS	18000	28200	32300
50 PERCENT EXCEEDS	5600	10600	9170
90 PERCENT EXCEEDS	4180	5520	4930

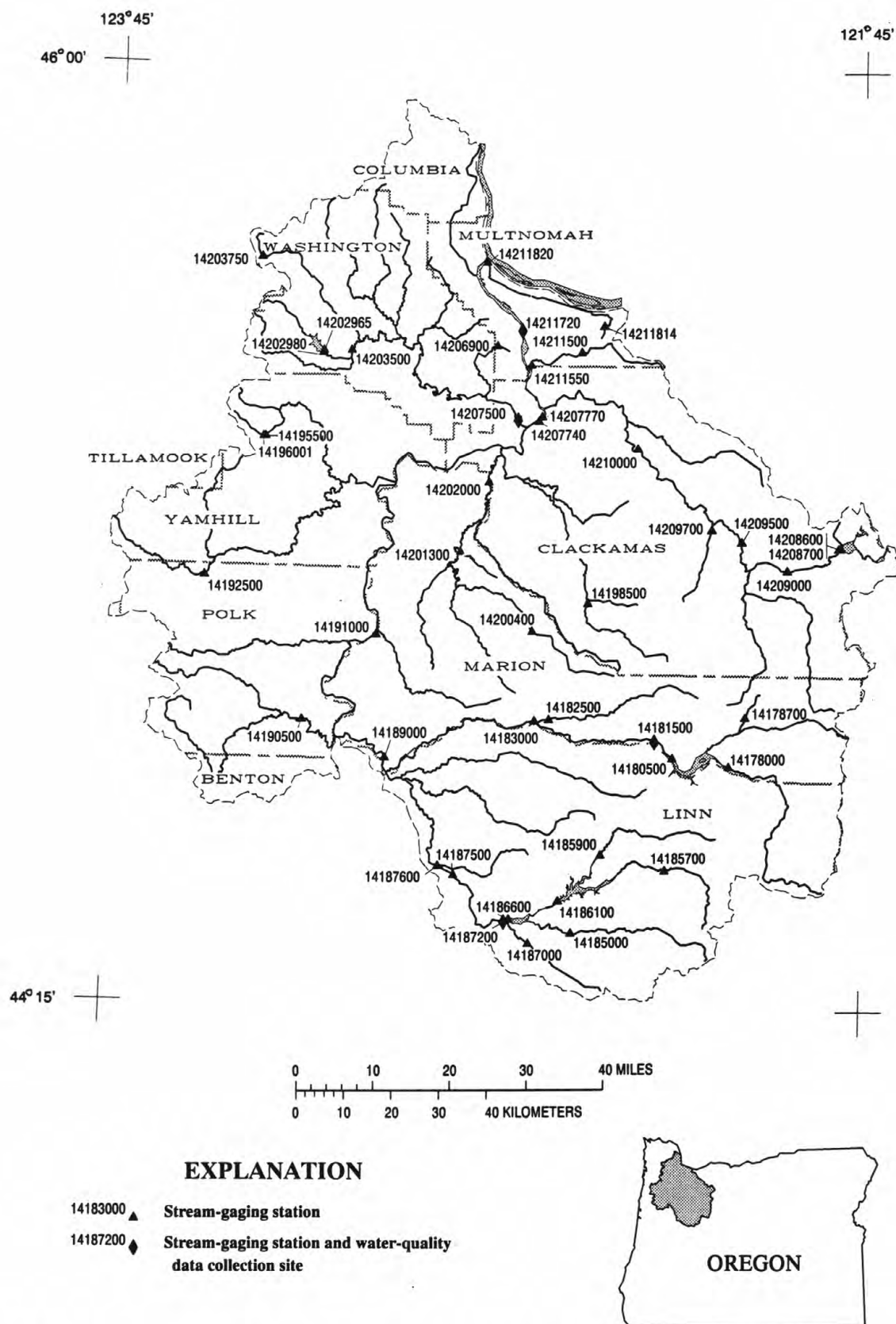


Figure 19--Location of surface-water and water-quality stations in the Willamette River Basin, downstream from Luckiamute River.

Continued on Figure 21

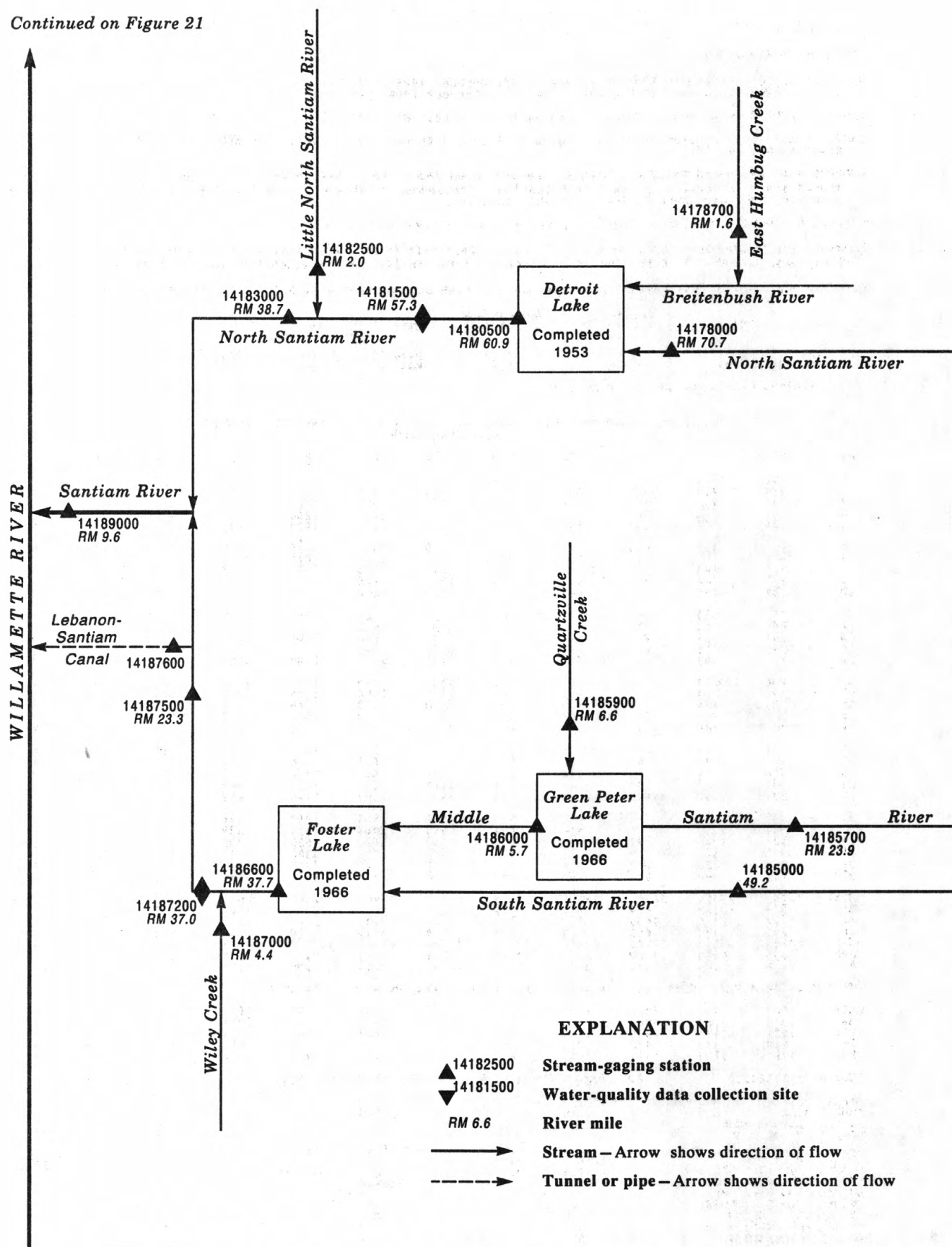


Figure 20--Schematic diagram showing gaging stations in the Santiam River Basin.

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LOCATION.--Lat 44°42'25", long 122°06'00", in SE 1/4 NW 1/4 sec.17, T.10 S., R.6 E., Marion County, Hydrologic Unit 17090005, on right bank 0.5 mi downstream from Boulder Creek, 3.0 mi southeast of Detroit, and at mile 70.7.

PERIOD OF RECORD.--January 1907 to October 1909, October 1928 to current year. Monthly discharge only January 1907, published in WSP 1318. Prior to October 1952, published as "at Detroit."

GAGE.--Water-stage recorder. Datum of gage is 1,590.07 ft above sea level. See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Records good except for flows above 3,000 ft³/s, which are fair. No regulation or diversion upstream from station. Continuous water-quality records for the period April 1951 to September 1987 have been collected at this location.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s Dec. 22, 1964, slope-area measurement of peak flow, gage height, 13.76 ft, temporary backwater from debris; minimum discharge, 250 ft³/s Sept. 13, 1909.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2200	4,300	6.52	Mar. 18	0600	*6,470	*7.46
Mar. 15	1530	4,610	6.67	Mar. 23	1030	5,050	6.87

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 1993, BY WATER YEAR (WY)

SUMMARY STATISTICS

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1907 - 1993	
ANNUAL TOTAL	248123		362310			
ANNUAL MEAN	678		993			
HIGHEST ANNUAL MEAN					1506	1974
LOWEST ANNUAL MEAN					569	1977
HIGHEST DAILY MEAN	3340	Feb 22	6120	Mar 18	19400	Dec 22 1964
LOWEST DAILY MEAN	295	Oct 27	295	Oct 27	250	Sep 13 1909
ANNUAL SEVEN-DAY MINIMUM	298	Oct 14	298	Oct 14	273	Sep 7 1909
ANNUAL RUNOFF (AC-FT)	492200		718600		722000	
ANNUAL RUNOFF (CFSM)	3.14		4.60		4.61	
ANNUAL RUNOFF (INCHES)	42.73		62.40		62.69	
10 PERCENT EXCEEDS	1210		1840		1790	
50 PERCENT EXCEEDS	543		730		780	
90 PERCENT EXCEEDS	310		371		402	

WILLAMETTE RIVER BASIN

14178700 EAST HUMBUG CREEK NEAR DETROIT, OR

LOCATION.--Lat 44°47'57", long 122°03'28", in NW 1/4 NE 1/4 sec.15, T.9 S., R.6 E., Marion County, Hydrologic Unit 17090005, in Willamette National Forest, on left bank 1.6 mi upstream from confluence with Humbug Creek, and 6.3 mi northeast of Detroit.

DRAINAGE AREA.--7.32 mi².

PERIOD OF RECORD.--August 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,050 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 36.6 ft³/s, 67.91 in/yr, 26,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,310 ft³/s Dec. 25, 1980, from rating curve extended above 450 ft³/s, gage height, 4.42 ft; minimum discharge, 1.6 ft³/s Sept. 30, 1987, Oct. 11, 12, 1991, Aug. 17-20, 27, 29, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1800	*545	*3.83	Mar. 23	0630	375	3.60
Mar. 18	0130	450	3.71				

Minimum discharge, 2.1 ft³/s Sept. 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	88	57	17	38	14	75	79	50	13	6.2	3.0
2	3.0	62	60	17	35	14	121	72	51	13	5.9	3.0
3	3.6	24	39	16	33	37	250	90	46	12	5.7	3.0
4	3.2	16	31	15	29	92	159	96	46	12	5.5	2.9
5	2.9	13	26	e13	29	139	100	78	87	11	5.4	2.9
6	2.7	11	23	e10	37	109	84	71	65	10	5.2	2.9
7	2.5	20	20	e10	47	111	91	70	54	9.9	5.1	2.8
8	2.5	33	20	e9.0	44	106	110	90	50	9.7	4.9	2.8
9	2.4	33	19	e8.0	41	91	150	82	44	9.0	4.8	2.8
10	2.4	24	52	e8.0	40	80	134	74	39	8.6	4.7	2.7
11	2.4	20	46	e8.0	39	63	111	69	42	8.4	4.6	2.7
12	2.3	44	32	e7.0	39	52	87	63	45	8.4	4.5	2.7
13	2.3	34	26	e7.0	37	46	76	57	40	8.4	4.4	2.7
14	2.3	25	29	e6.0	34	103	73	52	35	8.3	4.5	2.6
15	2.3	19	34	e6.0	31	272	77	48	32	8.4	4.8	2.5
16	2.3	16	28	e5.0	27	193	74	45	29	7.9	4.6	2.5
17	2.4	17	26	e5.0	24	268	74	43	26	8.6	4.5	2.5
18	2.3	20	22	e4.0	22	300	81	41	24	7.6	4.2	2.4
19	2.3	26	20	e20	21	195	76	38	22	8.4	4.0	2.4
20	2.5	24	27	64	19	183	69	36	21	8.1	4.1	2.5
21	2.9	241	27	48	18	128	81	35	20	7.6	4.0	2.5
22	2.7	189	32	34	17	136	90	34	25	10	3.8	2.4
23	2.4	79	38	26	16	301	100	30	26	11	4.1	2.3
24	2.4	48	34	35	15	171	139	28	22	9.1	4.0	2.3
25	2.3	34	28	88	14	103	128	31	20	8.2	3.7	2.3
26	2.3	27	26	73	14	77	117	28	18	7.6	3.5	2.2
27	2.2	38	25	54	13	65	104	38	17	7.3	3.3	2.2
28	2.3	55	25	57	13	59	84	36	16	7.1	3.3	2.2
29	5.0	38	24	63	---	55	92	32	15	7.1	3.2	2.1
30	16	42	21	54	---	52	93	30	14	6.7	3.1	2.1
31	65	---	19	45	---	54	---	39	---	6.4	3.1	---
TOTAL	156.7	1360	936	832.0	786	3709	3100	1655	1041	278.8	136.7	76.9
MEAN	5.05	45.3	30.2	26.8	28.1	120	103	53.4	34.7	8.99	4.41	2.56
MAX	65	241	60	88	47	340	250	96	87	13	6.2	3.0
MIN	2.2	11	19	4.0	13	14	69	28	14	6.4	3.1	2.1
AC-FT	311	2700	1860	1650	1560	7360	6150	3280	2060	553	271	153
CFSM	.69	6.19	4.12	3.67	3.83	16.3	14.1	7.29	4.74	1.23	.60	.35
IN.	.80	6.91	4.76	4.23	3.99	18.85	15.75	8.41	5.29	1.42	.69	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1993, BY WATER YEAR (WY)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	9.11	47.6	64.1	55.9	73.7	62.1	60.7	34.8	19.5	7.11	3.67	3.62			
MAX	25.4	102	140	107	175	120	103	62.6	37.0	16.4	7.51	7.32			
(WY)	1983	1985	1981	1983	1982	1993	1993	1984	1981	1983	1983	1986			
MIN	1.92	7.40	30.2	18.2	28.1	16.0	26.8	12.2	5.07	2.83	1.82	2.20			
(WY)	1988	1988	1993	1981	1993	1992	1986	1992	1992	1992	1992	1991			

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1979 - 1993

ANNUAL TOTAL	8348.3	14068.1	
ANNUAL MEAN	22.8	38.5	
HIGHEST ANNUAL MEAN			36.6
LOWEST ANNUAL MEAN			50.5
HIGHEST DAILY MEAN	278	Feb 20	1080
LOWEST DAILY MEAN	1.7	Aug 15	1.7
ANNUAL SEVEN-DAY MINIMUM	1.7	Aug 25	1.7
ANNUAL RUNOFF (AC-FT)	16560	27900	26510
ANNUAL RUNOFF (CFSM)	3.12	5.27	5.00
ANNUAL RUNOFF (INCHES)	42.43	71.49	67.91
10 PERCENT EXCEEDS	48	91	80
50 PERCENT EXCEEDS	11	24	20
90 PERCENT EXCEEDS	1.9	2.6	2.8

e Estimated

WILLAMETTE RIVER BASIN

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14180500 DETROIT LAKE NEAR DETROIT, OR

LOCATION.--Lat 44°43'20", long 122°14'55", in SW 1/4 NW 1/4 sec.7, T.10 S., R.5 E., Marion County, Hydrologic Unit 17090005, in control house near right abutment of Detroit Dam on North Santiam River, 4.9 mi west of Detroit, and at mile 60.9.

DRAINAGE AREA.--437 mi².

PERIOD OF RECORD.--January 1953 to current year. Prior to October 1971, published as Detroit Reservoir near Detroit.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by concrete, gravity-type dam with six 42-ft by 28-ft control gates. Length of dam is 1,580 ft, built by Corps of Engineers. Storage began in January 1953. Total capacity is 455,100 acre-ft and usable capacity is 340,100 acre-ft between elevations 1,425.0 ft, proposed lower limit of operation, and 1,569.0 ft, top of spillway gates. Reservoir used for flood control, power development, irrigation, improvement of navigation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 457,900 acre-ft July 13, 1972, elevation, 1,569.79 ft; minimum contents, 115,500 acre-ft Jan. 30, 1969, elevation, 1,425.37 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 441,500 acre-ft July 22, elevation, 1,565.10 ft; minimum contents, 149,600 acre-ft Jan. 19, elevation, 1,447.18 ft.

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

1,425	115,000	1,480	210,900	1,530	331,500
1,430	122,200	1,490	232,000	1,540	360,200
1,440	137,700	1,500	254,600	1,550	390,900
1,450	154,400	1,510	278,700	1,560	424,000
1,460	172,200	1,520	304,400	1,570	458,600

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1539.68	1498.13	1469.96	1451.49	1467.18	1479.98	1543.58	1560.90	1563.09	1563.92	1563.48	1559.57
2	1539.07	1498.10	1469.26	1451.33	1467.65	1480.11	1544.76	1561.40	1562.81	1563.92	1563.34	1559.36
3	1538.21	1496.91	1467.30	1451.32	1467.70	1480.74	1547.57	1562.79	1562.61	1563.99	1563.29	1559.15
4	1537.25	1495.31	1464.60	1451.13	1467.76	1482.57	1547.85	1563.87	1562.65	1564.04	1563.24	1558.93
5	1536.57	1493.63	1461.45	1450.82	1467.88	1485.72	1547.03	1563.67	1562.94	1563.98	1563.19	1558.71
6	1535.54	1491.58	1457.79	1449.09	1468.50	1488.25	1546.60	1563.44	1563.07	1563.93	1563.12	1558.45
7	1533.55	1490.19	1454.81	1448.56	1469.26	1490.78	1546.41	1563.35	1563.27	1563.87	1563.06	1558.27
8	1532.17	1489.37	1452.51	1448.75	1470.20	1493.46	1546.79	1563.53	1563.35	1563.79	1562.97	1557.91
9	1531.28	1488.43	1451.48	1448.84	1471.39	1495.89	1547.80	1563.52	1563.29	1563.69	1562.97	1557.39
10	1529.95	1487.07	1452.09	1448.99	1472.44	1498.12	1548.72	1563.38	1563.19	1563.73	1562.93	1556.88
11	1528.01	1485.58	1452.03	1447.95	1473.42	1499.97	1549.27	1563.43	1563.12	1563.74	1562.87	1556.33
12	1526.04	1484.93	1451.18	1447.97	1474.38	1501.48	1549.80	1563.37	1563.22	1563.75	1562.77	1555.82
13	1524.15	1484.06	1450.07	1447.94	1475.25	1502.82	1550.40	1563.21	1563.17	1563.76	1562.66	1555.29
14	1522.20	1482.87	1450.48	1447.92	1475.94	1505.72	1550.78	1562.83	1563.25	1563.79	1562.56	1554.72
15	1520.21	1481.47	1451.25	1447.88	1476.55	1514.88	1551.23	1562.72	1563.43	1563.82	1562.48	1554.17
16	1518.22	1479.78	1451.82	1447.81	1477.04	1520.53	1551.56	1562.55	1563.51	1563.79	1562.43	1553.63
17	1516.38	1478.41	1450.22	1447.73	1477.51	1526.91	1551.86	1562.54	1563.52	1563.70	1562.29	1553.15
18	1514.36	1477.13	1448.24	1447.60	1477.86	1536.57	1552.21	1562.85	1563.47	1563.65	1562.15	1552.58
19	1512.60	1476.20	1449.07	1447.90	1478.35	1541.26	1552.72	1563.16	1563.48	1563.66	1561.96	1552.02
20	1510.75	1475.04	1450.45	1450.55	1478.74	1542.85	1553.34	1563.31	1563.43	1563.77	1561.82	1551.16
21	1508.99	1478.94	1451.89	1451.38	1479.11	1542.41	1553.77	1563.55	1563.68	1563.84	1561.72	1550.04
22	1507.19	1484.90	1452.92	1451.72	1479.31	1541.34	1554.10	1563.57	1564.29	1564.11	1561.50	1548.51
23	1505.92	1485.73	1453.02	1452.15	1479.51	1546.63	1554.57	1563.36	1564.63	1564.34	1561.35	1547.01
24	1504.61	1484.23	1452.68	1452.73	1479.57	1547.78	1555.56	1563.23	1564.74	1564.35	1561.19	1545.52
25	1503.39	1482.01	1452.04	1454.69	1479.70	1545.44	1556.59	1563.63	1564.84	1564.32	1561.01	1544.02
26	1502.13	1479.31	1451.67	1456.92	1479.78	1543.31	1557.50	1563.60	1564.87	1564.25	1560.82	1542.47
27	1500.76	1477.20	1451.21	1458.80	1479.86	1542.86	1558.08	1563.62	1564.94	1564.11	1560.61	1540.86
28	1499.48	1475.64	1450.73	1460.78	1479.83	1542.28	1558.38	1563.56	1564.77	1564.03	1560.42	1539.25
29	1498.36	1473.30	1451.12	1462.87	---	1542.09	1559.33	1563.29	1564.52	1563.90	1560.23	1537.63
30	1497.57	1471.33	1451.32	1464.65	---	1542.02	1560.33	1563.22	1564.17	1563.78	1560.03	1535.98
31	1497.44	---	1451.42	1465.97	---	1542.56	---	1563.27	---	1563.63	1559.78	---
MAX	1539.68	1498.13	1469.96	1465.97	1479.86	1547.78	1560.33	1563.87	1564.94	1564.35	1563.48	1559.57
MIN	1497.44	1471.33	1448.24	1447.60	1467.18	1479.98	1543.58	1560.90	1562.61	1563.63	1559.78	1535.98
(†)	248700	193700	156800	183400	210600	367900	425100	435200	438300	436500	423200	348500
(‡)	-112600	-55000	-36900	+26600	+27200	+157300	+57200	+10100	+3100	-1800	-13300	-74700

CAL YR 1992 MAX 1562.36 MIN 1448.24 AC-FT† -300
WTR YR 1993 MAX 1564.94 MIN 1447.60 AC-FT† -12800

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

WILLAMETTE RIVER BASIN

14181500 NORTH SANTIAM RIVER AT NIAGARA, OR

LOCATION.--Lat 44°45'10", long 122°17'50", in NE 1/4 NE 1/4 sec.34, T.9 S., R.4 E., Linn County, Hydrologic Unit 17090005, on left bank 0.1 mi downstream from Little Sardine Creek, 0.8 mi downstream from Big Cliff Dam, 2.1 mi east of Niagara, and at mile 57.3.

DRAINAGE AREA.--453 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1908 to January 1920, October 1921 to March 1922, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "North Fork of Santiam River near Niagara" prior to October 1913, and as "above Mayflower Creek, near Detroit" October 1938 to September 1952.

REVISED RECORDS.--WSP 1288: 1914-18, 1920. WSP 1718: 1953-54.

GAGE.--Water-stage recorder. Datum of gage is 1,093.78 ft above sea level (Federal Highway Administration bench mark). See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--65 years (water years 1910-19, 1939-93), 2,303 ft³/s, 69.04 in/yr, 1,669,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,200 ft³/s Nov. 22, 1909, gage height, 16.4 ft, from floodmark, site and datum then in use, from rating curve extended above 35,000 ft³/s; minimum discharge, 19 ft³/s Aug. 21, 1963; minimum daily, 395 ft³/s Mar. 25, 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,300 ft³/s Mar. 25, gage height, 7.65 ft; minimum discharge, 744 ft³/s Aug. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1500	3280	5290	1450	1030	978	2050	3230	4120	1790	1180	1020
2	1500	3390	5200	1460	1550	984	2840	3170	4020	1410	1160	1020
3	1970	3310	5130	1460	1930	990	4590	2650	3490	1170	916	1030
4	2020	3280	5120	1450	1770	987	6330	3170	3060	1190	929	1030
5	2050	3230	5080	1460	1580	982	6420	4470	3040	1230	943	1030
6	2080	3350	5280	2530	1350	988	5100	4530	3050	1320	929	1040
7	3020	3030	4410	1610	1350	978	4780	4210	3240	1290	931	1060
8	2490	3040	3940	923	1190	987	4760	4160	3240	1280	922	1210
9	1790	3150	3030	904	1010	983	4820	4050	3090	1240	779	1520
10	2460	3110	3120	907	1020	987	4770	4060	3070	1030	777	1540
11	3210	3040	3040	1780	1030	970	4510	4070	3110	1000	909	1500
12	3240	3040	3050	979	1030	969	3560	4010	2660	988	918	1530
13	3160	3200	3060	914	1020	968	3050	3990	2610	997	922	1600
14	3170	3150	1860	913	1020	980	3030	3970	2170	1000	921	1540
15	3180	3110	1530	931	1010	1160	3020	3320	2080	997	921	1540
16	3200	3110	1540	920	1020	2470	3020	3320	2070	1010	921	1540
17	2970	3160	3270	924	990	3300	3150	3090	2050	1330	1030	1380
18	2990	3240	3340	942	971	3360	3260	2470	2030	1060	1030	1540
19	2960	3260	1100	937	968	4170	2540	2470	1870	1030	1020	1540
20	2760	3190	1000	1300	971	7360	2090	2840	1820	923	999	2080
21	2800	2640	1010	2110	970	7940	2790	2820	1310	928	1010	2540
22	2790	2830	1610	2070	967	8580	3240	2980	1110	948	998	3030
23	2070	4080	2380	1550	968	5100	3240	2950	1370	1120	1010	3050
24	2030	4860	2420	1540	982	7020	3180	2670	1550	1220	1010	3030
25	1960	4870	2410	1540	984	9990	3390	2550	1550	1220	1010	3040
26	2020	4880	2430	1070	979	8180	3300	2860	1480	1210	989	3020
27	2040	5000	2510	1040	974	4710	3200	3120	1560	1230	1010	3000
28	2030	5100	2500	1040	976	4360	3210	3140	1710	1220	1030	3070
29	2030	5020	1540	1040	---	3560	3190	3030	1960	1210	1010	3170
30	2020	5090	1520	1050	---	3050	3320	2760	1910	1200	1020	3040
31	2490	---	1530	1030	---	2060	---	3200	---	1170	1030	---
TOTAL	76000	108040	90250	39774	31610	100101	109750	103330	71400	35961	30184	57280
MEAN	2452	3601	2911	1283	1129	3229	3658	3333	2380	1160	974	1909
MAX	3240	5100	5290	2530	1930	9990	6420	4530	4120	1790	1180	3170
MIN	1500	2640	1000	904	967	968	2050	2470	1110	923	777	1020
AC-FT	150700	214300	179000	78890	62700	198600	217700	205000	141600	71330	59870	113600
MEAN†	620	2677	2311	1716	1619	5788	4620	3498	2432	1131	757	654
CFSM†	1.37	5.91	5.10	3.79	3.57	12.8	10.2	7.72	5.37	2.50	1.67	1.44
IN.†	1.58	6.60	5.88	4.37	3.72	14.73	11.38	8.91	5.99	2.88	1.93	1.61
AC-FT†	38100	159300	142100	105500	89900	355900	274900	215100	144700	69530	46570	38900

CAL YR 1992 TOTAL 550320 MEAN 1504 MAX 5290 MIN 651 AC-FT 1092000 MEAN† 1504 CFSM† 3.32 IN.† 45.21 AC-FT† 1092000
WTR YR 1993 TOTAL 853680 MEAN 2339 MAX 9990 MIN 777 AC-FT 1693000 MEAN† 2321 CFSM† 5.12 IN.† 69.55 AC-FT† 1680000

† Adjusted for change in contents in Detroit Lake.

WILLAMETTE RIVER BASIN

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14181500 NORTH SANTIAM RIVER AT NIAGARA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1953 to current year.

INSTRUMENTATION.--Temperature recorder since January 1953.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 16.5°C July 28, 29, 1958; minimum, 1.0°C Jan. 30 to Feb. 4, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.0°C several days in October; minimum, 3.0°C Jan. 18, 19, Feb. 19, 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.5	11.0	11.0	13.5	13.0	13.5	8.0	8.0	8.0	5.0	5.0	5.0
2	11.0	11.0	11.0	13.0	13.0	13.0	8.0	8.0	8.0	5.0	5.0	5.0
3	11.5	11.0	11.0	13.0	12.5	13.0	8.0	7.5	8.0	5.0	5.0	5.0
4	12.0	11.5	11.5	13.0	12.5	13.0	7.5	7.5	7.5	5.0	5.0	5.0
5	12.0	11.5	11.5	13.0	12.5	12.5	7.5	7.0	7.0	5.0	4.5	5.0
6	12.5	11.5	12.0	13.0	12.5	12.5	7.0	7.0	7.0	4.5	4.5	4.5
7	12.5	12.0	12.0	13.0	12.0	12.5	7.0	7.0	7.0	4.5	4.5	4.5
8	12.5	12.0	12.0	12.0	12.0	12.0	7.0	6.5	6.5	4.5	4.5	4.5
9	12.5	12.0	12.5	12.0	12.0	12.0	6.5	6.0	6.5	4.5	4.0	4.0
10	12.5	12.0	12.5	12.0	12.0	12.0	6.5	6.0	6.5	4.0	4.0	4.0
11	13.0	12.5	12.5	12.0	12.0	12.0	6.5	6.0	6.0	4.0	4.0	4.0
12	13.0	12.5	12.5	12.0	11.5	11.5	6.0	6.0	6.0	4.0	4.0	4.0
13	13.0	13.0	13.0	12.0	11.5	11.5	6.0	6.0	6.0	4.0	4.0	4.0
14	13.5	13.0	13.0	11.5	11.0	11.5	6.0	6.0	6.0	4.0	3.5	3.5
15	14.0	12.5	13.0	11.5	11.0	11.0	6.0	6.0	6.0	4.0	3.5	3.5
16	14.0	13.0	13.5	11.0	11.0	11.0	6.0	5.5	5.5	4.0	3.5	3.5
17	14.0	13.5	13.5	11.0	11.0	11.0	5.5	5.5	5.5	3.5	3.5	3.5
18	14.0	13.5	13.5	11.0	10.5	10.5	5.5	5.5	5.5	3.5	3.0	3.5
19	14.0	13.5	13.5	10.5	10.5	10.5	5.5	5.5	5.5	3.5	3.0	3.0
20	14.0	14.0	14.0	10.5	10.0	10.0	5.5	5.5	5.5	3.5	3.5	3.5
21	14.0	14.0	14.0	10.5	10.0	10.0	5.5	5.5	5.5	3.5	3.5	3.5
22	14.0	14.0	14.0	10.0	9.5	9.5	5.5	5.5	5.5	3.5	3.5	3.5
23	14.0	14.0	14.0	9.5	9.0	9.0	5.5	5.5	5.5	3.5	3.5	3.5
24	14.0	14.0	14.0	9.5	9.0	9.5	5.5	5.5	5.5	3.5	3.5	3.5
25	14.0	14.0	14.0	9.5	9.0	9.0	5.5	5.5	5.5	3.5	3.5	3.5
26	14.0	13.5	14.0	9.0	9.0	9.0	5.5	5.5	5.5	4.0	3.5	3.5
27	14.0	14.0	14.0	9.0	8.5	9.0	5.5	5.5	5.5	4.0	3.5	3.5
28	14.0	14.0	14.0	8.5	8.0	8.0	5.5	5.0	5.0	4.0	3.5	3.5
29	14.0	14.0	14.0	8.5	8.0	8.5	5.5	5.0	5.0	4.0	4.0	4.0
30	14.0	14.0	14.0	8.5	8.0	8.5	5.0	5.0	5.0	4.0	4.0	4.0
31	14.0	13.5	13.5	---	---	---	5.0	5.0	5.0	4.0	3.5	3.5
MONTH	14.0	11.0	13.0	13.5	8.0	11.0	8.0	5.0	6.0	5.0	3.0	4.0

14181500 NORTH SANTIAM RIVER AT NIAGRARA, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	3.5	3.5	3.5	3.5	3.5	6.0	5.5	6.0	6.5	6.0	6.0
2	3.5	3.5	3.5	3.5	3.5	3.5	5.5	5.0	5.0	6.0	5.5	6.0
3	3.5	3.5	3.5	4.0	3.5	3.5	5.5	5.0	5.0	6.0	6.0	6.0
4	3.5	3.5	3.5	4.0	4.0	4.0	6.0	5.5	5.5	6.0	6.0	6.0
5	4.0	3.5	3.5	4.5	4.0	4.5	6.0	5.5	5.5	6.0	6.0	6.0
6	4.0	3.5	4.0	4.5	4.5	4.5	6.0	5.5	5.5	6.0	6.0	6.0
7	4.0	4.0	4.0	5.0	4.5	4.5	5.5	5.5	5.5	7.0	6.0	6.5
8	4.0	4.0	4.0	5.0	4.5	5.0	5.5	5.0	5.0	7.0	6.0	6.0
9	4.0	4.0	4.0	5.0	4.5	4.5	5.5	5.0	5.5	6.5	6.0	6.0
10	4.0	4.0	4.0	5.0	4.5	5.0	5.5	5.5	5.5	7.0	6.5	6.5
11	4.5	4.0	4.0	5.0	4.5	5.0	5.5	5.5	5.5	7.0	6.5	6.5
12	4.5	4.0	4.0	5.0	4.5	4.5	6.0	5.0	5.5	7.0	6.5	6.5
13	4.5	4.0	4.0	5.0	4.5	4.5	6.0	5.5	5.5	7.0	6.5	6.5
14	4.0	4.0	4.0	5.0	4.5	4.5	6.0	5.5	5.5	7.0	6.0	6.5
15	4.0	4.0	4.0	5.0	4.5	5.0	6.0	5.5	5.5	7.0	6.0	6.5
16	4.0	3.5	3.5	5.0	4.5	5.0	6.0	5.5	5.5	7.0	6.5	7.0
17	3.5	3.5	3.5	5.0	4.5	5.0	6.0	5.5	6.0	7.0	6.5	6.5
18	3.5	3.5	3.5	5.5	5.0	5.5	6.0	5.5	5.5	7.0	7.0	7.0
19	3.5	3.0	3.5	5.5	5.0	5.0	6.0	5.5	5.5	7.0	7.0	7.0
20	3.5	3.5	3.5	5.0	4.5	5.0	6.0	5.5	6.0	7.0	7.0	7.0
21	3.5	3.5	3.5	5.5	4.5	5.0	6.0	5.5	5.5	7.0	6.5	7.0
22	3.5	3.5	3.5	5.5	5.0	5.5	6.0	5.5	5.5	7.5	6.5	7.0
23	3.5	3.5	3.5	5.5	5.0	5.0	6.0	5.5	5.5	7.5	7.0	7.0
24	4.0	3.5	3.5	5.5	5.0	5.0	6.0	5.5	6.0	7.0	7.0	7.0
25	3.5	3.5	3.5	6.0	5.5	5.5	6.0	5.5	5.5	7.5	7.0	7.0
26	3.5	3.5	3.5	6.0	5.0	5.5	6.0	5.5	6.0	7.5	7.0	7.0
27	3.5	3.0	3.5	6.0	5.0	5.0	6.0	6.0	6.0	7.5	6.5	7.0
28	3.5	3.5	3.5	5.0	5.0	5.0	6.0	5.5	6.0	7.5	7.0	7.0
29	---	---	---	5.0	5.0	5.0	6.0	5.5	6.0	7.5	7.0	7.5
30	---	---	---	5.5	5.0	5.0	6.0	5.5	6.0	7.5	7.0	7.0
31	---	---	---	6.0	5.5	5.5	---	---	---	7.5	7.0	7.5
MONTH	4.5	3.0	3.5	6.0	3.5	5.0	6.0	5.0	5.5	7.5	5.5	6.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.5	7.0	7.5	9.0	8.5	8.5	10.5	10.0	10.5	11.0	11.0	11.0
2	8.0	7.0	7.5	9.0	8.5	8.5	10.5	10.0	10.5	11.5	11.0	11.0
3	8.0	7.5	7.5	9.0	8.5	8.5	10.5	10.0	10.5	11.5	11.0	11.0
4	8.0	7.0	7.5	9.5	9.0	9.0	11.0	10.5	10.5	11.0	10.5	11.0
5	8.0	7.5	7.5	9.5	9.0	9.5	11.0	10.5	10.5	11.0	10.5	10.5
6	8.0	7.5	7.5	9.5	9.0	9.5	10.5	10.5	10.5	11.0	10.5	11.0
7	8.0	7.5	7.5	9.5	9.0	9.5	10.5	10.5	10.5	11.0	10.5	10.5
8	8.5	7.5	8.0	9.5	9.0	9.5	11.0	10.5	10.5	11.0	10.5	11.0
9	8.5	7.5	8.0	9.5	9.0	9.5	10.5	10.5	10.5	11.0	11.0	11.0
10	8.5	8.0	8.0	9.5	9.5	9.5	11.0	10.5	10.5	11.0	11.0	11.0
11	8.5	7.0	8.0	9.5	9.5	9.5	11.0	10.5	10.5	11.0	10.5	11.0
12	8.5	8.0	8.0	9.5	9.0	9.5	11.0	10.5	10.5	11.0	10.5	11.0
13	9.0	8.0	8.5	9.5	9.0	9.0	10.5	10.5	10.5	11.0	11.0	11.0
14	9.0	8.0	8.5	9.5	9.5	9.5	10.5	10.5	10.5	11.0	11.0	11.0
15	8.5	8.0	8.0	9.5	9.0	9.5	10.5	10.5	10.5	11.0	11.0	11.0
16	8.5	8.5	8.5	9.5	9.5	9.5	10.5	10.5	10.5	11.0	11.0	11.0
17	9.0	8.5	8.5	10.0	9.5	9.5	10.5	10.0	10.5	11.5	11.0	11.0
18	9.5	8.5	9.0	10.0	9.5	10.0	11.0	10.5	10.5	11.0	11.0	11.0
19	9.5	8.5	9.0	10.0	9.5	9.5	10.5	10.5	10.5	11.0	11.0	11.0
20	9.5	8.5	8.5	10.0	9.5	9.5	10.5	10.5	10.5	11.5	11.0	11.0
21	9.0	8.0	8.5	10.0	9.5	9.5	10.5	10.5	10.5	11.5	11.0	11.0
22	8.5	8.5	8.5	10.0	10.0	10.0	11.0	10.5	11.0	11.5	11.0	11.5
23	9.0	8.5	8.5	10.0	10.0	10.0	11.0	10.5	10.5	11.5	11.5	11.5
24	9.0	9.0	9.0	10.0	10.0	10.0	10.5	10.5	10.5	12.0	11.0	11.5
25	9.5	8.5	9.0	10.0	10.0	10.0	11.0	10.5	10.5	12.0	11.5	11.5
26	9.5	8.5	9.0	10.5	10.0	10.0	11.0	10.5	11.0	12.0	11.5	12.0
27	9.0	9.0	9.0	10.5	10.0	10.0	11.0	10.5	11.0	12.5	11.5	12.0
28	9.0	9.0	9.0	10.0	9.5	10.0	11.0	10.5	11.0	12.5	12.0	12.0
29	9.5	9.0	9.0	10.0	9.5	10.0	11.0	10.5	11.0	12.5	12.0	12.0
30	9.5	8.5	9.0	10.0	10.0	10.0	11.0	10.5	11.0	12.5	12.0	12.5
31	---	---	---	10.5	10.0	10.0	11.5	11.0	11.0	---	---	---
MONTH	9.5	7.0	8.5	10.5	8.5	9.5	11.5	10.0	10.5	12.5	10.5	11.0
YEAR	14.0	3.0	8.0									

14182500 LITTLE NORTH SANTIAM RIVER NEAR MEHAMA, OR

LOCATION.--Lat 44°47'30", long 122°34'40", in NW 1/4 sec.16, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on left bank 2.0 mi east of Mehama and at mile 2.0.

DRAINAGE AREA.--112 mi² at cableway 1.2 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1931 to current year. Records for July to September 1924 and July to September 1931 at site 4 mi upstream not equivalent owing to difference in drainage areas.

REVISED RECORDS.--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50. WSP 1935: Maximum only, 1932-34, 1936, 1938, 1943, 1945-49, 1950(M,P), 1951-53(M), 1954(M,P), 1955(M), 1956(M,P), 1957(M), 1958-59(M,P). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 655.41 ft above sea level. Prior to June 12, 1948, nonrecording gage at about same site and datum.

REMARKS.--Records fair. Discharges for period May 15 to June 21 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. No regulation or diversion upstream from station. Records herein are for measuring site. Continuous water-quality records for the period May 1985 to September 1986 have been collected at this location.

AVERAGE DISCHARGE.--62 years, 751 ft³/s, 91.12 in/yr, 544,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Dec. 22, 1964, gage height, 16.73 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 13 ft³/s Aug. 30, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 8,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2100	*11,800	*10.62	No other peak greater than base discharge.			
Minimum discharge, 26 ft ³ /s Oct. 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	2820	1520	556	806	228	712	1420	874	215	185	57
2	57	1650	1840	481	720	284	1180	1270	882	206	168	56
3	89	781	1180	442	674	589	3880	1490	738	196	153	55
4	112	504	866	437	634	1440	2190	1930	639	181	141	52
5	84	395	684	389	665	2290	1480	1390	874	167	131	51
6	70	308	572	346	737	1560	1230	1380	874	155	126	51
7	61	618	488	322	765	1380	1370	1480	1310	145	120	50
8	55	955	577	307	716	1230	1310	2140	1210	137	116	48
9	51	1060	787	275	689	1030	1810	1700	925	129	109	45
10	48	705	1410	248	726	885	2090	1310	874	123	103	44
11	45	510	1300	240	629	756	1870	1150	882	116	99	43
12	43	815	920	224	566	635	1460	955	1040	112	94	42
13	43	752	721	210	517	558	1240	818	839	112	91	42
14	43	581	770	203	462	1120	1140	712	675	114	89	41
15	40	452	935	192	412	3670	1200	639	706	130	101	40
16	39	358	748	185	361	2370	1210	581	669	130	97	40
17	39	362	682	177	328	2880	1250	569	569	181	100	39
18	38	529	567	169	310	5240	1490	569	489	189	90	38
19	37	792	504	253	336	2670	1330	e550	e420	162	87	37
20	38	770	1140	1340	309	2170	1060	e550	371	166	84	36
21	60	4670	1140	1270	287	1640	1000	586	338	182	84	36
22	52	4390	1420	1130	265	1760	1170	712	445	449	80	35
23	38	2030	1660	860	253	5110	1310	575	623	773	77	33
24	32	1240	1220	946	232	2480	1730	494	485	549	83	33
25	29	861	935	1720	217	1610	1860	505	405	414	77	31
26	28	652	966	1450	208	1190	2030	469	350	336	74	31
27	27	818	1140	1180	202	944	1840	464	318	282	69	30
28	28	1340	1090	1270	200	784	1360	484	288	250	67	29
29	40	882	942	1480	---	684	1940	450	260	281	65	29
30	304	1170	764	1150	---	624	1950	426	235	235	61	28
31	1630	---	652	949	---	600	---	621	---	206	59	---
TOTAL	3357	33770	30140	20401	13226	50411	46692	28389	19607	7023	3080	1222
MEAN	108	1126	972	658	472	1626	1556	916	654	227	99.4	40.7
MAX	1630	4670	1840	1720	806	5240	3880	2140	1310	773	185	57
MIN	27	308	488	169	200	228	712	426	235	112	59	28
AC-FT	6660	66980	59780	40470	26230	99990	92610	56310	38890	13930	6110	2420
CFSM	.97	10.1	8.68	5.88	4.22	14.5	13.9	8.18	5.84	2.02	.89	.36
IN.	1.12	11.22	10.01	6.78	4.39	16.74	15.51	9.43	6.51	2.33	1.02	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1993, BY WATER YEAR (WY)

	MEAN	388	1139	1429	1320	1178	1031	987	799	463	134	65.0	108
MAX	1594	3121	3680	3615	2581	2645	1712	1439	1684	547	432	490	
(WY)	1948	1943	1965	1953	1961	1932	1937	1949	1933	1983	1968	1959	
MIN	17.3	25.7	193	218	260	226	268	211	53.5	32.3	19.2	24.3	
(WY)	1988	1937	1977	1937	1977	1992	1941	1992	1992	1992	1961	1987	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1932 - 1993

ANNUAL TOTAL	157580	257318	751
ANNUAL MEAN	431	705	1146
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	4670	Nov 21	21900
LOWEST DAILY MEAN	14	Aug 30	13
ANNUAL SEVEN-DAY MINIMUM	15	Aug 26	15
ANNUAL RUNOFF (AC-FT)	312600	510400	544200
ANNUAL RUNOFF (CFSM)	3.84	6.29	6.71
ANNUAL RUNOFF (INCHES)	52.34	85.47	91.12
10 PERCENT EXCEEDS	1100	1540	1680
50 PERCENT EXCEEDS	176	510	466
90 PERCENT EXCEEDS	25	44	42

e Estimated

WILLAMETTE RIVER BASIN

14183000 NORTH SANTIAM RIVER AT MEHAMA, OR

LOCATION.--Lat 44°47'20", long 122°37'00", in NW 1/4 sec.18, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on right bank 300 ft downstream from highway bridge at Mehama, 0.5 mi downstream from Little North Santiam River, and at mile 38.71.

DRAINAGE AREA.--655 mi², at cableway 0.8 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to current year.
Monthly discharge only September 1921, published in WSP 1318. Prior to October 1913, published as North Fork
of Santiam River at Mehama.

REVISED RECORDS.--WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 602.49 ft above sea level. Prior to June 15, 1933, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--Records good. Discharge for period May 10 to June 16, 1993 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station. All records given herein are for measuring site. Continuous water-quality records for the period April 1985 to September 1986 have been collected at this location.

AVERAGE DISCHARGE.--77 years (water years 1906, 1911-14, 1922-93), 3,338 ft³/s, 2,418,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,600 ft³/s Dec. 28, 1945, gage height, 15.37 ft, from rating curve extended above 36,000 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 17.5 ft Nov. 20, 1921, from graph based on gage readings, and Jan. 6, 1923, from floodmark, at site then in use; minimum discharge, 254 ft³/s Aug. 3, 1970; minimum daily, 420 ft³/s Sept. 18, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,900 ft³/s Mar. 23, gage height, 8.92 ft; minimum discharge, 972 ft³/s Aug. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1440	6540	7760	2420	2140	1400	3070	5500	5560	2120	1450	1140
2	1460	5210	8450	2280	2370	1490	4140	5170	5540	1800	1420	1140
3	1850	4120	7190	2230	2720	1920	10400	5170	4870	1570	1220	1150
4	1980	3740	6590	2240	2620	2960	9730	6120	4140	1510	1190	1140
5	1970	3580	6180	2180	2470	4140	9180	6810	4490	1500	1180	1140
6	1940	3570	6270	2920	2340	3050	7310	6830	4530	1590	1160	1150
7	2770	3620	5380	2360	2300	2760	6830	6710	5330	1550	1150	1160
8	2390	4050	4830	2180	2560	2560	7680	7630	5140	1520	1140	1260
9	1790	4340	4360	1480	1930	2310	7770	6910	4540	1490	1030	1530
10	2220	3850	5630	1440	1960	2130	8380	6190	4440	1320	983	1580
11	3020	3560	5260	2040	1870	1960	7840	5910	4460	1270	1090	1540
12	3060	3920	4580	1600	1790	1830	6230	5540	4190	1250	1110	1560
13	2990	3980	4240	1380	1730	1740	5150	5310	3840	1260	1110	1620
14	3000	3740	3310	1370	1660	2390	4910	5110	3220	1260	1110	1580
15	3010	3550	2920	1360	1600	6390	4930	4380	3100	1280	1130	1580
16	3040	3440	2680	1340	1540	6120	4850	4250	3000	1270	1130	1580
17	2840	3520	4190	1320	1490	7860	5110	3950	2820	1560	1200	1440
18	2860	3790	4330	1320	1460	11300	5560	3310	2730	1420	1200	1570
19	2830	4310	2210	1430	1530	8310	4710	e3210	2450	1320	1200	1580
20	2680	4170	2800	3340	1480	10700	3770	e3600	2330	1260	1180	1960
21	2700	8820	2850	4060	1460	11000	4260	3700	1980	1240	1180	2400
22	2710	9380	3600	4040	1430	11700	4990	3980	1800	1550	1170	2860
23	2150	7020	4510	3090	1420	14000	5230	3790	2150	1970	1180	2950
24	1990	6810	4230	3030	1390	11100	5790	3430	2210	1880	1190	2920
25	1940	6280	3750	3940	1380	13200	6290	3300	2100	1740	1180	2930
26	1970	5820	3910	3210	1350	11000	6440	3510	1980	1650	1160	2930
27	2000	6110	4310	2720	1340	6570	6150	3770	2000	1590	1150	2920
28	2000	6990	4320	2770	1340	5740	5400	3860	2050	1560	1180	2970
29	2030	6260	3270	3000	---	4770	6230	3700	2280	1610	1150	3080
30	2290	6960	2810	2590	---	4040	6410	3400	2210	1530	1150	2940
31	4060	---	2640	2330	---	3110	---	4230	---	1480	1150	---
TOTAL	74980	151050	139360	72480	50290	179550	183840	148280	101480	46920	36223	57300
MEAN	2419	5035	4495	2338	1796	5792	6128	4783	3383	1514	1168	1910
MAX	4060	9380	8450	4060	2720	14000	10400	7630	5560	2120	1450	3080
MIN	1440	3440	2210	1320	1340	1400	3070	3210	1800	1240	983	1140
AC-FT	148700	299600	276400	143800	99750	356100	364600	294100	201300	93070	71850	113700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1993, BY WATER YEAR (WY)

MEAN	2899	5295	6183	5378	3933	3341	3308	3505	2553	1388	1262	1983
MAX	5109	9857	14300	11430	9197	10890	6128	5897	5521	2528	1833	2800
(WY)	1960	1974	1978	1956	1961	1972	1993	1960	1955	1983	1968	1959
MIN	1796	1904	1183	1212	1048	1467	1624	1136	956	757	699	996
(WY)	1988	1988	1977	1977	1977	1992	1973	1973	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1954 - 1993
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ANNUAL TOTAL	784662		1241753			
ANNUAL MEAN	2144		3402		3417	
HIGHEST ANNUAL MEAN					5255	1974
LOWEST ANNUAL MEAN					1743	1977
HIGHEST DAILY MEAN	9380	Nov 22	14000	Mar 23	36200	Dec 22 1964
LOWEST DAILY MEAN	682	Aug 1	983	Aug 10	682	Aug 1 1992
ANNUAL SEVEN-DAY MINIMUM	693	Aug 16	1080	Aug 9	693	Aug 16 1992
ANNUAL RUNOFF (AC-FT)	1556000		2463000		2475000	
10 PERCENT EXCEEDS	4320		6480		6860	
50 PERCENT EXCEEDS	1540		2810		2440	
90 PERCENT EXCEEDS	716		1230		1180	

e Estimated

LOCATION.--Lat 44°23'31", long 122°29'47", in NW 1/4 SW 1/4 sec.31, T.13 S., R.3 E., Linn County, Hydrologic Unit 17090006, on left bank, 0.2 mi upstream from Mouse Creek, 0.8 mi southwest of Cascadia, and at mile 49.2.

PERIOD OF RECORD.--September 1935 to current year. Monthly discharge only September 1935, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 775 ft above sea level, from topographic map. Prior to Sept. 26, 1989, at site 0.7 mi downstream at datum 759.88 above sea level. Prior to Nov. 1, 1935, nonrecording gage at site 0.7 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period June 1962 to September 1967 and February 1969 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--58 years, 812 ft³/s, 63.42 in/yr, 588,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,600 ft³/s Dec. 22, 1964, gage height, 19.68 ft, site and datum then in use; minimum discharge, 23 ft³/s Dec. 1, 2, 1936, site then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2200	*7,750	*8.93	Mar. 18	0700	7,440	8.77
Minimum discharge, 37 ft ³ /s Oct. 20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	1600	1860	777	845	438	978	1850	1960	325	184	70
2	43	1240	3020	658	781	579	1350	1610	1980	332	173	69
3	80	589	1830	590	770	908	4230	2140	1680	316	162	67
4	89	397	1250	578	787	1760	3220	2380	1390	289	152	65
5	68	316	963	521	904	2410	2250	1830	1440	269	144	64
6	58	250	792	466	1010	1780	1820	1970	1370	257	139	65
7	51	511	686	440	970	1580	1740	2030	1770	244	135	64
8	47	974	452	987	918	1450	1930	2430	1640	232	132	61
9	43	1020	1370	400	876	1300	2420	2020	1380	220	126	59
10	41	641	2240	367	838	1250	2490	1650	1350	211	121	57
11	40	488	1790	350	761	1160	2430	1430	1350	202	119	56
12	38	1370	1230	329	710	977	2000	1220	1440	196	114	57
13	38	988	961	315	648	870	1710	1090	1200	195	111	57
14	40	711	951	327	585	1190	1560	951	1010	194	110	54
15	39	547	1040	332	533	3990	1590	853	986	196	113	54
16	38	447	903	329	473	4900	1510	784	867	188	113	54
17	38	428	875	332	440	5080	1580	743	758	199	120	54
18	38	561	748	321	429	6930	1850	713	667	188	107	53
19	38	832	672	504	555	4560	1680	675	598	172	103	53
20	39	774	1530	2620	554	3380	1420	793	540	180	104	53
21	58	3030	1480	2050	507	2380	1350	806	510	192	106	53
22	63	4460	1460	1860	471	2010	1580	861	678	384	99	52
23	52	2140	1320	1310	459	4650	1690	728	718	527	100	50
24	46	1310	1080	1370	420	3290	2020	638	587	387	103	49
25	44	929	898	2130	386	2190	2090	827	516	315	93	48
26	41	728	995	1780	368	1650	2030	844	466	275	89	48
27	40	1000	1280	1460	357	1320	1740	963	439	248	84	47
28	39	1560	1550	1360	355	1100	1450	1110	405	235	81	47
29	53	1110	1250	1220	---	966	2210	996	375	254	79	46
30	264	1450	972	1050	---	872	2480	893	348	215	76	44
31	680	---	867	933	---	827	---	1190	---	197	73	---
TOTAL	2327	32401	38850	27531	17710	67747	58398	39018	30418	7834	3565	1670
MEAN	75.1	1080	1253	888	632	2185	1947	1259	1014	253	115	55.7
MAX	680	4460	3020	2620	1010	6930	4230	2430	1980	527	184	70
MIN	38	250	672	315	355	438	978	638	348	172	73	44
AC-FT	4620	64270	77060	54610	35130	134400	115800	77390	60330	15540	7070	3310
CSFM	.43	6.21	7.20	5.10	3.64	12.6	11.2	7.23	5.83	1.45	.66	.32
IN.	.50	6.93	8.31	5.89	3.79	14.48	12.49	8.34	6.50	1.67	.76	.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1993, BY WATER YEAR (WY)

MEAN	297	1099	1492	1420	1359	1170	1145	927	526	170	81.7	96.4
MAX	1296	2441	4319	3278	3260	2913	2052	1639	1261	466	222	318
(WY)	1951	1943	1965	1953	1961	1972	1937	1960	1937	1983	1968	1959
MIN	31.6	27.6	82.3	107	130	324	356	282	101	54.2	35.9	40.9
(WY)	1988	1937	1977	1977	1977	1941	1941	1987	1992	1940	1992	1987

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1935 - 1993

ANNUAL TOTAL	182646		327469			
ANNUAL MEAN	499		897		812	
HIGHEST ANNUAL MEAN					1280	1972
LOWEST ANNUAL MEAN					359	1977
HIGHEST DAILY MEAN	4460	Nov 22	6930	Mar 18	23000	Dec 22 1964
LOWEST DAILY MEAN	28	Aug 31	38	Oct 12	23	Dec 1 1936
ANNUAL SEVEN-DAY MINIMUM	29	Aug 28	38	Oct 12	24	Nov 25 1936
ANNUAL RUNOFF (AC-FT)	362300		649500		588400	
ANNUAL RUNOFF (CFSM)	2.87		5.16		4.67	
ANNUAL RUNOFF (INCHES)	39.05		70.01		63.42	
10 PERCENT EXCEEDS	1270		2000		1800	
50 PERCENT EXCEEDS	255		675		502	
90 PERCENT EXCEEDS	36		54		62	

WILLAMETTE RIVER BASIN

14185700 MIDDLE SANTIAM RIVER NEAR UPPER SODA, OR

LOCATION.--Lat 44°30'45", long 122°15'52", in SE 1/4 NE 1/4 sec.24, T.12 S., R.4 E., Linn County, Hydrologic Unit 17090006, on right bank 0.8 mi upstream from Bear Creek, 7.5 mi north of Upper Soda, and at mile 23.9.

DRAINAGE AREA.--74.6 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,500 ft above sea level, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--13 years, 401 ft³/s, 73.02 in/yr, 290,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s Feb. 23, 1986, gage height, 11.05 ft, from rating curve extended above 3,600 ft³/s on basis of slope-area measurement of December 1980; minimum discharge, 18 ft³/s Oct. 30, 1987, Sept. 23, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2030	3,870	6.16	Mar. 18	0730	*4,020	*6.25

Minimum discharge, 22 ft³/s Oct. 16, 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	837	887	271	455	205	637	973	595	201	94	41
2	27	801	1240	249	422	213	861	884	641	199	90	40
3	41	402	880	240	400	293	1910	1030	575	192	85	40
4	37	292	676	236	386	564	1600	1100	525	182	81	39
5	31	238	e550	216	400	965	1170	928	560	170	77	38
6	28	202	462	202	447	889	982	910	535	162	75	37
7	26	342	401	193	474	901	956	902	545	156	74	37
8	25	475	433	191	476	915	1070	1100	545	148	71	36
9	25	468	440	e180	468	868	1260	1010	507	140	69	35
10	24	359	691	e175	474	828	1280	893	502	134	66	34
11	24	315	645	171	450	751	1130	830	520	129	64	34
12	23	535	516	154	434	652	968	728	546	125	64	34
13	23	507	437	148	410	588	853	654	493	124	62	34
14	23	434	433	146	380	909	781	581	445	126	61	32
15	23	366	439	139	351	2330	809	528	439	123	62	32
16	23	315	395	135	e320	2320	783	489	393	120	61	32
17	23	341	376	129	e295	2640	780	471	358	130	63	32
18	23	407	333	125	286	3740	841	458	332	118	60	32
19	23	464	309	171	306	2610	786	426	309	111	58	32
20	23	425	441	529	297	2070	711	457	288	114	57	32
21	32	1720	421	492	283	1530	705	451	270	113	58	32
22	34	2270	434	440	263	1350	769	450	340	167	55	31
23	28	1260	444	365	247	2340	841	390	334	193	57	31
24	26	821	405	436	235	1840	1010	357	296	161	57	30
25	24	607	366	750	220	1310	1110	427	275	142	52	30
26	24	485	362	707	211	1010	1070	401	256	130	50	30
27	23	620	368	614	e205	818	952	422	247	122	47	29
28	23	763	363	594	e200	696	822	419	236	112	47	30
29	31	612	344	587	---	617	1080	386	224	114	46	29
30	108	690	312	537	---	557	1180	375	212	105	44	28
31	328	---	297	493	---	539	---	472	---	99	42	---
TOTAL	1202	18373	15100	10015	9795	37858	29707	19902	12343	4362	1949	1003
MEAN	38.8	612	487	323	350	1221	990	642	411	141	62.9	33.4
MAX	328	2270	1240	750	476	3740	1910	1100	641	201	94	41
MIN	23	202	297	125	200	205	637	357	212	99	42	28
AC-FT	2380	36440	29950	19860	19430	75090	58920	39480	24480	8650	3870	1990
CFSM	.52	8.21	6.53	4.33	4.69	16.4	13.3	8.61	5.52	1.89	.84	.45
IN.	.60	9.16	7.53	4.99	4.88	18.88	14.81	9.92	6.15	2.18	.97	.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1993, BY WATER YEAR (WY)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	107	556	691	588	739	607	626	434	294	104	48.0	43.5	
MAX	312	1072	1513	931	1680	1221	990	727	555	197	83.3	89.1	
(WY)	1983	1985	1982	1983	1986	1993	1993	1984	1984	1983	1983	1986	
MIN	19.5	53.7	347	247	312	209	301	175	62.0	43.1	24.0	24.4	
(WY)	1988	1988	1987	1981	1985	1992	1986	1992	1992	1992	1992	1987	

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1981 - 1993

ANNUAL TOTAL	96863	161609	401
ANNUAL MEAN	265	443	535
HIGHEST ANNUAL MEAN			287
LOWEST ANNUAL MEAN			11700
HIGHEST DAILY MEAN	2270	Nov 22	3740
LOWEST DAILY MEAN	19	Sep 19	23
ANNUAL SEVEN-DAY MINIMUM	19	Sep 16	23
ANNUAL RUNOFF (AC-FT)	192100	320600	290400
ANNUAL RUNOFF (CFSM)	3.55	5.94	5.37
ANNUAL RUNOFF (INCHES)	48.30	80.59	73.02
10 PERCENT EXCEEDS	641	960	853
50 PERCENT EXCEEDS	133	344	290
90 PERCENT EXCEEDS	23	32	34

e Estimated

WILLAMETTE RIVER BASIN

275

14185900 QUARTZVILLE CREEK NEAR CASCADIA, OR

LOCATION.--Lat 44°32'25", long 122°26'05", in NW 1/4 sec.10, T.12 S., R.3 E., Linn County, Hydrologic Unit 17090006, on Bureau of Land Management land, on right bank 80 ft downstream from Panther Creek, 10 mi north of Cascadia, and at mile 6.6.

DRAINAGE AREA.--99.2 mi².

PERIOD OF RECORD.--August 1963 to November 1964 (destroyed by flood of December 1964); October 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,050 ft, from topographic map. Aug. 13, 1963, to Dec. 22, 1964, water-stage recorder on left bank at present datum.

REMARKS.--Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period August 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--29 years (water years 1964, 1966-93), 651 ft³/s, 89.20 in/yr, 471,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Jan. 20, 1972, gage height, 16.38 ft; minimum discharge, 14 ft³/s Aug. 19-23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 36,500 ft³/s Dec. 22, 1964, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1930	*10,600	*12.84	Mar. 23	0730	6,410	11.00
Mar. 15	1230	6,180	10.88	Apr. 3	1230	5,180	10.32
Mar. 18	0330	7,520	11.55				

Minimum discharge, 20 ft³/s Oct. 16, 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	2260	1720	431	747	273	655	1180	779	168	105	43
2	27	1620	2500	374	679	307	1660	1000	823	166	98	42
3	47	584	1280	347	668	905	4590	1370	646	157	92	41
4	56	383	841	337	671	2160	2440	1550	546	144	87	40
5	40	298	632	300	809	2700	1490	1150	654	135	83	40
6	34	234	520	271	933	1770	1220	1150	607	128	79	39
7	29	516	443	261	912	1530	1280	1100	622	121	76	39
8	27	931	807	253	802	1340	1510	1530	662	116	74	38
9	25	856	931	229	761	1120	1940	1260	596	110	72	36
10	24	537	1970	213	732	989	2260	999	636	106	70	35
11	23	420	1340	207	631	840	1880	842	650	101	68	35
12	22	911	841	196	604	685	1430	693	738	98	66	35
13	22	677	631	189	550	618	1200	596	591	98	64	34
14	22	491	644	188	481	1530	1120	523	476	99	64	33
15	21	377	703	181	425	5070	1230	467	432	100	67	33
16	20	303	573	177	370	3430	1110	424	381	99	66	33
17	22	389	525	171	335	4120	1150	399	336	107	68	32
18	22	556	434	167	318	5800	1430	379	301	100	63	32
19	21	915	400	508	445	2980	1250	349	271	92	61	31
20	23	721	1150	2520	457	2340	967	366	247	98	60	31
21	44	4760	1010	1530	395	1610	924	409	234	99	60	31
22	46	4130	1100	1170	344	1850	1250	457	404	276	57	31
23	35	1850	1110	769	316	5240	1680	369	428	361	59	30
24	29	1040	832	1020	287	2580	2370	321	329	234	61	29
25	26	700	653	2010	265	1520	2070	392	281	185	55	29
26	25	535	692	1500	251	1080	1880	418	249	159	52	28
27	24	989	762	1170	244	825	1530	414	227	140	50	28
28	24	1350	842	1280	246	678	1150	437	209	130	48	28
29	60	820	716	1260	---	589	1690	414	193	142	47	27
30	405	1220	561	998	---	531	1640	377	179	121	45	26
31	1410	---	492	855	---	512	---	514	---	111	44	---
TOTAL	2682	31373	27655	21082	14678	57522	47996	21849	13727	4301	2061	1009
MEAN	86.5	1046	892	680	524	1856	1600	705	458	139	66.5	33.6
MAX	1410	4760	2500	2520	933	5800	4590	1550	823	361	105	43
MIN	20	234	400	167	244	273	655	321	179	92	44	26
AC-FT	5320	62230	54850	41820	29110	114100	95200	43340	27230	8530	4090	2000
CFSM	.87	10.5	8.99	6.86	5.28	18.7	16.1	7.10	4.61	1.40	.67	.34
IN.	1.01	11.76	10.37	7.91	5.50	21.57	18.00	8.19	5.15	1.61	.77	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1993, BY WATER YEAR (WY)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	248	1018	1236	1251	1076	953	855	612	329	102	60.8	89.3																			
MAX	753	2224	2897	2450	2441	2018	1600	1114	817	336	240	268																			
(WY)	1968	1974	1974	1970	1982	1972	1993	1971	1984	1983	1968	1971																			
MIN	20.8	126	110	157	208	204	382	182	63.1	36.8	20.9	28.0																			
(WY)	1988	1988	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987																			

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1963 - 1993

ANNUAL TOTAL	153782	245935	
ANNUAL MEAN	420	674	
HIGHEST ANNUAL MEAN			651
LOWEST ANNUAL MEAN			1113
HIGHEST DAILY MEAN	4760	5800	14900
LOWEST DAILY MEAN	17	20	14
ANNUAL SEVEN-DAY MINIMUM	17	21	14
ANNUAL RUNOFF (AC-FT)	305000	487800	471800
ANNUAL RUNOFF (CFSM)	4.24	6.79	6.57
ANNUAL RUNOFF (INCHES)	57.67	92.23	89.20
10 PERCENT EXCEEDS	991	1540	1490
50 PERCENT EXCEEDS	154	414	360
90 PERCENT EXCEEDS	22	33	40

WILLAMETTE RIVER BASIN

14186100 GREEN PETER LAKE NEAR FOSTER, OR

LOCATION.--Lat 44°27'10", long 122°32'40", in NE 1/4 SE 1/4 sec.10, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, in Green Peter Dam on Middle Santiam River, 7.0 mi northeast of Foster, and at mile 5.7.

DRAINAGE AREA.--273 mi².

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1971, published as Green Peter Reservoir near Foster.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by concrete, gravity-type dam with ogee spillway completed in 1966 by Corps of Engineers; controlled storage began Oct. 6, 1966. Total capacity, 428,100 acre-ft, usable capacity 330,800 acre-ft between elevations 887.0 ft, proposed lower limit of operation, and 1,015.0 ft, top of spillway gates. Reservoir used for flood control, power development, improvement of navigation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Midnight elevations furnished by Corps of Engineers and reviewed by Geological Survey. Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 426,700 acre-ft April 29, 1990, elevation, 1,014.61 ft; minimum contents, 116,900 acre-ft Dec. 15, 1972, elevation, 899.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 418,300 acre-ft May 23, elevation, 1,012.32 ft; minimum contents, 157,200 acre-ft Jan. 7, elevation, 920.69 ft.

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

899	116,600	960	251,100
900	118,300	980	309,700
920	155,700	1,000	374,800
940	199,900	1,015	428,100

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	946.33	942.80	949.10	924.95	933.97	954.64	993.19	1008.72	1010.98	1011.51	1011.10	1002.63
2	945.85	945.44	950.25	924.11	934.12	955.13	994.74	1009.30	1011.20	1011.51	1010.95	1002.16
3	945.30	946.48	949.54	923.26	934.17	956.25	997.36	1010.07	1011.03	1011.48	1010.82	1001.71
4	944.75	947.15	948.10	922.34	934.43	959.17	996.60	1010.49	1010.55	1011.44	1010.71	1001.24
5	944.18	947.69	946.23	922.40	934.92	962.79	994.31	1010.46	1010.31	1011.41	1010.59	1000.78
6	943.25	948.08	944.10	921.05	935.90	965.31	994.33	1010.51	1010.25	1011.38	1010.45	1000.30
7	942.65	948.97	941.75	920.95	936.93	967.60	994.34	1010.60	1010.30	1011.35	1010.32	999.83
8	942.02	950.45	941.90	921.59	938.02	969.62	994.69	1010.45	1010.38	1011.30	1010.17	999.30
9	941.41	951.81	942.06	922.07	939.41	971.36	995.44	1010.45	1010.38	1011.23	1010.02	998.60
10	940.79	951.74	943.49	922.51	940.75	972.95	996.27	1010.65	1010.88	1011.18	1009.88	997.87
11	940.15	951.62	944.19	921.40	941.97	974.32	996.94	1010.45	1010.98	1011.15	1009.73	997.15
12	939.52	952.28	943.39	921.43	943.12	975.45	997.78	1010.81	1011.32	1011.11	1009.58	996.45
13	938.87	952.37	942.23	921.73	944.15	976.55	998.61	1011.13	1011.50	1011.09	1009.42	996.03
14	938.31	951.14	941.07	922.26	945.07	978.72	999.27	1011.36	1011.53	1011.03	1009.22	995.34
15	938.31	949.81	939.90	922.61	945.93	983.48	1000.00	1011.20	1011.46	1010.98	1009.04	994.67
16	938.33	948.23	938.42	922.97	946.65	986.25	1000.07	1010.97	1011.30	1010.96	1008.83	993.98
17	938.35	947.20	936.71	923.30	947.29	989.91	1000.62	1011.12	1011.08	1010.90	1008.50	993.29
18	938.37	946.48	934.97	923.59	947.93	995.99	1000.62	1011.45	1010.80	1010.81	1008.21	992.59
19	938.38	946.48	933.60	924.45	948.85	998.63	1002.25	1011.82	1010.53	1010.74	1007.89	991.88
20	938.45	946.06	933.60	927.56	949.68	999.01	1002.69	1011.83	1010.23	1010.64	1007.58	991.19
21	938.51	952.46	933.60	929.25	950.48	997.11	1003.08	1012.05	1010.78	1010.52	1007.23	990.48
22	938.58	958.08	933.23	930.03	951.13	994.84	1003.75	1012.12	1010.86	1010.78	1006.91	989.77
23	938.61	958.45	932.78	930.17	951.73	998.06	1004.27	1012.11	1011.29	1011.22	1006.57	989.05
24	938.30	957.51	931.67	930.48	952.30	998.06	1005.06	1011.68	1011.34	1011.50	1006.15	988.32
25	937.96	955.98	930.25	932.42	952.85	995.30	1005.75	1011.47	1011.33	1011.52	1005.73	987.60
26	937.62	954.03	929.09	933.69	953.34	992.00	1006.28	1011.17	1011.47	1011.49	1005.30	986.86
27	937.25	952.72	928.02	933.64	953.82	991.17	1006.43	1010.98	1011.58	1011.47	1004.86	986.13
28	936.91	951.76	927.00	933.63	954.17	991.07	1006.71	1010.75	1011.68	1011.53	1004.86	985.42
29	936.81	950.12	926.86	933.60	---	991.60	1008.01	1010.65	1011.63	1011.49	1004.00	984.68
30	937.26	949.24	926.32	933.93	---	992.04	1008.13	1010.54	1011.55	1011.46	1003.55	983.94
31	939.23	---	925.62	934.02	---	992.52	---	1010.68	---	1011.27	1003.08	---
MAX	946.33	958.45	950.25	934.02	954.17	999.01	1008.13	1012.12	1011.68	1011.53	1011.10	1002.63
MIN	936.81	942.80	925.62	920.95	933.97	954.64	993.19	1008.72	1010.23	1010.52	1003.08	983.94
(†)	198100	222600	167500	186000	235400	349700	403100	412300	415400	414400	385400	322100
(‡)	-17400	+24500	-55100	+18500	+49400	+114300	+53400	+9200	+3100	-1000	-29000	-63300

CAL YR 1992 MAX --- MIN --- AC-FT† +6400
WTR YR 1993 MAX 1012.12 MIN 920.95 AC-FT‡ +106600

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

WILLAMETTE RIVER BASIN

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14186600 FOSTER LAKE AT FOSTER, OR

LOCATION.--Lat 44°25'00", long 122°40'25", in NW 1/4 NE 1/4 sec.27, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, in Foster Dam on South Santiam River, 0.3 mi above Wiley Creek, 0.5 mi north of Foster, and at mile 37.7.

DRAINAGE AREA.--492 mi².

PERIOD OF RECORD.--December 1966 to current year. Prior to October 1971, published as Foster Reservoir at Foster.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Lake is formed by rockfill embankment with an impervious core and ogee spillway completed in 1966 by Corps of Engineers; controlled storage began in November 1966. Total capacity, 60,780 acre-ft and usable capacity 33,210 acre-ft between elevations 609.0 ft, proposed lower limit of operation, and 641.0 ft, top of spillway gates. Lake used for reregulation of water released from Green Peter Lake, flood control, power development, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Midnight elevations furnished by Corps of Engineers and reviewed by Geological Survey. Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,350 acre-ft Apr. 28, 1990, elevation, 640.66 ft; minimum contents, 26,590 acre-ft Nov. 15, 16, 1971, elevation, 607.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,190 acre-ft Sept. 10, elevation, 638.09 ft; minimum contents, 29,520 acre-ft Dec. 12, elevation, 611.26 ft.

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

607	25,880	630	47,860
610	28,430	635	53,510
615	32,870	640	59,530
620	37,570	641	60,780
625	42,550		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	637.11	619.79	614.27	615.47	614.45	614.35	628.40	614.73	637.31	637.63	637.29	637.17
2	636.97	618.81	613.95	615.07	613.57	614.93	627.71	614.89	636.96	637.53	637.18	637.14
3	637.14	617.81	613.25	614.25	613.71	616.55	627.47	614.97	637.05	637.41	637.11	637.13
4	637.19	617.31	613.23	613.90	614.45	619.27	627.33	614.89	637.04	637.25	637.00	637.10
5	637.25	616.75	613.36	614.09	614.93	623.05	626.79	614.89	637.05	637.14	636.87	637.10
6	637.25	615.98	613.43	614.43	614.57	623.81	626.02	615.00	637.01	637.07	636.84	637.09
7	637.23	616.10	613.40	614.09	615.05	623.81	625.04	614.95	637.07	637.03	636.91	637.07
8	637.19	616.08	614.10	613.95	615.57	623.77	623.83	615.00	637.03	636.97	636.97	637.10
9	637.19	615.45	613.73	613.70	615.93	623.73	621.73	614.85	637.03	636.94	636.97	637.52
10	637.19	615.61	613.31	613.41	616.25	623.71	620.19	614.31	636.90	636.89	637.00	637.75
11	637.19	615.14	612.83	615.09	616.39	623.71	618.37	614.85	637.53	636.84	637.04	637.85
12	637.19	615.17	613.42	614.99	616.45	623.73	616.81	614.49	637.77	636.80	637.04	637.88
13	637.19	613.41	613.32	614.81	616.49	623.89	615.59	615.05	637.54	636.76	637.03	637.01
14	637.05	613.83	613.80	614.27	616.49	624.47	614.55	614.36	636.97	636.86	637.02	637.00
15	635.68	613.77	613.62	614.00	616.43	625.70	614.09	614.91	636.51	636.83	636.99	637.00
16	634.29	614.20	613.29	613.80	616.21	625.38	614.56	614.85	636.77	636.79	637.02	637.03
17	632.89	614.11	613.05	613.63	615.85	624.89	614.43	614.37	637.07	636.89	637.16	637.03
18	631.49	614.97	613.40	613.44	615.56	627.53	614.43	614.50	637.01	636.97	637.23	637.15
19	630.03	614.71	613.80	613.42	615.61	625.97	615.12	615.07	636.93	637.00	637.38	637.19
20	628.63	614.36	614.81	614.97	615.65	625.98	614.61	614.57	637.09	637.10	637.29	637.21
21	627.21	615.45	613.97	613.20	615.67	626.03	614.29	614.71	636.91	637.40	637.17	637.20
22	626.00	613.79	615.90	613.94	615.59	626.17	614.93	615.59	637.23	637.61	637.04	637.21
23	624.27	613.33	614.61	613.57	615.51	627.87	614.91	617.57	637.21	637.31	636.97	637.25
24	623.53	613.73	613.95	614.11	615.31	626.87	614.95	621.25	637.15	636.95	637.17	637.23
25	622.87	614.13	614.15	614.02	615.01	627.39	614.43	625.07	637.35	637.19	637.28	637.23
26	622.19	614.06	614.62	614.06	614.63	628.13	614.23	628.99	637.01	637.32	637.09	637.23
27	621.51	614.27	614.17	614.43	614.23	627.99	614.39	633.05	637.03	637.43	637.05	637.23
28	620.82	614.11	614.47	614.20	614.19	628.09	614.13	637.27	637.05	637.41	636.99	637.23
29	620.33	613.97	614.73	614.30	---	627.83	614.95	637.45	637.41	637.49	637.07	637.23
30	620.19	614.10	613.92	613.97	---	628.28	614.70	637.05	637.65	637.39	637.13	637.26
31	620.05	---	614.35	614.35	---	628.23	---	637.36	---	637.37	637.18	---
MEAN	631.04	615.14	613.88	614.16	615.35	624.55	618.43	619.38	637.12	637.15	637.08	637.23
MAX	637.25	619.79	615.90	615.47	616.49	628.28	628.40	637.45	637.77	637.63	637.38	637.88
MIN	620.05	613.33	612.83	613.20	613.57	614.35	614.09	614.31	636.51	636.76	636.84	637.00
(†)	37620	32060	32280	32280	32140	45940	32600	56300	56650	56320	56090	56180
(‡)	-18620	-5560	+220	0	-140	+13800	-13340	+23700	+350	-330	-230	+90

CAL YR 1992 MEAN 624.77 MAX 637.91 MIN 612.82 AC-FT† +820
WTR YR 1993 MEAN 625.10 MAX 637.88 MIN 612.83 AC-FT‡ -60

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

14187000 WILEY CREEK NEAR FOSTER, OR

LOCATION.--Lat 44°22'20", long 122°37'20", in NE 1/4 NE 1/4 sec.12, T.14 S., R.1 E., Linn County, Hydrologic Unit 17090006, on right bank 0.5 mi downstream from Little Wiley Creek, 3.5 mi southeast of Foster, and at mile 4.4.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--October 1947 to July 1973, July 1988 to current year.

REVISED RECORDS.--WDR OR-90-2: 1989 (M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 920 ft, from topographic map. Prior to April 6, 1965, water-stage recorder at present site at datum of 718.08 ft above sea level (Corps of Engineers bench mark). Apr. 6, 1965, to July 1973, water-stage recorder at present site at datum 2.00 ft lower than previous datum.

REMARKS.--No estimated daily discharges. Records good except those for Apr. 3 to Sept. 30, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--30 years (water years 1948-72, 1989-93), 216 ft³/s, 56.66 in/yr, 156,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s Jan. 21, 1972, gage height, 9.28 ft, from rating curve extended above 3,700 ft³/s; maximum gage height, 11.80 ft, Dec. 21, 1964 (backwater from debris), datum then in use; minimum discharge, 2.9 ft³/s August 28-31, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1030	*1,610	*4.89	Mar. 18	0500	*1,610	*4.89

Minimum discharge, 4.9 ft³/s Oct. 1, 2.

REVISIONS.--The low flow records for the 1992 water year have been revised. The minimum discharge has been revised to 2.9 ft³/s Aug. 28-31, 1992. Revised figures of daily discharges are given below. These figures supercede those published in the report for 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	19	250	84	212	151	42	222	25	24	5.2	3.3
2	6.7	16	238	121	191	129	40	176	25	18	5.5	3.4
3	6.7	15	206	117	167	122	42	146	24	15	5.4	3.2
4	6.8	15	185	190	148	121	53	124	22	16	5.2	3.5
5	6.6	169	199	170	132	127	77	109	21	19	5.7	6.2
6	6.4	167	1120	150	120	129	88	97	21	27	5.2	4.9
7	6.6	86	971	133	110	108	75	87	20	20	6.6	4.4
8	6.7	61	549	119	101	101	71	80	20	16	7.8	4.0
9	7.0	49	383	110	100	92	695	76	19	15	6.5	4.3
10	6.7	40	303	150	91	87	806	74	19	14	5.6	4.0
11	6.3	36	255	270	84	83	483	69	20	12	4.9	3.5
12	6.1	132	303	220	80	79	394	64	23	12	4.6	3.4
13	6.1	173	332	180	95	77	325	62	30	11	4.8	3.4
14	6.2	173	274	159	106	76	298	57	33	11	4.1	3.4
15	6.1	115	229	151	101	79	244	54	27	10	3.9	3.4
16	5.8	96	194	168	92	80	253	50	25	9.6	3.7	3.6
17	7.9	254	169	168	103	128	531	47	23	8.8	3.7	3.6
18	7.7	479	208	151	216	106	579	44	21	8.1	3.6	3.4
19	7.6	285	228	137	669	86	398	56	19	7.6	3.6	3.4
20	7.3	602	193	123	792	77	298	57	18	7.7	3.5	3.3
21	8.2	486	190	115	707	71	247	45	17	7.8	3.4	3.3
22	12	317	211	104	771	65	220	41	15	9.0	4.0	3.2
23	19	226	186	97	546	61	188	38	14	11	4.6	3.3
24	23	242	165	94	390	57	161	35	13	9.9	4.1	17
25	50	642	149	120	292	55	141	33	12	8.6	3.5	18
26	84	961	134	116	262	53	126	33	12	7.5	3.2	10
27	50	1070	122	159	225	52	115	32	12	7.1	3.0	7.2
28	32	565	113	289	189	49	104	31	12	6.4	2.9	6.4
29	50	412	108	253	167	47	113	29	24	6.2	2.9	5.5
30	30	304	98	200	---	45	252	28	21	5.7	2.9	5.1
31	22	---	90	188	---	43	---	27	---	5.3	2.9	---
TOTAL	514.5	8207	8355	4806	7259	2636	7459	2123	607	366.3	136.5	154.6
MEAN	16.6	274	270	155	250	85.0	249	68.5	20.2	11.8	4.40	5.15
MAX	84	1070	1120	289	792	151	806	222	33	27	7.8	18
MIN	5.8	15	90	84	80	43	40	27	12	5.3	2.9	3.2
AC-FT	1020	16280	16570	9530	14400	5230	14790	4210	1200	727	271	307
CFSM	.32	5.28	5.20	2.99	4.83	1.64	4.80	1.32	.39	.23	.09	.10
IN.	.37	5.89	6.00	3.45	5.21	1.89	5.36	1.52	.44	.26	.10	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1992, BY WATER YEAR (WY)

	MEAN	89.9	276	398	454	389	345	267	185	83.4	32.4	17.6	19.8
MAX	397	620	1107	842	944	625	490	353	171	75.9	53.4	67.8	
(WY)	1951	1951	1965	1953	1961	1972	1955	1963	1990	1969	1968	1968	
MIN	8.08	15.7	109	82.1	112	85.0	133	62.8	20.2	11.8	4.40	5.15	
(WY)	1989	1953	1960	1963	1973	1992	1968	1973	1992	1992	1992	1992	

SUMMARY STATISTICS	FOR 1991 CALENDAR YEAR	FOR 1992 WATER YEAR	WATER YEARS 1948 - 1992
ANNUAL TOTAL	62023.8	42623.9	
ANNUAL MEAN	170	116	216
HIGHEST ANNUAL MEAN			318
LOWEST ANNUAL MEAN			116
HIGHEST DAILY MEAN	1120	1120	6410
LOWEST DAILY MEAN	5.8	2.9	2.9
ANNUAL SEVEN-DAY MINIMUM	6.2	3.0	3.0
ANNUAL RUNOFF (AC-FT)	123000	84540	156200
ANNUAL RUNOFF (CFSM)	3.28	2.25	4.16
ANNUAL RUNOFF (INCHES)	44.54	30.61	56.56
10 PERCENT EXCEEDS	381	277	490
50 PERCENT EXCEEDS	119	53	119
90 PERCENT EXCEEDS	8.3	4.2	13

WILLAMETTE RIVER BASIN

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14187000 WILEY CREEK NEAR FOSTER, OR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	224	420	299	220	161	188	413	709	73	40	13
2	5.7	176	712	243	202	225	254	344	668	74	35	12
3	17	82	433	220	198	350	983	478	556	70	33	12
4	15	57	296	230	204	469	807	515	456	64	30	12
5	9.5	46	233	199	237	525	557	405	487	59	27	12
6	7.9	36	191	171	247	399	421	491	460	56	27	12
7	6.8	83	174	159	230	331	360	490	532	54	27	12
8	6.1	171	386	162	221	291	434	502	455	51	28	11
9	5.7	164	470	141	216	258	544	426	400	49	25	11
10	5.6	106	824	126	195	257	698	355	376	47	24	9.8
11	5.6	82	620	116	176	233	746	295	384	45	24	9.7
12	5.4	189	417	109	168	203	600	253	386	44	22	11
13	5.7	131	315	104	149	184	495	215	323	43	22	10
14	6.2	96	299	112	134	266	421	187	272	46	22	9.5
15	5.9	75	302	122	122	1000	432	164	238	57	25	9.3
16	5.9	61	277	125	111	1290	390	149	202	47	25	9.8
17	6.0	57	295	129	103	1240	411	143	184	46	25	9.4
18	6.1	63	250	123	103	1430	519	127	165	44	21	9.2
19	5.9	176	227	238	160	1000	461	120	147	42	21	9.4
20	6.9	157	554	1150	152	754	376	158	129	46	22	9.6
21	14	553	547	847	139	536	337	157	124	48	24	9.3
22	12	1010	444	755	132	481	390	171	143	100	20	9.2
23	8.9	450	353	508	135	1110	428	146	134	112	21	8.9
24	7.5	270	295	456	121	834	521	125	111	85	21	8.6
25	6.9	193	250	542	112	556	524	179	104	69	18	8.3
26	6.7	152	306	478	108	411	503	191	97	59	18	8.0
27	6.5	183	450	393	105	319	445	265	95	54	16	7.6
28	6.6	263	654	370	105	259	377	314	87	55	16	7.3
29	13	210	505	328	---	223	494	276	80	70	15	7.3
30	82	341	374	280	---	197	517	238	78	50	14	7.0
31	124	---	346	246	---	178	---	367	---	45	13	---
TOTAL	431.9	5857	12219	9481	4505	15970	14633	8659	8582	1804	721	295.2
MEAN	13.9	195	394	306	161	515	488	279	286	58.2	23.3	9.84
MAX	124	1010	824	1150	247	1430	983	515	709	112	40	13
MIN	4.9	36	174	104	103	161	188	120	78	42	13	7.0
AC-FT	857	11620	24240	18810	8940	31680	29020	17180	17020	3580	1430	586
CFSM	.27	3.77	7.61	5.90	3.11	9.95	9.42	5.39	5.52	1.12	.45	.19
IN.	.31	4.21	8.78	6.81	3.24	11.47	10.51	6.22	6.16	1.30	.52	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

	MEAN	87.5	273	398	449	382	351	274	188	89.9	33.3	17.8	19.5
MAX	397	620	1107	842	944	625	490	353	286	75.9	53.4	67.8	
(WY)	1951	1951	1965	1953	1961	1972	1955	1963	1993	1969	1968	1968	
MIN	8.08	15.7	109	82.1	112	85.0	133	62.8	20.2	11.8	4.40	5.15	
(WY)	1989	1953	1960	1963	1973	1992	1968	1973	1992	1992	1992	1992	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1948 - 1993

ANNUAL TOTAL	44055.3	83158.1	
ANNUAL MEAN	120	228	
HIGHEST ANNUAL MEAN			216
LOWEST ANNUAL MEAN			318
HIGHEST DAILY MEAN			116
LOWEST DAILY MEAN	1010	1430	6410
ANNUAL SEVEN-DAY MINIMUM	2.9	4.9	2.9
ANNUAL RUNOFF (AC-FT)	3.0	5.7	3.0
ANNUAL RUNOFF (CFSM)	87380	164900	156500
ANNUAL RUNOFF (INCHES)	2.32	4.40	4.17
10 PERCENT EXCEEDS	31.64	59.72	56.66
50 PERCENT EXCEEDS	309	520	492
90 PERCENT EXCEEDS	57	158	120
	4.2	9.4	13

WILLAMETTE RIVER BASIN

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR

LOCATION.--Lat 44°24'45", long 122°41'15", in SE 1/4 NE 1/4 sec.28, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 0.6 mi downstream from Wiley Creek and at mile 37.0.

DRAINAGE AREA.--557 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1973 to current year. Records for October 1966 to July 1973 (published as South Santiam River at Foster, station 14186700) at site 0.5 mi upstream not equivalent owing to inflow between sites.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since October 1966 by Green Peter Lake (station 14186100) and since December 1966 by Foster Lake (station 14186600). No diversion upstream from station.

AVERAGE DISCHARGE.--20 years, 2,807 ft³/s, 68.44 in/yr, 2,034,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s Apr. 28, 1990, gage height, 16.75 ft; minimum discharge, 410 ft³/s June 3, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,200 ft³/s Mar. 24, gage height, 15.38 ft; minimum discharge, 540 ft³/s June 23, Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	952	2280	7130	3160	3250	890	2000	4990	5150	1050	909	1050
2	953	2210	9060	3610	3160	953	3200	4060	5400	1050	905	1050
3	961	1390	7520	3740	2790	1100	11400	5190	4940	1050	726	1050
4	968	861	6340	3520	2220	1210	12800	6610	4970	1020	750	1060
5	957	743	5860	2050	2330	1510	12200	5880	4790	901	741	1060
6	950	756	5630	3130	2440	2170	6800	6140	4150	843	670	1050
7	961	826	5620	2110	1990	2380	6550	6320	4540	826	629	1050
8	955	1550	3590	1180	1580	2130	6870	8050	4380	820	620	1160
9	953	1960	4790	1090	1120	1920	8010	6620	3970	808	621	1170
10	963	2330	6100	1070	1080	1830	8530	5180	2940	753	622	1310
11	952	2430	5490	1850	1050	1680	8460	4820	3380	685	620	1370
12	947	3270	5140	1260	1040	1430	6280	3430	3370	684	621	1370
13	956	3850	4930	914	961	1200	5230	2450	3280	683	625	1370
14	955	3790	4740	947	893	1370	4860	2860	3230	700	704	1370
15	957	3760	5130	950	853	7250	4530	2720	3200	693	717	1340
16	950	3720	5060	917	828	11200	4880	2890	2590	684	711	1320
17	947	3130	5420	915	824	11300	4490	2210	2380	684	839	1310
18	947	2870	4740	907	828	11600	4470	1380	2490	683	834	1310
19	951	3740	3860	1020	893	11200	4360	1210	2340	676	839	1310
20	954	3820	4800	4500	900	10700	4310	2440	2040	682	958	1340
21	956	4340	5880	5680	863	11600	4020	2020	1370	683	1050	1350
22	956	8950	4970	5310	849	12000	3860	1890	1010	844	986	1350
23	956	7670	6240	4600	859	11100	5340	1140	1250	988	947	1350
24	957	6010	5790	4270	842	12000	6360	818	1640	774	937	1350
25	954	5470	5010	5200	833	12400	6710	851	1370	756	1050	1350
26	951	5420	4950	4730	829	11400	6500	814	1280	763	1140	1350
27	956	5540	6030	5040	822	6200	5980	877	1050	701	1080	1360
28	947	6590	6200	5100	818	3920	4930	1010	992	683	1070	1360
29	783	6010	4560	4770	---	2630	4700	2850	964	755	995	1360
30	704	6550	4520	3780	---	1950	7810	3060	990	776	990	1360
31	966	---	3780	3270	---	2010	---	3160	---	898	1010	---
TOTAL	29175	111836	168980	90590	37745	172233	186440	103940	85446	24596	25916	37960
MEAN	941	3728	5451	2922	1348	5556	6215	3353	2848	793	836	1265
MAX	968	8950	9060	5680	3250	12400	12800	8050	5400	1050	1140	1370
MIN	704	743	3590	907	818	890	2000	814	964	676	620	1050
AC-FT	57870	221800	335200	179700	74870	341600	369800	206200	169500	48790	51400	75290
MEAN†	355	4045	4559	3223	2235	7639	6888	3889	2907	772	361	203
CFSM†	0.64	7.26	8.18	5.79	4.01	13.7	12.4	6.98	5.22	1.39	0.65	0.36
IN.†	0.74	8.10	9.44	6.67	4.18	15.82	13.80	8.05	5.83	1.60	0.75	0.41
AC-FT†	21850	240700	280300	198200	124100	469700	409900	239100	173000	47460	22170	12080

CAL YR 1992 TOTAL 659233 MEAN 1801 MAX 9060 MIN 554 AC-FT 1308000 MEAN† 1811 CFSM† 3.25 IN.† 44.28 AC-FT† 1315000
WTR YR 1993 TOTAL 1074857 MEAN 2945 MAX 12800 MIN 620 AC-FT 2132000 MEAN† 3093 CFSM† 5.55 IN.† 75.39 AC-FT† 2239000

† Adjusted for change in contents in Green Peter Lake and Foster Lake.

WILLAMETTE RIVER BASIN

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14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1973 to current year.

INSTRUMENTATION.--Temperature recorder since July 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 15.5°C at times in 1975, 1978, 1981, 1987, 1990, 1993; minimum recorded, 2.5°C Dec. 30, 31, 1978, Feb. 1, 1980, Feb. 7, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 15.5°C on several days during July and August; minimum, 3.0°C Jan. 18.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.0	11.5	12.0	11.5	11.5	11.5	9.0	8.5	8.5	6.0	5.5	5.5
2	12.0	11.5	11.5	12.0	11.5	11.5	9.0	8.0	8.5	5.5	5.5	5.5
3	12.0	11.5	12.0	11.5	11.0	11.5	8.0	7.0	7.5	5.5	5.5	5.5
4	12.0	11.5	12.0	11.5	11.0	11.5	7.0	6.5	7.0	5.5	5.5	5.5
5	12.0	11.5	11.5	11.5	11.0	11.0	7.0	6.5	7.0	5.5	5.0	5.5
6	12.0	11.5	11.5	12.0	11.0	11.5	7.5	7.0	7.5	5.0	5.0	5.0
7	12.0	11.5	12.0	11.5	11.0	11.0	7.5	7.0	7.0	5.0	4.5	4.5
8	12.0	11.5	12.0	11.0	10.0	10.5	7.0	7.0	7.0	5.0	4.5	4.5
9	12.0	11.5	11.5	10.5	10.0	10.0	7.5	6.5	7.0	4.5	3.5	4.0
10	12.0	11.5	11.5	10.0	9.5	10.0	7.5	7.0	7.5	3.5	3.5	3.5
11	12.0	11.5	11.5	10.0	9.5	9.5	7.0	6.5	7.0	4.0	3.5	4.0
12	12.0	11.5	12.0	10.5	9.5	10.0	7.0	6.5	7.0	4.0	3.5	4.0
13	12.0	11.5	11.5	10.0	9.5	10.0	7.0	6.5	7.0	4.0	3.5	3.5
14	12.0	11.0	11.5	10.0	9.5	10.0	7.5	7.0	7.0	4.0	3.5	4.0
15	12.0	11.5	11.5	10.0	9.5	10.0	7.0	7.0	7.0	4.0	3.5	3.5
16	12.5	12.0	12.0	10.5	9.5	10.0	7.0	6.5	6.5	4.0	3.5	4.0
17	12.5	12.0	12.5	10.5	10.5	10.5	6.5	6.5	6.5	4.0	3.5	3.5
18	13.0	11.5	12.0	10.5	10.5	10.5	6.5	6.5	6.5	4.0	3.0	3.5
19	13.0	11.5	12.5	10.5	9.5	10.0	6.5	6.5	6.5	4.5	3.5	4.0
20	13.5	12.0	12.5	10.0	9.5	9.5	6.5	6.5	6.5	5.5	4.5	5.0
21	12.5	12.0	12.0	9.5	9.0	9.5	7.0	6.5	6.5	5.5	5.0	5.5
22	13.5	12.0	12.5	9.0	8.5	9.0	7.0	6.5	7.0	5.5	5.0	5.0
23	12.5	12.0	12.5	8.5	8.5	8.5	7.0	6.5	6.5	5.0	4.5	5.0
24	12.5	12.0	12.5	8.5	8.0	8.0	6.5	6.5	6.5	6.0	5.0	5.5
25	12.5	12.5	12.5	8.5	8.0	8.0	6.5	6.5	6.5	6.0	5.5	5.5
26	12.5	12.5	12.5	8.5	8.0	8.5	6.5	6.5	6.5	6.0	5.5	5.5
27	12.5	12.0	12.5	9.0	8.5	9.0	6.5	6.5	6.5	6.0	5.0	5.5
28	12.5	12.0	12.5	9.0	8.5	9.0	6.5	6.5	6.5	6.0	5.5	6.0
29	13.0	12.0	12.5	8.5	8.0	8.5	6.5	6.0	6.5	6.0	5.5	5.5
30	12.0	11.5	12.0	8.5	8.0	8.5	6.0	6.0	6.0	5.5	5.0	5.5
31	12.0	11.5	11.5	---	---	---	6.0	6.0	6.0	5.5	5.0	5.0
MONTH	13.5	11.0	12.0	12.0	8.0	10.0	9.0	6.0	7.0	6.0	3.0	5.0

WILLAMETTE RIVER BASIN

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.5	5.0	5.0	4.5	4.5	4.5	8.5	7.5	8.0	10.0	9.0	9.5
2	5.5	5.0	5.5	5.5	4.5	5.0	8.0	7.5	8.0	10.5	9.0	10.0
3	5.5	5.0	5.5	6.5	5.5	6.0	8.5	8.0	8.0	10.5	9.0	10.0
4	5.5	5.0	5.5	6.5	5.5	6.0	8.0	7.5	7.5	9.5	9.0	9.5
5	6.0	5.5	6.0	7.5	6.0	6.5	8.0	7.0	7.5	10.5	9.0	9.5
6	6.5	6.0	6.0	7.0	6.0	6.5	8.0	7.5	7.5	10.0	9.0	9.5
7	6.0	5.5	6.0	7.5	6.0	6.5	8.5	7.5	8.0	9.5	9.0	9.5
8	6.5	6.0	6.5	7.5	6.5	7.0	8.5	8.0	8.0	9.5	9.0	9.0
9	7.0	6.5	6.5	7.5	6.5	6.5	8.5	8.0	8.0	10.5	8.5	9.5
10	6.5	6.0	6.5	7.5	7.0	7.0	8.0	7.0	7.5	11.0	9.5	10.5
11	6.5	6.0	6.5	8.0	6.5	7.5	8.0	7.0	7.5	10.5	9.5	10.0
12	7.0	6.5	6.5	7.5	7.0	7.0	8.5	7.0	7.5	10.5	10.0	10.5
13	6.5	6.0	6.0	7.5	6.5	7.0	8.5	7.5	8.0	12.0	10.0	11.0
14	6.0	5.5	5.5	8.0	7.5	7.5	9.0	7.0	8.0	11.5	10.0	11.0
15	6.0	4.5	5.5	8.0	7.0	7.5	9.0	8.0	8.5	12.0	10.5	11.0
16	5.0	4.0	4.5	8.0	7.5	7.5	9.0	8.0	8.5	12.0	10.5	11.5
17	5.0	3.5	4.0	8.0	7.5	7.5	9.0	8.0	8.5	12.5	11.0	12.0
18	5.0	4.5	4.5	8.0	7.5	8.0	9.0	8.0	8.5	13.0	12.0	12.5
19	4.5	4.0	4.5	8.0	7.5	7.5	10.0	7.5	8.5	13.5	12.0	13.0
20	5.0	4.0	4.5	8.0	7.0	7.5	9.5	8.5	9.0	13.5	12.5	13.0
21	4.5	3.5	4.0	7.5	7.0	7.0	9.5	8.5	9.0	13.0	12.0	12.5
22	5.0	4.0	4.5	7.5	6.5	7.0	9.0	8.5	9.0	12.5	11.5	12.0
23	4.5	4.0	4.5	8.0	7.0	7.5	9.0	8.5	8.5	13.5	11.5	12.5
24	5.0	4.0	4.5	7.0	7.0	7.0	9.0	8.5	8.5	13.5	12.0	12.5
25	5.0	3.5	4.0	7.0	6.5	6.5	9.0	8.5	8.5	13.0	11.5	12.0
26	4.5	3.5	4.0	7.0	6.5	6.5	9.0	8.0	8.5	13.0	11.0	12.0
27	5.0	3.5	4.0	7.5	6.5	7.0	9.5	8.0	8.5	13.0	11.5	12.0
28	5.0	3.5	4.5	8.0	6.5	7.0	9.5	8.0	9.0	12.0	11.0	11.5
29	---	---	---	8.0	7.0	7.5	10.0	9.0	9.5	12.5	11.0	11.5
30	---	---	---	8.5	7.0	8.0	10.0	8.5	9.5	12.0	11.5	12.0
31	---	---	---	8.5	7.5	8.0	---	---	---	12.0	11.5	12.0
MONTH	7.0	3.5	5.0	8.5	4.5	7.0	10.0	7.0	8.5	13.5	8.5	11.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	12.0	11.5	11.5	13.5	12.0	12.5	15.5	13.5	14.5	13.0	12.5	13.0
2	12.0	11.0	11.5	13.5	12.5	12.5	15.5	13.5	14.5	13.0	12.5	13.0
3	12.0	11.0	11.5	13.5	12.0	13.0	15.5	13.5	14.5	13.0	12.5	13.0
4	12.0	11.0	11.5	13.5	12.5	13.0	15.5	13.5	14.5	13.0	12.5	13.0
5	12.0	11.0	11.5	14.0	12.5	13.0	15.5	14.0	14.5	13.0	12.5	12.5
6	11.5	11.0	11.5	14.0	12.5	13.0	15.5	14.0	14.5	13.0	12.5	13.0
7	11.5	11.0	11.5	14.0	12.5	13.0	14.5	13.5	14.0	13.0	12.5	13.0
8	12.5	11.0	11.5	14.5	12.0	13.5	15.0	13.5	14.0	13.0	12.5	12.5
9	12.0	11.0	11.5	14.0	12.5	13.0	15.0	13.5	14.0	13.0	12.5	12.5
10	12.0	11.0	11.5	14.5	12.5	13.5	15.0	13.5	14.0	13.0	12.5	12.5
11	11.5	11.0	11.0	14.5	12.5	13.0	15.0	13.5	14.0	12.5	12.0	12.5
12	12.5	10.5	11.5	13.5	12.5	13.0	15.0	13.5	14.0	12.5	12.0	12.5
13	12.5	11.0	12.0	13.5	12.5	13.0	14.5	13.5	14.0	12.5	12.0	12.5
14	12.5	11.5	12.0	13.5	12.5	13.0	14.5	13.5	14.0	12.5	12.0	12.5
15	12.5	11.5	12.0	13.5	12.5	13.0	14.5	13.5	14.0	13.0	12.0	12.5
16	13.0	11.5	12.0	14.0	13.0	13.0	14.0	13.5	13.5	13.0	12.0	12.5
17	13.5	11.5	12.5	14.5	12.5	13.5	14.5	13.0	14.0	13.0	12.0	12.5
18	13.5	11.5	12.5	14.5	12.5	13.5	15.0	13.5	14.0	12.5	12.0	12.0
19	13.0	12.0	12.5	14.0	13.0	13.5	14.5	13.5	14.0	12.5	12.0	12.0
20	13.5	11.5	12.5	14.0	13.0	13.5	14.0	13.5	14.0	12.5	12.0	12.0
21	12.0	11.5	12.0	14.0	13.0	13.5	14.5	13.5	14.0	12.5	11.5	12.0
22	12.5	11.0	12.0	14.0	13.0	13.5	14.5	13.5	14.0	12.5	11.5	12.0
23	12.5	10.5	12.0	14.5	13.5	13.5	14.5	13.5	13.5	12.0	11.5	12.0
24	13.0	11.5	12.0	14.5	13.5	14.0	14.0	13.0	13.5	12.5	11.5	12.0
25	13.5	12.0	12.5	14.0	13.0	13.5	14.0	13.0	13.5	12.0	11.5	12.0
26	13.5	12.0	13.0	15.0	13.0	14.0	14.0	13.5	13.5	12.0	11.5	12.0
27	13.0	12.0	12.5	15.5	13.0	14.0	13.5	13.0	13.5	12.0	11.5	11.5
28	13.5	12.0	12.5	14.0	13.0	13.5	14.0	13.0	13.5	12.0	11.5	11.5
29	13.5	12.0	12.5	14.5	13.5	14.0	13.5	13.0	13.0	12.0	11.5	11.5
30	14.0	12.0	13.0	15.0	13.0	14.0	14.0	12.5	13.0	12.0	11.5	11.5
31	---	---	---	15.5	13.5	14.5	13.5	12.5	13.0	---	---	---
MONTH	14.0	10.5	12.0	15.5	12.0	13.5	15.5	12.5	14.0	13.0	11.5	12.5
YEAR	15.5	3.0	9.5									

LOCATION.--Lat 44°29'55", long 122°49'20", in SW 1/4 NW 1/4 sec.28, T.12 S., R.1 W., Linn County, Hydrologic Unit 17090006, on left bank 0.1 mi downstream from highway bridge at Waterloo, 2.1 mi upstream from Hamilton Creek, and at mile 23.3.

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to December 1911 (gage heights only January to December 1911), July 1923 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as South Fork of Santiam River at Waterloo 1905-07, 1910-11.

GAGE.--Water-stage recorder. Datum of gage is 370.39 ft above sea level. Prior to Dec. 31, 1911, nonrecording gage at site 0.5 mi downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, nonrecording gage, at present site and datum.

AVERAGE DISCHARGE.--71 years (water years 1906, 1924-93), 2,918 ft³/s, 2,114,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,500 ft³/s Apr. 4, gage height, 8.59 ft; minimum discharge, 561 ft³/s Aug. 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	940	2050	7550	3410	3330	1050	2260	5610	5760	1160	988	e1050
2	952	2290	9580	3710	3290	1190	2990	4350	6170	1180	979	e1050
3	974	1520	8030	3980	2890	1360	11300	5170	5460	1180	810	e1060
4	964	947	6680	3820	2360	1530	13200	7070	5470	1150	775	1050
5	948	739	6050	2540	2360	1800	12500	6160	5410	1030	788	1060
6	939	751	5750	3160	2500	2300	7640	6400	4640	944	719	1060
7	942	740	5720	2500	2130	2580	6780	6640	4920	912	643	1050
8	937	1420	3960	1490	1780	2330	7120	8450	4830	905	627	1130
9	932	1970	4840	1290	1250	2090	8280	7050	4340	893	622	1170
10	936	2220	6740	1230	1180	1970	8850	5550	3460	832	617	1270
11	934	2400	6010	1740	1150	1840	9130	5050	3770	737	613	1400
12	922	3090	5410	1600	1150	1580	6890	3960	3740	728	614	1390
13	930	3830	5210	1050	1070	1350	5570	2730	3610	725	619	1380
14	932	3750	4880	1070	1000	1440	5180	3030	3510	743	690	1370
15	935	3710	5310	1070	948	6870	4860	2880	3440	739	735	1350
16	931	3670	5230	1040	916	12000	5090	3080	2920	728	719	1320
17	923	3200	5690	1030	900	12000	4780	2550	2580	724	827	1310
18	923	2800	5140	1010	907	12400	4780	1700	2690	722	858	1310
19	925	3700	4120	1090	1070	11600	4710	1430	2570	708	857	1310
20	938	3880	4830	4350	1080	11100	4680	2470	2280	717	939	1330
21	944	4210	6290	6480	1100	11500	4350	2380	1730	728	1110	1350
22	945	9300	5250	6150	1090	12400	4120	2140	1210	896	1040	1360
23	943	8170	6570	5170	1110	11900	5430	1530	1270	1150	993	1360
24	947	6240	6120	4680	1060	12300	6690	1010	1880	910	978	1360
25	935	5540	5290	5350	1030	12600	7040	1110	1570	807	1050	1360
26	931	5450	5120	5250	1000	11900	6940	1080	1480	831	1170	1360
27	930	5550	6410	5200	988	6830	6340	1110	1240	759	1100	1360
28	925	6580	6710	5310	975	4340	5510	1250	1130	720	e1090	1360
29	850	6150	5230	5040	---	3100	4720	2840	1100	783	e1010	1350
30	686	6730	4750	4060	---	2250	8140	3410	1110	856	e1010	1350
31	939	---	4340	3400	---	2270	---	3540	---	929	e1030	---
TOTAL	28732	112597	178810	98270	41614	181770	195870	112730	95290	26826	26620	37990
MEAN	927	3753	5768	3170	1486	5864	6529	3636	3176	865	859	1266
MAX	974	9300	9580	6480	3330	12600	13200	8450	6170	1180	1170	1400
MIN	686	739	3960	1010	900	1050	2					

MEAN	1508	4313	5638	5268	4740	3988	3631	2732	1676	632	460	706
MAX	5530	10340	15470	12220	12070	10530	7935	5875	5906	1526	1239	2769
(WY)	1969	1907	1965	1953	1961	1932	1937	1933	1933	1983	1969	1968
MIN	143	111	1068	713	597	865	1056	792	437	176	126	144
(WY)	1926	1930	1945	1977	1977	1992	1926	1987	1940	1926	1940	1945

ANNUAL TOTAL	685211			1137119					
ANNUAL MEAN	1872			3115				2918	
HIGHEST ANNUAL MEAN								4666	1974
LOWEST ANNUAL MEAN								1407	1977
HIGHEST DAILY MEAN	9580	Dec 2		13200	Apr 4		77000		Dec 22 1964
LOWEST DAILY MEAN	531	Jun 3		613	Aug 11			67	Oct 8 1966
ANNUAL SEVEN-DAY MINIMUM	544	Jul 22		622	Aug 7			75	Oct 7 1966
ANNUAL AVERAGE (AC-FT)	135900F			225500D			2114000D		
10 PERCENT EXCEEDS	4770			6720				6710	
50 PERCENT EXCEEDS	1040			1700				1780	
90 PERCENT EXCEEDS	605			843				260	

e Estimated

WILLAMETTE RIVER BASIN

14187600 LEBANON SANTIAM CANAL NEAR LEBANON, OR

LOCATION.--Lat 44°30'54", long 122°51'49", in SW 1/4 NW 1/4 sec.19, T.12 S., R.1 W., Linn County, Hydrologic Unit 17090006, near right bank, on downstream side of bridge on Headgate Road, 2.2 mi east of Lebanon.

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 370 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 156 ft³/s May 1, 1992; minimum daily discharge, 36 ft³/s May 2, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 124 ft³/s July 22; minimum daily discharge, 36 ft³/s May 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	92	73	48	46	61	55	38	70	69	112	102
2	92	82	65	49	46	63	57	36	71	69	113	99
3	92	67	51	49	51	65	75	37	70	68	109	100
4	92	74	50	49	54	67	77	40	68	67	103	100
5	91	80	49	46	55	68	76	39	68	66	108	99
6	91	66	49	46	55	70	68	39	66	65	107	99
7	89	80	49	45	54	73	66	39	67	72	106	99
8	88	86	46	42	52	72	55	41	66	78	106	100
9	87	91	47	41	50	70	46	40	64	78	102	101
10	87	93	37	41	49	69	47	38	61	77	99	102
11	87	95	41	43	49	68	48	37	62	74	99	104
12	87	99	50	42	49	66	45	46	63	80	99	104
13	87	79	50	40	49	65	43	61	62	85	99	100
14	69	60	58	40	48	66	42	62	61	85	101	91
15	85	60	66	40	48	63	42	62	60	90	103	91
16	84	82	65	40	47	56	42	62	59	93	103	90
17	83	96	66	40	47	56	41	61	57	93	106	91
18	84	88	65	40	47	57	41	56	67	93	106	91
19	84	87	63	41	48	56	41	54	73	99	105	91
20	83	88	64	49	48	55	41	60	71	102	98	94
21	82	103	67	52	49	55	39	59	67	109	92	96
22	81	118	65	51	49	56	37	58	62	124	90	96
23	80	92	67	50	49	56	38	55	65	123	89	96
24	80	71	67	49	48	56	40	50	75	110	81	95
25	80	69	65	50	47	56	40	51	73	108	101	96
26	79	69	65	50	53	53	40	51	72	109	106	96
27	80	69	68	50	60	48	39	51	70	107	97	96
28	79	71	60	50	60	44	38	52	69	106	91	97
29	78	70	52	50	---	51	37	59	68	108	90	97
30	76	72	51	48	---	57	40	62	68	110	89	97
31	79	---	50	47	---	56	---	63	---	112	95	---
TOTAL	2608	2449	1781	1418	1407	1874	1436	1559	1995	2829	3105	2910
MEAN	84.1	81.6	57.5	45.7	50.2	60.5	47.9	50.3	66.5	91.3	100	97.0
MAX	92	118	73	52	60	73	77	63	75	124	113	104
MIN	69	60	37	40	46	44	37	36	57	65	81	90
AC-FT	5170	4860	3530	2810	2790	3720	2850	3090	3960	5610	6160	5770

WTR YR 1993 TOTAL 25371 MEAN 69.5 MAX 124 MIN 36 AC-FT 50320

WILLAMETTE RIVER BASIN

285

14189000 SANTIAM RIVER AT JEFFERSON, OR

LOCATION.--Lat 44°42'55", long 123°00'40" (revised), in SE 1/4 sec.11, T.10 S., R.3 W., Marion County, Hydrologic Unit 17090005, on right bank 350 ft upstream from Southern Pacific railroad bridge at Jefferson, 2.1 mi downstream from confluence of North and South Santiam Rivers, and at mile 9.62.

DRAINAGE AREA.--1,790 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, October 1939 to current year. Gage-height records collected at same site since 1907 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1943. WSP 1248: 1911, 1915-16(M). WSP 1935: 1909.

GAGE.--Water-stage recorder. Datum of gage is 199.63 ft above sea level. Prior to Sept. 22, 1940, nonrecording gages at sites within 350 ft downstream at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1953 by Detroit Lake (station 14180500), since 1966 by Green Peter Lake (station 14186100) and by Foster Lake (station 14186600). Salem Canal diverts from North Santiam River at Stayton for irrigation and power; most of this water reaches Willamette River by way of Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near town of West Stayton; some return flow reaches North Santiam River upstream from station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany. Continuous water-quality records for the period October 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--63 years (water years 1908-16, 1940-93), 7,688 ft³/s, 5,570,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s Dec. 22, 1964, gage height, 24.22 ft; minimum discharge observed, 260 ft³/s Aug. 15-22, Aug. 24 to Sept. 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 25.0 ft was reached in December 1861, and 23.4 ft in February 1890 (information from Corps of Engineers). On Nov. 21, 1921, the stage reached 19.5 ft at gage on railroad bridge 350 ft downstream, corresponding gage height at present site and datum, 24.4 ft, from curve of relation, discharge, 202,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,400 ft³/s Mar. 23, gage height, 14.05 ft; minimum discharge, 1,240 ft³/s Aug. 10, 11.

REVISIONS.--Revised daily discharges, in cubic feet per second, for a period in November 1973 are given below. These figures supersede those published in the report for water year 1974.

	Nov. 16....35,800	Nov. 20....37,000	Nov. 24....34,500
	17....40,400	21....43,300	25....29,400
	18....37,000	22....36,900	26....31,200
	19....32,400	23....35,000	27....29,900
	TOTAL	MEAN	MAX
NOVEMBER 1973	805,420	26,850	43,300
WTR YR 1974	4,492,800	12,310	63,800
CAL YR 1974	2,909,540	7,971	43,300
		MIN	AC-FT
		8,320	1,598,000
		1,360	8,911,000
		1,190	5,771,000

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2340	8890	18500	7940	6980	3160	6930	14900	13100	3410	2390	1960
2	2420	8950	23700	7470	6840	3810	7670	12300	15000	3090	2300	1950
3	2730	6790	19700	7700	6820	4660	22900	12800	13500	2940	2050	1950
4	3090	5450	16000	8140	6330	6170	28000	16800	11900	2750	1690	1980
5	3060	4830	14200	7310	5920	9610	26500	16000	13400	2630	1690	1990
6	3020	4610	13500	7070	6010	8090	19900	16100	12400	2550	1620	2010
7	3390	4630	12800	6950	5700	7670	16400	16400	12400	2480	1530	2030
8	3590	5670	10700	4830	5330	6970	16500	19100	12700	2380	1520	2080
9	3020	7230	11300	3970	4300	6220	19900	17500	11000	2310	1440	2390
10	2950	6710	16700	3600	4130	5680	22300	14600	10400	2170	1290	2570
11	3830	6480	16500	3920	3950	5290	23100	13100	9790	1990	1300	2760
12	4020	7350	13200	4490	3860	4700	18500	11900	9810	1890	1360	2800
13	4060	8610	11800	3100	3680	4240	14600	9830	9020	1820	1360	2850
14	4000	8190	10400	3000	3450	4600	13700	9460	8220	1870	1440	2870
15	3950	7770	10100	2960	3260	14300	12900	8720	7650	1900	1670	2850
16	3970	7460	9510	2890	3090	24600	12800	8340	7200	1870	1690	2820
17	3860	7190	11700	2850	2950	26300	13000	7800	6390	2070	1750	2730
18	3770	6990	11900	2770	2880	33100	14000	6280	6170	2230	1880	2740
19	3790	8370	8530	3030	3340	27800	13300	5390	5830	1980	1880	2800
20	3690	9320	9350	9840	3510	26600	11400	6310	5300	1940	1900	3020
21	3720	11700	11600	15400	3690	26800	11300	7150	4700	1930	2130	3620
22	3700	25400	11200	15800	3890	26900	11500	6950	3490	2250	2130	4060
23	3330	19500	12700	12700	3850	38200	12900	6440	3690	3320	2050	4310
24	2920	15500	12600	10800	3580	30000	15900	5290	4450	3210	2030	4290
25	2860	13300	10900	11800	3390	30600	17100	5040	4080	2800	2030	4300
26	2810	12400	10500	11800	3260	27900	18000	5450	3710	2660	2150	4330
27	2820	12300	13100	10100	3140	18400	17000	5540	3540	2460	2080	4330
28	2830	14400	14300	10000	3070	13000	14800	5970	3320	2380	2080	4340
29	2890	13600	12300	10200	---	10600	13800	6810	3530	2520	2020	4470
30	3030	15000	9750	8930	---	8260	17800	7630	3420	2500	1950	4400
31	4760	---	9640	7470	---	7390	---	8710	---	2370	1900	---
TOTAL	104220	294590	398680	228830	120200	471620	484400	314610	239110	74670	56300	91600
MEAN	3362	9820	12860	7382	4293	15210	16150	10150	7970	2409	1816	3053
MAX	4760	25400	23700	15800	6980	38200	28000	19100	15000	3410	2390	4470
MIN	2340	4610	8530	2770	2880	3160	6930	5040	3320	1820	1290	1950
AC-FT	206700	584300	790800	453900	238400	935500	960800	624000	474300	148100	111700	181700

WILLAMETTE RIVER BASIN

14189000 SANTIAM RIVER AT JEFFERSON, OR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1993, BY WATER YEAR (WY)

MEAN	4938	11740	15520	14100	10360	8960	7629	6561	4511	1924	1703	3183
MAX	11890	26850	31700	24520	21250	25700	16150	11270	11150	4825	2883	5325
(WY)	1969	1974	1978	1974	1982	1972	1993	1984	1984	1983	1968	1968
MIN	2490	2882	2420	2178	1897	3245	3874	2115	1287	958	1100	1553
(WY)	1988	1988	1977	1977	1977	1992	1968	1973	1992	1992	1967	1967

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1967 - 1993

ANNUAL TOTAL	1763852	2878830										
ANNUAL MEAN	4819	7887								7583		
HIGHEST ANNUAL MEAN										12310		1974
LOWEST ANNUAL MEAN										3512		1977
HIGHEST DAILY MEAN	25400	Nov 22	38200	Mar 23	78800	Jan 21	1972					
LOWEST DAILY MEAN	764	Jul 29	1290	Aug 10	764	Jul 29	1992					
ANNUAL SEVEN-DAY MINIMUM	794	Jul 28	1390	Aug 8	794	Jul 28	1992					
ANNUAL RUNOFF (AC-FT)	3499000		5710000		5493000							
10 PERCENT EXCEEDS	11500		16400		16700							
50 PERCENT EXCEEDS	3290		5540		4970							
90 PERCENT EXCEEDS	1130		2030		1570							

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1991 to April 1992, November 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table.
These figures supercede those published in the report for 1992.

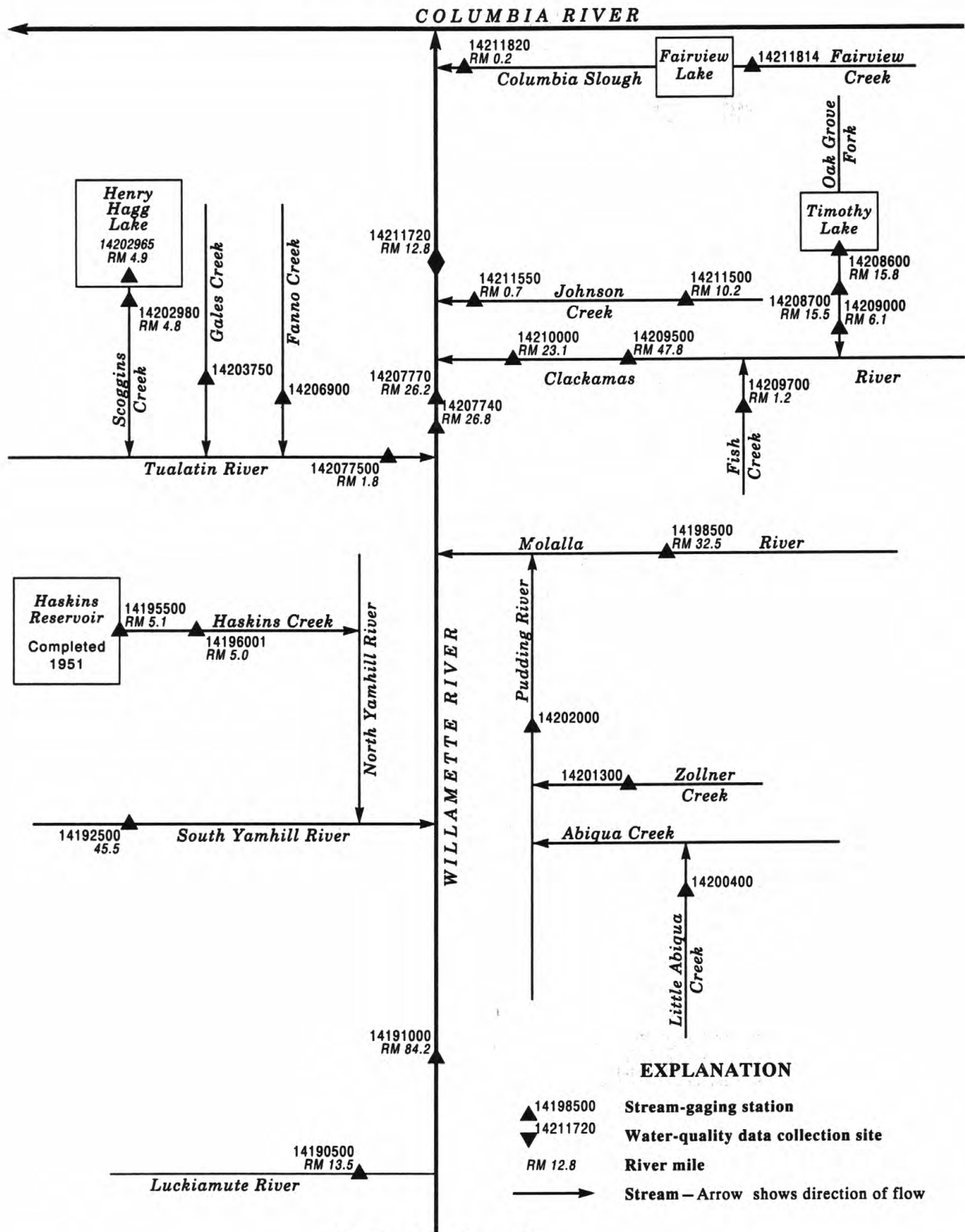
WATER-QUALITY DATA, WATER YEAR DECEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 07...	1450	9.0	26100	54	3810	62
12...	1330	9.0	17000	14	643	58
JAN 29...	0930	8.5	11300	14	427	62
FEB 20...	1250	9.5	18600	92	4620	52
21...	1045	9.5	18500	42	2100	57
APR 23...	1210	10.0	7000	16	302	94

WATER-QUALITY DATA, WATER YEAR NOVEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 24...	1445	8.0	15100	12	489	69
DEC 22...	1240	--	11300	7	214	66
FEB 23...	1415	--	3820	29	299	89
MAR 22...	0915	7.5	26200	22	1560	68
APR 09...	1000	8.0	19700	17	904	69
16...	1045	12.0	13100	7	248	74
MAY 05...	1025	10.0	16000	11	475	45
JUN 07...	1020	12.0	12100	8	261	65

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.



Continued on Figure 19

Figure 21--Schematic diagram showing gaging stations in the Willamette River Basin, downstream from Luckiamute River.

WILLAMETTE RIVER BASIN

14190500 LUCKIAMUTE RIVER NEAR SUVER, OR

LOCATION.--Lat 44°47'00", long 123°14'00", in SW 1/4 SW 1/4 sec.18, T.9 S., R.4 W., Polk County, Hydrologic Unit 17090003, on right bank 10 ft upstream from highway bridge at Helmick State Park, 3.0 mi northwest of Suver, 4.7 mi downstream from Little Luckiamute River, and at mile 13.5.

DRAINAGE AREA.--240 mi².

PERIOD OF RECORD.--August 1905 to October 1911, July 1940 to current year.

REVISED RECORDS.--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

GAGE.--Water-stage recorder. Datum of gage is 171.92 ft above sea level. Aug. 18, 1905, to Oct. 31, 1911, nonrecording gage at present site at different datum, Aug. 20 to Oct. 15, 1940, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation during periods of low flow caused by millpond upstream from station. A few small diversions for irrigation upstream from station. Continuous water-quality records for the period October 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--59 years, 879 ft³/s, 49.75 in/yr, 636,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Dec. 22, 1964, gage height, 34.52 ft; minimum discharge, 0.65 ft³/s Aug. 13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0800	*4,800	*24.22				
Minimum discharge, 28 ft ³ /s Oct. 14-17.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	596	896	1080	1080	504	918	1160	838	206	98	46
2	33	421	1800	953	976	898	1100	1070	853	199	90	46
3	36	300	1480	894	887	896	1700	1050	774	192	79	47
4	38	225	1040	1390	810	1230	1800	1130	676	190	75	42
5	37	209	818	1440	751	2690	1480	1000	793	183	71	42
6	34	172	715	1230	704	2400	1250	957	1010	170	70	43
7	32	168	653	1070	661	1680	1150	906	791	163	71	45
8	31	247	699	964	624	1320	1080	1090	686	155	77	42
9	29	326	1300	878	601	1100	1380	1030	605	151	77	41
10	30	285	2610	777	577	976	2170	943	595	146	72	37
11	30	235	4510	701	567	879	2810	846	546	143	70	33
12	31	218	2880	648	567	771	2420	770	567	139	67	33
13	30	204	1710	608	522	715	1930	721	497	135	67	36
14	29	179	1310	568	487	676	1620	652	458	147	71	37
15	28	163	1100	535	462	941	1440	601	442	143	76	36
16	28	150	936	507	432	1400	1310	555	422	138	81	38
17	30	140	1250	479	407	2700	1360	516	388	136	74	38
18	33	137	1410	451	393	3590	1560	481	362	141	67	35
19	37	146	1120	492	407	3100	1560	452	338	132	62	35
20	45	242	1550	2490	404	2270	1380	472	326	123	64	36
21	132	490	2220	3800	448	1750	1260	443	305	124	65	36
22	123	2700	2360	3440	502	1500	1130	435	309	140	66	36
23	80	1710	1860	2720	510	2760	1150	402	323	167	62	35
24	63	969	1490	2200	502	2800	1440	372	287	148	62	31
25	54	694	1240	2390	484	2100	1520	377	266	132	59	29
26	49	541	1080	2180	470	1660	1630	436	249	126	56	29
27	46	507	1070	1790	459	1380	1790	466	240	115	55	29
28	45	594	1360	1610	448	1180	1540	523	236	108	53	30
29	46	493	1460	1630	---	1040	1380	558	223	109	53	31
30	144	555	1330	1390	---	956	1310	554	214	110	52	30
31	352	---	1190	1220	---	901	---	756	---	105	49	---
TOTAL	1787	14016	46447	42525	16142	48763	45568	21724	14619	4516	2111	1107
MEAN	57.6	467	1498	1372	576	1573	1519	701	487	146	68.1	36.9
MAX	352	2700	4510	3800	1080	3590	2810	1160	1010	206	98	47
MIN	28	137	653	451	393	504	918	372	214	105	49	29
AC-FT	3540	27800	92130	84350	32020	96720	90380	43090	29000	8960	4190	2200
CFSM	.24	1.95	6.24	5.72	2.40	6.55	6.33	2.92	2.03	.61	.28	.15
IN.	.28	2.17	7.20	6.59	2.50	7.56	7.06	3.37	2.27	.70	.33	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

	177	1066	2027	2231	2017	1432	856	420	201	80.1	42.9	53.2
MEAN	177	1066	2027	2231	2017	1432	856	420	201	80.1	42.9	53.2
MAX	1241	4574	5112	4727	4769	3002	1847	1026	512	184	85.0	190
(WY)	1948	1910	1965	1956	1949	1961	1955	1963	1984	1906	1906	1959
MIN	20.2	56.9	106	151	253	391	312	190	74.3	30.0	9.45	17.0
(WY)	1953	1953	1977	1977	1977	1941	1977	1966	1992	1967	1967	1967

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1906 - 1993
ANNUAL TOTAL	187631	259325	
ANNUAL MEAN	513	710	879
HIGHEST ANNUAL MEAN			1464
LOWEST ANNUAL MEAN			230
HIGHEST DAILY MEAN	5140	Feb 21	25200
LOWEST DAILY MEAN	13	Aug 28	2.6
ANNUAL SEVEN-DAY MINIMUM	15	Aug 25	4.3
ANNUAL RUNOFF (AC-FT)	372200	514400	636700
ANNUAL RUNOFF (CFSM)	2.14	2.96	3.66
ANNUAL RUNOFF (INCHES)	29.08	40.20	49.75
10 PERCENT EXCEEDS	1330	1670	2320
50 PERCENT EXCEEDS	222	487	345
90 PERCENT EXCEEDS	20	37	36

14191000 WILLAMETTE RIVER AT SALEM, OR

LOCATION.--Lat 44°56'40", long 123°02'30", in SE 1/4 SW 1/4 sec. 22, T.7 S., R.3 W., Marion County, Hydrologic Unit 17090007, on right bank 300 ft upstream from Center Street Bridge in Salem and at mile 84.16.

DRAINAGE AREA.--7,280 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1909 to December 1916, January 1923 to current year. Monthly discharge only January 1923 to September 1927, published in WSP 1318. Gage-height records collected at about the same site since 1892 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1318: 1915(M).

GAGE.--Water-stage recorder. Datum of gage is 106.14 ft above sea level. Oct. 1, 1909, to Dec. 31, 1916, nonrecording gage at site 0.5 mi upstream at datum 8.00 ft higher. Jan. 1, 1923, to Nov. 26, 1934, nonrecording gage at Center Street Bridge at datum 8.00 ft higher. Nov. 27, 1934, to Sept. 30, 1962, water-stage recorder at present site at datum 8.00 ft higher.

REMARKS.--Records excellent except for estimated daily discharges, which are good. Discharges for period Jan 30 to Feb. 15, Feb. 19-23 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS). Flow regulated by 12 reservoirs upstream from station (see elsewhere in this report). Many small diversions for irrigation upstream from station; part of flow of Salem Canal, which diverts water from North Santiam River, returns to Willamette River downstream from station, through Mill Creek at Salem.

AVERAGE DISCHARGE.--77 years, 23,300 ft³/s, 43.46 in/yr, 16,880,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 348,000 ft³/s Jan. 8, 1923, gage height, 38.3 ft, present datum; minimum discharge, 2,470 ft³/s Aug. 27, 1940, gage height, 3.55 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 500,000 ft³/s Dec. 4, 1861, gage height, about 47 ft present datum, from rating curve extended above 250,000 ft³/s in 1916. Floods of Jan. 16, 1881, and Feb. 5, 1890, reached stages of 44.3 ft, discharge, 428,000 ft³/s, and 45.1 ft, discharge, 448,000 ft³/s, respectively, from floodmarks and information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83,500 ft³/s Mar. 24, gage height, 20.27 ft; minimum discharge, 6,930 ft³/s Oct. 1, gage height, 5.19 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7030	14100	35400	36500	25500	12600	24300	39900	37000	11000	9310	8570
2	7120	17800	46500	35000	24200	14700	23500	35500	50400	10700	9400	8590
3	7300	16900	52900	31300	22900	16700	34800	34000	54000	10300	9150	8580
4	7830	14300	48200	31100	20800	20000	58900	39500	51000	9910	8500	8550
5	7870	12300	41100	34100	18700	27200	68000	43900	50900	9680	8350	8520
6	7770	11500	36900	31100	18000	28400	63400	42500	52100	9320	8250	8520
7	7790	11100	34500	29400	17900	25800	55100	42500	46800	9100	8230	8520
8	8550	11400	31700	24300	17200	23300	50500	44700	42700	8810	8200	8480
9	8380	13500	32600	20400	16300	21100	52400	48100	38300	8630	8190	8290
10	7640	14300	48900	18400	16100	19100	63100	45700	35800	8450	8020	8690
11	8070	14300	63000	16900	16200	18000	69100	41100	32900	8160	7830	9190
12	8700	14200	58700	17800	16400	16800	67300	36900	32300	7990	7840	9590
13	8760	15700	46900	15600	16000	15700	56300	32800	31100	7860	7790	9750
14	8740	15600	37700	14000	15100	14900	47800	30800	28400	7850	7810	9770
15	8660	15200	32900	13500	14300	20600	43200	29200	25800	7850	8050	9810
16	8730	14800	30900	13500	e13500	42800	41000	26800	24000	7840	8220	9840
17	8660	14300	32300	13500	e12600	63500	40300	25600	22200	7840	8250	9850
18	8490	13700	37500	13500	e12200	75000	42500	23300	20600	8160	8610	9740
19	8410	14400	34500	13600	11900	80100	45100	20500	19600	8000	8630	9860
20	8360	17100	29900	26800	13200	78100	41400	20300	18500	7760	8850	9950
21	8380	19000	35300	52100	14800	73000	37800	22900	17400	7980	8940	10500
22	8600	35600	40200	62600	18300	69600	36000	23400	15300	8460	9180	11000
23	8560	46300	39700	63500	19900	76400	35900	24600	14300	9840	9110	11400
24	7950	41600	38700	55100	17800	80900	40000	23100	14400	10900	8920	11400
25	7750	36400	34600	47300	16000	76200	43000	21200	14000	11100	8880	11400
26	7600	31100	31900	44700	14700	73100	45600	21400	13000	10700	8830	11400
27	7580	27300	33100	42000	13800	63400	45900	22900	12400	9900	8830	11400
28	7700	27500	38600	39400	12900	48100	42400	24800	11900	9370	8710	11400
29	7820	28700	44500	37200	---	38900	38200	26500	11600	9310	8760	11500
30	8310	29000	41300	33400	---	31100	40500	27600	11400	9470	8720	11500
31	9860	---	37500	28200	---	26900	---	27800	---	9230	8610	---
TOTAL	252970	609000	1228400	955800	467200	1292000	1393300	969800	850100	281470	264970	295560
MEAN	8160	20300	39630	30830	16690	41680	46440	31280	28340	9080	8547	9852
MAX	9860	46300	63000	63500	25500	80900	69100	48100	54000	11100	9400	11500
MIN	7030	11100	29900	13500	11900	12600	23500	20300	11400	7760	7790	8290
AC-FT	501800	1208000	2437000	1896000	926700	2563000	2764000	1924000	1686000	558300	525600	586200
CFSM	1.12	2.79	5.44	4.24	2.29	5.72	6.38	4.30	3.89	1.25	1.17	1.35
IN.	1.29	3.11	6.28	4.88	2.39	6.60	7.12	4.96	4.34	1.44	1.35	1.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	13870	30290	47580	44810	33940	29490	23660	18680	13940	7568	7324	10230													
MAX	24390	70400	91780	78420	62870	73670	46440	31280	30910	12410	9540	13340													
(WY)	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980													
MIN	7935	8444	6780	6377	5313	11270	10260	7701	5657	5737	5734	6155													
(WY)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999													

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1969 - 1993
ANNUAL TOTAL	5230020	8860570	
ANNUAL MEAN	14290	24280	23410
HIGHEST ANNUAL MEAN			37960
LOWEST ANNUAL MEAN			9792
HIGHEST DAILY MEAN	63000	Dec 11	199000
LOWEST DAILY MEAN	5390	Jun 24	4140
ANNUAL SEVEN-DAY MINIMUM	5480	Jun 21	4340
ANNUAL RUNOFF (AC-FT)	10370000	17570000	16960000
ANNUAL RUNOFF (CFSM)	1.96	3.33	3.22
ANNUAL RUNOFF (INCHES)	26.72	45.28	43.69
10 PERCENT EXCEEDS	32700	48100	54000
50 PERCENT EXCEEDS	8750	17200	15000
90 PERCENT EXCEEDS	5630	8240	6750

e Estimated

WILLAMETTE RIVER BASIN

14191000 WILLAMETTE RIVER AT SALEM, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1991 to April 1992, December 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, WATER YEAR DECEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
07...	1130	--	66300	80	14300	69
11...	1100	7.5	59900	31	5010	84
JAN						
29...	1145	13.0	32000	53	4580	89
FEB						
21...	1400	10.5	59400	81	13000	78
APR						
17...	1100	--	19100	21	1080	92

WATER-QUALITY DATA, WATER YEAR DECEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
22...	1050	8.0	40400	24	2620	86
JAN						
28...	1030	7.0	39500	17	1810	77
FEB						
23...	1100	4.5	20300	60	3290	83
MAR						
22...	1310	9.0	69600	65	12200	85
APR						
09...	1245	10.0	51600	35	4880	81
16...	1225	10.5	40700	29	3190	86
MAY						
05...	1200	12.0	44200	16	1910	77
JUN						
08...	1120	--	43000	15	1740	85

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

LOCATION.--Lat 45°02'50", long 123°30'10", in NE 1/4 SE 1/4 sec.14, T.6 S., R.7 W., Polk County, Hydrologic Unit 17090008, on left bank 2.3 mi southwest of Willamina, 2.8 mi upstream from Willamina Creek, and at mile 45.5.

PERIOD OF RECORD.--May 1934 to September 1993 (discontinued).

REVISED RECORDS.--WSP 814: Drainage area. WSP 1318: 1934.

GAGE.--Water-stage recorder. Datum of gage is 235.55 ft above sea level.

REMARKS.-No estimated daily discharges. Records good. Slight regulation occasionally at low flows by millpond upstream. No diversion upstream from station.

AVERAGE DISCHARGE.--59 years, 604 ft³/s, 61.70 in/yr, 437,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s Dec. 22, 1964, gage height, 17.07 ft; minimum discharge, 2.6 ft³/s Oct. 11, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1830	*4,960	*7.65				
Minimum discharge, 11 ft ³ /s Sept. 28-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	914	932	666	701	214	559	722	359	117	48	15
2	22	552	1440	594	617	307	779	654	349	113	43	15
3	23	343	1050	649	548	428	1110	724	365	110	38	17
4	24	282	855	899	490	1030	942	713	333	105	35	16
5	24	239	706	818	446	1310	797	625	400	98	35	16
6	20	194	624	719	409	896	705	609	392	93	34	17
7	18	309	540	656	379	706	621	638	374	89	35	16
8	18	405	1010	602	354	589	645	743	345	86	34	14
9	18	513	1290	537	346	509	906	681	334	83	37	13
10	18	406	3440	487	337	462	1370	617	342	82	35	13
11	18	324	2550	442	329	408	1520	549	358	78	34	12
12	18	277	1670	395	306	371	1240	494	339	77	31	13
13	18	232	1210	363	279	346	1060	446	299	76	32	15
14	18	200	998	335	260	413	885	395	277	74	32	14
15	19	176	880	311	244	718	843	357	272	75	36	13
16	19	158	768	289	225	840	742	324	251	75	36	14
17	21	146	1040	269	207	1740	773	295	229	78	34	14
18	25	147	914	254	200	1860	839	268	214	72	30	13
19	59	368	834	535	199	1350	742	258	198	65	28	14
20	73	445	1710	2830	197	1170	658	262	184	63	27	15
21	138	2210	1810	2210	210	914	644	277	176	65	26	16
22	86	2820	1630	1770	200	1180	658	271	209	75	25	16
23	62	1540	1370	1330	192	2780	866	234	200	82	25	14
24	50	1000	1120	1370	184	1820	1240	208	168	72	30	14
25	43	727	928	1530	177	1340	1200	222	154	67	27	13
26	38	564	832	1300	172	1040	1280	240	145	64	25	12
27	36	846	873	1080	168	842	1230	270	142	58	23	12
28	34	885	1060	1140	165	696	1000	294	135	55	21	11
29	69	680	940	1110	---	597	926	296	130	59	20	11
30	327	907	831	940	---	562	824	312	121	65	19	11
31	738	---	751	813	---	500	---	374	---	55	16	---
TOTAL	2115	18809	36606	27243	8541	27938	27604	13372	7794	2426	951	419
MEAN	68.2	627	1181	879	305	901	920	431	260	78.3	30.7	14.0
MAX	738	2820	3440	2830	701	2780	1520	743	400	117	48	17
MIN	18	146	540	254	165	214	559	208	121	55	16	11
AC-FT	4200	37310	72610	54040	16940	55420	54750	26520	15460	4810	1890	831
CFSM	.51	4.71	8.88	6.61	2.29	6.78	6.92	3.24	1.95	.59	.23	.11
IN.	.59	5.26	10.24	7.62	2.39	7.81	7.72	3.74	2.18	.68	.27	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1993, BY WATER YEAR (WY)

MEAN	171	860	1412	1448	1301	981	584	279	133	50.1	24.7	39.2
MAX	846	2650	2917	3172	2869	1981	1364	613	405	163	82.3	282
(WY)	1948	1974	1965	1953	1949	1961	1937	1948	1981	1983	1968	1959
MIN	9.62	22.0	104	132	278	229	180	68.6	47.0	18.9	6.67	8.93
(WY)	1988	1937	1977	1977	1992	1939	1939	1939	1992	1967	1967	1989

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1935 - 1993
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ANNUAL TOTAL	152355.6		173818			
ANNUAL MEAN	416		476		604	
HIGHEST ANNUAL MEAN					1028	1974
LOWEST ANNUAL MEAN					215	1977
HIGHEST DAILY MEAN	3990	Jan 28	3440	Dec 10	16400	Dec 22 1964
LOWEST DAILY MEAN	4.6	Aug 28	11	Sep 28	4.4	Aug 19 1967
ANNUAL SEVEN-DAY MINIMUM	5.7	Aug 16	12	Sep 24	4.7	Aug 19 1967
ANNUAL RUNOFF (AC-FT)	302200		344800		437500	
ANNUAL RUNOFF (CFSM)	3.13		3.58		4.54	
ANNUAL RUNOFF (INCHES)	42.61		48.62		61.70	
10 PERCENT EXCEEDS	1050		1150		1620	
50 PERCENT EXCEEDS	152		306		248	
90 PERCENT EXCEEDS	10		18		20	

14195500 HASKINS CREEK RESERVOIR NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'43", long 123°21'23", in SW 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on control tower 250 ft upstream from dam on Haskins Creek, 11 mi northwest of McMinnville, and at mile 5.1.

DRAINAGE AREA.--6.88 mi².

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

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-79-1: 1978 (maximum contents).

GAGE.--Nonrecording gage. Datum of gage is sea level (levels by city of McMinnville). Prior to February 1981, at datum 20.0 ft lower.

REMARKS.--Reservoir is formed by earthfill dam equipped with five siphon spillways which act as overflow weirs until priming occurs, approximately 815.0 ft elevation. Capacity of reservoir (based on May 1992 resurvey, new capacity table put into use Oct. 1, 1991), 721 acre-ft between elevations 741.5 ft, invert of outlet tunnel, and 815.0 ft, crest of siphon spillways. Dead storage negligible. Rated capacity of three siphons is 700 ft³/s each and remaining two siphons 350 ft³/s each. Water is used for municipal supply of city of McMinnville.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 748 acre-ft Nov. 17, 1954, elevation, 815.65 ft, present datum; no contents at times during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 721 acre-ft many days during the year, elevation, 815.0 ft, present datum; no contents Oct. 1-20.

MONTHEND ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	755.0	0	-
Oct. 31.....	773.0	107	+107
Nov. 30.....	815.0	721	+614
Dec. 31.....	815.0	721	0
CAL YR 1992.....	-	-	0
Jan. 31.....	815.0	721	0
Feb. 28.....	815.0	721	0
Mar. 31.....	815.0	721	0
Apr. 30.....	815.0	721	0
May 31.....	815.0	721	0
June 30.....	814.9	717	-4
July 31.....	808.2	570	-147
Aug. 31.....	801.8	453	-117
Sept. 30.....	800.1	425	-28
WTR YR 1993.....	-	-	+425

14196001 HASKINS CREEK BELOW RESERVOIR, NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'39", long 123°21'06", in SE 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on right bank 800 ft downstream from Haskins Creek Reservoir, 11 mi northwest of McMinnville, and at mile 5.0.

DRAINAGE AREA.--6.90 mi².

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

REVISED RECORDS.--WSP 1738: Drainage area. Maximum discharge for water year 1957, published in WSP 1518, has been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 707 ft above sea level, topographic survey of 1955. Prior to Aug. 5, 1952, water-stage recorder at site 600 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. All records given herein include flow in pipeline which diverts 600 ft upstream from station for municipal supply of McMinnville. Flow regulated by Haskins Creek Reservoir (station 14195500). Water from McGuire Lake (station 14302800) on the Nestucca River is diverted through a tunnel to Haskins Creek Reservoir to augment summer flows.

COOPERATION.--Meter readings for diversion and elevations of Haskins Creek Reservoir furnished by city of McMinnville.

AVERAGE DISCHARGE.--42 years, 30.6 ft³/s, 60.22 in/yr, 22,170 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft³/s Dec. 23, 1964, gage height, 5.98 ft, from floodmark, from rating curve extended above 400 ft³/s on basis of slope-area measurement of peak flow; maximum daily discharge, 515 ft³/s Jan. 21, 1972; minimum daily, 0.10 ft³/s Oct. 27, 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 111 ft³/s Jan. 20; minimum daily, 6.4 ft³/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	11	31	35	52	20	31	38	18	11	10	14
2	8.1	11	45	31	47	20	37	35	18	9.9	12	13
3	7.9	11	35	33	40	25	41	37	18	10	17	12
4	7.9	12	31	34	34	55	33	35	17	9.3	16	13
5	8.5	9.3	27	31	36	63	33	32	17	8.4	16	12
6	8.4	11	24	28	33	49	32	32	16	9.3	15	11
7	8.3	11	21	26	32	42	30	37	16	10	13	11
8	9.6	12	34	26	30	36	33	35	15	12	11	12
9	10	13	35	24	30	33	50	34	15	12	11	15
10	10	12	68	23	29	31	66	32	15	12	13	13
11	10	12	60	22	28	29	65	30	15	11	13	12
12	11	13	43	21	27	27	57	28	14	10	13	10
13	10	13	37	20	25	25	51	27	13	9.6	12	10
14	11	13	35	20	24	27	50	25	12	9.2	10	11
15	11	14	35	18	23	30	42	24	12	8.5	8.3	12
16	12	14	36	18	22	36	40	23	12	9.3	8.4	11
17	13	14	35	18	21	47	39	22	8.7	9.1	9.6	10
18	12	15	34	17	21	52	39	21	13	7.4	11	10
19	13	16	35	31	20	40	36	21	8.8	7.9	13	9.8
20	10	15	45	111	20	37	34	20	9.8	8.8	13	9.4
21	6.7	17	63	84	20	35	34	21	9.7	9.1	9.7	8.4
22	7.5	16	62	71	19	45	33	19	15	9.1	11	8.0
23	8.7	16	59	58	18	67	44	18	13	7.3	11	9.7
24	7.3	15	55	67	16	52	46	15	11	7.8	11	11
25	6.4	29	49	90	17	49	46	18	9.5	7.8	11	10
26	7.9	32	40	81	17	42	56	16	8.6	7.4	12	9.4
27	8.2	31	42	74	16	37	47	19	8.7	8.5	11	9.2
28	7.9	24	50	80	16	34	48	17	8.4	12	13	10
29	7.5	21	48	82	---	31	38	16	8.6	10	13	11
30	8.2	29	39	67	---	31	37	18	9.9	8.3	12	10
31	11	---	39	57	---	29	---	19	---	9.4	14	---
TOTAL	287.4	482.3	1292	1398	733	1176	1268	784	385.7	291.4	374.0	327.9
MEAN	9.27	16.1	41.7	45.1	26.2	37.9	42.3	25.3	12.9	9.40	12.1	10.9
MAX	13	32	68	111	52	67	66	38	18	12	17	15
MIN	6.4	9.3	21	17	16	20	30	15	8.4	7.3	8.3	8.0
AC-FT	570	957	2560	2770	1450	2330	2520	1560	765	578	742	650
MEAN†	5.22	26.4	41.6	45.0	26.1	37.9	42.3	25.4	12.8	7.01	5.01	3.51
CFSM†	0.76	3.83	6.03	6.52	3.78	5.49	6.13	3.68	1.86	1.02	0.73	0.51
IN.†	0.87	4.27	6.96	7.53	3.94	6.33	6.85	4.24	2.07	1.17	0.84	0.57
AC-FT†	321	1570	2560	2770	1450	2330	2520	1560	761	431	308	209

CAL YR 1992 TOTAL 7744.2 MEAN 21.2 MAX 154 MIN 6.4 AC-FT 15360 MEAN† 18.9 CFSM† 2.74 IN.† 37.24 AC-FT† 13700
WTR YR 1993 TOTAL 8799.7 MEAN 24.1 MAX 111 MIN 6.4 AC-FT 17450 MEAN† 23.2 CFSM† 3.36 IN.† 45.61 AC-FT† 16780

† Adjusted for change in contents in Haskins Creek Reservoir and diversion from McGuire Lake.

WILLAMETTE RIVER BASIN

14198500 MOLALLA RIVER ABOVE PINE CREEK, NEAR WILHOIT, OR

LOCATION.--Lat 45°00'35", long 122°28'45", in NE 1/4 NE 1/4 sec.31, T.6 S., R.3 E., Clackamas County, Hydrologic Unit 17090009, on right bank 0.5 mi upstream from Pine Creek, 5 mi southeast of Wilhoit, and at mile 32.5.

DRAINAGE AREA.--97.0 mi², at cableway 0.2 mi downstream.

PERIOD OF RECORD.--October 1935 to September 1993 (discontinued).

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-75-1: 1967(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 791.35 ft above sea level (Bureau of Public Roads bench mark). Oct. 1, 1935, to Sept. 30, 1945, and Oct. 1, 1945, to Feb. 9, 1961, water-stage recorder at site 0.3 mi downstream at datums 8.42 ft and 10.44 ft lower, respectively. Feb. 10, 1961, to July 21, 1966, water-stage recorder at site 0.2 mi downstream at datum 5.99 ft lower.

REMARKS.--Records fair. No regulation or diversion upstream from station. Continuous water-quality records for the period January 1964 to September 1969 have been collected at this location.

AVERAGE DISCHARGE.--58 years, 530 ft³/s, 74.22 in/yr, 383,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s Dec. 22, 1964, gage height, 16.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,200 ft³/s; minimum discharge, 16 ft³/s several days August to October 1992, but may have been lower during period of no record, July 25 to Aug. 31, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	unknown	*6,190	*a8.93	Mar. 23	0700	5,040	8.24
Minimum daily discharge, 16 ft ³ /s Oct. 27, 28							
a From crest-stage gage.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	e1700	1130	397	594	177	549	979	e440	175	162	51
2	28	e1000	1190	348	519	197	863	866	e560	186	153	47
3	64	e480	794	328	472	463	2150	1060	e560	179	151	48
4	61	e310	591	319	435	791	1580	1270	e560	170	124	48
5	45	e240	472	289	431	1020	1040	1040	e640	158	117	48
6	37	e190	401	263	464	834	851	1020	e720	148	115	48
7	32	e380	348	248	490	800	831	1030	980	137	109	44
8	29	e590	481	237	468	763	958	1160	938	136	116	42
9	27	e650	556	216	459	662	e1500	992	804	134	101	40
10	26	e430	1550	203	468	584	e1800	858	683	129	95	40
11	25	e310	1240	195	423	508	e1600	750	654	129	97	40
12	24	e500	802	186	391	439	e1300	e600	641	124	88	40
13	27	e460	601	176	363	400	e1100	e520	560	129	82	40
14	28	e360	621	173	332	818	e1000	e460	482	144	86	36
15	e24	e280	657	166	305	2240	e1000	e420	496	173	108	38
16	e24	e220	561	161	269	1840	e1000	e380	465	155	94	40
17	e24	e220	524	155	250	2380	e1100	e360	417	232	93	39
18	e23	e330	440	149	242	3040	e1300	e340	378	201	80	37
19	e23	e490	402	332	244	2090	e1200	e330	331	181	80	37
20	e23	e470	942	1740	224	1840	868	e320	297	199	81	37
21	e37	e2900	849	1230	213	1390	843	e320	280	210	84	37
22	e22	e2700	818	892	198	1790	917	e360	312	e360	78	37
23	e23	e1200	821	665	189	4170	1020	e400	349	e580	76	35
24	e20	e760	693	679	177	2200	1430	e320	290	e340	71	35
25	e18	e530	574	1080	169	1370	1560	e310	252	300	68	34
26	e17	399	635	997	163	975	1650	e300	227	267	65	33
27	e16	564	686	832	160	761	1520	e280	216	224	62	32
28	e16	918	734	931	160	623	1180	e280	209	202	59	31
29	e23	646	651	1060	---	540	1180	e290	202	235	57	31
30	e180	930	532	866	---	483	1210	e260	186	202	53	30
31	e990	---	460	707	---	462	---	e320	---	188	51	---
TOTAL	1990	21157	21756	16220	9272	36650	36100	18195	14129	6327	2856	1175
MEAN	64.2	705	702	523	331	1182	1203	587	471	204	92.1	39.2
MAX	990	2900	1550	1740	594	4170	2150	1270	980	580	162	51
MIN	16	190	348	149	160	177	549	260	186	124	51	30
AC-FT	3950	41960	43150	32170	18390	72700	71600	36090	28020	12550	5660	2330
CFSM	.66	7.27	7.24	5.39	3.41	12.2	12.4	6.05	4.86	2.10	.95	.40
IN.	.76	8.11	8.34	6.22	3.56	14.06	13.84	6.98	5.42	2.43	1.10	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

MEAN	222	741	994	988	906	751	715	547	292	103	53.4	71.2
MAX	1020	1799	2604	2574	2411	1705	1366	1062	726	325	193	240
(WY)	1948	1974	1965	1953	1961	1972	1937	1945	1937	1983	1968	1978
MIN	18.3	24.1	106	119	131	223	198	147	60.4	35.7	21.3	24.3
(WY)	1988	1937	1977	1977	1977	1992	1941	1947	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1936 - 1993
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ANNUAL TOTAL	123871		185827			
ANNUAL MEAN	338		509		530	
HIGHEST ANNUAL MEAN					921	1974
LOWEST ANNUAL MEAN					241	1977
HIGHEST DAILY MEAN	3390	Feb 20	4170	Mar 23	15000	Dec 22 1964
LOWEST DAILY MEAN	16	Aug 29	16	Oct 27	16	Aug 29 1992
ANNUAL SEVEN-DAY MINIMUM	17	Aug 25	19	Oct 23	17	Aug 25 1992
ANNUAL RUNOFF (AC-FT)	245700		368600		383900	
ANNUAL RUNOFF (CFSM)	3.49		5.25		5.46	
ANNUAL RUNOFF (INCHES)	47.51		71.27		74.22	
10 PERCENT EXCEEDS	819		1170		1200	
50 PERCENT EXCEEDS	163		332		317	
90 PERCENT EXCEEDS	20		37		41	

e Estimated

WILLAMETTE RIVER BASIN

295

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR

LOCATION.--Lat 44°57'21", long 122°37'38", in SW 1/4 SE 1/4 sec.13, T.7 S., R.1 E, Marion County, Hydrologic Unit 17090009, on left bank, 4 mi south of Scotts Mills, and 0.1 mi upstream from mouth.

DRAINAGE AREA.--9.81 mi².

PERIOD OF RECORD.--July 1993 to September 1993.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above sea level, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--Maximum discharge, 21.0 ft³/s July 22, gage height, 3.40 ft; minimum discharge, 2.0 ft³/s Sept. 26-30.

DISCHARGE, CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	JUL	AUG	SEP
1	e14	7.0	3.7
2	e15	6.8	3.6
3	14	6.4	3.5
4	13	6.1	3.4
5	12	5.9	3.5
6	12	5.9	3.5
7	11	6.1	3.4
8	11	6.1	3.2
9	10	5.7	2.9
10	10	5.5	2.8
11	9.9	5.5	2.9
12	9.7	5.4	3.0
13	10	5.5	2.8
14	10	5.8	2.7
15	10	8.0	3.0
16	9.7	7.1	3.0
17	11	7.0	2.8
18	9.5	5.8	2.7
19	9.3	6.1	2.7
20	10	6.0	2.8
21	9.8	6.0	2.7
22	14	5.4	2.5
23	15	6.5	2.4
24	11	6.1	2.3
25	10	5.4	2.3
26	9.2	4.9	2.1
27	8.5	4.5	2.1
28	8.8	4.4	2.1
29	9.8	4.3	2.1
30	8.3	4.0	2.0
31	7.5	3.7	---
TOTAL	333.0	178.9	84.5
MEAN	10.7	5.77	2.82
MAX	15	8.0	3.7
MIN	7.5	3.7	2.0
AC-FT	661	355	168
CFS	1.09	.59	.29
IN.	1.26	.68	.32

e Estimated

WILLAMETTE RIVER BASIN

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 28, to September 30, 1993

WATER TEMPERATURE: July 28, to September 30, 1993.

INSTRUMENTATION.--Water-quality monitor.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--

SPECIFIC CONDUCTANCE: Maximum, 63 microsiemens Sept. 29, 30; minimum, 41 microsiemens July 28, 29.

WATER TEMPERATURE: Maximum, 18.0°C Aug. 4; minimum, 7.0°C Sept. 21-23.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, JULY TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JULY			AUGUST			SEPTEMBER	
1	---	---	---	49	45	46	53	51	51
2	---	---	---	48	46	47	53	52	53
3	---	---	---	49	47	47	54	52	53
4	---	---	---	50	48	49	60	53	54
5	---	---	---	54	49	50	54	53	54
6	---	---	---	54	49	50	55	53	54
7	---	---	---	51	49	49	60	54	55
8	---	---	---	54	50	52	61	56	58
9	---	---	---	55	50	53	61	56	59
10	---	---	---	55	50	53	57	55	56
11	---	---	---	55	50	52	59	55	57
12	---	---	---	56	53	54	60	55	57
13	---	---	---	56	53	55	59	54	56
14	---	---	---	58	54	56	58	54	55
15	---	---	---	58	51	54	60	55	56
16	---	---	---	56	43	52	60	55	56
17	---	---	---	46	43	44	61	54	56
18	---	---	---	48	43	45	60	55	56
19	---	---	---	50	44	47	59	55	56
20	---	---	---	48	44	46	60	53	55
21	---	---	---	49	45	46	59	54	55
22	---	---	---	50	46	48	59	54	55
23	---	---	---	51	44	47	59	55	56
24	---	---	---	48	44	46	60	54	56
25	---	---	---	49	45	47	61	55	57
26	---	---	---	51	47	48	61	55	57
27	---	---	---	52	47	48	61	57	57
28	43	41	42	51	47	48	62	55	57
29	44	41	42	52	48	50	63	55	57
30	46	42	44	54	48	50	63	55	57
31	46	44	45	51	49	50	---	---	---
MONTH	---	---	---	58	43	49	63	51	56

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JULY			AUGUST			SEPTEMBER	
1	---	---	---	16.5	12.5	14.5	14.5	11.5	13.0
2	---	---	---	17.0	13.0	15.0	15.0	11.5	13.0
3	---	---	---	17.5	13.5	15.5	15.0	12.0	13.5
4	---	---	---	18.0	14.5	16.0	15.0	11.5	13.0
5	---	---	---	17.5	14.5	16.0	14.5	12.0	13.0
6	---	---	---	17.0	14.5	15.5	15.0	12.0	13.5
7	---	---	---	15.5	14.0	14.5	16.0	13.0	14.5
8	---	---	---	16.0	13.5	14.5	16.0	13.0	14.5
9	---	---	---	15.5	13.0	14.0	16.0	12.0	14.0
10	---	---	---	14.5	12.0	13.0	15.5	12.0	13.5
11	---	---	---	15.5	12.5	13.5	14.0	11.5	12.5
12	---	---	---	14.5	12.0	13.0	13.5	11.0	12.0
13	---	---	---	14.0	12.5	13.0	13.0	9.0	11.0
14	---	---	---	13.5	12.5	13.0	12.5	9.5	11.0
15	---	---	---	14.0	13.0	13.5	13.0	11.0	12.0
16	---	---	---	13.5	12.5	13.0	13.0	9.5	11.0
17	---	---	---	14.5	11.0	12.5	12.5	9.0	11.0
18	---	---	---	15.0	11.5	13.5	12.0	9.0	10.5
19	---	---	---	16.0	14.0	14.5	11.5	10.0	11.0
20	---	---	---	15.0	14.0	14.5	10.5	8.5	9.5
21	---	---	---	15.0	13.5	14.0	10.5	7.0	9.0
22	---	---	---	15.5	12.0	13.5	10.5	7.0	8.5
23	---	---	---	14.5	13.0	14.0	10.5	7.0	9.0
24	---	---	---	13.0	11.0	12.0	11.0	7.5	9.5
25	---	---	---	13.0	10.5	11.5	11.5	8.5	10.0
26	---	---	---	13.5	9.5	11.5	12.5	8.5	10.5
27	---	---	---	13.5	10.5	12.0	12.5	10.0	11.0
28	14.0	12.5	13.0	14.0	11.5	12.5	12.5	10.0	11.5
29	13.0	11.5	12.5	14.0	10.0	12.0	13.5	10.0	11.5
30	14.5	11.0	12.5	14.5	10.5	12.5	13.0	10.5	12.0
31	15.5	11.0	13.0	14.5	11.0	12.5	---	---	---
MONTH	15.5	11.0	13.0	18.0	9.5	13.5	16.0	7.0	11.5

WILLAMETTE RIVER BASIN

297

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR

LOCATION.--Lat 45°06'02", long 122°49'14", in SW 1/4 SW 1/4 sec. 28, T.5 S., R.1 W., Marion County, Hydrologic Unit 17090009, downstream on left bank corner of Monitor-McKee Road bridge, 2.3 mi north-northwest of Mount Angel.

DRAINAGE AREA.--15.0 mi².

PERIOD OF RECORD.--July 1 to September 1993.

GAGE.--Water-stage recorder. Elevation of gage is 120 ft, from topographic map.

REMARKS.--Water-discharge records poor. Many diversions for irrigation upstream from station.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--Maximum discharge, 12 ft³/s July 19, 20, Sept. 17, 18; minimum discharge, 0.23 ft³/s Aug. 12.

DISCHARGE, CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	JUL	AUG	SEP
1	e3.2	1.2	.66
2	e4.0	.69	.71
3	e3.4	.71	.97
4	e2.8	.63	1.0
5	e2.4	.42	1.2
6	e2.2	.45	1.0
7	e2.0	.54	1.1
8	1.8	.46	.96
9	1.9	.30	.90
10	1.6	.32	.96
11	1.1	.33	.93
12	.78	.28	1.4
13	1.0	2.4	1.2
14	1.2	1.3	1.2
15	1.7	.94	1.3
16	1.6	2.7	1.1
17	2.5	5.3	6.2
18	2.3	1.9	6.4
19	3.4	2.1	1.9
20	8.0	1.5	1.7
21	2.4	1.1	1.7
22	1.9	.48	1.5
23	1.8	.37	1.3
24	1.5	.33	.89
25	1.4	.41	.73
26	1.4	.43	.70
27	1.6	.47	.62
28	2.1	.50	.63
29	2.5	.71	.61
30	1.7	.59	.61
31	1.7	.48	---
TOTAL	68.88	30.34	42.08
MEAN	2.22	.98	1.40
MAX	8.0	5.3	6.4
MIN	.78	.28	.61
AC-FT	137	60	83

e Estimated

WILLAMETTE RIVER BASIN

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July to September, 1993.

WATER TEMPERATURE: July to September 1993.

INSTRUMENTATION.--Water-quality monitor.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--

SPECIFIC CONDUCTANCE: Maximum, 500 microsiemens Sept. 18; minimum, 311 microsiemens July 14.

WATER TEMPERATURE: Maximum, 22.5°C Aug. 4; minimum, 10.5°C Sept. 24.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, JULY TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY			AUGUST			SEPTEMBER			
1	368	352	358	412	397	402	353	343	348
2	---	---	---	402	394	398	360	349	354
3	---	---	---	397	385	393	358	353	356
4	---	---	---	394	380	388	361	357	359
5	---	---	---	385	371	377	368	359	363
6	---	---	---	379	362	371	377	368	375
7	---	---	---	376	366	370	377	362	371
8	360	332	345	379	365	370	362	353	358
9	359	333	347	375	366	368	360	353	356
10	366	353	359	396	375	389	357	353	355
11	373	362	366	392	381	387	368	355	362
12	382	371	380	391	376	382	370	363	365
13	376	366	371	403	377	389	378	369	373
14	407	311	372	399	390	396	382	376	379
15	414	345	388	396	336	378	381	373	378
16	390	354	378	443	383	412	373	363	367
17	385	343	370	497	416	453	425	356	375
18	406	351	389	440	423	434	500	404	473
19	414	363	397	438	409	423	498	490	494
20	447	340	406	418	406	411	491	479	485
21	401	343	380	418	405	411	489	468	476
22	387	346	372	417	398	407	469	451	461
23	392	358	377	405	396	400	457	447	451
24	390	351	377	420	397	407	476	456	465
25	379	362	373	400	378	387	491	475	484
26	383	373	379	382	372	377	486	478	483
27	382	369	375	377	364	371	484	476	480
28	379	352	371	368	355	361	479	461	472
29	413	354	380	370	345	356	461	434	446
30	446	413	431	348	337	343	437	418	426
31	423	407	416	356	339	346	---	---	---
MONTH	---	---	---	497	336	389	500	343	410

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1993

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

WILLAMETTE RIVER BASIN

299

14202000 PUDDING RIVER AT AURORA, OR

LOCATION.--Lat 45°14'00", long 122°44'56", in SW 1/4 SE 1/4 sec.12, T.4 S., R.1 W., Clackamas County, Hydrologic Unit 17090009, upstream side of bridge on U.S. Highway 99E at Aurora, 0.9 mi upstream from Mill Creek and at mile 8.11.

DRAINAGE AREA.--479 mi².

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Aug. 7 to Sept. 30, 1993.

WATER TEMPERATURE: Aug. 7 to Sept. 30, 1993.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records of daily discharge available in the files of the Portland Field Office.

EXTREMES FOR PERIOD AUG. 7 TO SEPT. 30, 1993.--

SPECIFIC CONDUCTANCE: Maximum, 207 microsiemens Sept. 22; minimum, 116 microsiemens Sept. 27.

WATER TEMPERATURE: Maximum, 24.5°C Aug. 7; minimum, 14.0°C Sept. 24, 25.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, AUGUST TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
AUGUST			SEPTEMBER			
1	---	---	---	161	150	156
2	---	---	---	162	150	158
3	---	---	---	166	155	160
4	---	---	---	173	162	166
5	---	---	---	176	167	171
6	---	---	---	179	174	177
7	140	133	136	179	173	177
8	149	139	143	178	170	173
9	147	142	145	178	169	173
10	145	137	139	179	170	174
11	142	137	140	179	172	176
12	144	140	142	174	172	173
13	149	142	147	190	174	185
14	149	145	147	195	189	192
15	158	149	154	195	186	190
16	161	151	158	190	182	186
17	157	139	145	186	180	183
18	146	138	143	185	181	183
19	147	136	141	191	185	187
20	148	145	147	193	187	191
21	149	142	146	193	183	188
22	153	140	146	207	193	203
23	153	142	148	204	184	194
24	153	143	147	191	149	170
25	148	139	144	149	125	140
26	149	140	145	128	119	124
27	150	144	148	130	116	122
28	154	147	151	137	125	129
29	159	153	156	143	136	138
30	160	155	158	147	142	145
31	162	153	158	---	---	---
MONTH	---	---	---	207	116	169

TEMPERATURE, WATER (DEG. C), AUGUST TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
AUGUST			SEPTEMBER			
1	---	---	---	20.5	19.0	20.0
2	---	---	---	21.0	19.5	20.5
3	---	---	---	21.5	20.0	20.5
4	---	---	---	21.5	20.5	21.0
5	---	---	---	21.0	20.5	20.5
6	---	---	---	21.0	19.5	20.5
7	24.5	23.0	23.5	21.5	20.0	20.5
8	23.5	21.5	22.5	22.5	20.5	21.0
9	23.0	21.5	22.5	22.0	21.0	21.5
10	23.0	21.5	22.0	22.0	21.0	21.5
11	23.0	21.5	22.0	21.5	20.5	21.0
12	23.0	21.0	21.5	20.5	19.5	20.0
13	21.5	20.0	20.5	19.5	18.5	19.0
14	20.5	19.5	20.0	19.0	18.0	18.5
15	20.0	19.0	19.5	18.0	17.5	18.0
16	20.0	18.5	19.0	18.0	16.5	17.5
17	20.5	18.0	19.0	17.5	16.5	17.5
18	21.5	18.5	20.0	17.5	16.5	17.0
19	22.0	20.5	21.0	17.5	16.5	17.0
20	22.0	21.0	21.5	16.5	16.0	16.0
21	21.5	20.5	21.0	16.0	15.0	15.5
22	22.0	20.0	21.0	16.0	15.0	15.5
23	21.5	20.5	21.0	16.0	14.5	15.0
24	21.0	19.5	20.0	15.0	14.0	15.0
25	19.5	18.5	19.0	15.5	14.0	14.5
26	19.5	17.5	18.5	16.0	14.5	15.5
27	19.5	18.0	19.0	16.5	15.0	16.0
28	19.5	18.5	19.0	17.0	15.5	16.0
29	20.0	18.0	19.0	17.5	15.5	16.0
30	20.5	18.5	19.5	17.5	16.0	16.5
31	20.5	18.5	20.0	---	---	---
MONTH	24.5	17.5	20.5	22.5	14.0	18.0

WILLAMETTE RIVER BASIN

14202965 HENRY HAGG LAKE NEAR GASTON, OR

LOCATION.--Lat 45°28'25", long 123°11'51", in SE 1/4 NE 1/4 sec.20, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, at left end of Scoggins Dam on Scoggins Creek, 3.8 mi northwest of Gaston, and at mile 4.9.

DRAINAGE AREA.--38.7 mi².

PERIOD OF RECORD.--January 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with gated concrete spillway and a gated outlet tunnel. Storage began in January 1975. Total capacity at elevation 305.7 ft, maximum water-surface elevation, is 63,360 acre-ft, of which 56,160 acre-ft is active storage above elevation 239.3 ft, proposed minimum pool. Reservoir is used for irrigation, flood control, and recreation. Figures given herein represent active storage.

COOPERATION.--Monthend elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 53,730 acre-ft Apr. 30, 1988, elevation, 303.58 ft; minimum contents observed since first filling, 808 acre-ft Oct. 31, 1975, elevation, 237.21 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 53,650 acre-ft June 30, elevation, 303.51 ft; minimum contents observed, 13,480 acre-ft Nov. 19, elevation, 259.68 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	295.65	45,120	-
Oct. 31.....	260.47	14,030	-31,090
Nov. 30.....	262.15	15,230	+1,200
Dec. 31.....	273.53	24,150	+8,920
CAL YR 1992.....	-	-	+190
Jan. 31.....	286.27	35,670	+11,520
Feb. 28.....	291.17	40,480	+4,810
Mar. 31.....	300.04	49,780	+9,300
Apr. 30.....	303.46	53,590	+3,810
May 31.....	303.48	53,620	+30
June 30.....	303.51	53,650	+30
July 31.....	301.51	51,410	-2,240
Aug. 31.....	295.49	44,910	-6,500
Sept. 30.....	283.89	33,400	-11,510
WTR YR 1993.....	-	-	-11,720

WILLAMETTE RIVER BASIN

301

14202980 SCOGGINS CREEK BELOW HENRY HAGG LAKE, NEAR GASTON, OR

LOCATION.--Lat 45°28'10", long 123°11'56", in SE 1/4 NE 1/4 sec.20, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 600 ft downstream from Scoggins Dam, 800 ft upstream from small left bank tributary, 3.7 mi northwest of Gaston, and at mile 4.8.

DRAINAGE AREA.--38.8 mi².

PERIOD OF RECORD.--January 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 187.48 ft above sea level.

REMARKS.--Records good. Flow completely regulated by Henry Hagg Lake since January 1975. Discharge not adjusted for storage or release from Henry Hagg Lake as evaporation from reservoir at times exceeds natural flow.

AVERAGE DISCHARGE.--18 years, 98.6 ft³/s, 71,470 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,050 ft³/s Apr. 5, 1991, gage height, 18.01 ft; minimum discharge, 1.4 ft³/s Nov. 16, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 459 ft³/s Apr. 13, gage height, 8.36 ft; minimum discharge, 9.1 ft³/s June 25, 26, gage height, 3.36 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	21	15	12	13	11	e11	149	74	23	81	174
2	105	21	11	12	13	11	e11	149	84	35	119	253
3	96	21	11	12	12	11	e11	141	76	52	151	280
4	96	21	10	12	11	12	e11	130	66	52	165	292
5	91	21	11	12	11	12	e11	130	62	52	170	293
6	83	49	11	12	11	12	e11	130	62	46	157	292
7	71	66	11	12	11	12	e11	126	43	29	146	304
8	67	66	11	12	11	12	e100	130	32	44	146	314
9	77	39	11	12	11	11	247	130	32	109	126	313
10	86	22	12	12	11	12	270	129	39	116	127	312
11	86	22	11	12	11	12	193	114	59	116	137	311
12	77	22	11	12	11	12	291	97	54	95	148	310
13	66	38	11	12	11	12	435	97	55	65	147	309
14	60	50	11	12	11	12	292	82	42	56	138	308
15	63	50	11	12	11	12	181	74	16	42	138	254
16	64	50	11	12	11	12	156	74	16	37	111	183
17	64	57	11	12	11	12	139	69	26	27	85	149
18	65	67	11	12	11	12	138	58	26	26	92	135
19	65	41	11	12	11	12	119	52	26	26	96	135
20	61	21	11	13	11	12	92	54	26	27	103	135
21	37	22	11	13	11	12	83	58	20	27	110	135
22	32	22	11	12	11	12	83	58	45	27	110	125
23	59	22	34	12	11	12	131	58	46	27	109	95
24	72	22	57	13	11	67	199	57	24	28	99	87
25	72	21	57	13	11	113	198	57	13	28	91	87
26	62	21	57	13	11	109	199	57	9.6	28	107	87
27	51	22	57	13	11	71	199	87	9.9	58	118	100
28	59	22	35	13	11	26	185	129	20	81	118	120
29	71	22	12	13	---	23	130	64	29	81	118	145
30	42	22	12	13	---	14	121	64	28	81	118	151
31	22	---	12	13	---	e13	---	64	---	81	118	---
TOTAL	2121	983	579	382	313	708	4258	2868	1160.5	1622	3799	6188
MEAN	68.4	32.8	18.7	12.3	11.2	22.8	142	92.5	38.7	52.3	123	206
MAX	105	67	57	13	13	113	435	149	84	116	170	314
MIN	22	21	10	12	11	11	11	52	9.6	23	81	87
AC-FT	4210	1950	1150	758	621	1400	8450	5690	2300	3220	7540	12270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1993, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	97.6	72.6	128	116	77.5	115	79.8	56.6	58.6	115	139	125						
MAX	155	233	433	337	303	326	261	98.7	121	176	190	206						
(WY)	1980	1985	1978	1983	1982	1983	1991	1984	1992	1985	1991	1993						
MIN	26.2	16.7	10.9	9.85	9.50	10.8	12.0	19.9	14.3	52.3	83.4	72.9						
(WY)	1978	1988	1991	1992	1977	1977	1985	1977	1977	1993	1977	1977						

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1976 - 1993

ANNUAL TOTAL	23873.4	24981.5	
ANNUAL MEAN	65.2	68.4	
HIGHEST ANNUAL MEAN			98.6
LOWEST ANNUAL MEAN			172
HIGHEST DAILY MEAN	223	435	1610
LOWEST DAILY MEAN	9.2	9.6	5.3
ANNUAL SEVEN-DAY MINIMUM	9.4	11	5.8
ANNUAL RUNOFF (AC-FT)	47350	49550	71470
10 PERCENT EXCEEDS	170	149	200
50 PERCENT EXCEEDS	36	46	73
90 PERCENT EXCEEDS	10	11	13

e Estimated

WILLAMETTE RIVER BASIN

14203500 TUALATIN RIVER NEAR DILLEY, OR

LOCATION.--Lat 45°28'30", long 123°07'23", in NE 1/4 NW 1/4 sec.24, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 5 ft upstream from highway bridge, 1.0 mi south of Dilley, 1.2 mi downstream from Scoggins Creek, and at mile 58.81.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1940 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 147.57 ft above sea level. Prior to June 16, 1950, nonrecording gage at several sites within 200 ft of present site at datum 4.00 ft higher. June 16, 1950, to Aug. 10, 1966, water-stage recorder at present site at datum 4.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Diurnal fluctuation caused by operation of millpond on Scoggins Creek upstream from station and regulation by Henry Hagg Lake since January 1975. Diversions upstream from station of approximately 3,000 acre-ft from J. W. Barney Reservoir on the Middle Fork of North Fork Trask River for municipal water supply and irrigation in Wapato Lake area. Continuous water-quality records for the period November 1963 to September 1968 have been collected at this location.

AVERAGE DISCHARGE.--54 years, 381 ft³/s, 276,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s Dec. 22, 1964, gage height, 19.34 ft, from rating curve extended above 6,000 ft³/s; minimum discharge, 0.08 ft³/s Sept. 3, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft³/s Apr. 11, gage height, 16.80 ft; minimum discharge, 40 ft³/s Oct. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	132	176	283	429	128	224	426	198	76	99	137
2	116	119	270	249	367	167	248	400	213	74	111	217
3	105	81	224	233	307	178	353	397	195	93	147	248
4	104	58	174	291	271	251	357	375	183	95	155	265
5	100	56	147	306	243	448	314	344	175	93	162	272
6	92	59	132	278	278	479	277	340	170	89	159	276
7	83	87	118	252	213	431	252	331	154	76	146	281
8	75	108	142	230	205	384	259	386	135	69	148	294
9	78	125	248	208	200	324	440	374	130	124	141	293
10	94	82	408	186	195	280	1100	346	135	148	127	293
11	98	64	558	166	192	250	1330	310	151	153	136	295
12	93	59	476	160	184	223	1090	270	151	146	144	297
13	82	59	354	151	174	202	1110	256	142	115	153	297
14	76	73	290	143	164	193	989	231	135	105	140	298
15	78	70	277	136	156	255	664	207	110	90	140	275
16	81	67	249	131	147	253	567	196	92	93	132	205
17	82	68	328	126	140	352	518	185	103	83	99	174
18	81	76	323	121	136	426	488	171	99	79	95	152
19	87	85	296	139	136	415	450	159	97	72	98	153
20	86	75	386	524	133	387	398	164	94	72	101	151
21	77	215	479	1120	136	335	365	167	90	72	110	150
22	44	453	516	980	140	299	330	163	106	75	109	147
23	62	339	501	705	139	477	334	156	133	75	112	124
24	82	213	476	611	135	525	465	148	103	71	110	108
25	84	154	419	783	129	519	506	151	84	69	97	108
26	80	125	366	841	124	477	537	152	74	67	102	108
27	64	130	346	699	121	426	583	155	71	74	117	112
28	65	147	417	595	117	310	572	276	72	104	118	127
29	86	131	426	587	---	265	521	180	82	106	120	152
30	98	147	379	547	---	241	444	173	81	105	121	162
31	114	---	326	489	---	226	---	188	---	100	117	---
TOTAL	2640	3657	10227	12270	5256	10126	16085	7777	3758	2863	3866	6171
MEAN	85.2	122	330	396	188	327	536	251	125	92.4	125	206
MAX	116	453	558	1120	429	525	1330	426	213	153	162	298
MIN	44	56	118	121	117	128	224	148	71	67	95	108
AC-FT	5240	7250	20290	24340	10430	20080	31900	15430	7450	5680	7670	12240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1993, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	145	293	590	619	594	510	348	161	109	131	149	146						
MAX	230	881	1596	1184	1215	1086	974	338	183	195	199	229						
(WY)	1983	1985	1978	1980	1983	1983	1991	1984	1984	1985	1981	1978						
MIN	71.8	47.2	41.1	31.8	62.0	165	99.8	80.8	65.9	91.0	93.0	82.6						
(WY)	1978	1988	1977	1977	1977	1992	1977	1977	1979	1977	1977	1985						

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1976 - 1993

	1992	1993	1976-1993
ANNUAL TOTAL	74072	84696	
ANNUAL MEAN	202	232	315
HIGHEST ANNUAL MEAN			529
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	1810	1330	5170
LOWEST DAILY MEAN	44	44	22
ANNUAL SEVEN-DAY MINIMUM	66	66	23
ANNUAL RUNOFF (AC-FT)	146900	168000	228400
10 PERCENT EXCEEDS	370	476	775
50 PERCENT EXCEEDS	144	155	167
90 PERCENT EXCEEDS	84	78	79

WILLAMETTE RIVER BASIN

303

14203750 GALES CREEK NEAR GLENWOOD, OR

LOCATION.--Lat 45°38'37", long 123°22'09", in NE 1/4 SE 1/4 sec.24, T.2 N., R.6 W., Washington County, Hydrologic Unit 17090010, on left bank, 300 ft upstream from bridge over Gales Creek at Forest Park campground, and 4.7 mi west of Glenwood.

DRAINAGE AREA.--7.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to September 1993.

GAGE.--Water-stage recorder. Elevation of gage is 920 ft, from topographic map.

REMARKS.--Water-discharge records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--Maximum discharge, 7.4 ft³/s July 1-4, gage height, 1.81 ft; minimum discharge, 1.7 ft³/s Sept. 26-30.

DISCHARGE, CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	JUL	AUG	SEP
1	e7.1	4.7	2.7
2	7.3	4.5	2.7
3	7.3	4.4	2.7
4	7.1	4.3	2.7
5	6.9	4.1	2.7
6	6.8	4.1	2.7
7	6.7	4.2	2.6
8	6.5	4.2	2.5
9	6.4	4.3	2.4
10	6.4	4.2	2.4
11	6.4	4.2	2.4
12	6.6	4.1	2.5
13	6.6	3.8	2.3
14	6.4	3.9	2.2
15	6.4	4.1	2.2
16	6.4	4.0	2.2
17	6.4	3.7	2.2
18	6.1	3.6	2.2
19	6.0	3.4	2.3
20	5.9	3.3	2.2
21	5.9	3.3	2.2
22	6.2	3.2	2.2
23	6.1	3.3	2.1
24	5.8	3.4	2.1
25	5.7	3.4	2.0
26	5.4	3.3	1.9
27	5.1	3.2	1.8
28	5.1	3.1	1.8
29	5.4	3.0	1.8
30	5.2	3.0	1.8
31	5.0	2.9	---
TOTAL	192.6	116.2	68.5
MEAN	6.21	3.75	2.28
MAX	7.3	4.7	2.7
MIN	5.0	2.9	1.8
AC-FT	382	230	136

e Estimated

WILLAMETTE RIVER BASIN
14203750 GALES CREEK NEAR GLENWOOD, OR--Continued
WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1993.

INSTRUMENTATION.--Water-quality monitor since July 1993.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1993.--

WATER TEMPERATURE: Maximum, 14.0°C Aug. 3-5, minimum 8.5°C Sept. 20-24.

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER		
1	---	---	---	13.0	10.5	11.5	12.0	10.5	11.5
2	11.5	10.0	10.5	13.5	11.0	12.0	12.5	11.0	11.5
3	11.0	10.0	10.5	14.0	11.5	12.5	13.0	11.0	12.0
4	11.5	9.5	10.5	14.0	12.0	13.0	12.5	11.0	11.5
5	11.5	10.0	10.5	14.0	12.0	13.0	12.5	11.5	12.0
6	11.0	10.0	10.5	13.5	12.0	12.5	13.0	11.0	12.0
7	11.5	9.0	10.5	12.5	11.0	12.0	13.0	11.5	12.5
8	12.0	9.5	11.0	12.0	11.5	11.5	13.5	11.5	12.5
9	10.5	9.5	10.5	12.0	11.0	11.5	13.5	11.5	12.5
10	11.5	9.5	10.5	12.0	11.0	11.5	13.5	11.5	12.5
11	10.5	10.0	10.0	12.5	10.5	11.5	12.0	11.0	11.5
12	10.5	10.0	10.0	12.5	11.0	11.5	11.5	10.0	11.0
13	10.5	9.5	10.0	11.5	11.0	11.0	11.5	9.5	10.5
14	11.0	10.0	10.5	11.5	11.0	11.0	11.5	10.5	11.0
15	10.5	10.0	10.5	11.5	11.0	11.5	11.5	10.5	11.0
16	11.0	10.0	10.5	12.0	11.0	11.5	11.5	9.5	10.5
17	10.5	10.0	10.0	12.5	10.0	11.0	11.5	10.0	10.5
18	11.5	9.5	10.5	13.0	11.0	12.0	11.0	9.5	10.0
19	11.0	10.0	10.5	13.5	12.0	12.5	10.5	9.0	10.0
20	11.0	10.0	10.5	13.0	12.0	12.5	10.0	8.5	9.5
21	10.5	9.5	10.0	12.5	11.5	12.0	10.0	8.5	9.0
22	11.5	10.0	10.5	13.0	11.5	12.0	10.0	8.5	9.0
23	11.0	10.5	10.5	12.5	11.0	12.0	10.5	8.5	9.5
24	10.5	10.0	10.5	11.5	10.0	10.5	10.5	8.5	9.5
25	11.0	10.0	10.5	11.0	9.5	10.5	11.0	9.0	10.0
26	11.5	9.5	10.5	11.5	9.5	10.5	11.0	9.5	10.0
27	12.0	10.0	11.0	12.0	10.0	11.0	11.5	9.5	10.5
28	11.5	10.5	11.0	11.5	10.5	11.0	11.5	10.0	10.5
29	11.0	10.0	10.5	12.0	10.0	11.0	12.0	10.0	11.0
30	11.5	9.5	10.5	12.5	10.0	11.0	12.0	10.5	11.0
31	12.0	10.0	11.0	12.5	10.5	11.5	---	---	---
MONTH	12.0	9.0	10.5	14.0	9.5	11.5	13.5	8.5	11.0

WILLAMETTE RIVER BASIN

305

14206900 FANNO CREEK AT 56TH AVENUE, PORTLAND, OR

LOCATION.--Lat 45°29'17", long 122°44'01", in NE 1/4 NW 1/4 sec.18, T.1 S., R.1 E., Multnomah County, Hydrologic Unit 17090010, on bridge at SW 56th Ave., in Portland.

DRAINAGE AREA.--2.37 mi².

PERIOD OF RECORD.--Annual maximums, 1975-77. October 1990 to current year.

REVISED RECORDS.--WDR OR-92-1: 1991, 1991(m).

GAGE.--Water-stage recorder. Elevation of gage is 250 ft, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--3 years, 2.40 ft³/s, 13.77 in/yr, 17.40 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 237 ft³/s Feb. 12, 1975, gage height, 15.32 ft, at different datum; minimum discharge, 0.07 ft³/s many days in October 1991 and September 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0645	*186	*11.28	No other peak greater than base discharge.			
Minimum discharge, 0.10 ft ³ /s October 1.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	1.4	8.7	1.2	1.7	11	3.7	2.2	7.8	.62	.59	.43
2	1.8	.54	4.7	1.2	1.6	4.5	6.8	1.8	2.1	.65	.59	.43
3	.58	.32	1.5	5.9	1.5	8.4	17	9.0	1.6	.62	.59	.43
4	.16	1.9	1.3	5.1	1.4	6.3	4.6	2.2	1.9	.62	.59	.43
5	.15	.41	1.2	2.8	1.4	2.9	3.0	3.0	3.6	.62	.59	.42
6	.16	.28	1.2	1.9	1.3	2.3	2.9	4.8	1.9	.62	.59	.40
7	.16	1.2	1.2	1.5	1.2	2.1	2.4	9.0	1.3	.61	.59	.40
8	.17	2.1	9.7	1.4	1.2	1.9	8.3	3.2	1.2	.59	.59	.40
9	.17	.58	2.3	1.2	1.2	1.6	8.8	2.3	3.2	.59	.59	.40
10	.16	.34	37	1.2	1.2	1.5	6.5	1.9	1.3	.59	.59	.39
11	.16	.77	2.1	1.1	2.0	1.4	3.3	1.8	1.4	.56	.56	.39
12	.16	.59	1.4	.97	1.1	1.3	2.7	2.8	1.0	.55	.52	.39
13	.16	.34	1.1	.92	1.0	1.3	4.2	2.1	.89	.61	.52	.39
14	.16	.32	1.3	.92	1.0	8.1	3.3	1.5	.91	.82	.52	.39
15	.18	.26	.88	.92	.99	4.7	4.4	1.3	1.6	.60	.52	.38
16	.19	.21	2.4	.96	.96	11	6.2	1.3	.91	.55	.52	.37
17	.25	.32	4.3	.97	.96	15	9.1	1.2	.78	.55	.52	.37
18	.27	.37	1.6	.92	.96	4.2	4.0	1.2	.73	.55	.52	.37
19	.29	5.5	3.4	6.9	.96	2.8	2.5	8.8	.65	1.1	.57	.37
20	3.3	.79	2.4	31	1.8	3.6	2.6	3.4	.68	2.2	.52	.36
21	.30	20	2.0	14	3.8	2.2	7.0	1.7	.87	1.9	.51	.35
22	.19	5.3	1.2	12	5.0	15	2.8	1.3	4.4	1.2	.49	.35
23	.17	1.6	1.2	6.9	2.1	20	7.2	1.2	1.1	.66	.49	.35
24	.18	1.1	.98	9.0	1.6	4.6	3.3	1.1	.93	.63	.49	.35
25	.19	1.0	1.4	3.8	1.4	3.2	4.4	4.5	.87	.62	.47	.34
26	.19	.91	2.0	3.0	1.3	2.9	3.9	1.3	.84	.62	.46	.34
27	.26	4.9	4.4	2.8	1.2	2.5	2.4	7.5	.84	.59	.45	.34
28	.41	1.3	5.6	3.4	1.2	2.2	2.9	1.5	.76	1.3	.45	.34
29	8.1	1.0	2.0	2.7	---	2.1	2.3	1.2	.65	1.5	.45	.34
30	2.3	9.2	1.5	2.1	---	2.8	1.9	5.9	.64	.60	.45	.32
31	9.3	---	1.3	1.9	---	4.5	---	14	---	.59	.44	---
TOTAL	31.01	64.85	113.26	130.58	43.03	157.9	144.4	106.0	47.35	24.43	16.34	11.33
MEAN	1.00	2.16	3.65	4.21	1.54	5.09	4.81	3.42	1.58	.79	.53	.38
MAX	9.3	20	37	31	5.0	20	17	14	7.8	2.2	.59	.43
MIN	.15	.21	.88	.92	.96	1.3	1.9	1.1	.64	.55	.44	.32
AC-FT	62	129	225	259	85	313	286	210	94	48	34	22
CFSM	.42	.91	1.54	1.78	.65	2.15	2.03	1.44	.67	.33	.22	.16
IN.	.49	1.02	1.78	2.05	.68	2.48	2.27	1.66	.74	.38	.26	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1993, BY WATER YEAR (WY)

	1991	1992	1993	1991	1992	1993	1991	1992	1993
MEAN	1.08	2.90	3.64	4.20	4.62	3.71	3.99	2.44	1.19
MAX	1.64	3.27	3.97	4.33	6.62	5.09	4.81	3.42	1.69
(WY)	1991	1991	1992	1992	1991	1993	1993	1993	1991
MIN	.60	2.16	3.29	4.06	1.54	1.80	3.28	.95	.31
(WY)	1992	1993	1991	1991	1993	1992	1992	1992	1992

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1991 - 1993

ANNUAL TOTAL	720.40	890.48	
ANNUAL MEAN	1.97	2.44	
HIGHEST ANNUAL MEAN			2.40
LOWEST ANNUAL MEAN			2.72
HIGHEST DAILY MEAN	42	37	2.05
LOWEST DAILY MEAN	.07	.15	.07
ANNUAL SEVEN-DAY MINIMUM	.07	.16	.07
ANNUAL RUNOFF (AC-FT)	1430	1770	1740
ANNUAL RUNOFF (CFSM)	.83	1.03	1.01
ANNUAL RUNOFF (INCHES)	11.31	13.98	13.77
10 PERCENT EXCEEDS	4.2	6.0	5.4
50 PERCENT EXCEEDS	.97	1.2	1.2
90 PERCENT EXCEEDS	.09	.34	.15

WILLAMETTE RIVER BASIN

14207500 TUALATIN RIVER AT WEST LINN, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°21'03", long 122°40'30", in SW 1/4 sec.34, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090010, on left bank 300 ft upstream from bridge on State Highway 212, 0.4 mi west of West Linn city limits, and at mile 1.8.

DRAINAGE AREA.--706 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year. Prior to October 1960, published as "near Willamette."

REVISED RECORDS.--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941. WSP 1935: Drainage area. WDR OR-75-1: 1974(M). WDR OR-77-1: 1971-73, 1975, 1976(M).

GAGE.--Water-stage recorder. Datum of gage is 85.61 ft above sea level (levels by Corps of Engineers). Prior to June 12, 1941, nonrecording gage at datum 1.02 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Discharges for period Oct. 30 to Nov. 19, Nov. 22-25, computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. October 1951 to September 1970, records published for this station included the daily flow in Oswego Canal, which diverts at point 5.0 mi upstream from station for development of power between outlet of Lake Oswego and Willamette River. Adjustment for diversion to Lake Oswego provided by Oregon Water Resources Department since October 1, 1991. Some regulation in low-water season by flashboards on crest of diversion dam for Oswego Canal and regulation by Henry Hagg Lake since January 1975. Several diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--65 years, 1,492 ft³/s, 28.70 in/yr, 1,081,000 acre-ft/yr, adjusted for diversion in Oswego Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft³/s Dec. 23, 1933, gage height, 17.72 ft; minimum daily discharge, 0.20 ft³/s July 30 to Aug. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,430 ft³/s Jan. 22, gage height, 8.16 ft; minimum discharge, 86 ft³/s Oct 11, 12, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	714	891	2280	3310	716	1470	2330	1300	290	211	114
2	117	644	1380	2010	2960	881	1450	2090	1410	254	188	112
3	133	511	1550	1850	2530	1200	1770	2030	1340	228	162	116
4	144	409	1470	2000	2110	1360	2170	1980	1270	233	131	163
5	152	321	1170	2200	1810	1580	2310	1880	1180	241	127	232
6	145	253	934	2240	1590	2200	2140	1780	1110	227	139	270
7	121	223	779	2050	1430	2480	1920	1680	1020	208	145	281
8	112	216	795	1820	1310	2360	1830	1650	912	207	151	274
9	107	215	990	1620	1230	2100	1900	1620	809	173	158	264
10	106	239	2410	1440	1150	1830	2690	1580	760	147	165	265
11	97	266	3570	1260	1100	1580	3520	1500	722	173	160	263
12	95	243	3640	1130	1040	1370	3760	1400	701	211	149	267
13	104	215	3250	1030	989	1220	3800	1310	692	235	143	281
14	100	194	2730	965	924	1140	3810	1200	641	237	141	292
15	94	182	2160	905	868	1240	3810	1100	595	252	151	295
16	88	179	1770	857	821	1290	3710	998	564	247	173	296
17	89	173	1840	810	777	1740	3730	924	509	242	204	271
18	89	168	2050	768	726	2190	3530	855	471	235	193	226
19	89	238	2150	851	718	2510	3220	820	442	239	159	190
20	126	290	2230	1950	740	2530	2780	878	403	248	139	159
21	242	603	2350	3760	839	2360	2460	832	370	260	130	151
22	209	1140	2630	4380	910	2330	2250	817	382	260	126	156
23	163	1650	2740	4320	908	2860	2140	780	413	266	126	157
24	131	1560	2660	4400	854	3150	2180	718	469	256	125	152
25	97	1150	2480	4340	797	3190	2300	709	448	247	124	136
26	107	807	2280	4240	747	2970	2460	709	385	243	119	122
27	110	688	2150	4110	703	2710	2540	761	330	218	112	110
28	105	674	2270	4040	666	2380	2610	932	312	194	110	158
29	120	687	2490	3940	---	2010	2650	1330	309	194	110	152
30	353	819	2640	3770	---	1710	2530	1290	309	210	115	125
31	543	---	2530	3570	---	1540	---	1200	---	223	118	---
TOTAL	4395	15671	64979	74906	34557	60727	79440	39683	20578	7098	4504	6050
MEAN	142	522	2096	2416	1234	1959	2648	1280	686	229	145	202
MAX	543	1650	3640	4400	3310	3190	3810	2330	1410	290	211	296
MIN	88	168	779	768	666	716	1450	709	309	147	110	110
AC-FT	8720	31080	128900	148600	68540	120500	157600	78710	40820	14080	8930	12000
MEAN†	195	567	2143	2423	1235	1991	2717	1316	722	281	197	253
CFSM†	0.28	0.80	3.04	3.43	1.75	2.82	3.85	1.86	1.02	0.40	0.28	0.36
IN.†	0.32	0.90	3.50	3.96	1.82	3.25	4.30	2.15	1.14	0.46	0.32	0.40
AC-FT†	11990	33710	131800	149000	68600	122400	161700	80890	42950	17250	12110	15040

CAL YR 1992 TOTAL 321125 MEAN 877 MAX 5060 MIN 72 AC-FT 637000 MEAN† 929 CFSM† 1.32 IN.† 17.9 AC-FT† 674300
WTR YR 1993 TOTAL 412588 MEAN 1130 MAX 4400 MIN 88 AC-FT 818400 MEAN† 1170 CFSM† 1.66 IN.† 22.5 AC-FT† 847400

† Adjusted for diversion in Oswego Canal.

WILLAMETTE RIVER BASIN

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14207500 TUALATIN RIVER AT WEST LINN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to September 1981.

WATER TEMPERATURE: October 1975 to September 1981.

REMARKS.--Some samples were analyzed by different methods and may have data with different levels of detection.

WATER-QUALITY DATA

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCHI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CACO3)	CALCIUM, DIS-SOLVED (MG/L AS CA)
NOV 1992 17...	0935	180	247	7.5	10.5	2.0	7.5	68	K30	75	71	20
JAN 1993 29...	0950	3960	91	7.3	7.5	15	10.2	84	K42	120	30	7.6
JUN 21...	1128	367	183	7.9	19.0	4.0	8.4	91	67	K49	59	16
AUG 02...	0946	188	230	7.7	21.0	2.6	8.3	93	97	86	69	19
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CACO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 1992 17...	5.1	19	35	1	4.0	63	77	0	19	16	0.3	23
JAN 1993 29...	2.6	5.2	27	0.4	1.2	23	28	0	4.5	5.3	<0.1	18
JUN 21...	4.6	14	33	0.8	2.4	54	66	0	10	11	0.1	23
AUG 02...	5.2	17	34	0.9	3.4	63	77	0	15	13	0.2	23
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
NOV 1992 17...	159	159	0.22	77.3	0.70	0.68	0.09	0.08	--	1.3	2.9	
JAN 1993 29...	56	69	0.08	599	0.36	--	--	0.03	--	0.6	--	
JUN 21...	124	121	0.17	123	0.04	--	--	0.04	0.2	0.5	--	
AUG 02...	139	142	0.19	70.6	0.37	--	--	0.07	--	1.2	--	
DATE		NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	PHOS-PHORUS, ORTHO TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BARIUM, DIS-SOLVED (UG/L AS BA)	COBALT, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 1992 17...	2.9	0.25	0.17	0.17	--	--	0.18	<10	18	<3	260	
JAN 1993 29...	2.2	0.16	0.07	0.07	--	--	--	150	14	<3	130	
JUN 21...	1.6	0.14	0.07	0.07	2.9	1.2	--	30	19	<3	200	
AUG 02...	1.8	0.16	0.06	0.05	3.7	1.6	--	<10	19	<3	23	
DATE		LITHIUM, DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992 17...	<4	89	<10	1	<1	<1	81	<6	--	--	--	
JAN 1993 29...	<4	32	<10	<1	<1	<1	48	<6	34	364	89	
JUN 21...	<4	130	<10	<1	<1	<1	73	<6	14	15	96	
AUG 02...	<4	23	<10	1	<1	<1	79	<6	14	7.6	80	

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

WILLAMETTE RIVER BASIN

14207740 WILLAMETTE RIVER ABOVE FALLS, AT OREGON CITY, OR

LOCATION.--Lat 45°20'55", long 122°37'08", in SW 1/4 SW 1/4 sec.31, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090007, on right bank 0.2 mi above Willamette Falls, 0.6 mi downstream from Tualatin River, and at mile 26.8.

DRAINAGE AREA.--10,000 mi², approximately.

PERIOD OF RECORD.--October 1976 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 64.79 ft Dec. 17, 1977; minimum, 52.51 ft July 12, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 60.43 ft Mar. 24; minimum, 53.42 ft July 13.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	55.88	57.01	57.15	56.53	54.48	56.20	57.52	56.38	53.98	55.39	55.04
2	---	56.38	57.73	57.02	56.29	54.66	56.00	57.24	57.38	53.93	55.38	55.03
3	---	56.42	58.37	56.79	56.11	55.10	56.39	56.99	57.95	53.84	55.32	55.04
4	---	56.44	58.26	56.75	55.89	55.48	58.01	57.14	57.96	53.79	55.26	55.02
5	---	56.01	57.72	57.00	55.64	56.20	58.92	57.55	57.80	53.76	55.16	55.02
6	---	55.78	57.26	56.97	55.45	56.74	59.02	57.60	57.95	53.74	55.11	55.04
7	---	55.70	56.99	56.69	55.39	56.53	58.60	57.47	57.85	53.68	55.08	55.04
8	---	55.70	56.80	56.37	55.35	56.24	58.14	57.53	57.52	53.63	55.08	55.03
9	---	55.88	56.95	55.91	55.25	55.97	58.03	57.80	57.19	53.57	55.08	55.08
10	---	56.07	57.82	55.58	55.11	55.71	58.68	57.80	56.86	53.52	55.02	55.07
11	---	56.07	59.26	55.33	55.10	55.48	59.36	57.48	56.66	53.48	55.22	55.15
12	---	56.05	59.41	55.20	55.10	55.30	59.55	57.12	56.50	53.46	54.95	55.25
13	---	56.13	58.72	55.17	55.05	55.14	59.17	56.78	56.43	53.45	54.87	55.33
14	---	56.21	57.80	54.87	54.93	55.04	58.43	56.50	56.24	53.49	54.77	55.38
15	---	56.15	57.22	54.69	54.80	55.29	57.93	56.35	55.99	54.04	54.79	55.39
16	---	56.12	56.84	54.65	54.66	56.66	57.65	56.14	55.78	55.13	54.93	55.40
17	---	56.07	56.81	54.63	54.55	58.30	57.57	55.97	55.60	55.22	55.02	55.39
18	---	56.02	57.17	54.62	54.43	59.44	57.63	55.80	55.39	55.28	55.13	55.31
19	---	56.04	57.27	54.61	54.34	59.96	57.80	55.51	55.24	55.30	55.13	55.31
20	---	56.23	56.93	55.71	54.36	60.03	57.73	55.36	55.11	55.27	55.09	55.34
21	---	56.58	57.12	58.17	54.57	59.82	57.40	55.46	54.95	55.25	55.05	55.41
22	---	57.48	57.60	59.22	54.87	59.47	57.19	55.63	54.79	55.32	55.09	55.47
23	---	58.23	57.68	59.39	55.48	59.76	57.09	55.70	54.58	55.46	55.14	55.52
24	---	58.07	57.55	59.12	55.31	60.30	57.30	55.69	54.55	55.65	55.15	55.54
25	---	57.45	57.28	58.56	55.06	60.19	57.64	55.50	54.57	55.73	55.16	55.49
26	---	56.97	56.95	58.20	54.85	59.86	57.88	55.36	54.43	55.72	55.09	55.49
27	---	56.59	56.86	57.95	54.69	59.47	58.07	55.51	54.28	55.65	55.09	55.51
28	54.74	56.48	57.22	57.70	54.57	58.55	57.92	55.68	54.17	55.53	55.00	55.55
29	54.78	56.59	57.65	57.55	---	57.67	57.58	55.88	54.07	55.47	54.99	55.56
30	55.00	56.62	57.74	57.36	---	56.98	57.43	56.00	54.03	55.45	55.03	55.57
31	55.28	---	57.40	56.93	---	56.45	---	56.03	---	55.43	55.06	---
MEAN	---	56.41	57.53	56.64	55.13	57.30	57.88	56.45	55.94	54.59	55.08	55.29
MAX	---	58.23	59.41	59.39	56.53	60.30	59.55	57.80	57.96	55.73	55.39	55.57
MIN	---	55.70	56.80	54.61	54.34	54.48	56.00	55.36	54.03	53.45	54.77	55.02

WILLAMETTE RIVER BASIN

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14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR

LOCATION.--Lat 45°21'28", long 122°36'35", in NE 1/4 NW 1/4 sec.31, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090007, on right bank 0.5 mi below Willamette Falls, 1.4 mi upstream from Clackamas River, and at mile 26.2.

DRAINAGE AREA.--10,000 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is sea level (Oregon State Highway Division bench mark).

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 32.18 ft Feb. 21, 1982; minimum, 1.55 ft Sept. 7, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 18.56 ft Mar. 20; minimum, 2.11 ft Oct. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.18	3.96	5.28	7.31	5.07	5.95	10.86	9.39	9.82	11.30	10.49	10.89
2	6.36	3.55	4.73	7.09	5.51	6.28	12.58	10.79	11.51	10.85	9.87	10.40
3	5.96	3.06	4.18	6.90	5.43	6.02	13.34	12.57	12.97	10.44	9.53	9.91
4	5.57	2.48	3.74	6.57	4.33	5.48	13.21	12.41	12.95	10.74	9.53	10.03
5	5.28	2.43	3.70	6.59	4.36	5.34	12.42	10.81	11.72	11.30	9.97	10.62
6	5.03	2.24	3.53	6.41	3.86	5.02	11.12	10.28	10.71	11.40	10.42	10.85
7	4.99	2.11	3.58	6.96	4.19	5.46	11.08	9.93	10.38	11.37	10.05	10.54
8	5.84	2.63	4.20	7.21	4.09	5.51	11.69	9.73	10.40	11.20	9.73	10.28
9	6.02	2.93	4.41	7.91	4.71	5.99	11.90	10.00	10.64	10.64	8.91	9.65
10	5.99	2.83	4.32	8.03	5.29	6.29	15.19	10.82	12.83	10.36	8.19	9.07
11	5.96	2.70	4.22	7.63	4.89	6.10	17.11	15.18	16.23	9.79	8.13	8.87
12	6.39	2.79	4.37	7.55	5.13	6.13	16.86	15.91	16.45	9.22	7.47	8.35
13	6.71	3.32	4.77	7.70	4.87	5.98	15.91	13.50	14.60	9.33	7.36	8.17
14	6.63	3.35	4.69	7.84	5.19	6.20	13.50	11.80	12.47	9.22	7.13	7.91
15	6.52	3.30	4.61	7.48	5.06	6.02	12.00	10.67	11.21	8.84	6.60	7.39
16	6.20	3.05	4.34	6.90	4.96	5.81	11.11	10.04	10.50	8.41	5.87	6.89
17	6.13	2.77	4.16	6.92	4.43	5.55	11.32	9.99	10.64	8.02	5.24	6.38
18	6.10	2.72	4.15	6.96	4.62	5.69	11.58	10.66	11.08	7.70	5.18	6.16
19	6.36	2.93	4.49	7.72	4.73	6.07	11.70	10.49	11.05	8.87	5.49	6.99
20	6.41	3.00	4.62	7.62	4.91	6.16	11.51	10.21	10.71	11.19	6.72	9.14
21	6.54	3.17	4.81	9.59	5.51	7.36	11.99	10.11	10.98	14.89	11.19	13.37
22	6.39	3.06	4.77	12.56	9.15	11.35	12.81	11.27	11.95	16.25	14.88	15.70
23	6.61	3.08	4.83	13.93	12.30	13.07	12.71	11.91	12.19	16.42	15.91	16.14
24	6.74	3.12	4.91	13.36	12.14	12.84	12.16	11.40	11.78	16.07	14.76	15.47
25	6.74	3.08	4.80	12.14	10.78	11.41	11.44	10.41	10.93	14.76	13.77	14.17
26	6.96	3.19	4.84	10.78	9.44	10.10	10.92	9.74	10.20	13.91	13.31	13.57
27	7.31	3.44	5.12	9.92	8.28	9.06	10.79	9.56	10.07	13.48	12.66	13.03
28	7.33	3.78	5.28	9.59	8.21	8.74	12.08	10.10	10.99	12.76	11.92	12.32
29	7.61	3.90	5.46	9.16	8.25	8.65	12.85	11.66	12.29	12.13	11.45	11.75
30	7.75	4.41	5.79	9.39	7.78	8.86	12.79	11.93	12.35	11.56	10.70	11.13
31	7.26	4.51	5.65	---	---	---	12.09	11.28	11.65	10.81	9.34	10.10
MONTH	7.75	2.11	4.59	13.93	3.86	7.28	17.11	9.39	11.75	16.42	5.18	10.49

WILLAMETTE RIVER BASIN

14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	9.77	8.77	9.23	7.00	4.84	5.60	---	---	---	12.84	12.19	12.56
2	9.61	8.36	8.91	6.96	5.27	5.82	---	---	---	13.05	11.68	12.44
3	9.57	8.12	8.63	7.75	5.81	6.63	---	---	---	12.36	11.54	11.96
4	9.55	7.83	8.44	8.20	5.86	7.03	---	---	---	13.05	11.84	12.64
5	9.63	7.42	8.20	9.95	7.10	8.73	---	---	---	14.07	12.87	13.61
6	9.30	6.89	7.87	10.60	9.21	9.81	---	---	---	14.44	13.57	13.90
7	9.22	6.71	7.77	10.40	8.92	9.58	16.11	14.98	15.56	14.33	13.45	13.94
8	9.50	6.72	7.87	10.17	8.44	9.24	15.29	14.27	14.74	14.84	14.08	14.45
9	9.35	6.83	7.91	10.09	8.23	9.03	15.07	14.13	14.63	15.19	14.56	14.89
10	8.96	6.61	7.65	9.85	7.56	8.48	16.51	15.05	15.77	15.23	14.36	14.87
11	9.12	6.64	7.60	9.04	6.74	7.66	17.41	16.51	16.98	14.78	13.95	14.46
12	8.78	6.26	7.34	8.58	6.38	7.26	17.56	17.01	17.34	14.08	13.21	13.71
13	8.24	6.11	6.91	8.38	5.94	6.93	17.17	15.35	16.36	13.33	12.48	12.93
14	7.78	5.35	6.41	8.06	5.99	6.78	15.35	13.96	14.59	12.83	12.44	12.70
15	7.38	5.18	6.07	8.81	6.46	7.60	13.97	13.88	13.93	13.37	12.79	13.22
16	7.33	5.17	6.06	11.92	8.81	10.37	13.88	11.89	12.88	13.92	13.22	13.79
17	7.43	5.41	6.30	15.46	11.92	13.99	12.58	11.83	12.28	14.54	13.68	14.20
18	8.09	5.78	6.78	17.86	15.46	17.00	12.77	12.09	12.49	15.43	14.54	15.20
19	8.42	5.87	6.92	18.45	17.83	18.23	12.96	12.43	12.72	15.12	14.58	14.84
20	8.39	5.90	6.98	18.56	18.13	18.36	13.15	12.19	12.62	14.85	14.41	14.64
21	8.37	5.95	6.94	18.21	17.66	17.96	12.59	11.60	12.05	15.06	14.59	14.85
22	8.62	5.85	7.16	17.68	17.05	17.41	12.26	11.10	11.64	15.08	14.69	14.85
23	8.96	6.93	7.74	---	---	---	12.02	11.13	11.49	15.14	14.67	14.87
24	8.83	6.99	7.71	---	---	---	12.43	11.44	11.96	15.05	14.46	14.72
25	8.40	6.54	7.29	---	---	---	13.01	12.16	12.55	14.57	13.82	14.24
26	8.04	6.14	6.89	---	---	---	13.73	12.83	13.27	13.82	12.74	13.26
27	7.18	4.93	5.95	---	---	---	13.99	13.50	13.70	12.98	12.40	12.71
28	7.04	4.73	5.62	---	---	---	13.78	12.64	13.21	12.76	12.26	12.53
29	---	---	---	---	---	---	12.85	11.98	12.44	12.78	12.28	12.59
30	---	---	---	---	---	---	12.41	12.08	12.26	13.04	12.08	12.56
31	---	---	---	---	---	---	---	---	---	12.92	12.09	12.43
MONTH	9.77	4.73	7.33	---	---	---	---	---	---	15.43	11.54	13.70

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	13.09	12.09	12.77	8.85	6.41	7.28	7.99	4.86	6.07	6.77	3.84	5.43
2	14.75	13.09	14.16	8.91	6.24	7.22	7.19	4.22	5.43	6.93	3.64	5.45
3	15.58	14.75	15.27	8.79	6.07	7.10	7.48	4.46	5.90	6.89	4.39	---
4	16.00	15.27	15.56	8.47	5.38	6.63	7.97	5.30	6.93	6.40	3.64	4.90
5	15.76	15.12	15.38	8.09	5.04	6.26	7.73	4.50	6.00	6.17	4.69	5.75
6	15.43	14.60	15.00	7.68	5.08	6.10	7.79	4.88	6.12	6.09	3.99	5.60
7	14.71	13.86	14.28	7.67	5.51	6.48	6.70	3.93	5.13	6.04	---	---
8	14.29	13.80	14.02	7.62	5.48	6.45	6.44	3.99	4.82	6.12	---	---
9	14.10	13.50	13.79	6.99	4.75	5.95	6.65	3.83	4.89	6.13	3.49	4.40
10	13.78	12.51	13.14	6.82	4.23	5.27	6.47	3.70	4.59	6.15	3.10	4.37
11	12.75	11.50	12.08	6.80	3.85	5.04	6.24	3.59	4.32	6.41	3.80	4.80
12	11.87	11.30	11.50	6.46	3.82	4.57	6.41	3.39	4.53	5.74	3.58	4.89
13	11.95	11.10	11.60	6.69	4.49	5.32	6.55	3.29	4.50	6.07	3.22	4.69
14	11.56	10.34	10.94	6.70	4.31	5.27	6.23	2.88	4.47	6.45	3.56	4.88
15	10.88	9.34	10.18	7.03	4.03	5.26	6.56	3.27	5.00	6.28	3.09	4.70
16	10.04	8.79	9.31	7.53	4.22	5.47	6.79	3.27	4.97	7.07	3.65	5.27
17	9.89	8.60	9.10	7.52	4.48	5.80	7.12	3.70	5.42	7.26	3.81	5.52
18	9.75	8.53	9.04	8.11	5.30	6.36	7.82	4.35	6.31	6.86	---	---
19	10.11	8.61	9.20	8.31	5.37	6.57	7.99	4.32	6.19	6.83	---	---
20	9.92	8.19	8.93	8.45	5.53	6.60	7.77	4.82	6.19	6.33	---	---
21	9.81	7.84	8.65	8.41	5.34	6.64	7.06	3.66	4.93	6.49	3.43	4.63
22	9.49	7.69	8.42	8.67	6.07	7.01	6.76	3.80	5.31	6.40	---	---
23	9.15	7.43	8.17	8.51	5.58	6.65	6.75	3.47	5.03	6.40	3.86	---
24	8.89	7.34	8.03	7.58	5.56	6.55	6.75	---	---	5.80	3.28	---
25	8.76	7.17	7.99	7.95	4.84	6.13	6.12	---	---	5.99	3.57	---
26	8.76	6.52	7.53	7.95	4.78	5.97	6.46	3.46	4.87	5.11	3.13	---
27	8.47	5.54	6.64	8.00	5.32	6.22	6.40	3.52	5.23	5.90	3.02	---
28	8.35	5.61	6.52	8.02	5.13	6.16	5.35	3.52	4.65	6.29	3.84	---
29	8.43	6.37	7.02	7.87	5.22	6.31	5.95	2.55	4.95	6.67	4.03	5.05
30	8.78	6.53	7.37	6.94	5.45	6.28	6.26	2.77	4.97	6.87	4.26	5.23
31	---	---	---	8.27	5.62	6.58	6.22	2.88	4.66	---	---	---
MONTH	16.00	5.54	10.72	8.91	3.82	6.18	7.99	---	---	7.26	---	---

WILLAMETTE RIVER BASIN

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14208600 TIMOTHY LAKE NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'35", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, in intake structure 350 ft upstream from dam on Oak Grove Fork, 0.4 mi upstream from Anvil Creek, 14 mi south of Government Camp, and at mile 15.8.

DRAINAGE AREA.--53.8 mi².

PERIOD OF RECORD.--May 1956 to current year. Prior to October 1957, published as Timothy Meadows Reservoir.

GAGE.--Nonrecording gage. Datum of gage is sea level (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway built by Portland General Electric Co. Usable storage began May 28, 1956. Capacity, 65,710 acre-ft at elevation 3,190 ft, normal maximum operating level. Usable capacity increased in 1966 water year to 64,450 acre-ft between elevations 3,125.0 ft, invert of outlet pipe, and 3,192.0 ft, top of radial gates. Storage of 4,060 acre-ft below elevation 3,125.0 ft not normally available for release. Water is used for power generation. Figures given herein represent total contents.

COOPERATION.--Elevations and capacity table furnished by Portland General Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 68,800 acre-ft Oct. 3, 1967, elevation, 3,192.2 ft; minimum contents observed, 16,010 acre-ft Feb. 24, 1957, elevation, 3,144.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 67,030 acre-ft Apr. 29, May 21, elevation, 3,190.95 ft; minimum contents observed, 48,880 acre-ft Mar. 15, elevation, 3,176.92 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	3,189.89	65,560	-
Oct. 31.....	3,188.96	64,290	-1,270
Nov. 30.....	3,179.84	52,470	-11,820
Dec. 31.....	3,179.42	51,950	-520
CAL YR 1992.....	-	-	-5,770
Jan. 31.....	3,177.26	49,300	-2,650
Feb. 28.....	3,177.26	49,300	0
Mar. 31.....	3,182.21	55,450	+6,150
Apr. 30.....	3,190.93	67,000	+11,550
May 31.....	3,190.68	66,660	-340
June 30.....	3,190.88	66,930	+270
July 31.....	3,190.87	66,920	-10
Aug. 31.....	3,190.88	66,930	+10
Sept. 30.....	3,190.37	66,220	-710
WTR YR 1993.....	-	-	+660

WILLAMETTE RIVER BASIN

14208700 OAK GROVE FORK NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'50", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Anvil Creek, 0.3 mi downstream from Timothy Lake, 14 mi south of Government Camp, and at mile 15.5.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 3,041.83 ft above sea level (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--37 years, 129 ft³/s, 32.20 in/yr, 93,400 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s Dec. 24, 1964, gage height, 3.93 ft, from rating curve extended above 290 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Sept. 23, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft³/s Nov. 5, gage height, 2.62 ft; minimum discharge, 32 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	38	93	78	75	87	45	253	208	90	65	51
2	38	38	79	117	75	86	46	254	80	91	68	54
3	38	192	113	175	75	86	50	305	131	91	71	67
4	38	392	137	175	75	74	48	265	133	81	70	77
5	38	410	143	143	75	40	47	234	127	81	70	77
6	38	392	141	142	75	40	46	221	167	81	73	69
7	38	385	116	137	75	40	45	242	186	81	64	66
8	38	347	95	137	74	40	47	285	164	81	64	55
9	38	348	102	137	66	40	48	227	146	81	63	51
10	38	384	105	137	66	116	47	184	143	81	63	51
11	38	378	143	137	66	289	46	205	137	76	64	107
12	38	383	143	157	66	285	45	202	136	75	64	67
13	38	390	143	183	66	261	40	235	135	75	64	120
14	38	378	96	176	66	205	39	202	131	86	61	65
15	38	378	75	164	66	72	45	158	131	85	59	65
16	39	378	75	161	66	44	52	156	152	86	59	65
17	38	374	77	158	66	44	51	171	172	88	111	65
18	38	372	79	158	66	47	50	156	172	88	54	66
19	38	371	79	151	66	46	85	135	172	102	54	66
20	114	402	81	137	66	47	83	156	171	96	116	66
21	117	195	87	121	66	46	45	200	89	86	56	65
22	75	43	95	99	85	46	44	188	40	79	40	56
23	128	133	95	95	86	51	82	133	40	91	40	66
24	126	310	90	95	86	49	151	120	46	91	40	65
25	131	336	85	92	86	47	152	152	77	85	48	68
26	131	348	84	84	86	46	151	177	101	79	59	67
27	131	310	84	77	86	45	149	240	96	78	122	66
28	127	315	84	82	86	44	150	216	90	77	40	66
29	48	345	84	87	---	44	252	230	90	78	41	66
30	94	231	84	80	---	43	285	231	90	69	41	66
31	61	---	84	76	---	44	---	190	---	66	43	---
TOTAL	2005	9296	3071	3948	2058	2494	2466	6323	3753	2575	1947	2021
MEAN	64.7	310	99.1	127	73.5	80.5	82.2	204	125	83.1	62.8	67.4
MAX	131	410	143	183	86	289	285	305	208	102	122	120
MIN	37	38	75	76	66	40	39	120	40	66	40	51
AC-FT	3980	18440	6090	7830	4080	4950	4890	12540	7440	5110	3860	4010
MEAN†	44.1	111	90.6	84.2	73.5	181	276	198	130	82.9	62.9	55.5
CFSM†	0.81	2.04	1.67	1.55	1.35	3.33	5.07	3.64	2.39	1.52	1.16	1.02
IN.†	0.93	2.28	1.92	1.79	1.41	3.83	5.67	4.21	2.66	1.76	1.33	1.14
AC-FT†	2710	6620	5570	5180	4080	11100	16440	12200	7710	5100	3870	3300

CAL YR 1992 TOTAL 35986 MEAN 98.3 MAX 410 MIN 36 AC-FT 71380 MEAN† 90.4 CFSM† 1.66 IN.† 22.6 AC-FT† 65610
WTR YR 1993 TOTAL 41957 MEAN 115 MAX 410 MIN 37 AC-FT 83220 MEAN† 116 CFSM† 2.13 IN.† 28.9 AC-FT† 83880

† Adjusted for change in contents in Timothy Lake.

WILLAMETTE RIVER BASIN

14209000 OAK GROVE FORK ABOVE POWERPLANT INTAKE, OR

LOCATION.--Lat 45°04'20", long 121°57'00", on line between secs.3 and 4, T.6 S., R.7 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.2 mi upstream from Spring Creek, 0.7 mi upstream from Kink Creek, 1.0 mi upstream from Portland General Electric Co. diversion dam, 24 mi southeast of Estacada, and at mile 6.1.

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--May 1909 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as both Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, and Oak Grove Fork of Clackamas River at intake, near Cazadero, May 1909 to September 1910, as Oak Grove Fork of Clackamas River at intake, near Cazadero, October 1910 to September 1921, and as Oak Grove Fork at Portland General Electric Power Co. intake, October 1921 to September 1929.

REVISED RECORDS.--WSP 1248: 1909, 1910(M), 1916, 1918, 1923, 1932. WSP 1935: 1914, 1921.

GAGE.--Water-stage recorder. Datum of gage is 2,052.31 ft above sea level. May 21, 1909, to Nov. 17, 1911, nonrecording gage and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorder, at various sites 0.7 mi downstream, below Kink Creek, at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--84 years (water years 1910-93), 494 ft³/s, 357,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s Jan. 7, 1923, gage height, 5.45 ft, site and datum then in use, from rating curve extended above 2,300 ft³/s on basis of peak discharge for other stations in Clackamas River basin; minimum discharge, 161 ft³/s Sept. 16, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s Mar. 23, gage height, 3.43 ft; minimum discharge, 161 ft³/s Sept. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225	353	395	325	320	309	603	820	610	361	286	249
2	231	334	361	343	320	308	626	832	473	362	289	249
3	235	382	374	408	318	326	871	925	502	360	295	269
4	229	588	388	407	320	350	784	880	527	342	291	285
5	226	597	386	381	324	344	674	790	638	336	291	285
6	226	575	380	358	322	348	628	778	618	332	294	274
7	226	594	360	e360	326	360	633	777	648	329	278	267
8	226	611	338	e370	325	377	688	868	613	329	275	256
9	226	576	342	e360	320	383	773	763	569	326	273	248
10	226	596	371	e360	315	426	731	708	554	324	272	248
11	226	583	384	e350	314	585	662	739	549	314	273	303
12	226	587	371	e350	314	582	614	747	529	314	274	272
13	226	584	368	e350	314	549	585	800	505	314	274	316
14	226	572	352	e390	314	552	560	727	489	328	271	258
15	226	565	329	e390	310	592	571	663	497	331	270	258
16	226	560	322	e370	302	556	559	632	505	334	269	258
17	226	569	321	e370	302	608	566	634	518	337	325	258
18	226	579	320	e370	302	889	557	617	509	329	263	258
19	226	590	320	e360	306	832	564	586	502	345	271	258
20	293	598	341	e360	302	865	569	584	495	347	323	258
21	323	621	335	350	299	765	572	628	416	330	268	258
22	269	530	362	318	308	735	563	607	356	331	240	246
23	330	463	391	308	314	1100	580	528	357	349	241	262
24	326	581	369	313	311	919	677	492	335	341	243	258
25	330	581	352	341	308	768	694	539	363	330	248	263
26	331	575	362	341	308	675	684	551	390	318	272	261
27	330	578	364	322	308	615	657	674	382	314	330	259
28	328	571	360	329	308	578	635	628	374	314	236	259
29	261	580	348	342	---	553	792	612	371	312	237	258
30	316	544	341	334	---	530	898	619	365	301	236	259
31	353	---	335	323	---	527	---	615	---	292	237	---
TOTAL	8100	16617	11042	10953	8754	17906	19570	21363	14559	10226	8445	7910
MEAN	261	554	356	353	313	578	652	689	485	330	272	264
MAX	353	621	395	408	326	1100	898	925	648	362	330	316
MIN	225	334	320	308	299	308	557	492	335	292	236	246
AC-FT	16070	32960	21900	21730	17360	35520	38820	42370	28880	20280	16750	15690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1993, BY WATER YEAR (WY)

	MEAN	386	498	565	568	565	558	560	581	441	323	302	339
MAX	517	613	1047	1036	959	1377	825	1104	1126	517	429	516	
(WY)	1975	1969	1965	1974	1982	1972	1974	1971	1974	1974	1974	1960	
MIN	236	288	325	255	250	327	311	292	264	241	225	235	
(WY)	1982	1988	1977	1977	1977	1977	1978	1978	1992	1978	1979	1992	

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1957 - 1993

ANNUAL TOTAL	132945	155445	
ANNUAL MEAN	363	426	473
HIGHEST ANNUAL MEAN			709
LOWEST ANNUAL MEAN			335
HIGHEST DAILY MEAN	814	1100	3640
LOWEST DAILY MEAN	225	225	208
ANNUAL SEVEN-DAY MINIMUM	226	226	221
ANNUAL RUNOFF (AC-FT)	263700	308300	342900
10 PERCENT EXCEEDS	583	662	659
50 PERCENT EXCEEDS	313	350	464
90 PERCENT EXCEEDS	232	258	272

e Estimated

WILLAMETTE RIVER BASIN

315

14209700 FISH CREEK NEAR THREE LYNX, OR

LOCATION.--Lat 45°08'52", long 122°09'07", in NE 1/4 SE 1/4 sec.11, T.5 S., R.5 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank, 0.7 mi upstream from Clackamas River, and at mile 1.15.

DRAINAGE AREA.--45.2 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 940 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--4 years, 185 ft³/s, 55.54 in/yr, 133,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,830 ft³/s Dec. 6, 1991, gage height, 9.34 ft; minimum discharge, 6.0 ft³/s Sept. 1, 2, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,450 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1930	*3,410	*9.11	Mar. 23	0630	2,020	8.15
Mar. 18	0930	1,830	7.98				

Minimum discharge, 9.9 ft³/s Oct. 15-17, 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e660	577	135	217	57	290	488	291	65	53	20
2	14	e370	401	117	189	67	381	438	261	70	48	19
3	21	e200	276	109	166	157	989	502	226	67	44	19
4	21	150	211	104	146	415	734	527	223	63	41	19
5	18	120	172	92	133	593	487	413	424	59	39	19
6	15	93	146	81	134	472	378	401	375	55	38	19
7	13	135	127	74	149	435	360	382	353	52	37	18
8	12	310	154	73	146	413	433	349	349	50	35	18
9	12	e270	195	66	142	352	632	401	294	47	34	18
10	11	e150	637	64	143	296	669	355	252	45	33	17
11	11	e130	482	61	138	246	590	327	250	44	32	17
12	10	e200	294	57	133	212	456	289	251	44	31	17
13	11	182	218	54	125	190	375	256	217	43	30	17
14	11	154	274	53	116	347	336	227	188	44	30	17
15	10	126	316	51	106	898	337	204	202	46	34	17
16	9.9	103	248	49	87	806	337	187	184	45	31	16
17	10	97	214	47	90	910	347	182	165	53	31	16
18	10	103	175	45	84	1490	378	180	147	48	29	16
19	10	155	152	68	81	968	343	171	132	53	28	16
20	10	156	369	510	75	816	299	164	118	62	28	16
21	14	1370	312	387	71	623	321	162	107	62	27	16
22	14	1220	306	286	66	608	336	168	114	81	26	15
23	14	579	383	209	63	1570	322	144	130	111	26	14
24	13	337	296	248	59	863	383	129	109	111	27	14
25	12	229	230	493	56	566	468	133	97	100	26	14
26	12	176	278	468	54	403	492	122	87	86	24	14
27	11	260	291	370	52	313	452	179	82	75	23	14
28	12	490	286	393	52	260	367	230	81	69	23	14
29	19	315	241	438	---	231	503	239	74	75	22	14
30	101	556	191	342	---	212	618	198	68	64	21	14
31	329	---	160	267	---	210	---	260	---	58	21	---
TOTAL	802.9	9396	8612	5811	3073	15999	13413	8491	5851	1947	972	494
MEAN	25.9	313	278	187	110	516	447	274	195	62.8	31.4	16.5
MAX	329	1370	637	510	217	1570	989	527	424	111	53	20
MIN	9.9	93	127	45	52	57	290	122	68	43	21	14
AC-FT	1590	18640	17080	11530	6100	31730	26600	16840	11610	3860	1930	980
CFSM	.57	6.93	6.15	4.15	2.43	11.4	9.89	6.06	4.31	1.39	.69	.36
IN.	.66	7.73	7.09	4.78	2.53	13.17	11.04	6.99	4.82	1.60	.80	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1990	47.5	121	1991	17.8	1992
1991	312	429	1992	166	1990
1992	281	411	1992	216	1991
1993	290	431	1990	187	1993
	280	402	1991	110	1992
	278	516	1993	87.0	1992
	351	447	1993	249	1992
	195	274	1991	68.0	1992
	123	195	1993	20.9	1992
	38.1	62.8	1993	13.6	1992
	18.9	31.4	1993	8.20	1992
	13.4	16.5	1993	11.6	1991

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1990 - 1993

ANNUAL TOTAL	48986.3	74861.9	185
ANNUAL MEAN	134	205	205
HIGHEST ANNUAL MEAN			154
LOWEST ANNUAL MEAN			154
HIGHEST DAILY MEAN	1370	1570	2400
LOWEST DAILY MEAN	6.1	9.9	6.1
ANNUAL SEVEN-DAY MINIMUM	6.4	10	6.4
ANNUAL RUNOFF (AC-FT)	97160	148500	133900
ANNUAL RUNOFF (CFSM)	2.96	4.54	4.09
ANNUAL RUNOFF (INCHES)	40.32	61.61	55.54
10 PERCENT EXCEEDS	320	470	417
50 PERCENT EXCEEDS	60	133	114
90 PERCENT EXCEEDS	8.1	16	12

e Estimated

WILLAMETTE RIVER BASIN

14210000 CLACKAMAS RIVER AT ESTACADA, OR

LOCATION.--Lat 45°18'00", long 122°21'10", in NE 1/4 sec.19, T.3 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.2 mi downstream from River Mill Dam, 1.5 mi northwest of Estacada, and at mile 23.1.

DRAINAGE AREA.--671 m².

PERIOD OF RECORD.--April 1908 to current year. Monthly discharge only April 1908, published in WSP 1318.
Published as "near Cazadero" January 1909 to September 1957.

REVISED RECORDS.--WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288: Drainage area (former site). WSP 1638: 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 286.93 ft above sea level (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Oct. 1, 1957. Oct. 1, 1957, to Feb. 16, 1965, water-stage recorder at same site at datum 12.00 ft higher. Feb. 17, 1965 to Sept. 30, 1991, water-stage recorder at same site at datum 10 ft higher.

REMARKS.--No estimated daily discharges. Records good. Large diurnal fluctuations and some regulation caused by powerplants at River Mill Dam and, since 1958, North Fork Dam. Minor regulation since 1956 by Timothy Lake (station 14208600). Two small diversions upstream from station for Oregon City and Estacada municipal water supply.

AVERAGE DISCHARGE.--85 years, 2,729 ft³/s, 55.23 in/yr, 1,977,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft³/s Dec. 22, 1964, gage height, 28.36 ft (present datum); minimum discharge, 50 ft³/s Mar. 10, 1961, from rating curve extended below 260 ft³/s; minimum daily, 285 ft³/s Oct. 4, 5, 1958, caused by filling of North Fork dam forebay.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2300	*18,500	*18.24	Mar. 23	1030	17,900	18.08
Mar. 18	1030	16,600	17.77				

Minimum discharge, 497 ft³/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	632	4030	4510	1890	2580	1250	4020	5520	3680	1590	1260	867
2	695	2970	3790	1770	2370	1330	4800	5220	3250	1630	1220	800
3	924	2160	2920	1880	2170	1660	9440	5710	3050	1600	1190	763
4	918	2010	2530	1880	2080	2550	8740	6390	2990	1510	1160	846
5	707	1870	2230	1680	1950	3660	6350	5350	4130	1450	1160	843
6	532	1640	2000	1580	1890	3560	5150	5050	4040	1430	1110	861
7	628	1860	1900	1490	1890	3590	5220	5050	4150	1380	1090	828
8	635	2590	2200	1530	1900	3820	5060	5540	4140	1360	1070	806
9	631	2710	2270	1380	1900	3710	6860	5140	3550	1320	1060	809
10	629	2190	3920	1320	1900	3390	7040	4570	3320	1290	1030	803
11	615	1880	3750	1380	1890	3190	6510	4710	3200	1250	1030	885
12	618	2120	2850	1340	1870	2890	5530	4570	3150	1260	1010	926
13	640	2170	2460	1260	1820	2700	4770	4440	2890	1240	988	919
14	625	2040	2520	1350	1760	3070	4460	3950	2680	1340	1010	706
15	641	1870	2840	1260	1730	8350	4340	3640	2720	1340	1040	757
16	619	1770	2510	1210	1610	8630	4160	3400	2610	1360	1030	755
17	590	1680	2430	1210	1470	9490	4100	3340	2430	1500	1020	708
18	628	1800	2150	1200	1560	14300	4340	3370	2290	1410	1010	778
19	636	2100	1990	1280	1550	11200	3960	3280	2180	1420	977	785
20	759	2180	2900	3440	1530	9650	3700	3180	2200	1830	962	909
21	870	5920	2840	3350	1460	7830	4090	3170	2010	1660	937	741
22	721	11200	2730	2690	1410	6840	4330	3210	2040	1720	927	695
23	614	5700	3170	2320	1380	15200	4260	2840	2370	2060	913	758
24	712	3800	2860	2320	1310	11000	5060	2600	2040	1940	1000	773
25	717	2870	2510	3330	1280	7570	5660	2700	1940	1820	965	874
26	708	2430	2690	3790	1220	5910	5820	2720	1890	1660	912	927
27	706	2540	2840	3220	1270	4840	5360	3080	1820	1570	914	801
28	721	3860	2840	3160	1220	4100	4560	3310	1810	1480	875	719
29	651	3100	2620	3480	---	3570	4960	3150	1720	1530	862	748
30	1010	4060	2290	3170	---	3370	6240	2910	1660	1390	889	713
31	2180	---	2190	2880	---	3260	---	3510	---	1310	878	---
TOTAL	22912	89120	84250	65040	47920	175480	158890	124620	81950	46650	31499	24108
MEAN	739	2971	2718	2098	1711	5661	5296	4020	2732	1505	1016	804
MAX	2180	11200	4510	3790	2580	15200	9440	6390	4150	2060	1260	927
MIN	532	1640	1900	1200	1220	1250	3700	2600	1660	1240	862	695
AC-FT	45450	176800	167100	129000	95050	348100	315200	247200	162500	92530	62480	47820
CFSM	1.10	4.43	4.05	3.13	2.55	8.44	7.89	5.99	4.07	2.24	1.51	1.20
IN.	1.27	4.94	4.67	3.61	2.66	9.73	8.81	6.91	4.54	2.59	1.75	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1993, BY WATER YEAR (WY)

MEAN	1308	3243	4421	4438	4133	3664	3641	3451	2216	1151	881	948
MAX	2712	6263	11170	8821	8938	8921	5296	6396	5143	2018	1208	1602
(WY)	1969	1974	1965	1974	1982	1972	1993	1969	1974	1974	1974	1959
MIN	725	806	1030	1036	977	1850	1867	1456	882	763	659	655
(WY)	1989	1988	1977	1977	1977	1992	1967	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1959 - 1993

ANNUAL TOTAL	685191		952439				
ANNUAL MEAN	1872		2609			2784	
HIGHEST ANNUAL MEAN						4407	1974
LOWEST ANNUAL MEAN						1454	1977
HIGHEST DAILY MEAN	11200	Feb 22	15200	Mar 23		57200	Dec 22 1964
LOWEST DAILY MEAN	532	Oct 6	532	Oct 6		285	Oct 4 1958
ANNUAL SEVEN-DAY MINIMUM	594	Aug 28	613	Oct 6		507	Oct 3 1958
ANNUAL RUNOFF (AC-FT)	1359000		1889000			2017000	
ANNUAL RUNOFF (CFSM)	2.79		3.89			4.15	
ANNUAL RUNOFF (INCHES)	37.99		52.80			56.38	
10 PERCENT EXCEEDS	3420		5060			5230	
50 PERCENT EXCEEDS	1400		1990			2180	
90 PERCENT EXCEEDS	620		761			787	

WILLAMETTE RIVER BASIN

317

14211000 CLACKAMAS RIVER NEAR CLACKAMAS, OR

LOCATION.--Lat 45°23'36", long 122°31'54", in NE 1/4 SW 1/4 sec.14, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, on right bank 0.8 mi upstream from Johnson Creek, 2.1 mi southeast of Clackamas, and at mile 4.8.

DRAINAGE AREA.--930 mi² at gage, 936 mi² at Gladstone Bridge 3.6 mi downstream, where high-flow discharge measurements were made.

PERIOD OF RECORD.--November 1991 to February 1992, December 1992 to June 1993.

REVISIONS.--The water-quality data published for water year 1992 have been revised as shown in the following table. These figures supercede those published in the report for 1992.

WATER-QUALITY DATA, WATER YEAR NOVEMBER 1991 TO APRIL 1992

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV						
21...	1400	--	13000	19	667	72
DEC						
06...	1215	8.5	25000	98	6610	70
06...	1540	9.0	26000	187	13100	58
07...	0825	8.0	30000	122	9880	61
07...	1055	9.0	28000	80	6050	61
JAN						
29...	1410	9.0	11100	16	480	77
FEB						
19...	1505	8.0	9170	25	619	81
20...	1510	8.0	19200	59	3060	65
22...	1250	8.5	19800	49	2620	68
APR						
24...	1430	--	4500	4	49	--

WATER-QUALITY DATA, WATER YEAR DECEMBER 1992 TO JUNE 1993

DATE	TIME	TEMPER- ATURE WATER (DEG C)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
01...	1125	6.0	9000	8	194	85
FEB						
25...	0830	1.0	1900	22	113	96
MAR						
17...	1320	6.0	20000	29	1570	78
23...	1530	8.5	36000	290	28200	74
APR						
02...	1120	8.0	7910	4	85	87
08...	1420	10.0	8120	4	88	88
15...	1145	8.5	8020	12	260	57
19...	1015	8.5	7750	4	84	79
MAY						
04...	1030	10.0	11300	20	610	72
JUN						
08...	1355	--	7910	5	107	74

* Sediment discharges shown are estimated instantaneous values. The values were calculated by multiplying the water discharge times the sediment concentration times the coefficient of 0.0027 to get sediment discharge in tons per day. They do not reflect the actual sediment discharge for the given date.

WILLAMETTE RIVER BASIN

14211500 JOHNSON CREEK AT SYCAMORE, OR

LOCATION.--Lat 45°28'40", long 122°30'24", in lot 2, SW 1/4 sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, on right bank 0.3 mi southwest of Sycamore station, 2.5 mi east of city limits of Portland, and at mile 10.2.

DRAINAGE AREA.--26.5 mi².

PERIOD OF RECORD.--July 1940 to current year.

REVISED RECORDS.--WSP 1318: 1941(M). WDR OR-75-1: 1974. WDR OR-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 228.47 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. Since January 1980, on occasion overflow from the Powell Butte Reservoir enters Johnson Creek at Circle Avenue, mile 11.6. Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--53 years, 53.2 ft³/s, 27.29 in/yr, 38,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s Dec. 22, 1964, gage height, 14.68 ft; minimum discharge, 0.08 ft³/s Aug. 21, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0930	*825	*9.76	Apr. 3	1430	591	8.25
Mar. 23	0600	545	7.92				

Minimum discharge, 0.56 ft³/s Oct. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	40	127	55	51	34	68	58	114	5.9	4.3	2.2
2	5.9	17	187	46	42	43	109	55	83	6.9	3.8	2.6
3	8.5	13	78	108	36	103	406	130	60	6.0	4.3	2.5
4	3.7	22	51	211	31	119	241	105	43	5.3	3.5	4.0
5	2.2	14	40	131	26	86	134	77	39	4.7	3.3	3.2
6	1.7	8.8	33	83	22	63	102	118	37	4.4	2.9	2.4
7	1.3	16	28	61	19	49	79	126	56	4.1	2.7	2.4
8	.99	25	84	50	16	40	89	131	46	4.0	2.6	2.5
9	.91	21	107	37	14	34	123	96	39	4.2	2.4	2.3
10	.97	13	479	31	13	29	152	74	34	3.9	2.3	2.3
11	.90	11	173	27	15	26	120	59	45	3.3	2.5	2.1
12	.88	15	99	24	12	22	104	49	39	3.2	2.2	2.0
13	1.0	10	64	34	10	20	110	46	30	3.9	2.2	1.8
14	.79	7.9	72	18	9.5	32	114	36	26	8.4	2.3	2.0
15	.94	6.4	57	16	8.9	99	114	31	24	6.4	2.8	1.7
16	1.2	5.6	64	15	7.7	90	96	26	20	12	5.6	1.7
17	1.4	5.1	127	13	8.9	202	177	23	18	8.4	2.6	2.4
18	1.9	4.9	80	13	6.8	173	125	20	16	3.7	2.9	1.8
19	2.3	33	81	67	24	107	93	21	12	8.2	2.6	1.8
20	12	17	128	302	16	107	73	40	11	6.9	2.3	1.6
21	7.9	166	93	266	15	74	73	61	11	5.8	2.3	1.5
22	4.3	143	66	282	19	138	63	42	18	12	2.3	1.4
23	1.8	77	53	168	19	412	76	28	15	10	3.4	1.3
24	1.3	44	44	183	17	180	116	22	9.6	7.5	3.8	1.7
25	1.2	31	38	133	17	102	118	27	7.9	5.8	2.3	1.3
26	.79	24	61	96	15	70	125	24	8.3	5.2	2.3	1.6
27	.71	55	149	73	13	52	108	41	7.3	5.0	2.1	2.1
28	.91	52	170	74	13	41	77	32	7.6	9.5	2.2	2.0
29	17	35	111	106	---	34	88	29	6.3	8.8	2.2	1.9
30	47	150	81	78	---	35	68	37	5.9	5.4	2.1	2.0
31	58	---	65	62	---	34	---	136	---	4.9	2.1	---
TOTAL	191.34	1082.7	3090	2863	516.8	2650	3541	1800	888.9	193.7	87.2	62.0
MEAN	6.17	36.1	99.7	92.4	18.5	85.5	118	58.1	29.6	6.25	2.81	2.07
MAX	58	166	479	302	51	412	406	136	114	12	5.6	4.0
MIN	.71	4.9	28	13	6.8	20	63	20	5.9	3.2	2.1	1.3
AC-FT	380	2150	6130	5680	1030	5260	7020	3570	1760	384	173	123
CFSM	.23	1.36	3.76	3.49	.70	3.23	4.45	2.19	1.12	.24	.11	.08
IN.	.27	1.52	4.34	4.02	.73	3.72	4.97	2.53	1.25	.27	.12	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1993, BY WATER YEAR (WY)

MEAN	9.98	69.7	125	140	117	85.6	49.4	25.7	11.4	3.09	1.89	2.80
MAX	65.4	239	302	308	320	196	130	90.1	63.5	30.0	8.04	11.4
(WY)	1969	1951	1965	1970	1949	1957	1955	1963	1984	1983	1968	1972
MIN	1.29	1.56	4.34	9.01	16.0	18.1	9.46	3.32	1.46	.64	.44	.55
(WY)	1966	1953	1977	1977	1977	1992	1942	1966	1966	1973	1970	1967

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1941 - 1993

ANNUAL TOTAL	12411.47		16966.64						
ANNUAL MEAN	33.9		46.5			53.2			
HIGHEST ANNUAL MEAN						91.3			1974
LOWEST ANNUAL MEAN						15.6			1977
HIGHEST DAILY MEAN	617	Feb 20	479	Dec 10	2150		Dec 22	1964	
LOWEST DAILY MEAN	.49	Sep 22	.71	Oct 27		.10	Aug 7	1973	
ANNUAL SEVEN-DAY MINIMUM	.81	Aug 26	.91	Oct 9		.11	Aug 5	1973	
ANNUAL RUNOFF (AC-FT)	24620		33650		38560				
ANNUAL RUNOFF (CFSM)	1.28		1.75		2.01				
ANNUAL RUNOFF (INCHES)	17.42		23.82		27.29				
10 PERCENT EXCEEDS	93		121		145				
50 PERCENT EXCEEDS	9.6		22		14				
90 PERCENT EXCEEDS	.98		2.0		1.1				

WILLAMETTE RIVER BASIN

319

14211550 JOHNSON CREEK AT MILWAUKIE, OR

LOCATION.--Lat 45°27'11", long 122°38'31", in NE 1/4 SE 1/4 sec.26, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, on the right bank upstream side of the Milport Road bridge, in the city limits of Milwaukie, and at mile 0.7.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--April 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level, from State of Oregon.

REMARKS.--Record good except for estimated daily discharges, which are fair. Small diversions for irrigation upstream from station. Significant portion of summer flow is from Crystal Springs, through Crystal Springs Creek, which enters 0.5 mi upstream from gage.

AVERAGE DISCHARGE.--4 years, 63.0 ft³/s, 16.52 in/yr, 45,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft³/s Feb. 20, 1991, gage height 29.28 ft; minimum discharge, 12 ft³/s Aug. 11, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1330	*799	*28.46	No other peak greater than base discharge.			
Minimum discharge, 13 ft ³ /s Oct. 10-12, 14-18.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	63	140	69	68	52	94	70	144	19	18	15
2	19	31	212	61	58	73	119	64	113	20	17	16
3	26	25	92	107	52	147	437	151	86	21	17	17
4	19	33	60	252	46	160	303	126	67	20	18	17
5	16	28	47	173	41	123	163	92	63	19	17	19
6	15	23	41	112	37	94	124	132	54	18	16	17
7	15	27	37	81	34	75	100	133	74	18	17	16
8	14	38	93	65	33	62	115	148	69	18	16	17
9	14	34	125	52	31	53	137	108	58	17	17	17
10	14	26	508	42	29	46	177	87	52	18	16	16
11	14	24	218	38	33	38	139	68	60	17	16	16
12	14	26	133	33	28	36	118	58	61	16	16	16
13	14	24	91	45	26	33	123	55	48	16	16	16
14	14	21	95	34	25	49	133	44	44	29	16	15
15	14	20	83	30	24	128	130	38	42	27	18	15
16	14	19	79	27	23	124	112	34	38	21	18	15
17	14	19	172	26	e24	239	200	33	33	31	21	15
18	14	18	115	25	23	223	145	32	30	19	17	15
19	14	43	100	80	22	148	108	37	27	21	19	16
20	23	30	163	347	30	141	85	50	26	27	17	15
21	28	163	121	313	37	104	91	74	25	24	16	24
22	21	179	91	310	39	153	76	56	33	28	16	15
23	17	e80	73	204	37	458	89	39	34	26	17	15
24	15	e45	61	210	33	222	131	32	26	25	19	15
25	15	e35	55	168	31	142	128	39	23	21	17	16
26	15	e25	81	123	31	104	137	33	21	20	16	16
27	14	e60	168	97	29	81	121	56	21	19	16	16
28	14	63	213	91	29	66	95	43	22	23	16	16
29	29	44	145	128	---	56	103	38	23	28	16	16
30	79	155	107	101	---	56	80	48	20	20	16	16
31	75	---	85	84	---	57	---	166	---	19	16	---
TOTAL	638	1421	3804	3528	953	3543	4113	2184	1437	665	524	477
MEAN	20.6	47.4	123	114	34.0	114	137	70.5	47.9	21.5	16.9	15.9
MAX	79	179	508	347	68	458	437	166	144	31	21	19
MIN	14	18	37	25	22	33	76	32	20	16	16	15
AC-FT	1270	2820	7550	7000	1890	7030	8160	4330	2850	1320	1040	946
CFSM	.40	.91	2.37	2.20	.66	2.21	2.65	1.36	.92	.41	.33	.31
IN.	.46	1.02	2.73	2.53	.68	2.54	2.95	1.57	1.03	.48	.38	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	MEAN	26.0	62.3	105	132	121	79.7	85.2	56.6	35.7	20.3	17.7	16.7
MAX	40.4	84.2	135	183	161	114	137	91.3	47.9	21.5	20.3	17.5	
(WY)	1991	1991	1992	1990	1990	1993	1993	1991	1993	1993	1991	1991	
MIN	20.6	39.0	69.6	106	34.0	44.1	50.4	29.4	16.7	19.0	15.9	15.9	
(WY)	1993	1990	1990	1992	1993	1992	1990	1992	1992	1992	1990	1993	

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1990 - 1993
ANNUAL TOTAL	19957	23287	
ANNUAL MEAN	54.5	63.8	63.0
HIGHEST ANNUAL MEAN			70.2
LOWEST ANNUAL MEAN			58.2
HIGHEST DAILY MEAN	694	508	694
LOWEST DAILY MEAN	13	14	13
ANNUAL SEVEN-DAY MINIMUM	14	14	14
ANNUAL RUNOFF (AC-FT)	39580	46190	45630
ANNUAL RUNOFF (CFSM)	1.05	1.23	1.22
ANNUAL RUNOFF (INCHES)	14.33	16.72	16.52
10 PERCENT EXCEEDS	117	144	141
50 PERCENT EXCEEDS	28	34	34
90 PERCENT EXCEEDS	15	16	16

e Estimated

WILLAMETTE RIVER BASIN

14211720 WILLAMETTE RIVER AT PORTLAND, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°31'07", long 122°40'00", in NW 1/4 NE 1/4 sec.3, T.1 S., R.1 E., Multnomah County, Hydrologic Unit 17090012, in pier at east end of drawspan, on upstream side of Morrison Bridge, in Portland, and at mile 12.8.

DRAINAGE AREA.--11,100 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year. Gage-height records collected in this vicinity since 1879 are in reports of the National Weather Service.

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is 1.55 ft above sea level (levels by National Weather Service).

REMARKS.--Water-discharge records fair except for estimated daily discharges below 50,000 ft³/s, which are poor. Flow regulated by many reservoirs upstream. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--21 years, 31,900 ft³/s, 23,110,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283,000 ft³/s Jan. 18, 1974; maximum gage height, 23.84 ft Jan. 18, 1974; minimum daily discharge, 4,200 ft³/s July 10, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 7, 1894, and June 1, 1948, reached stages of 33.0 ft and 30.0 ft, respectively, from information by National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 122,000 ft³/s Mar. 24; maximum gage height, 13.31 ft May 18; minimum daily discharge, 7,650 ft³/s Oct. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8440	20500	46900	49900	e44300	e19300	e40800	65100	e42000	16000	14900	11600
2	9040	26100	59400	48000	e40600	e20800	e39600	61700	54500	15000	14500	e11400
3	9180	24900	67700	45200	e37600	e24200	e53300	56200	63000	14900	e14000	11100
4	9800	22500	65500	e46700	e35200	e29300	e76900	60000	62800	14900	e12600	11300
5	11200	20700	59100	e49100	e31800	e39200	e92600	63600	61600	14500	e12200	10900
6	10200	15700	47900	e48600	e29400	e45700	e91800	65200	66500	13100	11600	11400
7	9120	15300	45300	e45700	e28200	e45000	e83400	62400	64300	13700	12000	13200
8	8270	15800	41400	e40400	e27400	e41500	e75800	65200	58100	15200	10800	11600
9	9380	18900	43800	e34600	e26500	e37600	e77400	70700	52700	12900	11000	e11700
10	9670	19500	60100	e30200	e25700	e33800	e88300	67100	49100	12200	11600	11800
11	9260	19400	85800	e27600	e25300	e31100	e99600	62700	45300	12100	10400	13000
12	9750	20500	91700	e26600	e25300	e28800	e101000	58400	43100	11100	11500	14000
13	9820	19700	76400	e25300	e24800	e26800	e90400	51600	42100	12000	12200	12300
14	9780	20800	60300	e23200	e23900	e25800	e78100	45200	39700	11900	11000	12100
15	9880	19600	50700	e21600	e22700	e35200	75400	44000	36800	10800	10600	11400
16	9730	19300	45900	e20900	e21700	e54400	69300	40100	34100	11400	10200	12000
17	9230	18400	45700	e20600	e20800	e84200	64500	37500	30900	11100	11400	12100
18	8350	19100	51700	e20500	e19400	e112000	66400	34700	28400	13300	10800	12700
19	7650	19400	50700	e20800	e18500	e120000	72100	33700	27000	12300	12800	12000
20	9710	22100	46300	e34200	e19200	e118000	67800	32200	25800	12200	11700	11400
21	10700	25500	48200	e66800	e21000	e110000	61500	30400	24000	11100	11800	12200
22	9700	53200	55600	e91300	e24100	e103000	59200	e34000	22600	12600	11700	13300
23	9590	63400	58400	e96100	e26600	e119000	57300	e36000	21500	13700	12200	15600
24	10100	61000	56800	e88100	e26500	e122000	60400	e38000	20800	15600	12100	15400
25	9560	52500	51400	e78600	e24800	e116000	68400	e33000	21200	16600	12000	16000
26	8950	44500	46200	e73100	e22700	e108000	71900	e30000	19800	16500	e12000	15200
27	8600	40100	47200	e68000	e21200	e96200	75900	e31000	18200	e16000	e12100	13400
28	8720	38600	51600	e64000	e20000	e78400	71800	e32000	18000	15200	12100	13800
29	8810	39200	57700	e61200	---	e63100	66900	e33500	17700	13800	11500	14500
30	10200	40100	62100	e56900	---	e51800	64000	e36000	17200	15700	11100	13900
31	14600	---	53800	e50000	---	e44300	---	e37500	---	15000	11100	---
TOTAL	296990	856300	1731300	1473800	735200	1984500	2161800	1448700	1128800	422400	367500	382300
MEAN	9580	28540	55850	47540	26260	64020	72060	46730	37630	13630	11850	12740
MAX	14600	63400	91700	96100	44300	122000	101000	70700	66500	16600	14900	16000
MIN	7650	15300	41400	20500	18500	19300	39600	30000	17200	10800	10200	10900
AC-FT	589100	1698000	3434000	2923000	1458000	3936000	4288000	2873000	2239000	837800	728900	758300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1993, BY WATER YEAR (WY)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	15610	40210	65130	59950	50530	43630	35690	25520	18220	9376	8369	11530									
MAX	22150	98410	129200	119200	94040	77790	72060	46730	38730	15870	11850	17350									
(WY)	1976	1974	1978	1974	1982	1974	1993	1993	1984	1983	1993	1978									
MIN	8915	10300	8894	8795	8050	17980	17630	11150	7125	6541	6136	7684									
(WY)	1988	1988	1977	1977	1977	1978	1977	1973	1992	1973	1973	1992									

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1973 - 1993
ANNUAL TOTAL	7749670	12989590	
ANNUAL MEAN	21170	35590	31900
HIGHEST ANNUAL MEAN			54490
LOWEST ANNUAL MEAN			13710
HIGHEST DAILY MEAN	105000	122000	276000
LOWEST DAILY MEAN	5240	7650	4200
ANNUAL SEVEN-DAY MINIMUM	6090	9190	5260
ANNUAL RUNOFF (AC-FT)	15370000	25760000	23110000
10 PERCENT EXCEEDS	49400	71100	73100
50 PERCENT EXCEEDS	13500	26100	20500
90 PERCENT EXCEEDS	6810	11000	8000

e Estimated

14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1975 to September 1981.

WATER TEMPERATURE: November 1975 to September 1981.

WATER-QUALITY DATA

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)
NOV 1992 16...	1311	23800	73	7.7	10.0	4.9	11.2	98	41	32	22
JAN 1993 25...	1042	E78600	62	7.4	5.5	23	13.7	109	K170	K410	22
MAR 15...	1323	E35200	73	7.6	9.0	7.2	10.6	93	87	18	26
APR 15...	1204	61200	62	7.6	10.0	7.4	12.0	107	77	73	23
JUN 23...	1131	23900	73	7.7	18.0	3.0	9.4	98	K60	39	26
AUG 05...	1222	E12200	82	7.6	21.0	2.3	8.3	94	21	K8	27
DATE	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
NOV 1992 16...	6.0	1.8	5.6	34	0.5	0.8	24	30	0	3.2	4.4
JAN 1993 25...	5.6	1.9	3.9	27	0.4	0.8	17	21	0	3.8	3.5
MAR 15...	6.7	2.2	5.3	30	0.5	0.7	25	30	0	3.7	4.3
APR 15...	5.7	2.0	4.1	28	0.4	0.6	20	25	0	3.2	2.9
JUN 23...	6.6	2.2	4.6	27	0.4	0.7	27	32	0	3.0	3.6
AUG 05...	6.8	2.3	6.4	34	0.5	0.9	27	33	0	4.3	4.1
DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)
NOV 1992 16...	<0.1	15	56	54	0.08	3600	0.07	0.08	0.02	0.02	--
JAN 1993 25...	<0.1	15	38	50	0.05	E8060	0.05	--	--	0.02	--
MAR 15...	<0.1	15	66	56	0.09	E6270	0.08	--	--	0.01	--
APR 15...	<0.1	15	59	49	0.08	9750	0.05	--	--	0.02	0.2
JUN 23...	<0.1	15	51	54	0.07	3290	0.05	--	--	<0.01	<0.2
AUG 05...	<0.1	17	64	60	0.09	E2110	0.06	--	--	0.01	<0.2
DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	PHOS-PHORUS, ORTHO TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	
NOV 1992 16...	0.2	0.37	0.36	0.06	0.05	0.06	--	--	0.05	20	
JAN 1993 25...	0.3	--	1.20	0.11	0.03	0.03	--	--	--	--	
MAR 15...	0.2	--	0.75	0.06	0.03	0.04	--	--	--	30	
APR 15...	0.3	--	0.62	0.07	0.03	0.03	2.0	0.6	--	100	
JUN 23...	<0.2	--	0.43	0.04	0.03	0.04	1.4	0.6	--	--	
AUG 05...	0.3	--	0.42	0.07	0.05	0.05	1.5	0.4	--	20	

E - Estimated.

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

WILLAMETTE RIVER BASIN
14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued

WATER-QUALITY RECORDS

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)
NOV 1992 16...	5	<3	77	<4	9	<10	<1	<1	<1	37
JAN 1993 25...	--	--	--	--	--	--	--	--	--	--
MAR 15...	7	<3	63	<4	17	<10	2	<1	<1	41
APR 15...	18	<3	150	<4	11	<10	<1	<1	<1	40
JUN 23...	--	--	--	--	--	--	--	--	--	--
AUG 05...	6	<3	41	<4	6	10	<1	<1	<1	41
DATE	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	GROSS ALPHA, 2 SIGMA SUSP. TOTAL (UG/L AS U-NAT)	ALPHA, 2 SIGMA SED, SUSP. TOT DRY (UG/L AS U-NAT)
NOV 1992 16...	--	--	<6	8	514	97	--	--	--	--
JAN 1993 25...	0.02	0.01	--	39	E8280	87	0.20	0.31	0.62	0.53
MAR 15...	--	--	<6	10	E950	89	--	--	--	--
APR 15...	--	--	<6	21	3470	95	--	--	--	--
JUN 23...	--	--	--	9	581	90	--	--	--	--
AUG 05...	<0.01	0.01	<6	8	E264	100	<0.01	0.39	2.7	1.02
DATE	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90Y90 (PCI/L)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	BETA- 2 SIGMA SED, SUSP, TOT DRY (PCI/L YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)
NOV 1992 16...	--	--	--	--	--	--	--	--	--	--
JAN 1993 25...	1.0	0.50	0.91	0.46	0.60	0.56	0.57	0.53	0.19	0.03
MAR 15...	--	--	--	--	--	--	--	--	--	--
APR 15...	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--
AUG 05...	0.95	0.54	0.88	0.46	0.51	0.47	0.49	0.45	0.03	0.01

E - Estimated.

14211814 FAIRVIEW CREEK AT GLISAN STREET, NEAR GRESHAM, OR

LOCATION.--Lat 45°31'40", long 122°26'51", in Land Grant parcel number 58, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17090012, on right bank at upstream side of culvert on Glisan St., 0.4 mi east of the intersection of 202nd Ave. and Glisan St., 1.7 mi northwest of Gresham City Hall.

DRAINAGE AREA.--4.94 mi².

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 205 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion. High flows affected to an unknown degree by two small ponds just upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35 ft³/s Apr. 3, 1993, gage height, 5.28 ft; maximum gage height, 5.47 ft Nov. 21, 1992; minimum discharge, 0.29 ft³/s Aug. 30, Sept. 1, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s Apr. 3, gage height, 5.28 ft; minimum discharge, 0.31 ft³/s Oct. 15-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	8.2	9.3	3.3	3.4	3.5	6.5	3.5	7.5	2.1	2.1	1.2
2	1.2	4.6	10	3.1	3.2	3.6	7.4	3.4	4.9	2.6	2.1	1.1
3	2.7	3.0	4.9	5.6	3.0	5.5	24	8.5	4.8	2.4	2.0	1.1
4	1.2	3.7	3.6	10	2.9	6.3	12	5.9	4.0	2.1	2.0	1.1
5	.77	2.9	3.0	5.7	2.9	4.1	5.9	3.9	4.2	2.1	1.9	1.3
6	.62	1.5	2.8	3.9	2.9	3.2	5.0	5.8	4.1	1.9	1.8	1.1
7	.51	2.7	2.6	3.4	2.6	2.9	4.5	5.5	4.6	1.9	1.8	1.1
8	.46	3.4	7.5	3.2	2.5	2.8	5.9	6.4	3.7	1.9	1.8	1.1
9	.44	2.8	8.0	3.0	2.5	2.6	6.5	4.1	3.6	1.9	1.8	1.1
10	.40	1.4	19	2.6	2.5	2.5	7.5	3.6	3.6	1.8	1.8	1.1
11	.39	1.2	9.8	3.0	2.9	2.2	5.7	3.4	4.1	1.8	1.8	1.1
12	.37	3.0	5.5	e4.6	2.7	1.9	5.1	3.3	3.6	1.8	1.6	.97
13	.37	1.7	3.9	e3.4	2.3	1.9	5.5	3.7	3.2	2.2	1.6	.97
14	.37	.99	4.6	e2.4	2.2	3.8	5.0	3.4	e3.2	4.2	1.6	.97
15	.31	.79	4.0	e2.2	2.1	9.6	5.6	3.1	e3.6	5.1	1.7	.98
16	.31	.74	3.8	2.1	1.9	6.2	4.6	3.0	e3.4	4.5	1.7	.98
17	.31	.71	7.5	2.1	1.8	10	9.0	3.0	e3.2	5.1	1.7	.97
18	.32	.65	4.9	2.1	1.7	6.2	5.6	2.9	e3.0	3.3	1.6	.97
19	.37	4.2	4.4	7.0	2.0	3.8	4.2	3.6	e2.8	3.5	1.5	.94
20	1.6	3.7	7.1	20	2.6	4.4	3.9	6.1	e2.6	3.6	1.5	.82
21	3.3	17	4.9	13	3.6	3.5	4.9	7.9	e2.5	3.4	1.5	.82
22	2.6	16	3.7	11	3.4	6.9	4.0	5.8	e3.0	4.2	1.4	.82
23	1.1	6.5	3.3	6.7	2.9	18	5.0	3.6	e3.4	3.5	1.7	.82
24	.74	3.5	3.0	7.7	2.5	6.4	5.5	3.1	e3.0	2.8	1.9	.79
25	.63	2.5	2.9	5.5	2.3	4.3	5.5	4.1	e2.8	2.5	1.6	.77
26	.54	2.0	5.0	4.4	2.0	3.8	4.9	3.5	2.4	2.4	1.4	.79
27	.45	5.7	7.8	4.0	1.9	3.6	4.1	5.8	2.4	2.3	1.3	.72
28	.43	4.9	7.8	5.3	1.9	3.3	3.8	4.6	2.5	3.0	1.3	.69
29	1.5	3.2	5.1	5.6	---	3.3	4.6	e4.0	2.9	4.2	1.3	.72
30	11	11	4.0	4.0	---	3.5	3.6	5.1	2.4	3.3	1.3	.71
31	10	---	3.5	3.6	---	3.4	---	9.8	---	2.6	1.3	---
TOTAL	45.78	124.18	177.2	163.5	71.1	147.0	185.3	143.4	105.0	90.0	51.4	28.62
MEAN	1.48	4.14	5.72	5.27	2.54	4.74	6.18	4.63	3.50	2.90	1.66	.95
MAX	11	17	19	20	3.6	18	24	9.8	7.5	5.1	2.1	1.3
MIN	.31	.65	2.6	2.1	1.7	1.9	3.6	2.9	2.4	1.8	1.3	.69
AC-FT	91	246	351	324	141	292	368	284	208	179	102	57
CFSM	.30	.84	1.16	1.07	.51	.96	1.25	.94	.71	.59	.34	.19
IN.	.34	.94	1.33	1.23	.54	1.11	1.40	1.08	.79	.68	.39	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MEAN	1.48	4.14	5.72	5.27	2.54	4.74	6.18	4.63	3.50	2.90	1.66	.95
MAX	1.48	4.14	5.72	5.27	2.54	4.74	6.18	4.63	3.50	2.90	1.66	.95
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	1.48	4.14	5.72	5.27	2.54	4.74	6.18	4.63	3.50	2.90	1.66	.95
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993

SUMMARY STATISTICS

FOR 1993 WATER YEAR

ANNUAL TOTAL	1332.48
ANNUAL MEAN	3.65
HIGHEST DAILY MEAN	24 Apr 3
LOWEST DAILY MEAN	.31 Oct 15
ANNUAL SEVEN-DAY MINIMUM	.34 Oct 12
ANNUAL RUNOFF (AC-FT)	2640
ANNUAL RUNOFF (CFSM)	.74
ANNUAL RUNOFF (INCHES)	10.03
10 PERCENT EXCEEDS	6.6
50 PERCENT EXCEEDS	3.0
90 PERCENT EXCEEDS	.89

e Estimated

WILLAMETTE RIVER BASIN

14211820 COLUMBIA SLOUGH AT PORTLAND, OR

LOCATION.--Lat 45°32'38", long 122°45'49", in NE 1/4 SE 1/4 sec.23, T.2 N., R.1 W., Multnomah County, Hydrologic Unit 17090012, on right bank, 0.25 mi upstream from mouth, and 1.25 mi upstream from confluence of Willamette and Columbia Rivers.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Acoustic velocity meter with water-stage and velocity-index recorder. Datum of gage is 1.53 ft above sea level.

REMARKS.--Record of daily net flows is fair due to large positive and negative flows.

AVERAGE DISCHARGE.--4 years, 105 ft³/s, 75,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 424 ft³/s June 20, 1991, maximum gage height, 13.16 ft May 18, 1993; minimum daily discharge, -231 ft³/s Mar. 26, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 340 ft³/s Dec. 10; maximum gage height, 13.16 ft May 18; minimum daily discharge, -167 ft³/s May 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	229	123	213	140	140	188	-113	96	59	153	101
2	133	229	189	202	156	69	168	86	21	69	88	62
3	143	157	126	102	127	149	51	82	-16	101	-14	66
4	105	116	97	127	158	113	-91	7.4	37	125	14	99
5	48	111	179	73	119	30	-69	-53	18	101	40	80
6	12	90	20	14	101	32	82	110	261	35	26	73
7	150	58	15	48	104	26	90	-58	116	21	140	92
8	77	82	23	18	32	2.2	170	29	-23	64	87	70
9	-6.2	50	92	84	56	32	156	-45	-17	141	56	108
10	20	60	340	78	110	129	191	111	179	131	127	120
11	55	107	95	61	146	159	116	58	229	134	59	148
12	105	118	234	197	127	46	57	19	118	95	104	126
13	69	56	205	64	205	93	165	81	134	80	130	54
14	42	43	125	187	218	93	236	-29	177	83	70	53
15	44	77	110	266	88	132	291	-53	241	88	34	12
16	50	107	187	269	62	83	192	-85	167	128	11	44
17	53	73	81	191	-2.0	37	102	-167	72	24	-16	46
18	64	128	286	101	-17	-53	120	-100	7.6	40	-30	63
19	87	120	147	43	3.7	12	164	71	40	50	37	58
20	226	196	108	230	38	-60	59	-37	89	83	42	58
21	184	135	85	273	101	-90	105	-127	84	-16	92	37
22	138	-4.0	87	210	26	131	94	-51	87	90	48	100
23	79	49	128	154	84	7.5	71	-26	114	61	89	155
24	80	122	180	275	57	-53	138	-36	66	107	135	143
25	103	205	144	164	73	111	118	48	124	176	108	100
26	83	168	97	155	121	167	-3.0	129	183	118	135	67
27	62	197	170	174	183	220	106	76	222	102	85	29
28	90	177	33	301	66	160	193	125	94	147	75	54
29	84	160	68	330	---	190	114	55	-19	84	52	41
30	180	194	190	219	---	220	143	108	55	62	44	69
31	297	---	114	225	---	232	---	215	---	91	30	---
TOTAL	2912.8	3610.0	4078	5048	2682.7	2559.7	3517.0	430.4	2956.6	2674	2051	2328
MEAN	94.0	120	132	163	95.8	82.6	117	13.9	98.6	86.3	66.2	77.6
MAX	297	229	340	330	218	232	291	215	261	176	153	155
MIN	-6.2	-4.0	15	14	-17	-90	-91	-167	-23	-16	-30	12
AC-FT	5780	7160	8090	10010	5320	5080	6980	854	5860	5300	4070	4620
CAL YR 1992	TOTAL 37847.20		MEAN 103	MAX 366	MIN -51	AC-FT 75070						
WTR YR 1993	TOTAL 34848.2		MEAN 95.5	MAX 340	MIN -167	AC-FT 69120						



Figure 22--Location of surface-water and water-quality stations in the Oregon Coastal Drainages north of the Siuslaw River Basin.

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR

LOCATION.--Lat 46°10'55", long 123°10'50", in NE 1/4 sec.16, T.8 N., R.4 W., Columbia County, Hydrologic Unit 17080003, on left bank, 0.7 mi downstream from Crims Island, 3.0 mi northwest of Quincy, and at mile 53.8.

DRAINAGE AREA.--256,900 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1968 to June 1970, June 1991 to current year.

GAGE.--Acoustic velocity meter with water-stage and velocity index recorder. Datum of gage is 0.52 ft above sea level. May 1968 to June 1970 water-stage recorder with auxiliary water-stage recorder 5.6 miles downstream, at datum 10.00 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by many reservoirs on Columbia River and in tributary basins. Flows are tidal affected and frequently reverse direction during tidal cycles except during periods of high runoff. Mean discharge values are based on a 24 hour day, not a tidal cycle.

AVERAGE DISCHARGE.--3 years (water years 1969, 1992-93), 224,200 ft³/s, 162,500,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 581,000 ft³/s Jan. 28, 1970; minimum daily discharge, 88,400 ft³/s Aug. 31, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 472,000 ft³/s May 18, 19; maximum elevation, 8.78 ft June 5; minimum daily discharge, 95,700 ft³/s Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130000	141000	e206000	e263000	e186000	e169000	226000	284000	369000	237000	186000	116000
2	129000	136000	e215000	e241000	e208000	e180000	217000	307000	370000	225000	150000	128000
3	128000	160000	e224000	e223000	e210000	e200000	235000	280000	381000	224000	159000	130000
4	128000	160000	e258000	e221000	e204000	138000	e276000	302000	387000	201000	176000	119000
5	131000	139000	e294000	e251000	e224000	169000	e280000	314000	386000	183000	163000	115000
6	134000	149000	e238000	e268000	e177000	170000	310000	322000	363000	182000	180000	102000
7	115000	140000	e235000	e281000	e169000	167000	309000	334000	339000	207000	160000	107000
8	111000	136000	e254000	e282000	e146000	171000	304000	363000	354000	209000	134000	127000
9	124000	135000	e241000	e280000	151000	e192000	308000	371000	367000	208000	140000	135000
10	114000	150000	e229000	e259000	e153000	e183000	316000	375000	369000	186000	143000	134000
11	104000	169000	e271000	e229000	e169000	e189000	325000	383000	345000	182000	135000	e141000
12	96800	145000	e294000	e253000	e164000	e186000	e339000	381000	330000	168000	152000	123000
13	110000	135000	e271000	e223000	e180000	e196000	327000	370000	339000	198000	153000	121000
14	120000	139000	e240000	e263000	e173000	149000	e307000	375000	322000	195000	128000	113000
15	132000	143000	e234000	e235000	e132000	e175000	274000	401000	303000	197000	131000	107000
16	118000	143000	e265000	e228000	e182000	e181000	249000	425000	275000	192000	132000	112000
17	106000	134000	e275000	e192000	e229000	e227000	250000	441000	269000	189000	133000	102000
18	99100	157000	e254000	e149000	e224000	e257000	259000	472000	268000	203000	151000	96200
19	121000	152000	e239000	e193000	e224000	291000	e249000	472000	275000	202000	152000	95700
20	121000	159000	e239000	e221000	e224000	299000	246000	462000	258000	194000	145000	97500
21	130000	140000	e209000	e170000	e194000	313000	249000	465000	250000	186000	130000	112000
22	141000	235000	e218000	e234000	e164000	323000	242000	464000	245000	202000	111000	125000
23	116000	e193000	e221000	e263000	e206000	e360000	242000	461000	250000	186000	119000	141000
24	117000	e237000	e234000	e284000	e209000	e401000	244000	453000	249000	197000	126000	132000
25	107000	e267000	e208000	e227000	e227000	e415000	233000	449000	248000	185000	139000	120000
26	112000	e229000	e168000	242000	e215000	e415000	261000	420000	235000	181000	150000	109000
27	104000	176000	e170000	e240000	e215000	e383000	288000	399000	207000	196000	155000	104000
28	108000	e181000	e174000	236000	e191000	e363000	281000	389000	207000	198000	130000	125000
29	110000	e158000	e229000	e239000	---	e298000	274000	379000	233000	203000	118000	122000
30	106000	e162000	e250000	e211000	---	276000	280000	379000	245000	210000	119000	134000
31	134000	---	e262000	e209000	---	245000	---	371000	---	214000	104000	---
TOTAL	3656900	4900000	7319000	7310000	5350000	7681000	8200000	12063000	9038000	6140000	4404000	3545400
MEAN	118000	163300	236100	235800	191100	247800	273300	389100	301300	198100	142100	118200
MAX	141000	267000	294000	284000	229000	415000	339000	472000	387000	237000	186000	141000
MIN	96800	134000	168000	149000	132000	138000	217000	280000	207000	168000	104000	95700
AC-FT	7253000	9719000	14520000	14500000	10610000	15240000	16260000	23930000	17930000	12180000	8735000	7032000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	143500	194500	236200	266500	228600	221400	269400	322100	334500	221600	149600	129800														
MAX	166700	248000	271400	334200	259900	247800	406500	469600	403200	270100	184500	151100														
(WY)	1969	1969	1969	1970	1970	1970	1971	1971	1971	1972	1972	1972														
MIN	118000	163300	216000	199400	191100	196700	196200	210900	203900	139500	122200	112700														
(WY)	1993	1993	1970	1992	1993	1992	1992	1968	1992	1992	1992	1992														

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1968 - 1993

ANNUAL TOTAL	65445200	79607300																								
ANNUAL MEAN	178800	218100																								
HIGHEST ANNUAL MEAN																										
LOWEST ANNUAL MEAN																										
HIGHEST DAILY MEAN				365000	Feb 22		472000	May 18																		
LOWEST DAILY MEAN				88400	Aug 31		95700	Sep 19																		
ANNUAL SEVEN-DAY MINIMUM				95700	Aug 27		103000	Sep 15																		
ANNUAL RUNOFF (AC-FT)				129800000			157900000																			
10 PERCENT EXCEEDS				242000			363000																			
50 PERCENT EXCEEDS				176000			207000																			
90 PERCENT EXCEEDS				113000			119000																			

e Estimated

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1967 to September 1970, October 1990 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1992 to current year.

WATER TEMPERATURE: August 1967 to September 1970. October 1992 to current year.

INSTRUMENTATION.--Temperature recorder August 1967 to September 1970. Temperature and specific conductance recorders from October 1992 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 23.5°C Aug. 21, 22, 1967; minimum, 0.0°C Jan. 31, Feb. 1, 1969.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 208 microsiemens Sept. 4, minimum, 93 microsiemens June 1, 2.

WATER TEMPERATURE: Maximum, 22.5°C Sept. 8-10, 12, minimum, 0.5°C Jan. 16, 18, 19.

WATER-QUALITY DATA

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECA, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)	
NOV 1992												
19...	1235	108000	154	8.0	11.0	1.9	10.5	96	K10	K7	56	
JAN 1993												
27...	1143	E240000	126	8.0	3.5	6.7	13.1	99	280	69	54	
MAR												
16...	1139	E181000	158	8.3	5.0	5.5	13.1	103	K6	K10	61	
APR												
27...	0941	352000	152	8.0	10.5	5.7	11.3	102	K85	28	54	
MAY												
03...	0953	346000	144	7.9	11.5	8.2	11.0	103	--	--	54	
10...	1036	480000	136	7.9	12.0	7.6	11.4	107	--	--	52	
17...	0907	489000	141	7.9	14.0	12	11.0	108	--	--	55	
24...	0919	544000	127	8.0	15.0	8.1	11.5	115	--	--	48	
JUN												
01...	1032	374000	110	7.9	15.0	6.0	10.8	108	--	--	43	
07...	0902	442000	104	7.8	15.0	5.6	10.9	108	--	--	42	
24...	0929	342000	108	8.2	17.0	1.8	10.6	107	K19	K3	40	
AUG												
06...	1113	339000	132	8.3	21.0	1.6	9.5	108	59	K12	53	
DATE		CALCIUM, DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV 1992												
19...	15	4.4	7.4	22	0.4	1.1	54	66	0	11	5.0	
JAN 1993												
27...	15	4.1	5.5	18	0.3	1.0	48	59	0	8.3	4.1	
MAR												
16...	16	5.0	8.2	22	0.5	1.3	57	70	0	12	6.1	
APR												
27...	14	4.6	9.1	26	0.5	1.5	61	75	0	11	5.9	
MAY												
03...	14	4.5	8.3	25	0.5	1.5	51	62	0	10	4.9	
10...	14	4.0	7.2	23	0.4	1.4	48	59	0	10	4.1	
17...	15	4.2	6.6	20	0.4	1.4	51	63	0	10	3.4	
24...	13	3.8	6.4	22	0.4	1.3	48	59	0	9.0	3.1	
JUN												
01...	12	3.1	4.7	19	0.3	1.0	40	49	0	7.4	2.6	
07...	12	3.0	4.6	19	0.3	1.0	35	43	0	7.1	2.6	
24...	11	3.1	5.1	21	0.3	1.0	40	49	0	6.7	3.1	
AUG												
06...	15	3.8	5.6	18	0.3	1.0	49	59	0	9.2	3.5	
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA, DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA, TOTAL (MG/L AS N)	NITRO-GEN, NITRITE, DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE, DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC, TOTAL (MG/L AS N)
NOV 1992												
19...	0.2	8.9	89	89	0.12	25900	<0.01	0.01	0.01	0.01	<0.2	
JAN 1993												
27...	0.1	10	83	80	0.11	E53800	0.03	--	--	0.02	<0.2	
MAR												
16...	0.1	11	105	96	0.14	E51300	0.02	--	--	<0.01	0.2	
APR												
27...	0.1	16	103	102	0.14	97900	0.04	--	--	<0.01	<0.2	
MAY												
03...	<0.1	16	95	92	0.13	88800	0.03	--	--	<0.01	0.3	
10...	0.2	15	94	87	0.13	122000	0.02	--	--	0.01	<0.2	
17...	<0.1	15	97	88	0.13	128000	0.03	--	--	0.01	<0.2	
24...	0.2	14	87	82	0.12	128000	0.02	--	--	<0.01	0.2	
JUN												
01...	0.1	11	74	67	0.10	74700	0.03	--	--	<0.01	<0.2	
07...	0.1	11	66	63	0.09	78700	0.02	--	--	<0.01	<0.2	
24...	0.1	9.7	66	64	0.09	61000	0.01	--	--	<0.01	<0.2	
AUG												
06...	0.1	9.5	83	77	0.11	76100	0.04	--	--	<0.01	<0.2	

E - Estimated.

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

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

WATER-QUALITY RECORDS

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM, DIS- SOLVED (UG/L AS LI)
NOV 1992										
19...	0.700	0.700	<0.01	0.01	0.02	0.01	<10	19	<3	22
JAN 1993										
27...	--	0.530	0.04	0.02	0.02	--	50	20	<3	45
MAR										
16...	--	0.310	0.04	<0.01	<0.01	--	20	21	<3	30
APR										
27...	--	0.520	0.04	0.02	0.02	--	90	17	<3	70
MAY										
03...	--	0.460	0.06	0.04	0.03	--	100	18	<3	120
10...	--	0.410	0.03	0.02	0.03	--	90	18	<3	84
17...	--	0.310	0.06	0.02	0.02	--	80	18	<3	100
24...	--	0.320	0.06	0.04	0.02	--	60	19	<3	69
JUN										
01...	--	0.180	0.02	<0.01	0.01	--	50	15	<3	47
07...	--	0.160	0.02	0.02	0.01	--	50	15	<3	60
24...	--	0.085	0.03	0.02	0.02	--	--	--	--	--
AUG										
06...	--	0.081	0.04	0.02	0.02	--	--	--	--	--

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992										
19...	2	<10	<1	<1	<1	90	<6	6	1740	96
JAN 1993										
27...	4	<10	<1	<1	<1	75	<6	16	E10400	80
MAR										
16...	2	<10	2	<1	<1	91	<6	20	E9770	78
APR										
27...	4	<10	<1	<1	<1	77	<6	15	14300	88
MAY										
03...	3	<10	<1	<1	<1	77	<6	22	20600	76
10...	3	<10	<1	<1	<1	80	<6	28	36300	64
17...	3	<10	<1	<1	<1	79	<6	42	55400	62
24...	2	<10	<1	<1	<1	74	<6	36	52800	63
JUN										
01...	2	<10	<1	<1	<1	61	<6	22	22200	78
07...	1	<10	1	<1	<1	61	<6	18	21500	76
24...	--	--	--	--	--	--	--	16	14800	87
AUG										
06...	--	--	--	--	--	--	--	16	14700	86

NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°42'15", long 123°45'15", in NW 1/4 sec.35, T.3 N., R.9 W., Tillamook County, Hydrologic Unit 17100202, on right bank 0.2 mi upstream from Cook Creek, 2.2 mi northeast of Foss, and at mile 13.5.

DRAINAGE AREA.--667 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.60 ft above sea level (State Highway Department bench mark). Prior to Nov. 11, 1939, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. No regulation. Several small diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--54 years, 2,638 ft³/s, 53.73 in/yr, 1,911,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,400 ft³/s Jan. 9, 1990, gage height, 25.07 ft; minimum discharge, 34 ft³/s Aug. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 19,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2100	*9,200	*9.95				
Minimum discharge, 82 ft ³ /s Sept. 30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	1760	3260	2750	3670	710	1940	3100	1590	607	361	147
2	141	1650	3590	2410	3160	787	2140	2750	1790	593	333	145
3	137	1160	3600	2250	2740	927	2860	2660	1780	580	306	142
4	133	922	3060	2450	2410	2470	3280	2590	1670	563	285	138
5	128	798	2540	2420	2160	3960	3020	2370	1490	538	266	135
6	120	672	2160	2250	1940	3650	2730	2310	1360	516	255	136
7	113	941	1870	2080	1770	2990	2510	2390	1390	499	249	135
8	108	1330	2020	1950	1630	2520	2750	3060	1270	482	245	133
9	104	1810	2870	1780	1520	2170	4290	3170	1220	463	247	126
10	103	1480	4160	1580	1420	1910	6680	2930	1280	454	247	120
11	99	1210	6060	1370	1320	1680	8420	2610	1250	447	245	118
12	95	1020	5480	1330	1220	1490	7710	2290	1200	446	234	118
13	94	862	4150	1270	1150	1350	6210	2040	1110	450	231	114
14	90	753	3500	1160	1080	1380	4990	1830	1030	442	234	114
15	88	670	3270	1090	1020	1820	4260	1640	1020	446	266	114
16	86	611	3010	1020	965	1820	3740	1470	990	453	259	111
17	88	575	3200	961	902	2220	3350	1340	915	450	247	110
18	99	552	3410	916	854	3170	3160	1230	842	455	247	109
19	135	901	3220	1190	832	3130	2860	1150	785	435	232	107
20	197	1130	5070	4040	845	2850	2560	1130	736	399	216	106
21	239	4710	7140	5880	857	2530	2460	1220	707	390	201	106
22	228	8170	7800	5530	838	3600	2400	1160	889	426	193	104
23	204	6450	7230	4630	805	7660	2550	1070	1000	444	210	101
24	183	4250	6180	4640	760	6840	3300	960	950	439	220	100
25	167	2950	5110	6580	732	5450	3720	907	834	424	209	99
26	156	2220	4320	6540	706	4310	4660	871	754	397	192	97
27	142	2330	3860	5770	685	3490	5780	887	725	371	192	93
28	137	2590	3700	5360	670	2890	5080	937	694	354	184	89
29	165	2340	3860	5420	---	2470	4250	1120	667	375	173	87
30	386	2800	3640	4920	---	2200	3610	1220	626	430	163	85
31	1180	---	3160	4270	---	1970	---	1350	---	402	155	---
TOTAL	5498	59617	125500	95807	38661	86414	117270	55762	32564	14170	7297	3439
MEAN	177	1987	4048	3091	1381	2788	3909	1799	1085	457	235	115
MAX	1180	8170	7800	6580	3670	7660	8420	3170	1790	607	361	147
MIN	86	552	1870	916	670	710	1940	871	626	354	155	85
AC-FT	10910	118300	248900	190000	76680	171400	232600	110600	64590	28110	14470	6820
CFSM	.27	2.98	6.07	4.63	2.07	4.18	5.86	2.70	1.63	.69	.35	.17
IN.	.31	3.32	7.00	5.34	2.16	4.82	6.54	3.11	1.82	.79	.41	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1993, BY WATER YEAR (WY)

	MEAN	782	3651	5995	6191	5728	4268	2721	1243	607	272	148	210
MAX	2948	9256	11390	12450	12490	8696	6124	3028	1591	747	314	877	
(WY)	1948	1974	1956	1971	1949	1956	1991	1948	1968	1983	1968	1959	
MIN	69.9	197	599	596	1066	1171	1149	520	250	137	62.5	63.6	
(WY)	1953	1953	1977	1977	1977	1992	1941	1989	1992	1967	1967	1967	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1940 - 1993

ANNUAL TOTAL	657444	641999	
ANNUAL MEAN	1796	1759	
HIGHEST ANNUAL MEAN			2638
LOWEST ANNUAL MEAN			4235
HIGHEST DAILY MEAN	23000	8420	1974
LOWEST DAILY MEAN	47	85	1977
ANNUAL SEVEN-DAY MINIMUM	48	91	1967
ANNUAL RUNOFF (AC-FT)	1304000	1273000	1911000
ANNUAL RUNOFF (CFSM)	2.69	2.64	3.95
ANNUAL RUNOFF (INCHES)	36.67	35.81	53.73
10 PERCENT EXCEEDS	4270	4760	7140
50 PERCENT EXCEEDS	671	1130	1120
90 PERCENT EXCEEDS	77	131	126

PACIFIC SLOPE BASINS IN OREGON

NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1980 to September 1981.

WATER TEMPERATURE: December 1974 to September 1981.

REMARKS.--Some samples were analyzed by different methods and may have data with different levels of detection.

WATER-QUALITY DATA

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)	
NOV 1992 20...	1034	1120	68	7.6	8.0	1.3	10.5	88	70	24	20	
JAN 1993 28...	1025	5230	48	7.4	7.0	4.6	11.7	98	K12	20	13	
JUN 22...	1012	870	63	7.6	14.5	0.4	9.9	98	77	47	20	
AUG 03...	1032	305	74	7.8	20.0	0.5	9.6	108	51	48	23	
DATE		CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	
NOV 1992 20...	5.5	1.4	5.7	38	0.6	0.8	18	22	0	4.0	5.4	
JAN 1993 28...	3.7	1.0	4.4	40	0.5	0.6	24	30	0	3.2	4.3	
JUN 22...	5.5	1.4	5.7	38	0.6	0.7	20	24	0	3.1	4.6	
AUG 03...	6.4	1.6	6.6	38	0.6	0.8	24	29	0	3.1	4.8	
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	
NOV 1992 20...	<0.1	13	56	48	0.08	169	0.03	0.04	0.02	0.01	<0.2	
JAN 1993 28...	<0.1	15	34	50	0.05	480	<0.01	--	--	0.02	<0.2	
JUN 22...	<0.1	16	44	51	0.06	103	0.02	--	--	<0.01	<0.2	
AUG 03...	<0.1	15	55	54	0.08	45.3	0.03	--	--	<0.01	<0.2	
DATE		NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BAR-IUM, DIS-SOLVED (UG/L AS BA)	COBAL-T, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM, DIS-SOLVED (UG/L AS LI)
NOV 1992 20...	0.23	0.20	0.04	0.03	0.03	0.03	<10	3	<3	140	<4	
JAN 1993 28...	--	0.74	0.02	<0.01	<0.01	--	70	4	<3	65	<4	
JUN 22...	--	0.37	0.01	0.01	0.01	--	10	4	<3	240	<4	
AUG 03...	--	0.30	0.02	<0.01	<0.01	--	10	6	<3	220	<4	
DATE		MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
NOV 1992 20...	2	<10	<1	<1	<1	<1	35	<6	4	12	87	
JAN 1993 28...	3	<10	<1	<1	<1	<1	28	<6	12	169	84	
JUN 22...	2	<10	<1	<1	<1	<1	37	<6	3	7.0	88	
AUG 03...	2	10	<1	<1	<1	<1	44	<6	2	1.6	82	

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

LOCATION.--Lat 45°29'05", long 123°41'20", in SW 1/4 SE 1/4 sec.8, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.2 mi upstream from Negro Jack Creek, 8.0 mi east of Tillamook, and at mile 11.4.

PERIOD OF RECORD.--October 1914 to September 1915, August to November 1916, July 1931 to current year. Prior to January 1915 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 71.89 ft above sea level. Dec. 18, 1914, to Nov. 4, 1916, nonrecording gage at site 2.8 mi downstream at different datum. July 30, 1931, to Sept. 30, 1938, nonrecording gage at site 2.82 mi downstream at datum 28.83 ft lower. Oct. 1, 1938, to Oct. 17, 1968, water-stage recorder at site 2.1 mi downstream at datum 29.76 ft lower.

AVERAGE DISCHARGE.--63 years (water years 1915, 1932-93), 1,165 ft³/s, 98.27 in/yr, 844,000 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1916 reached a stage of 20.8 ft, from floodmark, site and datum then in use.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1730	*11,600	*12.21				
Minimum discharge, 55 ft ³ /s Oct. 15, 16.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	1570	1540	1150	1530	393	926	1550	610	280	164	81
2	80	1410	1790	1040	1330	491	1270	1390	564	271	150	82
3	79	828	1570	1090	1170	604	1900	1450	535	260	141	80
4	75	627	1350	1180	1040	2650	1770	1430	505	250	134	79
5	72	506	1180	1050	942	3600	1470	1300	476	235	128	77
6	67	430	1050	964	865	2340	1280	1270	452	224	125	77
7	64	794	941	903	820	1780	1120	1310	439	218	123	76
8	64	1030	1230	867	780	1460	1410	1670	414	209	123	74
9	60	1190	1620	e810	757	1180	2720	1580	469	203	124	72
10	59	954	2380	e750	726	1010	3440	1380	530	199	122	71
11	59	785	2620	e700	686	873	3400	1180	599	193	117	71
12	58	685	2020	e630	581	768	2580	1030	606	190	113	72
13	59	583	1670	e580	534	693	2050	913	550	193	110	71
14	57	510	1620	e540	544	900	1690	802	520	199	112	70
15	55	452	1640	494	507	1490	1600	721	514	191	123	71
16	57	411	1510	452	465	1420	1510	653	471	189	118	69
17	63	398	1590	429	433	1800	1460	598	434	197	113	68
18	81	402	1450	404	418	2110	1470	548	402	181	108	67
19	170	763	1410	e530	406	1770	1350	524	376	169	107	68
20	197	842	2610	e3200	402	1550	1220	517	352	168	102	68
21	207	5890	3350	e3000	409	1300	1180	572	345	165	100	68
22	179	5630	3240	e2000	382	2150	1210	535	515	197	97	67
23	145	3010	2900	1650	355	4730	1580	482	494	196	108	65
24	122	2040	2380	2350	337	3100	2360	440	426	185	106	64
25	107	1530	1980	5790	324	2210	2570	435	387	176	100	64
26	98	1200	1780	4100	312	1730	3030	412	361	166	96	63
27	91	1320	1670	2890	305	1440	3010	422	345	156	93	61
28	87	1420	1680	2780	303	1200	2270	435	327	155	91	61
29	109	1190	1600	2840	---	1050	1970	432	310	173	87	60
30	300	1460	1430	2280	---	966	1730	492	292	204	84	59
31	1300	---	1280	1830	---	870	---	618	---	182	82	---
TOTAL	4302	39860	56081	49273	17763	49628	56546	27091	13620	6174	3501	2096
MEAN	139	1329	1809	1589	634	1601	1885	874	454	199	113	69.9
MAX	1300	5890	3350	5790	1530	4730	3440	1670	610	280	164	82
MIN	55	398	941	404	303	393	926	412	292	155	82	59
AC-FT	8530	79060	111200	97730	35230	98440	112200	53730	27020	12250	6940	4160
CFSM	.86	8.25	11.2	9.87	3.94	9.94	11.					

MEAN	563	1851	2599	2492	2175	1771	1184	617	337	170	106	156
MAX	2230	3975	7988	5776	4619	3637	2622	1391	876	514	240	780
(WY)	1948	1935	1934	1953	1961	1956	1991	1933	1933	1983	1968	1959
MIN	43.5	87.2	378	344	634	406	426	202	131	76.5	44.3	40.1
(WY)	1988	1937	1977	1977	1993	1992	1939	1939	1992	1992	1967	1967

ANNUAL TOTAL	277914		325935			
ANNUAL MEAN	759		893		1165	
HIGHEST ANNUAL MEAN					1698	1974
LOWEST ANNUAL MEAN					524	1977
HIGHEST DAILY MEAN	10200	Jan 28	5890	Nov 21	27500	Dec 22 1933
LOWEST DAILY MEAN	43	Aug 28	55	Oct 15	34	Sep 1 1967
ANNUAL SEVEN-DAY MINIMUM	44	Aug 26	58	Oct 10	35	Aug 30 1967
ANNUAL RUNOFF (AC-FT)	551200		646500		843800	
ANNUAL RUNOFF (CFSM)	4.72		5.55		7.23	
ANNUAL RUNOFF (INCHES)	64.21		75.31		98.29	
10 PERCENT EXCEEDS	1740		2070		2850	
50 PERCENT EXCEEDS	313		530		564	
90 PERCENT EXCEEDS	53		75		89	

e Estimated

NESTUCCA RIVER BASIN

14302800 MCGUIRE LAKE NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'30", long 123°24'30", in NW 1/4 SE 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on control tower in reservoir on Nestucca River, 0.3 mi upstream from Walker Creek, and 5.0 mi southwest of Fairdale.

DRAINAGE AREA.--2.85 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Nonrecording gage. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with ungated spillway. Capacity of reservoir is 3,840 acre-ft between elevations 1,810.0 ft and 1,865.5 ft. Dead storage negligible. Under normal operation, reservoir is filled in the spring (April or May) and drained when fall rains start. There is no planned storage during winter months; however, during periods of heavy runoff, inflow may be greater than capacity of outlet tunnel and there may be temporary storage. Water is used during summer months for municipal supply of city of McMinnville.

COOPERATION.--Elevation and capacity table furnished by city of McMinnville, Water and Light Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,890 acre-ft Mar. 12 1972, Feb. 19, Mar. 28, 1974, elevation, 1,865.8 ft; no contents most of time during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,860 acre-ft May 8, elevation, 1,865.6 ft; no contents observed many days in December, January and February.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,853.5	2,360	-
Oct. 31.....	1,848.0	1,830	-530
Nov. 30.....	1,823.4	339	-1,490
Dec. 31.....	1,812.3	46	-293
CAL YR 1992.....	-	-	+46
Jan. 31.....	1,810.1	2	-44
Feb. 28.....	1,830.0	600	+598
Mar. 31.....	1,850.2	2,030	+1,430
Apr. 30.....	1,863.8	3,600	+1,570
May 31.....	1,865.2	3,800	+200
June 30.....	1,865.1	3,780	-20
July 31.....	1,865.1	3,780	0
Aug. 31.....	1,862.7	3,450	-330
Sept. 30.....	1,859.5	3,030	-420
WTR YR 1993.....	-	-	+670

NESTUCCA RIVER BASIN

333

14302900 NESTUCCA RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'40", long 123°25'05", in SW 1/4 NW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on right bank 100 ft upstream from former Meadow Lake, 0.4 mi downstream from Walker Creek, 5.3 mi southwest of Fairdale, and at mile 49.3.

DRAINAGE AREA.--6.18 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,778.99 ft above sea level (levels by city of McMinnville).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated since March 1969 by McGuire Lake about 1 mi upstream from gage (station 14302800). During winter months lake is empty except when inflow exceeds capacity of outlet tunnel.

AVERAGE DISCHARGE.--33 years (water years 1961-93), 30.7 ft³/s, 67.46 in/yr, 22,240 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft³/s Dec. 22, 1964, gage height, 10.43 ft; minimum discharge, 0.41 ft³/s Sept. 11, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 181 ft³/s Jan. 20, gage height, 4.41 ft; minimum discharge, 0.64 ft³/s Sept 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	78	48	35	50	13	17	23	16	5.8	3.2	1.1
2	5.8	69	56	30	43	12	23	20	17	5.6	2.8	1.1
3	5.6	60	48	33	30	18	28	27	15	5.4	2.6	1.1
4	5.5	58	44	32	16	53	25	23	15	5.2	2.3	1.1
5	5.5	55	41	27	15	62	22	21	17	5.0	2.0	1.2
6	5.5	52	38	24	14	45	19	26	16	4.8	2.0	1.1
7	4.4	56	34	23	14	34	16	38	14	4.6	2.0	1.1
8	3.6	61	47	21	13	27	20	46	13	4.5	2.0	1.0
9	3.9	62	45	20	14	22	40	41	15	4.2	2.0	1.0
10	3.7	56	68	18	15	19	67	37	14	4.3	2.0	.98
11	3.6	54	62	17	16	16	64	33	15	4.1	2.0	.97
12	3.6	51	52	16	15	14	46	29	13	4.1	2.0	.97
13	3.6	48	46	15	14	12	36	26	11	4.3	2.0	.97
14	3.6	45	48	15	13	17	28	24	11	4.3	2.1	.94
15	3.6	42	65	14	11	19	27	21	10	4.3	2.2	.98
16	3.7	41	59	14	11	24	23	19	9.6	4.4	2.1	.99
17	3.8	39	36	13	10	38	25	18	9.0	4.9	1.8	.97
18	4.3	38	29	12	9.7	39	24	16	8.3	4.8	1.6	.94
19	4.9	48	29	47	9.5	31	21	17	7.7	4.4	1.6	1.0
20	5.9	42	63	156	9.1	28	19	18	7.3	4.2	1.5	1.0
21	5.5	99	87	133	9.0	22	19	20	7.1	4.2	1.5	1.0
22	4.6	100	91	104	8.4	31	19	17	16	5.3	1.5	.98
23	4.4	68	81	71	8.0	50	32	14	13	5.2	1.5	.95
24	4.2	53	63	78	7.7	38	44	12	9.9	4.5	1.5	.89
25	4.2	46	50	116	7.5	30	42	14	8.3	4.3	1.4	.84
26	3.2	41	49	107	7.4	24	51	13	7.4	4.0	1.4	.83
27	1.8	46	51	86	7.2	19	45	16	6.8	3.8	1.4	.99
28	1.9	42	73	95	7.2	16	36	15	6.3	3.7	1.3	.82
29	8.4	39	59	104	---	14	32	14	6.2	3.9	1.3	.82
30	30	47	48	84	---	14	26	17	6.0	4.0	1.2	.76
31	77	---	41	63	---	13	---	17	---	3.5	1.2	---
TOTAL	234.9	1636	1651	1623	404.7	814	936	692	340.9	139.6	57.0	29.39
MEAN	7.58	54.5	53.3	52.4	14.5	26.3	31.2	22.3	11.4	4.50	1.84	.98
MAX	77	100	91	156	50	62	67	46	17	5.8	3.2	1.2
MIN	1.8	38	29	12	7.2	12	16	12	6.0	3.5	1.2	.76
AC-FT	466	3250	3270	3220	803	1610	1860	1370	676	277	113	58
MEAN†	4.75	29.6	48.5	51.7	25.2	49.4	57.6	25.5	11.0	4.50	1.63	0.86
CFSM†	0.77	4.79	7.85	8.37	4.08	7.99	9.32	4.13	1.78	0.73	0.26	0.14
IN.†	0.89	5.34	9.04	9.65	4.25	9.23	10.41	4.76	1.99	0.84	0.30	0.15
AC-FT†	292	1760	2980	3180	1400	3040	3430	1570	656	277	100	51

CAL YR 1992 TOTAL 6292.93 MEAN 17.2 MAX 125 MIN .48 AC-FT 12480 MEAN† 19.5 CFSM† 3.16 IN.† 43.06 AC-FT† 14190
WTR YR 1993 TOTAL 8558.49 MEAN 23.4 MAX 156 MIN .76 AC-FT 16980 MEAN† 25.9 CFSM† 4.19 IN.† 56.87 AC-FT† 18740

† Adjusted for storage and diversion from McGuire Lake.

NESTUCCA RIVER BASIN

14303200 TUCCA CREEK NEAR BLAINE, OR

LOCATION.--Lat 45°19'28", long 123°32'43", in SE 1/4 NW 1/4 sec.9, T.3 S., R.7 W., Tillamook County, Hydrologic Unit 17100203, on right bank at road bridge, 80 ft upstream from mouth, and 8 mi northeast of Blaine.

DRAINAGE AREA.--3.09 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft above sea level, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--10 years (water years 1984-93), 14.6 ft³/s, 64.18 in/yr, 10,570 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266 ft³/s Dec. 9, 1987, gage height, 3.66 ft; minimum discharge, 0.46 ft³/s Sept. 30, Oct. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 180 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 22	0015	*93	*2.38				
Minimum discharge, 0.92 ft ³ /s Sept. 28-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	23	23	20	29	7.1	14	29	8.0	5.3	2.8	1.5
2	1.5	19	24	17	24	6.7	17	26	8.2	5.1	2.6	1.5
3	1.5	14	22	17	20	8.3	21	27	8.2	5.0	2.6	1.5
4	1.5	12	20	15	18	25	24	25	8.1	4.9	2.5	1.5
5	1.4	9.3	18	13	16	41	23	24	8.1	4.7	2.4	1.5
6	1.4	7.9	16	12	14	633	21	23	7.9	4.5	2.4	1.5
7	1.3	12	14	11	13	27	18	24	7.9	4.4	2.4	1.4
8	1.3	16	16	11	12	22	19	26	7.5	4.4	2.4	1.3
9	1.3	19	15	9.7	11	18	27	26	8.2	4.3	2.4	1.3
10	1.2	18	29	9.0	10	16	42	25	8.0	4.3	2.4	1.3
11	1.2	15	34	8.5	9.9	14	59	22	8.9	4.1	2.3	1.3
12	1.2	13	29	8.1	9.2	12	51	19	8.4	4.0	2.3	1.3
13	1.1	11	24	7.8	8.6	11	40	17	8.2	4.0	2.3	1.3
14	1.1	9.6	22	7.6	8.1	13	31	15	8.3	4.0	2.3	1.2
15	1.1	8.6	20	7.2	7.6	14	27	13	8.3	3.9	2.3	1.3
16	1.1	7.9	19	6.9	7.2	14	23	12	7.9	3.9	2.3	1.3
17	1.2	7.6	19	6.8	6.8	16	22	11	7.5	3.9	2.2	1.2
18	1.8	7.1	16	6.5	6.6	19	21	9.8	7.2	3.7	2.1	1.2
19	2.0	11	17	9.3	6.5	20	19	9.5	6.9	3.4	2.1	1.3
20	2.7	9.3	28	29	6.4	20	18	9.0	6.7	3.5	2.0	1.3
21	2.5	56	46	36	6.2	18	18	9.4	6.5	3.5	2.0	1.3
22	2.2	83	56	33	6.0	23	17	8.7	8.3	4.0	1.9	1.2
23	1.9	58	56	28	5.7	47	18	8.0	7.4	3.7	2.0	1.2
24	1.8	39	45	39	5.6	48	22	7.4	6.7	3.4	1.9	1.1
25	1.8	28	35	70	5.4	37	27	7.6	6.4	3.3	1.8	1.1
26	1.7	22	31	64	5.3	29	34	7.1	6.2	3.2	1.7	1.1
27	1.7	21	28	47	5.2	23	35	7.6	6.0	3.1	1.7	1.0
28	1.7	18	29	50	5.2	19	33	7.3	5.8	3.1	1.7	.98
29	3.7	16	27	58	---	17	32	7.1	5.6	3.2	1.6	.95
30	8.1	22	25	48	---	15	30	8.2	5.4	3.1	1.6	.94
31	17	---	22	37	---	14	---	8.3	---	2.9	1.5	---
TOTAL	72.5	613.3	825	742.4	288.5	647.1	803	479.0	222.7	121.8	66.5	37.87
MEAN	2.34	20.4	26.6	23.9	10.3	20.9	26.8	15.5	7.42	3.93	2.15	1.26
MAX	17	83	56	70	29	48	59	29	8.9	5.3	2.8	1.5
MIN	1.1	7.1	14	6.5	5.2	6.7	14	7.1	5.4	2.9	1.5	.94
AC-FT	144	1220	1640	1470	572	1280	1590	950	442	242	132	75
CFSM	.76	6.62	8.61	7.75	3.33	6.76	8.66	5.00	2.40	1.27	.69	.41
IN.	.87	7.38	9.93	8.94	3.47	7.79	9.67	5.77	2.68	1.47	.80	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	3.57	28.4	24.1	29.7	27.1	23.1	17.2	10.2	6.63	2.94
MAX	8.96	50.1	37.2	48.0	53.5	39.9	33.4	18.7	12.0	4.47
(WY)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1984
MIN	.95	3.36	15.9	12.2	10.3	6.59	9.28	4.02	2.40	1.65
(WY)	1988	1988	1987	1985	1993	1992	1990	1989	1992	1986

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1984 - 1993

	1992 CALENDAR YEAR	1993 WATER YEAR	1984 - 1993
ANNUAL TOTAL	3834.43	4919.67	
ANNUAL MEAN	10.5	13.5	14.6
HIGHEST ANNUAL MEAN			17.9
LOWEST ANNUAL MEAN			10.5
HIGHEST DAILY MEAN	95 Jan 28	83 Nov 22	218 Feb 10 1990
LOWEST DAILY MEAN	.95 Sep 7	.94 Sep 30	.55 Oct 1 1987
ANNUAL SEVEN-DAY MINIMUM	1.0 Aug 25	1.0 Sep 24	.63 Sep 28 1987
ANNUAL RUNOFF (AC-FT)	7610	9760	10570
ANNUAL RUNOFF (CFSM)	3.39	4.36	4.72
ANNUAL RUNOFF (INCHES)	46.16	59.23	64.18
10 PERCENT EXCEEDS	25	29	34
50 PERCENT EXCEEDS	5.0	8.2	8.0
90 PERCENT EXCEEDS	1.1	1.4	1.4

e Estimated

14305500 SILETZ RIVER AT SILETZ, OR

LOCATION.--Lat 44°42'55", long 123°53'10", in NW 1/4 SW 1/4 sec.11, T.10 S., R.10 W., Lincoln County, Hydrologic Unit 17100204, on right bank, 1.8 mi downstream from Baker Creek, 1.5 mi east of Siletz, and at mile 42.6.

DRAINAGE AREA.--202 mi².

PERIOD OF RECORD.--October 1905 to November 1911, January to May 1912, January to June 1924, November 1924 to current year. Prior to December 1905 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1935: 1943, 1947-49(M), 1953-58(M).

GAGE.--Water-stage recorder. Datum of gage is 102.32 ft above sea level. Oct. 1, 1905, to Sept 30, 1938, nonrecording gage at various sites within 2.5 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Records good. Slight regulation from logponds. Small diversions upstream from station for irrigation. Continuous water-quality records for the period February 1972 to September 1985 have been collected at this location.

AVERAGE DISCHARGE.--74 years (water years 1906-11, 1926-93), 1,522 ft³/s, 102.32 in/yr, 1,103,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (1905-12, 1924-38).--Maximum discharge, 34,600 ft³/s Nov. 22, 1909, gage height, 24.6 ft, site and datum then in use; minimum observed discharge, 51 ft³/s Dec. 6, 7, 1929.

EXTREMES FOR PERIOD OF RECORD (1938-93).--Maximum discharge, 32,200 ft³/s Jan. 28, 1965, gage height, 27.32 ft, present site and datum; minimum discharge, 47 ft³/s Oct. 20, 21, 29, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1921, reached a stage of 31.6 ft, at site 2.5 mi downstream at different datum, from floodmark, discharge, 40,800 ft³/s, from rating curve extended above 17,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1900	*12,000	*13.39				
Minimum discharge, 68 ft ³ /s Oct. 15, 16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	2590	2110	1570	1590	628	1270	2390	1140	396	219	104
2	105	1630	2670	1390	1410	867	2230	2080	1150	385	204	106
3	104	1080	2210	1420	1260	1060	4100	2120	1070	372	193	105
4	103	909	1790	1810	1160	2840	3400	2250	992	358	184	103
5	97	774	1510	1670	1090	5570	2540	2000	1020	341	179	102
6	88	648	1380	1510	1030	3360	2090	1890	982	326	178	100
7	83	1050	1230	1370	963	2330	1770	1920	969	314	178	100
8	80	1400	1510	1260	908	1800	1680	2350	916	307	170	96
9	80	1440	1900	1120	894	1480	1960	2170	927	302	167	94
10	78	1150	5510	1010	886	1320	2860	1860	980	294	166	92
11	76	957	4580	921	867	1140	3540	1600	1040	285	162	91
12	74	889	2990	857	807	1020	2960	1410	1070	276	155	91
13	72	762	2210	798	745	939	2460	1260	973	276	152	91
14	73	677	1840	759	695	1080	2020	1110	911	276	151	88
15	69	611	1610	744	653	2390	2020	1010	924	277	162	87
16	70	558	1450	694	606	2580	1870	916	846	276	160	87
17	86	539	1700	657	572	5370	1940	843	769	298	154	87
18	97	536	1660	622	556	6800	2340	775	711	273	147	87
19	165	872	1570	1040	560	4360	2230	753	663	248	144	86
20	284	1020	3460	5420	557	3210	1930	742	622	250	144	85
21	562	5570	3940	4350	584	2390	1770	768	590	261	140	85
22	356	7230	3670	3250	547	2970	1710	786	632	444	134	85
23	263	4050	3060	2530	537	7500	2200	700	611	426	137	82
24	220	2600	2460	3220	517	4850	3460	642	544	340	140	80
25	186	1870	2010	4450	502	3290	3510	689	511	298	129	79
26	166	1450	1820	3510	489	2460	3670	691	482	274	123	78
27	151	1810	1850	2720	482	1950	3590	823	471	256	119	76
28	142	1910	2480	2660	477	1610	2850	790	450	247	117	74
29	237	1560	2370	2570	---	1390	2910	817	432	253	115	74
30	1020	1980	2040	2150	---	1320	2790	910	411	262	110	74
31	2270	---	1810	1840	---	1170	---	1060	---	236	106	---
TOTAL	7562	50122	72400	59892	21944	81044	75670	40125	23809	9427	4739	2669
MEAN	244	1671	2335	1932	784	2614	2522	1294	794	304	153	89.0
MAX	2270	7230	5510	5420	1590	7500	4100	2390	1150	444	219	106
MIN	69	536	1230	622	477	628	1270	642	411	236	106	74
AC-FT	15000	99420	143600	118800	43530	160800	150100	79590	47230	18700	9400	5290
CFSM	1.21	8.27	11.6	9.56	3.88	12.9	12.5	6.41	3.93	1.51	.76	.44
IN.	1.39	9.23	13.33	11.03	4.04	14.92	13.94	7.39	4.38	1.74	.87	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

	716	2429	3277	3253	2916	2242	1501	840	496	225	132	198
MEAN	716	2429	3277	3253	2916	2242	1501	840	496	225	132	198
MAX	3412	6207	7828	7664	6055	4560	3560	2579	1602	602	419	1138
(WY)	1927	1907	1934	1953	1949	1932	1937	1933	1906	1910	1968	1959
MIN	50.1	72.4	401	518	752	557	387	233	144	99.7	64.5	58.6
(WY)	1988	1930	1977	1977	1973	1941	1926	1939	1928	1992	1992	1965

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1906 - 1993
ANNUAL TOTAL	351478	449403	
ANNUAL MEAN	960	1231	1507
HIGHEST ANNUAL MEAN			2337
LOWEST ANNUAL MEAN			660
HIGHEST DAILY MEAN	7990	Feb 20	30700
LOWEST DAILY MEAN	49	Aug 29	47
ANNUAL SEVEN-DAY MINIMUM	52	Aug 25	48
ANNUAL RUNOFF (AC-FT)	697200	891400	1091000
ANNUAL RUNOFF (CFSM)	4.75	6.10	7.46
ANNUAL RUNOFF (INCHES)	64.73	82.76	101.33
10 PERCENT EXCEEDS	2360	2850	3810
50 PERCENT EXCEEDS	449	867	753
90 PERCENT EXCEEDS	66	97	105

ALSEA RIVER BASIN

14306340 EAST FORK LOBSTER CREEK NEAR ALSEA, OR

LOCATION.--Lat 44°14'53", long 123°38'07", in NE 1/4 SE 1/4 sec.22, T.15 S., R.8 W., Benton County, Hydrologic Unit 17100205, on left bank 500 ft upstream from mouth, and 9 mi south of Alsea.

DRAINAGE AREA.--5.70 mi².

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

REVISED RECORDS.--WDR OR-87-2: 1984(M,P), 1985(M,P), 1986(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except those below 10 ft³/s, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--10 years, 21.5 ft³/s, 51.29 in/yr, 15,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 652 ft³/s Nov. 2, 1984, gage height, 3.81 ft, from rating curve extended above 260 ft³/s; maximum gage height, 3.86 ft, Dec. 9, 1987, from crest-stage gage; minimum discharge, 0.17 ft³/s Sept. 27, 28, Oct. 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0700	*313	*3.20	No other peak greater than base discharge.			
Minimum discharge, 0.25 ft ³ /s Oct. 12.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	27	38	36	23	22	26	36	24	5.5	2.2	.90
2	1.1	16	67	29	21	30	49	32	25	5.5	2.2	.90
3	1.1	7.6	38	28	19	40	85	35	25	5.5	2.0	.95
4	1.0	6.4	27	44	17	42	60	38	22	5.1	1.9	.89
5	1.0	6.0	20	40	15	45	43	33	37	4.8	1.9	.90
6	.86	4.6	17	32	15	39	37	31	41	4.5	1.7	.96
7	.59	5.8	16	27	14	32	32	34	34	4.5	1.7	.99
8	.49	9.4	41	23	13	26	33	39	29	4.5	1.7	.92
9	.41	17	46	20	13	22	63	36	25	4.2	1.7	.80
10	.36	12	156	18	12	19	97	31	22	3.9	1.7	.71
11	.35	8.0	77	16	12	17	89	27	21	3.7	1.7	.70
12	.30	16	50	15	14	15	64	23	20	3.6	1.5	.70
13	.34	13	37	13	13	14	50	21	19	3.4	1.5	.70
14	.36	9.1	31	13	12	24	42	19	17	3.4	1.5	.70
15	.43	7.1	28	13	11	57	41	18	15	3.4	1.5	.70
16	.47	6.0	26	12	11	89	38	16	15	3.4	1.5	.77
17	.51	5.5	32	12	10	150	43	15	13	3.4	1.5	.80
18	.60	5.4	35	12	9.6	146	46	13	11	3.4	1.5	.80
19	.73	20	31	42	12	77	42	12	10	3.1	2.0	.80
20	1.6	25	76	204	11	59	36	12	9.9	3.1	4.0	.80
21	3.1	103	94	99	11	47	32	12	9.4	3.3	2.2	.80
22	2.7	90	69	105	12	45	31	12	11	5.2	1.8	.76
23	1.7	44	51	62	14	103	44	11	9.5	4.8	1.7	.70
24	1.2	28	42	51	13	65	62	10	8.4	4.0	1.6	.70
25	.91	19	35	53	12	48	55	14	7.7	3.6	1.5	.60
26	.90	14	30	49	12	39	61	13	7.1	3.3	1.3	.62
27	.90	14	34	43	12	33	58	12	6.7	2.7	1.1	.54
28	1.0	15	65	38	12	29	45	13	6.6	2.7	1.1	.55
29	6.1	13	52	34	---	26	41	16	6.2	2.8	1.1	.54
30	14	25	41	30	---	25	40	18	5.8	2.6	1.1	.54
31	22	---	38	27	---	24	---	23	---	2.4	.90	---
TOTAL	68.03	591.9	1440	1240	375.6	1449	1485	675	513.3	119.3	52.30	22.74
MEAN	2.19	19.7	46.5	40.0	13.4	46.7	49.5	21.8	17.1	3.85	1.69	.76
MAX	22	103	156	204	23	150	97	39	41	5.5	4.0	.99
MIN	.30	4.6	16	12	9.6	14	26	10	5.8	2.4	.90	.54
AC-FT	135	1170	2860	2460	745	2870	2950	1340	1020	237	104	45
CFSM	.39	3.46	8.15	7.02	2.35	8.20	8.68	3.82	3.00	.68	.30	.13
IN.	.44	3.86	9.40	8.09	2.45	9.46	9.69	4.41	3.35	.78	.34	.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	MEAN	3.21	40.6	37.8	45.4	45.9	34.0	23.8	14.2	9.95	2.63	1.31	1.18
MAX	9.39	115	65.1	64.7	96.5	62.1	49.5	27.8	21.3	3.88	1.82	2.05	
(WY)	1985	1985	1988	1990	1986	1989	1993	1984	1985	1984	1990	1986	
MIN	.39	7.62	17.6	16.0	13.4	11.5	10.4	6.26	1.83	1.40	.52	.66	
(WY)	1988	1990	1990	1985	1993	1992	1987	1992	1992	1992	1992	1987	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1984 - 1993

ANNUAL TOTAL	6330.52	8032.17	21.5	
ANNUAL MEAN	17.3	22.0	29.1	1984
HIGHEST ANNUAL MEAN			16.9	1992
LOWEST ANNUAL MEAN			546	Nov 2 1984
HIGHEST DAILY MEAN	232	204	.25	Oct 13 1991
LOWEST DAILY MEAN	.30	.30	.29	Oct 9 1991
ANNUAL SEVEN-DAY MINIMUM	.36	.36		
ANNUAL RUNOFF (AC-FT)	12560	15930		
ANNUAL RUNOFF (CFSM)	3.03	3.86	3.78	
ANNUAL RUNOFF (INCHES)	41.31	52.42	51.29	
10 PERCENT EXCEEDS	43	50	52	
50 PERCENT EXCEEDS	6.7	13	11	
90 PERCENT EXCEEDS	.54	.88	.93	

14306500 ALSEA RIVER NEAR TIDEWATER, OR

LOCATION.--Lat 44°23'10", long 123°49'50", in NW 1/4 NW 1/4 sec.6, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, on right bank 0.9 mi downstream from Grass Creek, 2.5 mi upstream from Scott Creek, 3.8 mi southeast of Tidewater, and at mile 21.0.

DRAINAGE AREA.--334 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 48.16 ft above sea level. Prior to Nov. 16, 1939, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Discharges for periods Jan. 19 to Feb. 4, Mar. 1-11, Mar. 14 to Apr. 1, computed from data obtained through National Weather Service. No regulation. Diversion for irrigation upstream from station. Continuous water-quality records for the period October 1979 to September 1981 have been collected at this location.

AVERAGE DISCHARGE.--54 years, 1,470 ft³/s, 59.80 in/yr, 1,065,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft³/s Dec. 22, 1964, gage height, 27.44 ft; minimum discharge, 45 ft³/s Sept. 26, 27, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on or about Feb. 3, 1890, reached a stage of 29.5 ft, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1500	*10,100	*12.77				
Minimum discharge, 54 ft ³ /s Oct. 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	1330	1540	2340	1430	922	1510	1890	1500	468	227	123
2	100	820	3210	2040	1310	1320	2130	1730	1780	462	216	122
3	100	497	2250	1870	1210	1540	3590	1950	1580	448	207	122
4	94	364	1560	2460	1130	1890	3370	2340	1400	433	200	119
5	87	317	1230	2610	1060	2470	2540	2060	1780	417	194	117
6	77	256	1080	2300	994	2070	2140	1870	2220	400	186	118
7	71	271	1000	2010	940	1710	1890	1850	1850	390	184	119
8	68	354	1320	1820	902	1460	1930	2280	1580	381	183	117
9	67	491	2070	1630	884	1280	3680	2120	1410	373	181	114
10	65	467	6540	1430	843	1180	5260	1870	1310	365	178	110
11	64	366	5180	1300	856	1060	5480	1650	1250	353	174	107
12	61	466	3230	1210	859	971	4450	1490	1180	345	172	106
13	60	441	2320	1120	803	913	3550	1380	1060	342	168	108
14	57	354	1890	1070	758	1010	2890	1240	985	338	170	104
15	56	296	1630	1040	726	1800	2710	1150	953	336	172	102
16	57	258	1450	967	690	2660	2500	1060	891	332	173	103
17	61	243	1880	938	660	5580	2610	989	827	333	174	104
18	63	245	2360	897	647	7100	3100	927	777	332	167	102
19	63	420	2000	1120	767	4670	2900	900	732	305	166	101
20	110	820	3050	7540	779	3610	2480	891	700	298	214	101
21	252	2340	3700	5850	902	2860	2230	876	669	307	196	101
22	166	5240	3360	5760	1040	2640	2030	825	700	396	173	100
23	125	2560	2680	4390	1090	5740	2200	762	662	396	161	97
24	99	1510	2190	3680	1020	4620	2990	716	610	331	160	95
25	85	1060	1860	3110	938	3420	2990	845	579	295	153	92
26	78	821	1680	2960	881	2740	2900	848	554	280	147	91
27	73	858	1860	2510	842	2270	2850	884	542	266	143	90
28	71	955	3610	2260	819	1930	2460	850	524	255	138	89
29	114	836	3590	1960	---	1700	2280	999	503	254	136	88
30	497	1070	2930	1740	---	1570	2110	1080	481	254	132	87
31	813	---	2560	1580	---	1430	---	1260	---	238	126	---
TOTAL	3831	26326	76810	73512	25780	76136	85750	41582	31589	10723	5371	3149
MEAN	124	878	2478	2371	921	2456	2858	1341	1053	346	173	105
MAX	813	5240	6540	7540	1430	7100	5480	2340	2220	468	227	123
MIN	56	243	1000	897	647	913	1510	716	481	238	126	87
AC-FT	7600	52220	152400	145800	51130	151000	170100	82480	62660	21270	10650	6250
CFSM	.37	2.63	7.42	7.10	2.76	7.35	8.56	4.02	3.15	1.04	.52	.31
IN.	.43	2.93	8.55	8.19	2.87	8.48	9.55	4.63	3.52	1.19	.60	.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1993, BY WATER YEAR (WY)

	MEAN	373	1754	3220	3512	3220	2488	1507	803	409	192	118	130
MAX	2521	6058	7419	7874	6586	5144	3203	1848	1053	363	234	452	
(WY)	1948	1974	1965	1953	1949	1961	1963	1983	1993	1983	1968	1941	
MIN	62.0	115	182	211	607	604	550	331	178	116	65.6	60.1	
(WY)	1988	1940	1977	1977	1977	1941	1977	1966	1966	1992	1966	1965	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1940 - 1993

ANNUAL TOTAL	328003	460559	
ANNUAL MEAN	896	1262	1470
HIGHEST ANNUAL MEAN			2541
LOWEST ANNUAL MEAN			431
HIGHEST DAILY MEAN	9650	Feb 20	36100
LOWEST DAILY MEAN	56	Oct 15	47
ANNUAL SEVEN-DAY MINIMUM	59	Oct 12	51
ANNUAL RUNOFF (AC-FT)	650600	913500	1065000
ANNUAL RUNOFF (CFSM)	2.68	3.78	4.40
ANNUAL RUNOFF (INCHES)	36.53	51.30	59.80
10 PERCENT EXCEEDS	2240	2900	3790
50 PERCENT EXCEEDS	465	891	645
90 PERCENT EXCEEDS	68	102	99

SIUSLAW RIVER BASIN

14307620 SIUSLAW RIVER NEAR MAPLETON, OR

LOCATION.--Lat 44°03'45", long 123°52'55", in SW 1/4 NW 1/4 sec.27, T.17 S., R.10 W., Lane County, Hydrologic Unit 17100206, on right bank 250 ft above Shoemaker Creek, 2.5 mi northwest of Mapleton, and at mile 23.7.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 41 ft, from topographic map.

REMARKS.--Records good until Jan. 1; poor thereafter. No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--26 years, 2,018 ft³/s, 46.64 in/yr, 1,462,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,400 ft³/s Jan. 21, 1972, gage height, 28.45 ft; minimum discharge, 45 ft³/s Aug. 18, 19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of about 28 ft, from information by local residents (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1300	*14,400	*14.31				
Minimum discharge, 79 ft ³ /s Oct. 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	1730	1870	4820	2030	1740	2310	2600	2780	604	317	180
2	144	1210	4360	4120	1880	2310	3750	2360	2970	585	302	177
3	163	792	3120	3360	1750	2820	8200	2520	2600	572	287	173
4	148	610	2170	4160	1650	3180	7270	3040	2310	559	272	170
5	132	534	1650	5020	1550	3790	5160	2880	2370	531	264	171
6	118	447	1400	4360	1470	3300	4180	2610	2740	508	265	167
7	106	463	1280	3560	1390	2720	3600	2540	2530	518	263	169
8	97	593	1770	3020	1350	2340	3410	2910	2110	501	259	168
9	95	759	3800	2600	1310	2060	4620	2730	1880	485	257	164
10	94	712	7980	2260	1260	1880	7010	2420	1730	469	251	158
11	91	587	6850	2040	1260	1710	7440	2160	1640	454	247	153
12	87	709	4640	1850	1310	1590	6110	1970	1550	440	240	152
13	85	664	3390	1700	1280	1490	4900	1830	1420	435	234	149
14	82	556	2640	1620	1240	1680	4020	1660	1280	430	228	142
15	80	471	2170	1560	1190	3130	3750	1550	1230	431	232	146
16	102	413	1910	1460	1140	5180	3410	1440	1140	425	232	142
17	110	392	2270	1420	1080	9690	3480	1360	1070	430	237	144
18	122	383	3020	1370	1050	12200	3980	1250	1010	423	228	137
19	135	574	2920	1820	1240	8140	3800	1210	931	398	227	139
20	153	1110	3800	11200	1320	5860	3350	1220	890	394	332	142
21	269	2610	4640	9790	1570	4500	2990	1210	847	399	346	144
22	242	5100	4500	10600	2130	4010	2860	1180	999	519	298	141
23	202	2990	3680	7940	2600	8800	3240	1080	948	536	271	138
24	174	1940	2950	6120	2490	7380	4270	1000	847	476	254	138
25	159	1390	2470	5290	2140	5250	4410	1130	779	429	236	134
26	148	1080	2220	4380	1900	4100	4350	1190	720	399	222	130
27	137	1050	2360	3680	1760	3420	4210	1220	711	371	211	126
28	132	1080	4470	3280	1650	2890	3570	1220	683	357	202	119
29	184	982	4980	2810	---	2540	3220	1470	635	369	196	117
30	508	1180	4260	2470	---	2370	2890	1600	624	353	187	117
31	838	---	4160	2230	---	2180	---	2040	---	332	182	---
TOTAL	5251	33111	103700	121910	43990	124250	129760	56600	43974	14132	7779	4447
MEAN	169	1104	3345	3933	1571	4008	4325	1826	1466	456	251	148
MAX	838	5100	7980	11200	2600	12200	8200	3040	2970	604	346	180
MIN	80	383	1280	1370	1050	1490	2310	1000	624	332	182	117
AC-FT	10420	65680	205700	241800	87250	246400	257400	112300	87220	28030	15430	8820
CFSM	.29	1.88	5.69	6.69	2.67	6.82	7.36	3.11	2.49	.78	.43	.25
IN.	.33	2.09	6.56	7.71	2.78	7.86	8.21	3.58	2.78	.89	.49	.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

	MEAN	388	2282	4657	4810	4314	3416	2159	1081	608	275	162	177
MAX	1219	7819	9787	10060	9084	6819	4445	2101	1466	628	321	356	
(WY)	1969	1974	1982	1970	1986	1974	1982	1984	1993	1983	1968	1971	
MIN	64.3	281	261	300	876	1119	686	541	280	127	77.9	86.8	
(WY)	1988	1977	1977	1977	1977	1992	1977	1985	1992	1977	1973	1987	

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1968 - 1993
ANNUAL TOTAL	453407	688904	
ANNUAL MEAN	1239	1887	2018
HIGHEST ANNUAL MEAN			3711
LOWEST ANNUAL MEAN			576
HIGHEST DAILY MEAN	14600	Feb 20	45900
LOWEST DAILY MEAN	47	Sep 21	45
ANNUAL SEVEN-DAY MINIMUM	56	Sep 17	47
ANNUAL RUNOFF (AC-FT)	899300	1366000	1462000
ANNUAL RUNOFF (CFSM)	2.11	3.21	3.43
ANNUAL RUNOFF (INCHES)	28.68	43.58	46.64
10 PERCENT EXCEEDS	3070	4360	5290
50 PERCENT EXCEEDS	655	1280	886
90 PERCENT EXCEEDS	82	147	133

e Estimated

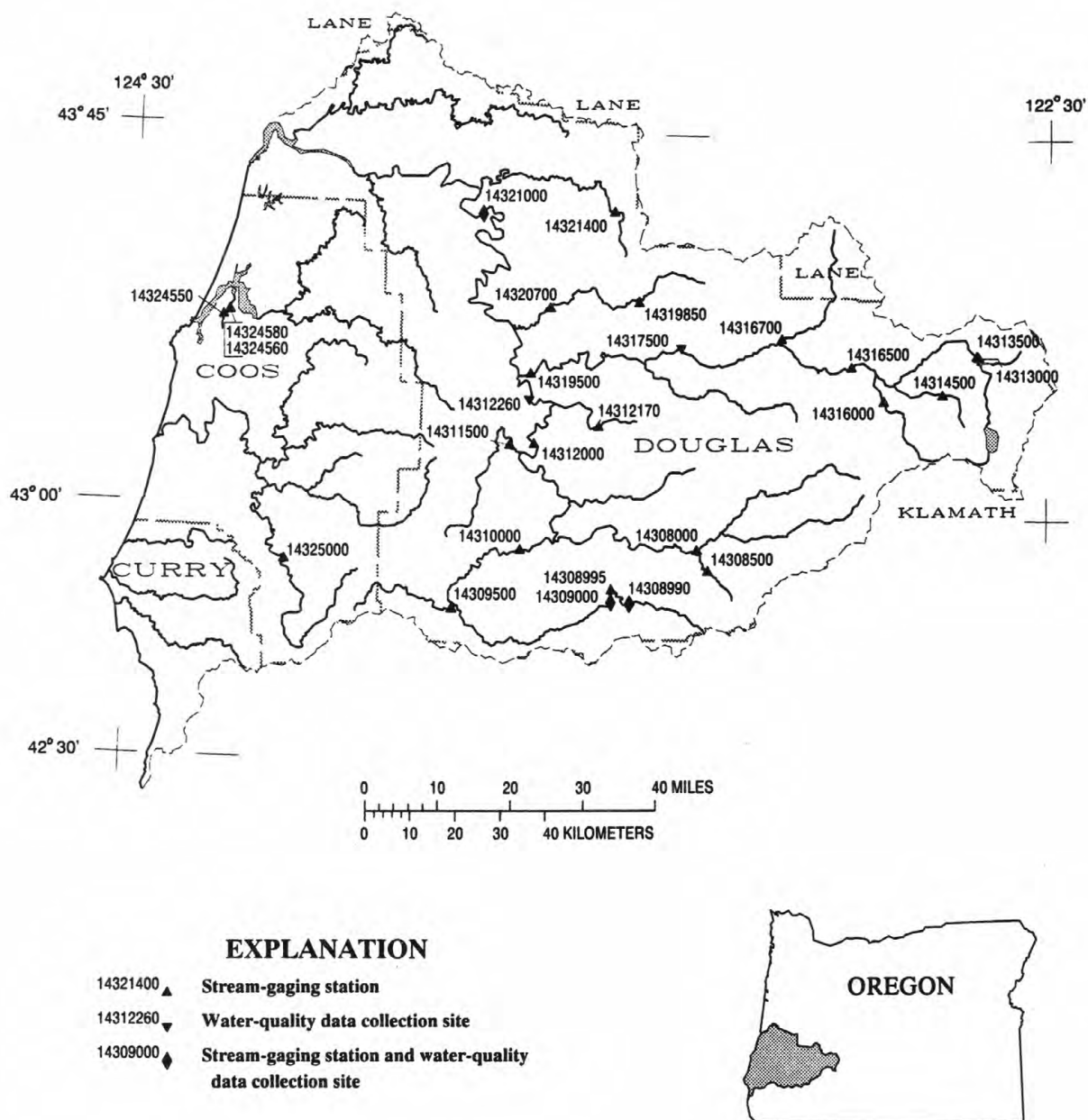


Figure 23--Location of surface-water and water-quality stations in the Umpqua River, Coos River, and Coquille River Basins.

UMPUA RIVER BASIN

14308500 ELK CREEK NEAR DREW, OR

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LOCATION.--Lat 42°53'25", long 122°55'00", in SW 1/4 sec.11, T.31 S., R.2 W., Douglas County, Hydrologic Unit 17100302, on right bank 100 ft downstream from Dixon Creek, 0.1 mi upstream from Drew Creek, 1.3 mi northwest of Drew, 3.3 mi southeast of Tiller, and at mile 4.1.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--September 1954 to September 1982, October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,279.25 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--35 years (1955-82, 1987-93), 77.9 ft³/s, 19.45 in/yr, 56,440 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft³/s Dec. 22, 1964, gage height, 10.61 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurement at gage height 10.34 ft; maximum gage height, 10.80 ft Jan. 15, 1974; no flow at times several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 11.8 ft, from floodmarks, probably for flood in January or November 1953, discharge, about 11,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0630	*3,520	*8.30	Jan. 21	2100	1,410	6.41

Minimum discharge, 0.03 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	30	35	240	102	78	78	54	241	11	4.5	2.4
2	.17	25	37	152	96	86	77	50	188	10	4.2	2.2
3	.54	77	81	112	121	152	134	73	245	9.7	3.9	1.9
4	.75	86	74	104	149	188	365	91	256	8.9	3.7	1.7
5	.63	32	53	102	185	171	384	80	591	8.8	3.4	1.6
6	.51	19	41	90	173	160	248	80	332	8.3	3.2	1.7
7	.48	14	42	122	145	162	183	76	247	8.0	3.4	1.6
8	.45	10	178	189	141	155	169	81	189	7.5	3.3	1.3
9	.46	11	331	157	137	147	234	76	136	6.9	3.4	1.1
10	.44	17	548	121	117	161	243	66	105	6.8	3.2	1.0
11	.46	27	298	96	133	163	238	57	88	6.5	3.1	.87
12	.40	19	208	80	203	131	201	51	76	6.4	3.0	.90
13	.40	14	137	74	154	119	166	46	64	5.9	2.8	.94
14	.38	11	104	113	120	129	151	40	54	6.0	2.8	.92
15	.51	9.1	109	125	98	224	127	36	47	5.8	7.5	.88
16	.69	7.7	95	116	83	294	107	32	41	5.5	9.2	.82
17	.72	6.7	100	113	74	475	140	28	36	5.2	6.2	.86
18	.72	6.0	100	99	72	399	273	24	31	5.0	4.8	.82
19	.60	6.3	87	145	126	276	237	23	27	4.9	4.8	.85
20	.52	12	120	1780	176	202	176	29	25	5.1	6.9	.83
21	.50	45	194	752	147	156	144	23	23	5.1	6.9	.88
22	.48	54	168	877	152	128	118	21	23	12	5.2	.88
23	.95	275	124	421	156	188	106	18	20	25	4.3	.92
24	1.8	154	101	270	129	212	101	16	17	13	4.0	.82
25	1.3	81	87	212	105	175	94	18	16	9.3	3.6	.76
26	.92	53	79	184	90	142	86	38	15	7.8	3.5	.71
27	1.0	40	289	175	82	118	80	24	14	6.9	3.3	.67
28	1.1	42	435	174	78	98	73	24	13	6.4	3.2	.63
29	1.0	53	245	153	---	85	67	29	12	5.8	3.3	.64
30	1.2	43	165	131	---	78	60	50	11	5.7	3.1	.63
31	5.6	---	331	115	---	73	---	305	---	5.2	2.7	---
TOTAL	25.74	1279.8	4996	7594	3544	5325	4860	1659	3183	244.4	130.4	32.73
MEAN	.83	42.7	161	245	127	172	162	53.5	106	7.88	4.21	1.09
MAX	5.6	275	548	1780	203	475	384	305	591	25	9.2	2.4
MIN	.06	6.0	35	74	72	73	60	16	11	4.9	2.7	.63
AC-FT	.51	2540	9910	15060	7030	10560	9640	3290	6310	485	259	65
CFSM	.02	.78	2.96	4.50	2.33	3.16	2.98	.98	1.95	.14	.08	.02
IN.	.02	.88	3.42	5.19	2.42	3.64	3.32	1.13	2.18	.17	.09	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1993, BY WATER YEAR (WY)

	7.55	67.9	164	205	160	157	98.9	51.1	18.7	4.04	1.61	1.89
MEAN	7.55	67.9	164	205	160	157	98.9	51.1	18.7	4.04	1.61	1.89
MAX	62.8	449	651	644	382	356	193	164	106	10.8	10.2	18.7
(WY)	1963	1974	1965	1974	1958	1974	1956	1963	1993	1978	1978	1978
MIN	.62	3.34	3.11	4.94	5.05	15.0	20.1	6.94	1.96	.72	.008	.043
(WY)	1988	1977	1977	1977	1977	1992	1990	1987	1987	1973	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1955 - 1993

ANNUAL TOTAL	10694.90	32874.07	77.9
ANNUAL MEAN	29.2	90.1	180
HIGHEST ANNUAL MEAN			1874
LOWEST ANNUAL MEAN			16.0
HIGHEST DAILY MEAN	548	Dec 10	1780
LOWEST DAILY MEAN	.00	Aug 2	.06
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 11	.43
ANNUAL RUNOFF (AC-FT)	21210	65210	56420
ANNUAL RUNOFF (CFSM)	.54	1.66	1.43
ANNUAL RUNOFF (INCHES)	7.31	22.48	19.45
10 PERCENT EXCEEDS	78	210	191
50 PERCENT EXCEEDS	8.0	50	19
90 PERCENT EXCEEDS	.00	.88	.92

UMPQUA RIVER BASIN

14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR

LOCATION.--Lat 42°49'24", long 123°07'29", in SW 1/4 NW 1/4 sec.1, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank, about 600 ft upstream from bridge on Houck Ranch Road (BLM), 1.1 mi downstream from Sugar Creek, 3.2 mi south of Galesville Dam, 6.9 mi northeast of Azalea, and at mile 65.6

DRAINAGE AREA.--64.7 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,900 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. Continuous water-quality records for the period November 1985 to September 1989 have been collected at this location.

AVERAGE DISCHARGE.--8 years, 62.0 ft³/s, 13.01 in/yr, 44,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,560 ft³/s Jan. 20, 1993, gage height 8.48 ft (from outside highwater mark); minimum discharge, 3.5 ft³/s Dec. 26, 1989, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1927 occurred Jan. 15, 1974. Stage and discharge not known at this site, but was 10,600 ft³/s at site 7.4 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1230	1,110	4.75	Jan. 21	2300	1,300	5.16
Jan. 20	unknown	*3,560	*a8.48				

Minimum discharge, 5.0 ft³/s Oct. 1.

a From outside highwater mark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	74	39	206	133	97	126	92	106	31	17	13
2	7.8	121	60	142	127	111	128	87	88	31	17	12
3	8.0	45	75	117	151	185	186	133	113	31	16	12
4	7.7	29	54	114	182	207	328	138	112	29	16	12
5	6.8	24	44	106	231	192	301	114	291	28	15	11
6	6.4	19	38	94	221	195	233	108	205	27	15	11
7	6.1	20	44	108	193	212	195	103	157	27	15	12
8	5.7	24	165	145	197	209	203	103	135	26	16	12
9	5.5	30	321	126	191	207	293	95	114	25	15	12
10	5.5	28	568	105	163	219	284	88	100	24	15	11
11	5.5	22	300	92	175	213	247	82	91	23	14	11
12	5.5	19	193	83	205	181	214	78	83	23	14	11
13	5.5	18	140	80	169	168	192	73	74	23	14	11
14	5.5	16	112	e90	142	177	177	68	68	23	14	11
15	5.6	15	116	e110	123	261	161	63	63	22	23	11
16	5.8	14	101	e110	109	332	145	60	59	22	24	11
17	5.8	13	102	e120	99	566	249	56	55	22	18	11
18	5.8	13	86	e120	97	483	378	53	52	21	16	11
19	5.8	22	75	e400	133	342	292	52	50	20	18	11
20	5.8	36	89	e1700	157	267	232	57	47	20	19	11
21	9.1	50	143	744	133	225	203	51	46	20	19	11
22	8.9	269	150	857	130	190	177	48	46	29	16	11
23	7.3	120	110	416	139	261	166	45	43	40	15	11
24	6.6	66	95	286	124	247	156	43	40	27	15	11
25	6.4	47	82	235	113	210	144	43	38	23	14	10
26	6.4	39	77	207	102	181	136	48	37	21	14	10
27	6.4	39	239	193	99	162	124	43	35	20	14	9.9
28	7.0	52	546	190	95	143	113	58	35	19	14	9.6
29	16	46	251	175	---	128	105	50	33	20	13	9.6
30	74	39	163	159	---	119	98	50	32	19	13	9.6
31	42	---	232	146	---	114	---	114	---	18	13	---
TOTAL	311.4	1369	4810	7776	4133	6804	5986	2296	2448	754	491	330.7
MEAN	10.0	45.6	155	251	148	219	200	74.1	81.6	24.3	15.8	11.0
MAX	74	269	568	1700	231	566	378	138	291	40	24	13
MIN	5.2	13	38	80	95	97	98	43	32	18	13	9.6
AC-FT	618	2720	9540	15420	8200	13500	11870	4550	4860	1500	974	656
CFSM	.16	.71	2.40	3.88	2.28	3.39	3.08	1.14	1.26	.38	.24	.17
IN.	.18	.79	2.77	4.47	2.38	3.91	3.44	1.32	1.41	.43	.28	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	11.4	39.8	64.1	129	153	153	79.2	53.2
MAX	17.1	102	155	251	408	315	200	104
(WY)	1987	1988	1989	1990	1991	1992	1993	1994
MIN	6.41	12.2	18.2	45.2	55.1	34.2	32.5	20.8
(WY)	1988	1989	1990	1991	1992	1993	1994	1995

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1986 - 1993

ANNUAL TOTAL	14471.6	37509.1	61.9
ANNUAL MEAN	39.5	103	1993
HIGHEST ANNUAL MEAN			103
LOWEST ANNUAL MEAN			29.8
HIGHEST DAILY MEAN	568	1700	1710
LOWEST DAILY MEAN	4.8	5.2	4.8
ANNUAL SEVEN-DAY MINIMUM	5.0	5.5	5.0
ANNUAL RUNOFF (AC-FT)	28700	74400	44880
ANNUAL RUNOFF (CFSM)	.61	1.59	.96
ANNUAL RUNOFF (INCHES)	8.32	21.57	13.01
10 PERCENT EXCEEDS	83	223	146
50 PERCENT EXCEEDS	22	60	28
90 PERCENT EXCEEDS	5.7	11	7.5

e Estimated

UMPQUA RIVER BASIN

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14308995 GALESVILLE RESERVOIR NEAR AZALEA, OR

LOCATION.--Lat 42°50'56", long 123°10'40", in NE 1/4 sec.28, T.31 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on the upstream face of Galesville dam to the right side of the spillway section, 1.2 mi downstream from McGinnis Creek, 5.6 mi northeast of Azalea, and at mile 60.2.

DRAINAGE AREA.--74.3 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Douglas County).

REMARKS.--Reservoir is formed by a roller compacted concrete dam; storage began Oct. 7, 1985. Capacity, 42,220 acre-ft between elevations 1,780.0 ft (bottom of evacuation outlet) and 1,881.5 ft (crest of spillway). Dead storage, 1,800 acre-ft below elevation 1,780.0 ft. Reservoir is used for irrigation, power generation, flood control, and recreation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Douglas County Water Resources Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 41,790 acre-ft May 9, 10, 1993, elevation, 1,881.36 ft; minimum contents, 7,240 acre-ft Jan. 9, 10, 1991, elevation, 1,805.03 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 41,790 acre-ft May 9, 10, elevation, 1,881.36 ft; minimum contents, 7,390 acre-ft Nov. 21, elevation, 1,805.56 ft.

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

1,780	1,800	1,820	11,960	1,860	29,480
1,790	3,590	1,830	15,660	1,870	34,970
1,800	5,890	1,840	19,820	1,880	40,930
1,810	8,700	1,850	24,420	1,885	44,130

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1814.95	1809.50	1807.02	1826.39	1845.49	1854.82	1873.54	1880.25	1879.35	1879.62	1874.74	1862.88
2	1815.35	1809.95	1807.05	1826.90	1845.37	1855.09	1873.79	1880.35	1879.44	1879.60	1874.41	1862.46
3	1815.15	1809.88	1807.19	1827.25	1845.37	1855.65	1874.28	1880.64	1879.48	1879.57	1874.07	1862.03
4	1814.94	1809.74	1807.19	1827.63	1845.52	1856.29	1875.22	1880.59	1879.47	1879.53	1873.71	1861.60
5	1814.72	1810.53	1807.04	1827.91	1845.89	1856.86	1875.91	1880.66	1879.98	1879.50	1873.35	1861.17
6	1814.57	1810.36	1806.90	1828.08	1846.40	1857.43	1876.13	1880.82	1879.99	1879.46	1873.03	1860.73
7	1815.73	1810.24	1806.80	1828.34	1846.98	1858.04	1876.15	1881.02	1879.85	1879.40	1872.68	1860.31
8	1815.41	1810.10	1807.55	1828.86	1847.56	1858.62	1876.24	1881.23	1879.62	1879.35	1872.33	1859.88
9	1815.05	1810.02	1809.48	1829.26	1848.15	1859.19	1876.65	1881.36	1879.40	1879.30	1871.95	1859.44
10	1814.70	1809.85	1812.97	1829.53	1848.61	1859.81	1877.00	1881.31	1879.36	1879.23	1871.58	1859.00
11	1814.35	1809.62	1814.55	1829.72	1849.13	1860.39	1877.19	1881.23	1879.44	1879.14	1871.21	1858.54
12	1814.00	1807.48	1815.41	1829.85	1849.79	1860.86	1877.26	1881.09	1879.54	1879.03	1870.84	1858.10
13	1813.71	1807.30	1815.84	1829.97	1850.26	1861.28	1877.27	1880.90	1879.61	1878.93	1870.47	1857.66
14	1813.47	1807.08	1816.08	1830.22	1850.62	1861.73	1877.34	1880.69	1879.66	1878.85	1870.11	1857.21
15	1813.25	1806.66	1816.27	1830.48	1850.92	1862.47	1877.50	1880.37	1879.69	1878.77	1869.81	1856.77
16	1813.03	1806.38	1816.46	1830.72	1851.16	1863.43	1877.79	1880.11	1879.71	1878.66	1869.44	1856.33
17	1812.82	1806.18	1816.67	1830.97	1851.35	1865.28	1878.48	1879.85	1879.72	1878.55	1869.03	1855.89
18	1813.75	1805.96	1816.83	1831.20	1851.54	1866.82	1879.42	1879.62	1879.72	1878.41	1868.63	1855.44
19	1813.53	1805.86	1816.90	1831.78	1851.91	1867.83	1879.90	1879.43	1879.72	1878.24	1868.28	1855.01
20	1813.35	1805.74	1817.08	1840.20	1852.37	1868.57	1879.90	1879.35	1879.71	1878.06	1867.92	1854.59
21	1813.16	1805.63	1817.63	1843.66	1852.72	1869.15	1879.71	1879.34	1879.73	1877.87	1867.53	1854.20
22	1812.96	---	1818.10	1847.52	1853.05	1869.63	1879.74	1879.37	1879.75	1877.78	1867.12	1853.83
23	1812.75	1807.53	1818.39	1848.81	1853.44	1870.39	1879.67	1879.39	1879.74	1877.59	1866.70	1853.48
24	1812.54	1807.56	1818.58	1848.85	1853.76	1871.07	1879.63	1879.40	1879.73	1877.30	1866.28	1853.16
25	1812.48	1807.50	1818.72	1848.20	1854.02	1871.60	1879.48	1879.42	1879.73	1876.98	1865.85	1852.87
26	1812.23	1807.37	1818.83	1847.40	1854.25	1872.04	1879.56	1879.42	1879.72	1876.66	1865.43	1852.61
27	1811.96	1807.27	1819.85	1846.73	1854.44	1872.40	1879.75	1879.38	1879.71	1876.33	1865.01	1852.39
28	1811.69	1807.28	1822.65	1846.28	1854.62	1872.70	1879.91	1879.43	1879.68	1875.99	1864.59	1852.17
29	1810.25	1807.19	1823.79	1846.01	---	1872.96	1880.04	1879.42	1879.67	1875.66	1864.17	1851.95
30	1809.36	1807.12	1824.48	1845.79	---	1873.18	1880.14	1879.44	1879.64	1875.37	1863.74	1851.73
31	1809.43	---	1825.53	1845.67	---	1873.38	---	1879.49	---	1875.06	1863.31	---
MAX	1815.73	---	1825.53	1848.85	1854.62	1873.38	1880.14	1881.36	1879.99	1879.62	1874.74	1862.88
MIN	1809.36	---	1806.80	1826.39	1845.37	1854.82	1873.54	1879.34	1879.35	1875.06	1863.31	1851.73
(†)	8520	7840	13940	22380	26700	36930	41020	40620	40710	37920	31250	25260
(‡)	-1830	-680	+6100	+8440	+4320	+10230	+4090	-400	+90	-2790	-6670	-5990

CAL YR 1992 MAX --- MIN --- AC-FT† -5630
WTR YR 1993 MAX --- MIN --- AC-FT‡ +14910

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

UMPQUA RIVER BASIN

14309000 COW CREEK NEAR AZALEA, OR

LOCATION.--Lat 42°49'30", long 123°10'40", in N-1/2 sec.4, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.8 mi upstream from Whitehorse Creek, 4.5 mi northeast of Azalea, and at mile 58.2.

DRAINAGE AREA.--78.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1926 to September 1928 (no winter records), April 1929 to December 1931, April 1932 to current year.

REVISED RECORDS.--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M). WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,694.32 ft above sea level (Douglas County Road Department bench mark). Prior to July 19, 1949, nonrecording gage at same site and datum.

REMARKS.--Records excellent. Flow regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--63 years (water years 1930-31, 1933-93), 107 ft³/s, 18.63 in/yr, 77,520 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Jan. 15, 1974, gage height, 16.40 ft, from high-water mark in well; minimum discharge, 1.1 ft³/s Aug. 12, 1981, but may have been less during period of no gage-height record Sept. 4-30, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 463 ft³/s Jan. 24, gage height, 3.71 ft; minimum discharge, 22 ft³/s Oct. 16, result of regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	69	60	74	191	69	92	70	147	38	110	124
2	59	69	66	69	172	67	67	60	70	38	113	121
3	41	63	66	67	160	67	69	68	111	38	113	123
4	40	55	65	69	160	65	78	160	128	37	117	123
5	40	52	71	73	154	64	129	95	153	38	118	123
6	48	44	70	77	116	65	186	67	212	38	104	123
7	45	45	70	76	73	64	203	48	210	39	113	122
8	50	49	76	74	70	68	198	44	209	39	113	122
9	63	46	77	73	68	69	196	63	184	39	117	122
10	60	52	83	71	71	66	203	104	116	41	116	122
11	59	60	79	70	68	66	209	114	75	47	116	122
12	59	46	69	69	69	66	208	127	57	52	113	121
13	48	45	75	68	67	68	207	132	57	53	115	121
14	38	46	84	70	67	70	168	134	56	e44	115	120
15	40	74	85	68	65	68	119	163	56	e46	120	117
16	37	58	85	68	65	77	71	142	56	e52	127	120
17	37	43	83	65	66	84	70	137	56	e54	128	120
18	35	43	72	64	68	76	131	127	54	e60	127	119
19	35	53	76	67	70	76	167	124	50	e70	128	115
20	36	60	68	101	69	72	249	e86	48	e78	128	113
21	36	72	71	83	72	71	270	e56	46	e78	127	107
22	38	74	70	89	71	69	181	e44	44	82	127	100
23	38	70	68	180	73	69	195	e40	44	99	127	94
24	37	73	67	334	69	71	179	e40	42	111	127	88
25	40	63	66	450	66	69	198	e47	39	116	126	81
26	42	62	66	447	65	68	113	56	38	115	126	74
27	44	62	84	388	67	67	76	62	38	115	125	e65
28	47	58	105	326	70	67	72	55	38	120	126	e64
29	50	63	81	260	---	66	74	64	38	116	125	64
30	38	57	68	233	---	66	73	64	38	101	125	64
31	47	---	71	191	---	68	---	115	---	105	124	---
TOTAL	1373	1726	2297	4414	2462	2138	4451	2708	2510	2099	3736	3214
MEAN	44.3	57.5	74.1	142	87.9	69.0	148	87.4	83.7	67.7	121	107
MAX	63	74	105	450	191	84	270	163	212	120	128	124
MIN	35	43	60	64	65	64	67	40	38	37	104	64
AC-FT	2720	3420	4560	8760	4880	4240	8830	5370	4980	4160	7410	6370
MEAN†	14.5	46.0	173	280	166	235	217	80.8	85.2	22.3	12.0	6.39
CFSM†	0.19	0.59	2.22	3.59	2.13	3.01	2.78	1.04	1.09	0.29	0.15	0.08
IN.†	0.21	0.66	2.56	4.14	2.21	3.48	3.11	1.19	1.22	0.33	0.18	0.09
AC-FT†	890	2740	10660	17200	9200	14470	12920	4970	5070	1370	740	380

CAL YR 1992 TOTAL 18697 MEAN 51.1 MAX 105 MIN 34 AC-FT 37090 MEAN† 43.3 CFSM† 0.56 IN.† 7.56 AC-FT† 31460
WTR YR 1993 TOTAL 33128 MEAN 90.8 MAX 450 MIN 35 AC-FT 65710 MEAN† 111 CFSM† 1.42 IN.† 19.38 AC-FT† 80620

e Estimated

† Adjusted for change in contents in Galesville Reservoir.

UMPQUA RIVER BASIN
14309000 COW CREEK NEAR AZALEA, OR--Continued
WATER-QUALITY RECORDS

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PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: November 1985 to current year.

INSTRUMENTATION.--Water-quality monitor since November 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: Maximum recorded, 15.1 mg/L Feb. 7, 1989, caused by operation of bypass valve at dam; minimum, 0.9 mg/L July 30, 1988.

EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum recorded, 12.6 mg/L Jan. 22; minimum recorded, 2.4 mg/L June 22, may have been caused by manipulation of release gate at dam.

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.4	7.8	8.1	---	---	---	---	---	---	12.1	11.5	11.8
2	8.4	7.7	8.0	---	---	---	---	---	---	12.4	11.7	12.0
3	---	7.8	---	---	---	---	---	---	---	11.9	11.5	11.7
4	---	---	---	---	---	---	---	---	---	11.7	11.3	11.6
5	---	---	---	---	---	---	---	---	---	11.8	11.3	11.6
6	9.6	---	---	---	---	---	---	---	---	11.9	10.5	11.7
7	9.7	8.4	9.0	9.6	8.8	9.3	---	---	---	11.9	11.5	11.7
8	9.2	8.0	8.6	9.4	8.8	9.2	---	---	---	12.1	11.6	11.8
9	8.8	8.0	8.3	9.4	9.0	9.2	---	---	---	11.9	11.4	11.7
10	8.5	7.7	8.1	9.6	9.1	9.3	10.5	9.8	10.3	12.0	11.6	11.9
11	8.2	7.6	7.9	9.5	9.0	9.2	10.6	10.1	10.3	12.3	11.7	12.0
12	8.1	7.3	7.7	9.3	8.8	9.0	10.7	10.3	10.6	12.3	11.8	12.1
13	8.1	7.4	7.7	---	---	---	11.0	10.6	10.8	12.2	11.7	12.0
14	8.4	7.6	7.9	---	---	---	11.0	10.4	10.7	11.9	9.3	10.9
15	---	---	7.6	---	---	---	10.8	10.5	10.6	12.4	9.3	10.6
16	---	---	7.6	---	---	---	10.8	10.4	10.6	12.1	9.8	10.8
17	---	---	---	---	---	---	11.1	4.0	10.5	10.9	9.7	10.3
18	---	---	---	---	---	---	11.0	10.6	10.8	10.9	9.6	10.2
19	---	---	---	---	---	---	10.9	10.5	10.7	11.2	9.6	10.4
20	9.0	8.3	8.7	10.1	9.6	9.9	10.7	10.2	10.6	12.2	9.9	11.3
21	9.1	8.5	8.7	9.7	9.3	9.5	10.7	10.3	10.5	12.4	11.5	12.0
22	9.1	8.1	8.6	9.8	9.3	9.6	10.7	10.2	10.5	12.6	10.0	11.6
23	8.9	7.8	8.3	9.9	9.5	9.7	---	---	---	11.9	10.1	11.1
24	8.7	4.9	7.9	9.7	9.2	9.5	---	---	---	12.2	10.8	11.9
25	8.2	---	---	9.7	9.3	9.4	---	---	---	12.2	11.6	11.8
26	---	---	---	9.7	9.0	9.3	---	---	---	11.9	11.6	11.8
27	---	---	---	---	---	---	---	---	---	11.9	11.2	11.5
28	---	---	---	---	---	---	---	---	---	11.4	10.3	10.9
29	---	---	---	---	---	---	11.9	11.1	11.7	10.8	10.1	10.4
30	---	---	---	---	---	---	12.0	11.4	11.7	10.7	10.2	10.4
31	---	---	---	---	---	---	11.8	11.3	11.6	10.5	10.1	10.3
MONTH	---	---	---	---	---	---	---	---	---	12.6	9.3	11.3

UMPQUA RIVER BASIN

14309000 COW CREEK NEAR AZALEA, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	10.4	10.1	10.2	10.7	9.2	9.6	11.3	9.7	10.7	10.0	9.7	9.8
2	10.4	9.9	10.1	9.9	9.3	9.6	10.3	9.5	10.1	9.9	8.5	9.7
3	10.3	9.8	10.1	10.3	9.4	9.8	10.3	9.6	10.1	10.0	9.1	9.7
4	10.9	9.9	10.3	10.1	9.4	9.6	10.4	9.8	10.1	9.4	9.0	9.2
5	10.6	10.0	10.3	10.2	9.3	9.8	10.2	9.1	10.0	11.2	9.2	10.0
6	10.5	10.1	10.2	9.9	9.4	9.7	10.1	9.5	9.9	11.1	9.1	10.2
7	10.5	10.2	10.3	9.9	9.3	9.6	10.1	9.6	9.9	11.0	9.5	10.1
8	10.4	10.1	10.3	11.5	9.3	10.2	10.0	9.7	9.9	9.9	9.2	9.7
9	10.5	10.1	10.3	11.4	9.3	10.3	10.0	9.5	9.8	9.7	8.9	9.4
10	10.8	10.1	10.4	9.8	9.1	9.4	10.1	9.5	9.9	10.2	8.9	9.1
11	10.8	10.2	10.6	9.8	9.1	9.5	9.9	9.6	9.8	10.9	8.7	9.7
12	10.5	10.1	10.4	9.8	9.0	9.4	9.9	8.9	9.8	10.9	8.6	9.8
13	10.6	10.2	10.4	9.9	9.1	9.5	10.0	9.3	9.8	11.0	8.8	9.7
14	10.5	10.0	10.3	9.7	9.1	9.4	11.3	9.6	10.2	10.7	8.6	9.6
15	10.6	10.0	10.3	9.8	9.1	9.4	11.3	9.5	10.4	10.5	8.6	9.0
16	10.7	10.2	10.4	9.5	8.8	9.2	11.3	9.8	10.5	9.0	8.4	8.9
17	10.8	9.9	10.4	9.7	8.9	9.4	10.7	9.6	9.9	10.3	8.1	9.0
18	11.5	10.0	10.8	10.1	9.3	9.7	10.1	9.4	9.8	10.6	8.1	9.1
19	11.3	9.7	10.5	10.3	9.6	9.9	11.8	9.6	10.4	9.1	8.5	8.8
20	11.3	9.7	10.0	10.4	10.0	10.2	11.5	9.5	10.5	10.2	8.6	9.2
21	11.8	9.9	11.0	10.3	9.9	10.1	11.0	9.4	10.4	9.1	8.6	8.9
22	10.3	9.8	10.1	10.4	9.9	10.1	11.4	9.4	10.5	9.3	8.7	9.1
23	10.8	9.6	10.0	10.2	9.8	10.0	11.5	9.4	10.4	9.2	8.9	9.0
24	10.2	9.5	9.8	10.4	10.0	10.2	9.8	9.1	9.5	9.2	8.8	9.0
25	10.3	9.7	10.0	10.5	9.9	10.1	9.7	9.5	9.5	9.3	8.5	9.0
26	10.9	9.4	10.0	10.4	9.9	10.1	11.3	9.5	9.8	9.8	8.2	8.8
27	10.0	9.3	9.6	10.4	10.0	10.2	11.4	9.6	10.3	8.9	8.1	8.5
28	10.3	9.3	9.9	10.5	10.0	10.3	11.5	9.7	10.5	8.8	8.2	8.5
29	---	---	---	10.6	9.9	10.3	11.2	8.7	10.2	8.6	8.2	8.4
30	---	---	---	10.4	8.8	10.2	9.9	8.6	9.6	8.4	7.7	8.2
31	---	---	---	11.2	9.7	10.2	---	---	---	8.4	7.6	7.9
MONTH	11.8	9.3	10.2	11.5	8.8	9.8	11.8	8.6	10.1	11.2	7.6	9.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	8.0	7.2	7.6	7.6	7.1	7.3	8.3	7.8	8.1	7.1	6.5	6.8
2	9.7	7.2	8.3	7.4	6.9	7.2	8.3	7.9	8.1	9.7	6.5	7.1
3	7.8	7.4	7.5	7.4	6.9	7.2	8.5	7.3	8.2	7.3	6.1	6.6
4	9.5	7.1	7.7	7.3	6.7	7.0	10.3	7.9	9.1	6.7	6.1	6.4
5	7.7	7.1	7.4	7.5	6.8	7.1	10.1	7.5	9.0	6.6	6.1	6.4
6	7.8	7.0	7.4	7.6	7.0	7.2	10.0	7.8	9.0	6.5	6.1	6.3
7	7.6	6.0	7.4	7.6	7.0	7.3	8.2	7.8	8.0	6.5	6.1	6.3
8	7.7	7.1	7.5	7.4	7.0	7.2	8.2	7.8	8.0	6.8	6.0	6.4
9	7.7	7.1	7.5	7.5	7.0	7.3	10.3	7.9	9.0	6.6	6.1	6.4
10	7.8	6.8	7.4	7.5	6.9	7.2	11.0	7.6	9.3	6.9	6.3	6.5
11	7.7	7.2	7.5	7.3	6.8	7.1	10.8	7.4	9.2	6.8	6.1	6.5
12	7.7	7.1	7.6	7.2	6.7	6.9	10.9	7.3	9.1	6.7	6.3	6.5
13	7.8	2.4	7.4	7.1	6.6	6.8	10.5	7.1	8.9	6.6	6.1	6.4
14	7.8	7.4	7.6	9.3	6.6	8.1	10.6	7.1	8.9	6.8	6.0	6.4
15	7.9	6.6	7.7	9.2	6.4	7.8	7.4	7.0	7.2	8.3	6.0	6.3
16	7.8	7.4	7.7	6.8	6.2	6.6	9.6	6.9	7.3	6.6	6.1	6.3
17	7.9	7.5	7.6	6.6	5.8	6.4	7.2	6.6	7.0	6.6	5.1	6.2
18	7.8	7.5	7.7	6.6	5.5	6.1	7.0	6.5	6.7	6.6	6.0	6.3
19	8.0	7.6	7.8	6.2	5.2	5.8	6.8	6.3	6.6	6.7	6.3	6.5
20	8.1	7.4	7.8	5.9	5.1	5.6	6.6	6.2	6.5	6.6	6.1	6.4
21	8.2	7.7	8.0	5.9	5.2	5.6	6.5	5.9	6.3	6.5	5.9	6.2
22	8.1	7.8	8.0	8.0	5.6	6.7	6.4	5.8	6.2	6.4	5.6	6.1
23	8.3	7.3	7.7	8.1	7.6	7.8	6.5	5.9	6.2	6.4	5.9	6.1
24	7.9	7.4	7.6	7.9	7.4	7.7	7.0	5.9	6.4	6.5	5.9	6.3
25	8.2	7.4	7.7	8.0	7.6	7.8	7.3	6.8	7.0	6.6	6.0	6.3
26	7.9	7.5	7.7	8.1	7.7	7.9	7.4	6.7	7.0	7.0	6.1	6.6
27	7.9	6.2	7.7	8.3	7.9	8.1	7.1	6.6	6.8	7.4	6.4	6.7
28	7.7	7.3	7.5	9.8	7.6	8.8	6.9	6.4	6.7	7.1	6.0	6.8
29	7.6	7.2	7.4	10.0	7.6	8.7	6.8	6.3	6.5	7.2	5.6	6.6
30	7.6	7.1	7.3	10.1	7.8	8.9	6.9	6.3	6.6	6.7	5.4	6.1
31	---	---	---	8.2	7.8	8.0	7.1	6.5	6.7	---	---	---
MONTH	9.7	2.4	7.6	10.1	5.1	7.3	11.0	5.8	7.6	9.7	5.1	6.4

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LOCATION.--Lat 42°48'15", long 123°36'35", in SW 1/4 NE 1/4 sec.11, T.32 S., R.8 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.6 mi downstream from Bear Creek, 11 mi northwest of Glendale, and at mile 0.8.

PERIOD OF RECORD.--August 1955 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,018.48 ft above sea level. Prior to June 8, 1964, at site 0.6 mi upstream at different datum.

AVERAGE DISCHARGE.--38 years, 257 ft³/s, 40.16 in/yr, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 18.59 ft, from floodmark, from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.0 ft³/s Aug. 29 to Sept. 1, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1300	2,780	7.34	Jan. 22	0700	3,650	8.25
Jan. 20	0730	*7,000	*11.68				

Minimum discharge, 4.1 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	97	88	608	418	274	267	180	163	37	19	11
2	16	132	116	408	390	301	355	166	205	37	19	10
3	11	65	196	304	462	554	930	235	177	37	18	10
4	7.7	38	135	364	538	603	1310	368	161	35	17	10
5	6.5	32	96	370	580	504	833	314	180	34	16	9.9
6	6.0	26	78	308	523	481	582	261	208	33	16	9.6
7	6.0	23	102	272	452	480	440	223	188	31	15	9.6
8	5.9	24	586	338	411	441	534	215	163	31	15	9.6
9	5.6	51	1110	352	386	394	1030	200	142	30	15	9.3
10	5.4	61	1740	289	344	392	1910	182	130	29	14	9.2
11	5.3	40	916	237	477	400	1280	163	115	28	14	9.0
12	5.1	30	848	201	1080	337	852	153	103	28	14	8.7
13	5.1	25	489	189	788	295	632	137	93	28	14	8.7
14	5.1	21	312	199	546	285	498	126	85	28	14	8.7
15	5.1	19	253	263	434	373	424	116	78	28	18	8.7
16	5.2	18	210	266	351	450	360	108	74	27	21	8.7
17	5.4	18	274	290	291	1150	403	100	68	25	17	8.4
18	5.4	18	254	283	259	1330	906	94	64	25	16	8.2
19	5.4	41	254	940	822	746	757	94	60	24	17	8.2
20	5.6	104	359	5280	948	546	549	92	58	24	21	8.2
21	8.6	106	598	2520	614	425	454	91	57	23	20	8.2
22	11	437	556	2870	564	373	389	89	56	35	18	8.2
23	8.2	264	366	1380	576	1640	366	82	53	43	16	8.2
24	7.1	135	270	814	477	1010	385	77	48	35	15	8.2
25	6.8	85	221	687	385	636	363	81	46	29	14	8.2
26	6.6	62	187	656	328	471	322	92	43	26	13	8.1
27	6.6	53	484	601	293	374	286	85	42	24	13	7.8
28	6.6	104	e1500	590	276	303	253	94	42	23	13	7.8
29	15	93	e1000	574	---	254	226	94	41	23	12	7.7
30	50	74	e500	524	---	223	200	93	39	23	12	7.4
31	51	---	e550	467	---	201	---	138	---	21	12	---
TOTAL	306.7	2296	14648	23444	14013	16246	18096	4543	2982	904	488	263.5
MEAN	9.89	76.5	473	756	500	524	603	147	99.4	29.2	15.7	8.78
MAX	51	437	1740	5280	1080	1640	1910	368	208	43	21	11
MIN	5.1	18	78	189	259	201	200	77	39	21	12	7.4
AC-FT	608	4550	29050	46500	27790	32220	35890	9010	5910	1790	968	523
CFSM	.11	.88	5.44	8.70	5.76	6.03	6.94	1.69	1.14	.34	.18	.10
IN.	.13	.98	6.27	10.04	6.00	6.95	7.75	1.94	1.28	.39	.21	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1993, BY WATER YEAR (WY)

MEAN	43.6	298	579	645	571	489	273	114	41.4	18.0	10.4	13.2
MAX	254	1470	1669	1496	1660	934	840	476	99.4	29.5	16.0	56.9
(WY)	1963	1974	1956	1970	1958	1983	1982	1963	1993	1983	1983	1986
MIN	5.19	14.4	13.3	24.2	66.0	91.6	56.2	38.3	17.8	10.6	3.85	3.89
(WY)	1988	1977	1977	1977	1977	1992	1990	1987	1992	1987	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1956 - 1993

ANNUAL TOTAL	47873.4		98230.2				
ANNUAL MEAN	131		269			257	
HIGHEST ANNUAL MEAN						499	1974
LOWEST ANNUAL MEAN						60.2	1977
HIGHEST DAILY MEAN	1740	Dec 10	5280	Jan 20	11000		Dec 22 1964
LOWEST DAILY MEAN	3.0	Aug 31	5.1	Oct 12		3.0	Aug 31 1992
ANNUAL SEVEN-DAY MINIMUM	3.2	Aug 26	5.2	Oct 10		3.2	Aug 26 1992
ANNUAL RUNOFF (AC-FT)	94960		194800			186100	
ANNUAL RUNOFF (CFSM)	1.51		3.10			2.96	
ANNUAL RUNOFF (INCHES)	20.49		42.05			40.17	
10 PERCENT EXCEEDS	384		605			668	
50 PERCENT EXCEEDS	45		103			67	
90 PERCENT EXCEEDS	3.8		8.2			8.7	

e Estimated

UMPQUA RIVER BASIN

14310000 COW CREEK NEAR RIDDLE, OR

LOCATION.--Lat 42°55'25", long 123°25'40", in NE 1/4 sec.32, T.30 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.4 mi upstream from Council Creek, 3.8 mi southwest of Riddle, and at mile 6.7.

DRAINAGE AREA.--456 mi².

PERIOD OF RECORD.--September 1954 to current year.

REVISED RECORDS.--WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 682.60 ft above sea level.

REMARKS.--No estimated daily discharges. Records excellent. Regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1955-85), 903 ft³/s, 654,200 acre-ft/yr.

8 years (water years 1986-93), 532 ft³/s, 385,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft³/s Jan. 15, 1974, gage height, 28.17 ft; minimum discharge, 7.4 ft³/s Aug. 17-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of about 28.5 ft, present site and datum, from slope-area measurement, discharge, 41,100 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,000 ft³/s Jan. 20, gage height, 18.89 ft; minimum discharge, 47 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	262	243	2700	1280	987	681	601	612	145	151	154
2	83	384	285	1840	1180	1030	894	560	626	143	153	152
3	91	317	470	1300	1200	1480	1400	638	515	146	154	149
4	74	205	425	1370	1410	1700	3120	899	542	140	151	149
5	65	159	334	1630	1470	1420	2680	901	619	134	151	147
6	62	136	284	1390	1400	1270	2080	740	833	128	152	149
7	62	121	369	1200	1170	1220	1610	638	803	124	144	149
8	64	114	1030	1300	1020	1120	1640	598	705	122	145	146
9	62	126	3220	1500	956	1010	2550	548	639	121	146	143
10	75	176	3930	1260	840	955	4300	528	570	119	148	143
11	73	146	3250	1000	911	976	3580	530	467	115	149	143
12	75	139	2670	823	2390	846	2680	531	394	119	149	141
13	75	116	1680	747	2090	758	2120	514	343	119	146	140
14	75	108	1070	776	1480	713	1730	486	320	121	148	142
15	66	102	863	1010	1170	857	1430	468	299	120	165	142
16	61	112	729	1050	968	1040	1130	469	286	112	182	140
17	62	120	961	1080	819	1080	1210	437	265	114	179	141
18	59	100	999	1060	737	3900	3360	419	252	113	174	141
19	58	119	949	1450	1310	2430	3190	405	241	112	183	141
20	58	275	939	14500	2460	1750	2310	405	232	114	222	140
21	66	254	1430	7700	1900	1330	1910	362	224	124	215	138
22	72	898	1580	8300	1910	1100	1590	329	221	145	196	134
23	68	921	1130	4740	2150	2430	1310	294	209	184	186	129
24	64	512	844	3070	1930	2360	1260	276	191	187	180	123
25	64	360	689	2550	1520	1720	1140	276	180	181	175	118
26	64	268	596	2370	1250	1340	1070	311	169	179	172	108
27	66	226	806	2180	1100	1100	882	303	165	175	170	102
28	67	249	4920	2020	1020	921	774	358	165	172	167	94
29	84	275	3420	1850	---	785	702	332	159	176	163	88
30	185	246	2210	1680	---	699	643	334	151	174	162	86
31	219	---	2380	1450	---	641	---	471	---	158	159	---
TOTAL	2375	7546	44705	76896	39041	42068	54976	14961	11397	4336	5137	4012
MEAN	76.6	252	1442	2481	1394	1357	1833	483	380	140	166	134
MAX	219	921	4920	14500	2460	3900	4300	901	833	187	222	154
MIN	56	100	243	747	737	641	643	276	151	112	144	86
AC-FT	4710	14970	88670	152500	77440	83440	109000	29680	22610	8600	10190	7960

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	91.8	383	723	1349	1354	1138	633	314
MAX	162	956	1532	2481	3226	2184	1833	516
(WY)	1990	1989	1988	1993	1986	1989	1993	1993
MIN	55.4	88.5	210	612	439	282	194	147
(WY)	1989	1988	1990	1992	1988	1992	1990	1987

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1986 - 1993

ANNUAL TOTAL	138861	307450	532
ANNUAL MEAN	379	842	140
HIGHEST ANNUAL MEAN			1993
LOWEST ANNUAL MEAN			1992
HIGHEST DAILY MEAN	4920	Dec 28	14500
LOWEST DAILY MEAN	43	Aug 12	16
ANNUAL SEVEN-DAY MINIMUM	45	Aug 9	17
ANNUAL RUNOFF (AC-FT)	275400	609800	385600
10 PERCENT EXCEEDS	951	2080	1360
50 PERCENT EXCEEDS	159	384	201
90 PERCENT EXCEEDS	51	108	59

UMPQUA RIVER BASIN

349

14311500 LOOKINGGLASS CREEK AT BROCKWAY, OR

LOCATION.--Lat 43°07'50", long 123°27'50", in SE 1/4 SE 1/4 sec.13, T.28 S., R.7 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.7 mi northwest of Brockway and at mile 2.85.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WSP 2135: Drainage area (former site).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 540 ft, from topographic map. Prior to Oct. 5, 1967, water-stage recorder at site 2.3 mi downstream at different datum. Oct. 5, 1967, to Oct. 5, 1976, water-stage recorder, at datum 1.00 ft lower.

REMARKS.--Records good except for periods of backwater from beaver dams, Oct. 1-21, July 4-20, which are fair. Some regulation since January 1980 by Ben Irving Reservoir 17 mi upstream on Berry Creek, capacity, 11,200 acre-ft. Many diversions by pumping for irrigation upstream from station. Discharge not adjusted for storage or release from Ben Irving Reservoir as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--24 years (water years 1956-79), 282 ft³/s, 204,300 acre-ft/yr; 13 years (water years 1981-93), 214 ft³/s, 155,200 acre-ft/yr. Data for the 1980 water year not included due to construction and initial filling of Ben Irving Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s Dec. 26, 1955, gage height, 24.93 ft, site and datum then in use, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 25.28 ft Dec. 23, 1964 (backwater from South Umpqua River, site and datum then in use); no flow at times each year prior to January 1980, and Aug. 6, 7, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,190 ft³/s Jan. 20, gage height, 9.72 ft; minimum discharge, 0.32 ft³/s Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	41	39	1280	192	302	189	119	239	15	4.4	6.6
2	23	62	68	758	171	305	281	111	188	15	2.8	5.4
3	22	49	162	520	162	323	1050	130	146	14	2.4	4.8
4	20	35	120	1150	154	300	1600	173	129	13	1.9	4.2
5	19	26	83	1580	142	257	1290	149	154	10	2.2	5.5
6	18	17	64	1010	130	220	813	136	164	8.3	1.2	5.3
7	18	14	91	730	119	195	575	124	140	7.3	3.1	4.6
8	17	12	212	654	112	173	589	142	116	6.6	7.7	6.3
9	16	12	948	657	104	155	676	138	97	6.4	8.1	5.9
10	17	16	1210	534	93	156	1070	127	86	5.6	6.5	5.9
11	17	18	890	422	111	148	1180	112	76	5.0	5.0	5.8
12	16	16	992	351	269	129	873	102	70	3.8	6.6	6.8
13	16	14	542	303	255	118	650	94	61	3.5	7.6	6.5
14	16	12	344	312	223	116	524	83	54	4.0	8.6	6.2
15	16	10	251	310	196	126	428	75	49	5.3	11	5.7
16	15	9.4	206	316	169	218	346	68	46	10	11	6.3
17	14	9.0	398	306	149	511	409	63	40	7.7	11	6.7
18	12	8.4	471	300	142	791	600	59	37	7.7	10	7.1
19	12	10	380	313	538	576	597	61	35	8.5	13	7.2
20	14	35	338	2770	1030	470	490	62	33	8.2	16	7.8
21	17	48	401	2230	1100	361	389	59	32	7.5	18	7.4
22	17	189	409	2320	1350	304	325	58	30	15	16	7.1
23	17	195	316	1460	1200	501	294	54	27	22	13	7.6
24	16	103	247	911	884	527	266	52	25	18	13	7.9
25	16	67	202	640	634	471	233	53	23	16	12	9.1
26	16	48	174	515	484	372	213	55	21	13	12	10
27	16	38	398	423	387	306	186	80	19	9.5	9.6	11
28	15	35	1680	357	328	252	165	109	21	7.8	9.5	8.9
29	17	33	1560	298	---	212	149	121	18	8.0	8.4	7.5
30	22	32	1120	254	---	188	134	99	16	7.9	6.7	8.8
31	27	---	1440	221	---	170	---	239	---	6.8	7.4	---
TOTAL	532	1213.8	15756	24205	10828	9253	16584	3107	2192	296.4	265.7	205.9
MEAN	17.2	40.5	508	781	387	298	553	100	73.1	9.56	8.57	6.86
MAX	27	195	1680	2770	1350	791	1600	239	239	22	18	11
MIN	12	8.4	39	221	93	116	134	52	16	3.5	1.2	4.2
AC-FT	1060	2410	31250	48010	21480	18350	32890	6160	4350	588	527	408

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1993, BY WATER YEAR (WY)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	27.1	227	549	454	597	363	256	70.6	23.4	8.12	6.90	10.2	
MAX	86.3	809	1961	1036	1544	965	826	149	73.1	21.9	13.0	23.3	
(WY)	1987	1985	1982	1982	1983	1983	1982	1988	1993	1983	1983	1986	
MIN	7.74	13.4	33.0	122	133	54.6	38.4	15.1	6.00	3.06	4.10	5.37	
(WY)	1988	1988	1990	1981	1988	1992	1990	1987	1987	1985	1982	1987	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1981 - 1993

ANNUAL TOTAL	40620.6	84438.8	
ANNUAL MEAN	111	231	214
HIGHEST ANNUAL MEAN			451
LOWEST ANNUAL MEAN			83.5
HIGHEST DAILY MEAN	1680	Dec 28	2770
LOWEST DAILY MEAN	2.8	Jun 3	1.2
ANNUAL SEVEN-DAY MINIMUM	3.6	May 30	2.6
ANNUAL RUNOFF (AC-FT)	80570		167500
10 PERCENT EXCEEDS	293		644
50 PERCENT EXCEEDS	25		70
90 PERCENT EXCEEDS	6.2		6.8
			5.2

UMPQUA RIVER BASIN

14312000 SOUTH UMPQUA RIVER NEAR BROCKWAY, OR

LOCATION.--Lat 43°08'00", long 123°23'50", in SW 1/4 sec.15, T.28 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on right bank 10 ft upstream from Winston Bridge on State Highway 99, 2.5 mi northeast of Brockway, 4.2 mi downstream from Lookingglass Creek, and at mile 132.8.

DRAINAGE AREA.--1,670 mi².

PERIOD OF RECORD.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1946(M), 1948(M), 1951. WSP 1448: Drainage area. WDR OR 72-1: 1965(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 462.52 ft above sea level (State Highway Department bench mark). Prior to June 24, 1949, nonrecording gage at several sites within 400 ft of present site at various datums. June 24, 1949, to Oct. 1, 1970, at datum 461.84 ft above sea level (State Highway Department bench mark).

REMARKS.--No estimated daily discharges. Records excellent. Regulation from Ben Irving Reservoir, since January 1980, on Berry Creek during summer months. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--59 years (water years 1907-11, 1924-26, 1943-93), 2,774 ft³/s, 22.56 in/yr, 2,010,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s Dec. 23, 1964, gage height, 34.28 ft; minimum discharge, 16 ft³/s Aug. 23, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum, discharge, 89,500 ft³/s. Discharge for flood of February 1890, which reached a stage 1.9 ft higher, according to local resident who lived nearby at time of both floods, has been found to be in error and should not be used.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1300	*37,000	*18.28	Jan. 22	1500	24,100	14.79

Minimum discharge, 97 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	857	1230	8140	3500	3000	2680	2750	5560	614	415	313
2	130	3120	1890	5950	3220	3160	3040	2570	5200	602	387	295
3	152	2170	3480	4390	3160	3990	5800	2650	4380	592	368	285
4	167	1120	2610	4750	3630	5210	13000	3800	3910	575	356	277
5	159	762	1930	5990	3910	5050	12700	3900	5740	542	341	272
6	156	610	1520	4980	4390	4610	9300	3600	6660	517	326	272
7	150	491	1610	4170	3820	4590	7130	4430	5300	494	324	276
8	139	504	2080	4520	3450	4480	6300	4180	4750	476	319	275
9	130	631	8270	5260	3500	4270	7710	4010	3870	457	320	261
10	126	858	10300	4480	3230	4140	10700	3500	3250	440	307	251
11	131	770	11900	3640	2960	4290	10400	3220	2730	425	301	246
12	136	598	7950	3020	4250	3770	8460	2990	2410	409	301	249
13	138	509	5570	2670	4760	3340	6830	2800	2060	405	299	248
14	136	448	3900	2690	3860	3180	5840	2510	1820	396	306	245
15	135	409	3200	3480	3210	3890	5110	2290	1630	398	344	246
16	131	379	2860	3560	2770	7270	4520	2160	1500	393	452	241
17	126	373	3400	3390	2420	11400	4390	2080	1380	380	538	242
18	125	355	3610	3330	2210	13900	7640	2040	1270	370	444	244
19	123	377	3220	3070	2900	11400	8790	1980	1200	360	503	262
20	120	1120	2900	21700	6340	8300	6960	2100	1140	353	506	254
21	138	1250	4430	22400	6170	6410	5750	2120	1080	353	591	249
22	147	5000	5440	21300	6350	5190	4910	1980	1050	409	600	248
23	194	5070	4270	14600	6670	6630	4430	1850	1000	820	492	243
24	209	2830	3340	9120	5930	9700	4480	1680	915	1150	439	238
25	165	1880	2870	6850	4790	7190	4430	1630	837	774	414	231
26	149	1380	2500	6120	3960	5660	4320	1830	783	635	398	219
27	140	1170	2980	5640	3430	4670	3990	1830	744	559	381	209
28	138	1550	11800	5290	3120	3890	3480	1810	721	510	369	200
29	152	1730	10800	4930	---	3320	3120	1870	689	491	355	186
30	208	1380	7190	4380	---	2950	2940	1840	651	477	342	179
31	627	---	7350	3910	---	2700	---	3230	---	448	325	---
TOTAL	4992	39701	146400	207720	111910	171550	189150	81230	74230	15824	12163	7456
MEAN	161	1323	4723	6701	3997	5534	6305	2620	2474	510	392	249
MAX	627	5070	11900	22400	6670	13900	13000	4430	6660	1150	600	313
MIN	115	355	1230	2670	2210	2700	2680	1630	651	353	299	179
AC-FT	9900	78750	290400	412000	222000	340300	375200	161100	147200	31390	24130	14790
CFSM	.10	.79	2.83	4.01	2.39	3.31	3.78	1.57	1.48	.31	.23	.15
IN.	.11	.88	3.26	4.63	2.49	3.82	4.21	1.81	1.65	.35	.27	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

	476	2774	5531	6793	6318	4799	3211	1945	893	266	135	148
MEAN	476	2774	5531	6793	6318	4799	3211	1945	893	266	135	148
MAX	6045	13590	19540	16010	15370	10950	7378	6909	3312	576	392	587
(WY)	1951	1974	1956	1956	1958	1974	1963	1963	1953	1953	1993	1986
MIN	103	190	184	262	341	882	589	446	142	52.6	40.2	69.3
(WY)	1988	1953	1977	1977	1977	1992	1926	1926	1926	1926	1973	1967

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1906 - 1993

ANNUAL TOTAL	436434	1062326	2773
ANNUAL MEAN	1192	2910	5567
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	11900	Dec 11	22400
LOWEST DAILY MEAN	64	Aug 16	115
ANNUAL SEVEN-DAY MINIMUM	67	Aug 12	128
ANNUAL RUNOFF (AC-FT)	865700	2107000	2009000
ANNUAL RUNOFF (CFSM)	.71	1.74	1.66
ANNUAL RUNOFF (INCHES)	9.72	23.66	22.56
10 PERCENT EXCEEDS	3130	6640	6740
50 PERCENT EXCEEDS	544	2080	1090
90 PERCENT EXCEEDS	80	235	113

UMPQUA RIVER BASIN

351

14312170 SOUTH FORK DEER CREEK NEAR DIXONVILLE, OR

LOCATION.--Lat 43°10'16", long 123°13'23", in NW 1/4 NW 1/4 sec.6, T.28 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank, 900 ft upstream from bridge on Douglas County Road Number 83, 2.6 mi southeast of Dixonville, and 2.2 mi upstream from confluence of north and south forks.

DRAINAGE AREA.--15.2 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 700 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good except for periods of backwater Oct. 1-31, Sept. 1-30, which are fair. No regulation. Minor diversion for irrigation upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--4 years, 16.5 ft³/s, 14.74 in/yr, 11,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 392 ft³/s Jan. 20, 1993, gage height, 3.63 ft; minimum discharge, 0.38 ft³/s Aug. 26-29, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 8	2300	293	3.31	Jan. 20	0900	*392	*3.63
Dec. 10	0900	331	3.44	Jan. 21	2000	266	3.21
Dec. 28	0430	379	3.59				

Minimum discharge, 0.54 ft³/s, Oct. 12, 13, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	22	9.0	111	17	34	24	20	105	6.2	3.2	2.5
2	2.0	20	41	68	16	43	26	19	69	6.3	3.1	2.4
3	1.8	9.2	42	48	15	46	88	26	53	5.9	3.0	2.2
4	1.1	6.7	23	88	14	41	163	28	54	5.7	2.8	1.9
5	.91	6.2	15	104	13	32	133	25	124	5.5	2.6	2.0
6	.90	4.9	13	69	12	27	79	29	86	5.3	2.8	2.1
7	.80	6.8	57	57	11	24	53	29	69	5.2	3.0	2.0
8	.74	7.6	108	73	11	20	67	26	54	5.0	2.9	1.8
9	.72	9.2	161	68	10	18	101	23	43	4.9	2.5	1.8
10	.68	8.2	190	51	9.4	20	104	21	39	4.7	2.5	1.7
11	.65	8.0	125	39	13	18	90	18	32	4.6	2.6	1.8
12	.62	7.6	105	32	30	17	66	17	27	4.4	2.6	1.9
13	.61	6.8	60	28	24	16	53	17	23	4.4	2.7	1.8
14	.66	6.5	42	43	20	16	45	15	21	4.4	2.8	1.6
15	.71	6.2	33	45	17	19	43	13	19	4.2	7.4	1.6
16	.70	6.4	33	40	15	58	37	12	17	3.9	6.4	1.7
17	.65	6.2	60	37	13	92	93	11	15	3.6	3.9	1.6
18	.65	6.5	63	32	14	88	153	8.9	13	3.6	3.3	1.6
19	.62	26	49	41	50	73	102	13	12	3.4	6.9	1.7
20	1.0	22	46	252	74	60	69	18	11	3.4	8.8	1.7
21	4.0	28	57	180	81	45	50	17	11	3.5	7.8	1.7
22	1.0	58	53	180	122	38	44	16	10	8.7	6.2	1.5
23	.70	32	41	104	99	56	42	14	9.1	13	5.4	1.4
24	.71	18	33	66	63	53	37	13	8.2	6.5	4.8	1.3
25	.80	11	27	49	46	44	38	13	7.7	5.2	4.0	1.3
26	.92	7.9	26	40	36	36	38	14	7.2	4.5	3.3	1.2
27	1.2	7.0	56	34	31	30	33	22	7.4	3.9	3.0	1.1
28	2.4	8.1	240	29	28	25	28	40	6.9	3.9	3.0	1.1
29	6.7	6.7	130	25	---	22	25	39	6.5	4.3	2.9	1.1
30	11	7.1	91	22	---	20	22	37	6.2	3.6	2.8	1.1
31	10	---	153	19	---	21	---	155	---	3.3	2.6	---
TOTAL	57.65	386.8	2182.0	2074	904.4	1152	1946	768.9	966.2	155.0	121.6	50.2
MEAN	1.86	12.9	70.4	66.9	32.3	37.2	64.9	24.8	32.2	5.00	3.92	1.67
MAX	11	58	240	252	122	92	163	155	124	13	8.8	2.5
MIN	.61	4.9	9.0	19	9.4	16	22	8.9	6.2	3.3	2.5	1.1
AC-FT	114	767	4330	4110	1790	2280	3860	1530	1920	307	241	100
CFSM	.12	.85	4.62	4.39	2.12	2.44	4.26	1.63	2.11	.33	.26	.11
IN.	.14	.94	5.33	5.07	2.21	2.81	4.75	1.88	2.36	.38	.30	.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	1990	1991	1992	1993
MEAN	2.55	13.4	29.8	32.7
MAX	3.31	20.0	70.4	66.9
(WY)	1991	1992	1993	1990
MIN	1.86	5.53	2.98	14.5
(WY)	1993	1990	1991	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1990 - 1993

ANNUAL TOTAL	4648.55	10764.75		
ANNUAL MEAN	12.7	29.5		
HIGHEST ANNUAL MEAN			16.5	
LOWEST ANNUAL MEAN			29.5	1993
HIGHEST DAILY MEAN	240	252	9.47	1992
LOWEST DAILY MEAN	.50	.61	.50	Jan 20 1993
ANNUAL SEVEN-DAY MINIMUM	.55	.66	.55	Aug 27 1992
ANNUAL RUNOFF (AC-FT)	9220	21350	11970	Aug 25 1992
ANNUAL RUNOFF (CFSM)	.83	1.94	1.08	
ANNUAL RUNOFF (INCHES)	11.35	26.29	14.74	
10 PERCENT EXCEEDS	32	73	44	
50 PERCENT EXCEEDS	4.6	15	6.2	
90 PERCENT EXCEEDS	.74	1.7	1.1	

UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR
(National stream quality accounting network station)

LOCATION.--Lat 43°13'23", long 123°24'48", in SW 1/4 NE 1/4 sec.16, T.27 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank, 3.7 mi west of Roseburg, and at mile 117.7.

DRAINAGE AREA.--1,798 mi².

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to current year.

pH: August 1971 to current year.

WATER TEMPERATURE: October 1970 to current year.

DISSOLVED OXYGEN: October 1970 to current year.

INSTRUMENTATION.--Water-quality monitor from October 1970 to current year.

REMARKS.--Water-discharge records for South Umpqua River near Brockway (station 14312000) are used for computation of weighted averages or suspended-sediment loads. Some samples were analyzed by different methods and may have data with different levels of detection.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 423 microsiemens Sept. 18, 1971; minimum, 37 microsiemens Feb. 18, 1983.

pH: Maximum, 10.0 units Sept. 8, 9, 1971; minimum, 5.0 units Sept. 29, 1971.

WATER TEMPERATURE: Maximum, 35.0°C July 16, 1976; minimum, 0.0°C on several days in water years 1973, 1974, 1989, 1991.

DISSOLVED OXYGEN: Maximum, 18.5 mg/L Aug. 24, 1986; minimum, 0.2 mg/L Sept. 25, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 213 microsiemens Oct. 1; minimum recorded, 70 microsiemens Mar. 17, but may have been lower during storm peak Jan. 20.

pH: Maximum, 9.0 units Aug. 12, Sept. 3, 4, 25, 26; minimum, 6.8 units Apr. 5-7.

DISSOLVED OXYGEN: Maximum, 13.7 mg/L Oct. 17, 18; minimum, 4.5 mg/L Oct. 1.

WATER TEMPERATURE: Maximum, 28.5°C Aug. 3, 4; minimum, 4.5°C Jan. 13, 14.

WATER-QUALITY DATA

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)	CALCIUM, DIS-SOLVED (MG/L AS Ca)
OCT 1992												
01...	1845	126	--	--	--	--	--	--	--	--	--	--
15...	1135	136	--	--	--	--	--	--	--	--	--	--
21...	1330	147	200	8.4	15.8	0.8	11.1	--	K1	70	77	18
27...	1150	140	--	--	--	--	--	--	--	--	--	--
NOV												
17...	1100	374	145	7.9	9.5	--	11.4	101	K7	32	54	13
DEC												
16...	1200	2840	100	7.6	6.0	8.5	11.9	101	72	63	42	9.2
JAN 1993												
20...	1100	18900	92	7.5	6.5	--	11.0	91	380	K460	38	8.1
FEB												
10...	1130	3240	84	7.5	7.5	4.0	11.5	98	26	45	31	7.2
MAR												
16...	1000	7000	83	7.4	9.5	--	10.8	96	150	190	32	7.6
APR												
14...	1030	5910	91	7.5	10.0	7.1	10.8	96	24	--	35	7.9
MAY												
04...	1200	3750	102	7.6	14.0	--	10.3	100	220	54	42	9.6
JUN												
16...	1300	1510	111	7.8	18.0	3.5	9.6	103	52	K8	43	10
JUL												
15...	1300	398	152	8.5	22.0	--	9.5	110	K14	22	56	13
AUG												
11...	0930	298	152	7.8	23.0	0.1	7.6	89	37	1800	58	13
SEP												
02...	1230	295	154	8.8	22.5	--	11.1	130	K23	22	60	13
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, DIS IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 1992												
01...	--	--	--	--	--	--	--	--	--	--	--	5.2
15...	--	--	--	--	--	--	--	--	--	--	--	8.4
21...	7.7	11	23	0.5	1.6	64	76	1	9.7	16	<0.1	7.8
27...	--	--	--	--	--	--	--	--	--	--	--	8.2
NOV												
17...	5.3	7.2	22	0.4	0.9	50	61	0	6.5	9.3	<0.1	--
DEC												
16...	4.5	4.9	20	0.3	0.6	40	49	0	4.8	4.4	<0.1	17
JAN 1993												
20...	4.3	4.3	19	0.3	0.7	37	45	0	4.2	4.0	<0.1	--
FEB												
10...	3.1	3.9	21	0.3	0.5	33	40	0	3.2	2.9	<0.1	16
MAR												
16...	3.2	3.9	21	0.3	0.5	33	40	0	3.2	2.7	<0.1	--
APR												
14...	3.8	3.9	19	0.3	0.6	43	52	0	3.3	2.5	<0.1	16
MAY												
04...	4.4	4.5	19	0.3	0.6	43	52	0	3.8	3.5	<0.1	--
JUN												
16...	4.4	5.1	20	0.3	0.6	46	56	0	4.6	4.5	<0.1	18
JUL												
15...	5.7	6.9	21	0.4	0.7	56	61	4	5.9	7.4	<0.1	--
AUG												
11...	6.1	7.0	21	0.4	0.9	55	68	0	5.6	7.3	<0.1	13
SEP												
02...	6.7	7.2	20	0.4	0.8	59	62	5	6.2	7.8	0.2	--

E - Estimated value.

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

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

WATER-QUALITY DATA

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 1992												
01...	--	--	--	--	0.299	--	--	0.141	0.5	--	0.501	0.192
15...	--	--	--	--	0.086	--	--	0.043	0.3	--	0.257	0.084
21...	131	112	0.18	52.0	0.13	0.16	0.05	0.05	0.4	0.26	0.280	0.12
27...	--	--	--	--	0.077	--	--	0.033	0.3	--	0.184	0.082
NOV 17...	79	73	0.11	79.8	--	0.13	0.02	--	0.4	0.11	0.078	0.05
DEC 16...	73	71	0.10	560	0.05	0.04	0.02	0.03	<0.2	0.35	0.370	0.02
JAN 1993												
20...	68	49	0.09	3460	--	--	--	--	1.1	--	0.240	0.33
FEB 10...	46	58	0.06	402	0.06	--	--	0.04	<0.2	--	0.160	0.02
MAR 16...	60	41	0.08	1130	--	--	--	--	<0.2	--	0.055	0.04
APR 14...	58	64	0.08	926	0.03	--	--	<0.01	<0.2	--	0.081	0.04
MAY 04...	70	52	0.09	709	--	--	--	--	<0.2	--	0.052	0.02
JUN 16...	74	75	0.10	302	0.03	--	--	<0.01	<0.2	--	0.087	0.10
JUL 15...	100	74	0.14	107	--	--	--	--	<0.2	--	0.084	0.05
AUG 11...	97	87	0.13	78.0	0.04	--	--	0.02	<0.2	--	0.110	0.04
SEP 02...	88	78	0.12	70.1	--	--	--	--	0.3	--	0.087	0.16
DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ANTI- MONY, DIS- SOLVED (UG/L AS SB)	ARSENIC, DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 1992												
01...	0.178	0.177	--	--	--	--	--	--	--	--	--	--
15...	0.086	0.076	--	--	--	--	--	--	--	--	--	--
21...	0.11	0.10	0.10	20	--	--	17	--	--	--	<3	--
27...	0.078	0.068	--	--	--	--	--	--	--	--	--	--
NOV 17...	--	0.03	0.03	--	--	--	--	--	--	--	--	--
DEC 16...	0.02	0.03	0.03	--	--	--	--	--	--	--	--	--
JAN 1993												
20...	--	0.03	--	170	<1	<1	8	<0.5	<1	2	<1	3
FEB 10...	0.03	0.02	--	130	--	--	9	--	--	--	<3	--
MAR 16...	--	0.02	--	--	--	--	--	--	--	--	--	--
APR 14...	0.04	0.02	--	180	--	--	10	--	--	--	<3	--
MAY 04...	--	0.02	--	--	--	--	--	--	--	--	--	--
JUN 16...	0.10	0.03	--	--	--	--	--	--	--	--	--	--
JUL 15...	--	0.04	--	--	--	--	--	--	--	--	--	--
AUG 11...	0.03	0.02	--	<10	<1	<1	14	<0.5	<1	<1	<3	1
SEP 02...	--	0.04	--	--	--	--	--	--	--	--	--	--
DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 1992												
01...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
21...	30	--	<4	6	--	<10	1	<1	<1	160	<6	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 17...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 1993												
20...	220	<1	<4	12	<0.1	<1	2	<1	<1	--	--	8
FEB 10...	59	--	<4	6	--	<10	<1	<1	<1	56	<6	--
MAR 16...	--	--	--	--	--	--	--	--	--	--	--	--
APR 14...	98	--	<4	6	--	<10	1	<1	<1	60	<6	--
MAY 04...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 11...	23	<1	<4	3	<0.1	<10	<1	<1	<1	110	<6	3
SEP 02...	--	--	--	--	--	--	--	--	--	--	--	--

[illegible]

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	213	205	208	210	200	205	100	95	97	89	86	88
2	206	198	201	206	138	182	123	99	107	93	88	91
3	202	199	201	---	---	---	123	94	105	99	93	96
4	213	201	205	---	---	---	98	94	96	102	98	100
5	213	208	210	---	---	---	101	98	99	98	95	96
6	209	205	207	---	---	---	105	100	102	102	98	100
7	208	204	206	130	120	124	117	105	111	105	102	103
8	208	204	206	135	130	132	127	116	120	107	105	106
9	206	202	204	139	135	137	---	---	---	105	96	99
10	206	200	203	140	138	139	---	---	---	98	95	96
11	205	200	203	138	133	135	---	---	---	102	98	100
12	207	201	204	134	129	130	---	---	---	106	102	103
13	208	204	207	131	128	130	---	---	---	109	105	107
14	207	203	206	132	129	131	99	92	96	113	109	111
15	208	202	206	135	130	132	103	99	101	112	104	109
16	208	204	206	139	134	136	103	98	101	104	96	99
17	209	203	207	---	---	---	105	101	103	98	96	97
18	209	202	205	---	---	---	104	103	104	97	96	97
19	207	201	205	149	144	146	105	103	104	100	96	97
20	207	203	205	161	143	151	107	105	106	101	---	---
21	206	197	201	157	144	153	108	96	105	---	---	---
22	198	194	196	146	84	129	96	84	88	---	---	---
23	206	198	201	85	80	82	88	84	86	86	71	78
24	206	200	202	92	85	89	93	88	90	85	79	82
25	204	199	201	99	92	95	96	93	95	90	85	88
26	210	203	206	105	99	102	100	96	97	91	90	91
27	210	207	209	110	105	107	108	100	103	91	90	90
28	209	205	208	111	109	110	106	75	88	91	89	90
29	211	205	208	109	96	104	81	75	78	91	89	90
30	207	193	200	97	94	95	88	81	85	91	90	90
31	207	190	197	---	---	---	91	88	89	93	90	91
MONTH	213	190	204	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	94	92	93	108	105	106	106	104	105	---	---	---
2	95	94	95	108	105	107	108	105	106	---	---	---
3	96	94	95	106	98	103	113	97	107	109	103	106
4	96	92	94	98	86	91	97	82	87	108	98	104
5	92	87	89	86	83	84	90	87	88	98	91	93
6	87	81	83	85	83	84	94	89	92	95	91	94
7	82	80	81	85	83	84	104	91	93	95	87	91
8	85	81	83	83	81	82	100	93	96	87	86	86
9	85	83	84	81	80	81	101	---	---	87	86	86
10	85	83	83	84	80	82	---	---	---	90	87	88
11	87	83	84	84	81	82	86	84	85	91	89	90
12	89	85	87	82	81	81	89	86	87	91	90	90
13	85	79	81	85	82	83	94	88	91	92	91	91
14	85	80	82	89	84	86	97	94	95	93	92	93
15	89	85	87	89	84	87	100	97	98	97	93	94
16	92	89	90	84	73	80	102	100	101	99	97	98
17	94	90	93	75	70	71	110	102	105	101	97	99
18	98	94	95	74	72	73	114	105	109	100	97	99
19	110	98	105	72	71	72	---	---	---	99	97	98
20	108	90	99	78	72	76	---	---	---	101	96	98
21	95	89	92	82	77	79	101	98	99	97	94	96
22	98	94	96	88	82	84	103	100	101	95	93	94
23	97	95	97	93	85	89	105	103	104	94	93	93
24	96	94	95	85	71	74	105	101	103	100	94	96
25	100	96	97	79	74	77	101	98	99	99	96	98
26	103	99	101	85	79	82	100	97	98	100	98	99
27	104	102	103	90	85	87	99	96	97	99	95	97
28	106	103	104	94	89	91	100	98	99	105	96	103
29	---	---	---	97	94	95	102	100	101	108	104	107
30	---	---	---	99	96	98	104	102	103	113	106	109
31	---	---	---	104	99	101	---	---	---	123	110	117
MONTH	110	79	92	108	70	86	---	---	---	---	---	---

UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	117	97	105	---	---	---	144	138	140	157	152	155
2	99	92	94	138	134	136	147	141	143	158	153	156
3	93	92	92	138	135	137	148	142	145	159	154	157
4	95	92	94	139	136	137	---	---	---	160	154	158
5	106	94	101	141	137	139	150	145	148	160	155	158
6	100	93	95	143	139	141	151	147	149	161	155	158
7	98	95	96	145	140	143	152	148	150	162	157	160
8	98	94	95	146	142	144	152	148	150	163	158	161
9	98	95	96	148	143	145	154	148	151	164	158	162
10	101	98	99	149	144	147	154	149	152	165	159	163
11	104	101	102	149	145	147	155	150	153	165	160	163
12	106	103	104	151	145	149	156	150	154	164	158	162
13	108	106	107	151	147	149	157	152	155	164	158	162
14	---	---	---	154	148	151	157	151	155	164	159	162
15	---	---	---	154	149	152	157	154	156	165	160	163
16	---	---	---	155	150	153	158	153	156	164	160	162
17	117	114	116	155	151	153	158	151	153	164	158	162
18	119	116	117	156	151	154	153	149	151	164	160	162
19	121	118	119	157	152	155	155	144	151	165	159	162
20	121	120	120	158	153	156	156	151	154	165	160	163
21	124	121	122	158	154	156	155	151	153	165	160	163
22	125	123	124	159	155	157	153	148	150	166	161	164
23	126	123	125	166	155	160	---	---	---	166	161	164
24	127	124	126	160	148	152	---	---	---	166	162	164
25	129	125	127	148	134	140	---	---	---	167	162	165
26	130	127	128	134	129	131	---	---	---	167	162	165
27	132	128	130	130	127	129	---	---	---	167	161	165
28	---	---	---	132	128	130	---	---	---	168	162	166
29	---	---	---	136	130	133	---	---	---	171	161	166
30	---	---	---	139	134	136	---	---	---	173	165	170
31	---	---	---	141	135	138	156	151	154	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	173	152	162

UMPQUA RIVER BASIN

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14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	7.6	7.2	7.5	7.5	7.6	7.5	7.5	7.5	7.3	7.2	7.4	7.4
2	7.5	7.1	7.5	7.4	7.6	7.5	7.5	7.5	7.3	7.2	7.4	7.3
3	7.7	7.1	---	---	7.6	7.5	7.6	7.5	7.3	7.3	7.4	7.4
4	8.1	7.2	---	---	7.6	7.5	7.6	7.6	7.3	7.3	7.4	7.2
5	8.0	7.3	---	---	7.6	7.5	7.6	7.5	7.3	7.3	7.3	7.2
6	8.1	7.3	---	---	7.7	7.6	7.6	7.5	7.3	7.2	7.3	7.2
7	8.3	7.3	7.6	7.4	7.7	7.6	7.6	7.6	7.2	7.2	7.3	7.2
8	8.3	7.3	7.7	7.4	7.7	7.6	7.6	7.6	7.3	7.2	7.3	7.2
9	8.4	7.3	7.7	7.5	---	---	7.6	7.6	7.3	7.2	7.3	7.2
10	8.6	7.4	7.7	7.5	---	---	7.6	7.6	7.2	7.1	7.3	7.2
11	8.6	7.4	7.8	7.6	---	---	7.6	7.6	7.3	7.2	7.3	7.2
12	8.6	7.4	7.8	7.5	---	---	7.7	7.6	7.4	7.2	7.2	7.2
13	8.4	7.4	7.8	7.5	---	---	7.7	7.7	7.3	7.2	7.3	7.2
14	8.6	7.4	7.9	7.5	7.5	7.4	7.7	7.7	7.3	7.2	7.3	7.2
15	8.6	7.4	7.9	7.5	7.6	7.5	7.7	7.6	7.3	7.3	7.4	7.2
16	8.6	7.4	8.0	7.5	7.6	7.4	7.7	7.6	7.4	7.3	7.3	7.0
17	8.7	7.4	8.0	7.5	7.6	7.6	7.7	7.6	7.4	7.4	7.2	6.9
18	8.8	7.4	8.0	---	7.6	7.6	7.7	7.6	7.5	7.4	7.0	6.9
19	8.7	7.4	7.7	7.5	7.6	7.5	7.7	7.6	7.5	7.3	7.0	6.9
20	8.2	7.4	7.7	7.4	7.6	7.6	---	---	7.4	7.2	7.1	7.0
21	8.5	7.3	7.7	7.6	7.6	7.6	---	---	7.2	7.1	7.1	7.1
22	8.5	7.3	7.6	7.3	7.6	7.5	---	---	7.1	7.1	7.1	7.1
23	8.5	7.3	7.3	7.3	7.5	7.5	7.0	6.9	7.2	7.1	7.4	7.1
24	8.4	7.4	7.4	7.3	7.6	7.5	7.1	7.0	7.3	7.2	7.1	7.0
25	8.1	7.5	7.5	7.4	7.7	7.6	7.2	7.1	7.3	7.3	7.1	7.0
26	8.2	7.4	7.5	7.5	7.7	7.6	7.2	7.2	7.3	7.3	7.1	7.1
27	8.3	7.4	7.6	7.5	7.7	7.6	7.2	7.2	7.4	7.3	7.1	7.1
28	8.4	7.4	7.7	7.5	7.6	7.5	7.2	7.2	7.4	7.4	7.2	7.1
29	7.9	7.4	7.7	7.6	7.5	7.4	7.2	7.2	---	---	7.2	7.1
30	7.8	7.4	7.6	7.5	7.5	7.4	7.2	7.2	---	---	7.3	7.1
31	7.7	7.4	---	---	7.5	7.4	7.3	7.2	---	---	7.3	7.2
MONTH	8.8	7.1	---	---	---	---	---	---	7.5	7.1	7.4	6.9
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	7.4	7.2	---	---	7.2	7.1	8.4	---	8.5	7.3	8.9	7.4
2	7.3	7.2	---	---	7.1	7.1	8.5	7.5	8.6	7.2	8.8	7.4
3	7.2	7.0	7.5	7.2	7.2	7.1	8.6	7.6	8.6	7.2	9.0	7.2
4	7.0	6.9	7.5	7.3	7.2	7.1	8.6	7.6	8.5	7.2	9.0	7.3
5	6.9	6.8	7.3	7.1	7.3	7.1	8.7	7.6	8.6	7.2	8.9	7.3
6	6.9	6.8	7.4	7.1	7.1	7.1	8.7	7.5	8.5	7.2	8.9	7.3
7	7.0	6.8	7.3	7.2	7.2	7.1	8.7	7.5	8.7	7.2	8.9	7.3
8	7.0	6.9	7.4	7.1	7.2	7.1	8.7	7.5	8.8	7.2	8.9	7.2
9	---	---	7.4	7.1	7.2	7.1	8.7	7.5	8.9	7.3	8.9	7.2
10	---	---	7.6	7.1	7.3	7.1	8.7	7.4	8.9	7.4	8.9	7.2
11	7.0	7.0	7.5	7.2	7.3	7.2	8.8	7.4	8.9	7.4	8.8	7.2
12	7.0	7.0	7.4	7.2	7.4	7.2	8.8	7.5	9.0	7.4	8.9	7.2
13	7.1	7.0	7.7	7.2	7.4	7.2	8.7	7.5	8.8	7.3	8.9	7.2
14	7.1	7.0	7.9	7.2	---	---	8.8	7.5	8.8	7.3	8.9	7.3
15	7.2	7.1	7.9	7.2	---	---	8.8	7.5	8.7	7.3	8.9	7.3
16	7.2	7.1	7.8	7.2	---	---	8.7	7.5	8.5	7.3	8.9	7.3
17	7.2	7.1	8.0	---	7.6	7.3	8.8	7.4	8.5	7.4	8.9	7.3
18	7.2	6.9	7.8	7.3	7.6	7.3	8.8	7.4	8.6	7.4	8.8	7.3
19	---	---	7.6	7.2	7.6	7.3	8.7	7.3	8.0	7.3	8.8	7.4
20	---	---	7.6	7.2	7.7	7.4	8.7	7.4	7.6	7.3	8.9	7.4
21	7.1	7.1	7.6	7.2	7.7	7.4	8.7	7.4	8.1	7.3	8.9	7.4
22	7.2	7.1	7.7	7.3	7.8	7.4	8.0	7.3	8.2	7.4	8.9	7.4
23	7.2	7.1	7.7	7.3	7.9	7.5	8.1	7.3	---	7.4	8.9	7.4
24	7.2	7.2	7.6	7.1	8.0	7.6	7.8	7.5	---	---	8.9	7.4
25	7.2	7.2	7.5	7.2	8.1	7.6	8.0	7.5	---	---	9.0	7.4
26	7.2	7.2	7.7	7.3	8.2	7.6	8.2	7.4	---	---	9.0	7.4
27	7.2	7.1	7.5	7.2	8.2	7.6	8.3	7.3	---	---	8.9	7.3
28	7.3	7.1	7.3	7.1	8.3	7.6	8.1	7.3	---	---	8.8	7.2
29	7.3	7.2	7.4	7.2	---	---	8.2	7.3	---	---	8.9	7.2
30	7.4	7.2	7.4	7.1	---	---	8.5	7.3	8.8	---	8.8	7.1
31	---	---	7.3	7.1	---	---	8.5	7.3	8.9	7.4	---	---
MONTH	---	---	---	---	---	---	8.8	---	---	---	9.0	7.1

UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	21.0	18.5	20.0	13.5	13.5	13.5	7.5	7.5	7.5	6.5	6.0	6.5
2	18.5	18.0	18.0	13.5	13.0	13.0	7.5	7.0	7.5	6.0	6.0	6.0
3	19.5	17.5	18.5	---	---	---	7.5	7.0	7.0	6.0	6.0	6.0
4	19.0	17.5	18.0	---	---	---	7.5	6.5	7.0	6.0	6.0	6.0
5	18.0	16.5	17.0	---	---	---	6.5	6.0	6.0	6.0	5.5	6.0
6	17.5	15.5	16.5	---	---	---	6.0	5.5	5.5	5.5	5.5	5.5
7	17.5	15.0	16.5	14.0	12.5	13.5	6.0	5.5	6.0	5.5	5.0	5.5
8	17.5	15.0	16.5	13.0	12.0	12.5	6.5	6.0	6.0	5.5	5.0	5.5
9	18.5	16.0	17.0	12.5	11.0	12.0	7.0	6.5	7.0	5.5	5.0	5.5
10	18.5	15.0	17.0	11.0	10.0	11.0	8.0	7.0	7.5	5.5	5.0	5.0
11	18.5	15.5	17.0	10.0	9.5	9.5	8.0	7.5	7.5	5.5	5.0	5.0
12	18.5	15.5	17.0	10.5	9.5	10.0	8.0	7.0	7.5	5.5	5.0	5.0
13	17.5	16.0	17.0	11.0	9.5	10.5	8.0	6.5	7.0	5.0	4.5	5.0
14	17.0	14.5	15.5	10.5	9.5	10.0	6.5	6.5	6.5	5.0	4.5	5.0
15	15.5	13.5	14.5	10.5	9.5	10.0	6.5	6.0	6.5	5.5	5.0	5.5
16	15.5	13.0	14.5	11.0	9.5	10.0	6.5	5.5	6.0	6.0	5.0	5.5
17	15.5	13.5	14.5	11.0	10.0	10.5	6.0	5.5	6.0	6.0	5.5	5.5
18	15.5	13.5	14.5	10.5	9.5	10.0	6.0	5.5	6.0	5.5	5.0	5.5
19	16.0	13.5	15.0	10.5	9.5	10.0	6.0	6.0	6.0	5.5	5.5	5.5
20	15.0	14.5	15.0	9.5	9.0	9.5	6.5	6.0	6.5	---	5.5	---
21	16.5	14.5	15.5	9.5	9.0	9.0	7.0	6.5	7.0	---	---	---
22	16.5	14.5	15.5	9.5	8.5	9.0	7.0	6.5	7.0	---	---	---
23	16.5	14.5	15.5	9.5	9.0	9.5	7.0	7.0	7.0	6.5	6.0	6.5
24	16.5	14.5	15.5	9.0	8.5	8.5	7.0	6.5	7.0	6.5	6.0	6.5
25	16.0	15.5	15.5	8.5	7.5	7.5	6.5	6.5	6.5	7.0	6.5	7.0
26	16.0	15.0	15.5	8.0	7.0	7.5	6.5	6.0	6.5	7.0	6.5	6.5
27	16.0	14.5	15.0	8.0	7.5	8.0	6.5	6.5	6.5	6.5	6.0	6.0
28	15.5	14.5	15.0	8.5	7.5	8.0	7.0	6.5	6.5	7.0	6.0	6.5
29	15.0	14.0	14.5	8.0	7.5	8.0	7.0	6.5	7.0	7.5	6.5	7.0
30	14.0	13.5	14.0	8.0	7.5	8.0	6.5	6.0	6.5	7.0	6.5	7.0
31	13.5	13.0	13.5	---	---	---	6.5	6.0	6.5	6.5	5.5	6.0
MONTH	21.0	13.0	16.0	---	---	---	8.0	5.5	6.5	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	5.0	5.5	6.5	5.5	6.0	11.0	10.0	10.5	15.5	13.5	14.5
2	6.0	5.0	5.5	7.0	6.0	6.5	11.0	10.5	11.0	15.5	13.5	14.5
3	7.0	6.0	6.5	8.5	7.0	8.0	11.0	10.0	11.0	15.0	14.5	14.5
4	7.5	6.5	7.0	8.5	8.5	8.5	10.0	9.5	10.0	14.5	13.5	14.0
5	8.0	7.5	7.5	9.5	8.0	8.5	10.0	9.0	9.5	13.5	12.0	12.5
6	8.5	7.5	8.0	10.0	8.5	9.0	10.0	9.5	10.0	13.5	12.0	12.5
7	8.0	7.5	8.0	10.5	9.0	9.5	11.5	10.0	10.5	13.0	11.5	12.0
8	7.5	7.0	7.5	10.0	9.0	9.5	12.0	11.0	11.5	12.0	11.0	11.5
9	8.0	7.0	7.5	9.5	9.0	9.0	---	11.0	---	13.5	11.0	12.0
10	8.0	7.5	7.5	10.0	9.0	9.5	---	---	---	15.0	12.5	13.5
11	7.5	7.0	7.5	11.0	9.5	10.0	9.5	8.5	9.0	15.0	13.5	14.0
12	7.5	7.0	7.5	11.0	10.0	10.5	10.0	8.5	9.0	14.0	13.0	13.5
13	7.5	7.0	7.5	10.5	9.5	10.0	10.0	9.5	10.0	14.5	12.5	13.5
14	8.0	7.0	7.5	10.5	9.5	10.0	10.5	9.5	10.0	14.0	13.0	13.5
15	7.5	7.0	7.5	11.0	10.0	10.5	11.0	10.0	10.5	16.0	13.5	14.5
16	7.0	6.0	6.0	10.0	9.0	9.5	11.0	10.5	10.5	17.0	15.0	16.0
17	6.0	5.0	5.5	9.5	8.5	9.0	11.0	10.0	10.5	18.0	16.5	17.5
18	5.5	5.0	5.0	10.0	9.0	9.5	11.0	10.0	10.5	18.5	17.0	18.0
19	5.0	5.0	5.0	10.0	9.5	10.0	11.5	10.0	11.0	18.5	17.5	18.5
20	5.5	5.0	5.0	10.5	9.5	10.0	11.0	9.5	10.5	18.0	17.0	17.5
21	5.5	5.0	5.5	10.5	10.0	10.0	11.0	9.5	10.0	17.5	16.5	16.5
22	6.5	5.5	6.0	10.0	9.5	9.5	11.0	10.5	11.0	17.5	15.5	16.5
23	6.5	6.5	6.5	10.5	9.5	10.0	10.5	10.0	10.5	18.5	16.0	17.5
24	7.0	6.0	6.5	10.0	9.5	9.5	11.0	10.0	10.5	18.5	17.5	18.0
25	6.5	6.0	6.0	9.5	8.5	9.0	11.0	10.5	10.5	18.0	17.5	18.0
26	6.5	5.5	6.0	9.0	8.5	8.5	11.5	10.0	10.5	18.5	16.5	17.5
27	6.5	5.0	5.5	9.5	8.5	9.0	12.0	10.0	11.0	18.0	17.0	17.0
28	6.5	5.0	6.0	10.5	9.0	9.5	12.5	11.0	12.0	17.0	16.5	16.5
29	---	---	---	11.0	9.5	10.5	14.0	12.0	12.5	18.0	16.0	17.0
30	---	---	---	11.5	10.0	11.0	15.0	13.0	14.0	17.5	16.5	17.5
31	---	---	---	11.5	10.5	11.0	---	---	---	17.0	16.0	16.5
MONTH	8.5	5.0	6.5	11.5	5.5	9.5	---	---	---	18.5	11.0	15.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	16.0	14.5	15.0	23.0	---	---	26.0	22.5	24.0	24.0	20.5	22.5
2	14.5	13.5	14.0	23.0	21.0	22.0	27.0	23.5	25.0	24.5	21.0	22.5
3	14.5	13.5	14.0	23.5	21.0	22.0	28.5	24.0	26.0	24.5	21.0	23.0
4	14.5	13.5	14.0	23.5	21.0	22.5	28.5	24.5	---	25.0	21.5	23.5
5	14.0	13.5	14.0	24.0	21.5	22.5	28.0	25.0	26.5	23.5	22.0	23.0
6	13.5	12.5	12.5	24.0	21.5	22.5	26.5	25.0	25.5	24.0	21.5	22.5
7	13.5	12.0	13.0	24.0	21.5	22.5	25.0	23.5	24.5	24.5	21.5	23.0
8	15.0	13.0	14.0	24.5	21.5	23.0	25.5	23.0	24.0	25.5	22.0	24.0
9	15.0	14.0	14.5	25.0	22.0	23.0	26.0	22.5	24.0	26.0	22.5	24.5
10	16.0	14.0	15.0	25.0	21.5	23.5	25.5	22.5	24.0	26.0	23.0	24.5
11	16.0	14.5	15.0	24.0	22.0	23.0	25.5	22.5	24.0	24.5	23.0	23.5
12	17.0	14.5	15.5	24.0	20.5	22.5	25.5	22.0	24.0	23.5	22.0	22.5
13	17.5	15.5	16.5	23.0	21.0	22.0	24.0	22.5	23.0	23.0	20.0	21.5
14	19.0	17.0	18.0	23.0	21.0	21.5	23.0	21.5	22.0	22.0	19.5	21.0
15	19.0	18.5	19.0	23.0	20.5	22.0	22.5	21.0	21.5	22.0	20.0	21.0
16	19.5	18.0	19.0	23.5	20.5	22.0	22.0	20.5	21.5	22.0	19.0	20.5
17	21.0	18.0	19.5	24.5	21.5	23.0	22.5	20.0	21.0	21.5	19.0	20.5
18	22.5	19.5	21.0	24.5	21.0	23.0	24.0	20.5	22.0	20.5	19.0	19.5
19	22.5	21.0	21.5	24.0	21.5	22.5	23.0	21.5	22.0	19.5	18.5	19.0
20	22.0	20.0	21.5	23.5	21.5	22.5	21.5	21.0	21.5	19.0	17.0	18.0
21	22.0	20.0	21.0	23.0	21.0	22.0	22.5	20.5	21.5	18.5	16.0	17.5
22	20.0	18.5	19.0	22.0	21.0	21.5	23.5	21.0	22.0	18.5	15.5	17.0
23	19.5	17.5	19.0	22.0	20.5	21.0	---	22.0	---	18.5	15.5	17.0
24	20.5	19.0	20.0	21.5	20.5	21.0	---	---	---	18.5	15.5	17.0
25	22.0	20.5	21.5	21.5	20.5	21.0	---	---	---	19.0	16.0	17.5
26	24.0	22.0	23.0	22.0	20.5	21.0	---	---	---	19.5	16.5	18.0
27	23.0	21.0	22.5	24.0	20.5	22.0	---	---	---	20.0	17.0	18.5
28	22.0	20.5	---	23.0	21.5	22.5	---	---	---	20.0	17.5	18.5
29	---	---	---	23.0	21.0	22.0	---	---	---	20.5	17.5	19.0
30	---	---	---	24.0	20.5	22.0	23.0	---	---	21.0	18.0	19.5
31	---	---	---	25.0	21.0	23.0	24.0	20.0	22.0	---	---	---
MONTH	---	---	---	25.0	---	---	---	---	---	26.0	15.5	20.5

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR---Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12.2	11.6	11.9	12.9	11.9	12.7	10.8	9.9	10.4	---	---	---
2	12.1	11.6	11.9	12.5	11.8	12.1	11.2	10.2	10.6	10.5	---	---
3	11.8	11.2	11.5	12.0	11.3	11.6	10.6	10.3	10.5	10.3	9.6	9.9
4	11.3	11.0	11.1	11.5	11.2	11.3	10.6	10.0	10.4	10.3	9.4	9.8
5	11.4	10.8	11.1	12.5	11.3	11.6	---	---	---	10.7	9.8	10.3
6	11.6	11.0	11.2	12.1	11.0	11.5	---	---	---	10.9	10.1	10.4
7	11.2	10.7	11.0	11.5	11.1	11.3	---	---	---	10.8	9.9	10.4
8	11.5	10.8	11.1	11.4	11.1	11.3	---	---	---	11.3	10.5	10.9
9	11.6	11.2	11.4	12.0	11.2	11.4	---	---	---	11.2	10.4	10.7
10	11.7	11.1	11.4	11.4	11.0	11.2	---	---	---	11.0	9.9	10.7
11	11.8	11.2	11.6	11.4	10.8	11.1	11.2	10.7	10.9	10.7	9.5	10.1
12	11.7	11.2	11.5	11.3	10.8	11.0	11.5	10.8	11.1	10.7	9.5	10.0
13	11.8	11.2	11.5	11.4	10.9	11.1	10.9	10.6	10.7	11.1	9.7	10.3
14	11.5	11.3	11.4	11.4	10.8	11.1	10.9	10.5	10.7	11.0	9.6	10.3
15	11.8	11.4	11.7	11.3	10.8	11.0	10.8	10.5	10.7	12.3	9.8	11.0
16	12.2	11.5	11.9	11.4	10.6	10.9	11.2	10.4	10.6	11.2	9.7	10.9
17	13.2	11.7	12.4	11.2	10.3	10.7	10.8	10.5	10.7	11.3	---	---
18	13.0	11.9	12.5	10.5	10.2	10.3	10.8	10.3	10.6	10.9	9.6	10.2
19	12.5	11.4	11.9	10.3	10.1	10.2	---	---	---	10.4	9.0	9.7
20	11.8	11.5	11.7	10.3	9.8	10.1	---	---	---	10.5	9.1	9.7
21	11.9	11.6	11.8	10.2	9.8	10.0	10.8	10.4	10.6	10.8	9.2	10.0
22	12.4	11.5	11.8	10.1	9.8	9.9	10.4	10.0	10.2	10.9	9.6	10.3
23	12.4	11.3	11.6	11.0	9.7	10.4	10.9	9.9	10.3	---	9.6	---
24	12.0	11.3	11.7	10.8	10.5	10.6	11.0	10.5	10.8	---	---	---
25	12.0	11.7	11.9	11.1	10.4	10.7	10.9	10.5	10.7	---	---	---
26	13.1	11.8	12.2	11.3	10.8	11.0	10.9	10.5	10.7	---	---	---
27	13.1	12.8	12.9	11.1	10.7	10.9	11.0	10.5	10.7	---	---	---
28	13.0	12.6	12.8	10.9	10.5	10.7	10.7	10.2	10.5	---	---	---
29	---	---	---	11.3	10.4	10.7	10.6	9.9	10.3	---	---	---
30	---	---	---	11.2	10.6	10.9	10.4	9.6	10.0	---	---	---
31	---	---	---	10.6	10.1	10.4	---	---	---	---	---	---
MONTH	13.2	10.7	11.7	12.9	9.7	11.0	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	10.1	---	---	9.6	6.4	7.7	11.8	7.1	8.9
2	---	---	---	10.0	7.5	8.6	9.5	6.0	7.4	11.9	6.6	8.7
3	9.9	---	---	10.1	7.5	8.6	10.0	5.6	7.5	12.3	6.3	8.5
4	9.5	9.2	9.4	10.5	7.3	8.6	---	5.9	---	12.4	6.1	8.5
5	9.3	8.9	9.2	10.7	7.5	8.8	9.9	5.7	7.6	11.6	6.0	8.0
6	10.3	9.0	9.5	10.8	7.4	8.8	9.7	5.7	7.3	12.0	6.0	8.2
7	10.4	9.7	10.2	11.1	7.1	8.8	11.1	5.8	7.9	12.0	6.0	8.2
8	9.9	9.3	9.7	10.8	7.4	8.9	11.8	6.6	8.7	11.5	5.7	8.0
9	9.5	9.1	9.4	11.3	7.1	8.9	11.9	6.7	8.8	12.0	5.8	8.1
10	9.7	9.4	9.5	11.0	7.1	8.8	12.0	6.2	8.7	11.8	5.3	7.8
11	9.6	9.0	9.4	10.5	6.8	8.3	11.9	6.0	8.4	11.1	5.1	7.3
12	9.6	8.9	9.3	12.2	7.0	8.8	11.7	5.9	8.3	11.7	5.4	7.9
13	10.1	8.8	9.3	11.1	6.9	8.9	---	---	---	12.0	5.8	8.2
14	---	---	---	11.3	7.3	9.0	---	---	---	12.1	6.1	8.6
15	---	---	---	11.3	7.4	9.1	---	---	---	12.5	6.5	8.9
16	---	---	---	11.4	7.2	8.9	10.9	---	---	12.5	6.6	8.9
17	9.5	8.4	8.9	11.4	6.6	8.6	10.6	7.5	8.7	12.5	6.7	8.9
18	9.1	8.0	8.6	11.3	6.6	8.6	10.9	7.2	8.8	11.8	6.6	8.5
19	8.8	7.8	8.2	10.3	6.3	8.1	8.9	6.8	7.6	12.1	6.9	8.9
20	8.9	7.7	8.2	10.7	6.3	8.2	8.2	6.8	7.4	12.5	7.3	9.3
21	8.5	7.4	8.0	10.5	6.4	8.1	9.9	6.9	8.1	12.7	7.4	9.5
22	9.7	7.7	8.5	9.6	6.3	7.6	9.4	7.4	8.2	12.9	7.8	9.8
23	9.8	8.5	9.2	10.1	7.4	8.6	---	7.2	---	13.3	7.9	9.9
24	9.6	8.2	8.9	9.3	8.0	8.6	---	---	---	13.1	7.8	9.9
25	9.4	7.7	8.5	9.5	7.9	8.7	---	---	---	12.8	7.7	9.6
26	8.8	7.1	8.0	9.9	7.9	8.7	---	---	---	12.3	7.4	9.4
27	8.8	6.8	7.7	9.8	7.2	8.3	---	---	---	12.4	7.2	9.2
28	---	---	---	8.8	6.9	7.7	---	---	---	11.7	7.2	9.1
29	---	---	---	9.3	6.9	8.0	---	---	---	11.8	7.0	8.9
30	---	---	---	9.5	7.0	8.0	11.2	---	---	11.6	6.5	8.5
31	---	---	---	9.4	6.6	7.8	11.4	7.1	8.8	---	---	---
MONTH	---	---	---	12.2	---	---	---	---	---	13.3	5.1	8.7

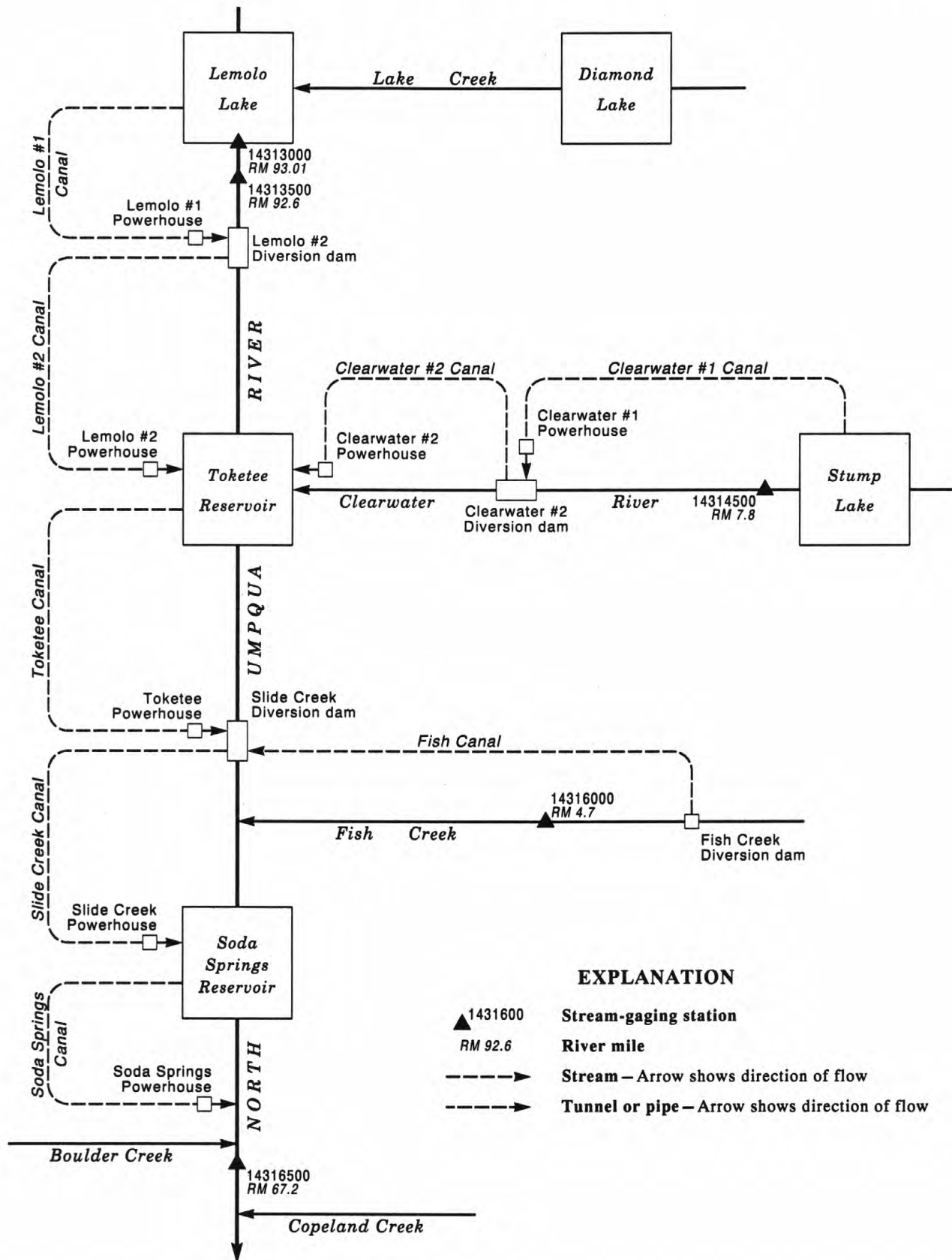


Figure 24--Schematic diagram showing gaging stations and diversions in the North Umpqua River Basin, from Copeland Creek upstream.

UMPQUA RIVER BASIN

14313000 LEMOLO LAKE NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'10", long 122°11'20", in SE 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, at Lemolo No. 1 diversion dam on North Umpqua River, 0.8 mi downstream from Lake Creek, 13.0 mi east of town of Toketee Falls, and at mile 93.01.

DRAINAGE AREA.--170 mi².

PERIOD OF RECORD.--July 1954 to current year. Prior to October 1960, published as Lemolo Reservoir near Toketee Falls.

GAGE.--Nonrecording gage. Datum of gage is sea level (levels by Pacific Power).

REMARKS.--Lake is formed by Lemolo No 1 diversion dam. Storage began July 15, 1954. Usable capacity for normal operation, 12,520 acre-ft between elevations 4,097.0 ft and 4,148.5 ft. Dead storage below 4,097.0 ft, 1,040 acre-ft. Water is used for power generation. Figures given herein represent total contents.

COOPERATION.--Gage readings furnished by Pacific Power.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 14,000 acre-ft Dec. 24, 1964, elevation, 4,149.5 ft; minimum observed, 11 acre-ft Mar. 5, 1955, elevation, 4,055.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 13,410 acre-ft July 21, elevation, 4,148.15 ft; minimum observed, 1,730 acre-ft Jan. 18, 19, elevation, 4,104.6 ft.

MONTHEND ELEVATION AND CONTENTS AT 0900, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	4,135.2	8,620	--
Oct. 31.....	4,122.5	4,880	-3,740
Nov. 30.....	4,122.1	4,780	-100
Dec. 31.....	4,119.8	4,200	-580
CAL YR 1992.....	--	--	+1,740
Jan. 31.....	4,121.7	4,680	+480
Feb. 28.....	4,115.9	3,350	-1,330
Mar. 31.....	4,141.2	10,670	+7,320
Apr. 30.....	4,144.8	12,040	+1,370
May 31.....	4,144.1	11,770	-270
June 30.....	4,142.1	11,010	-760
July 31.....	4,147.4	13,100	+2,090
Aug. 31.....	4,147.2	13,010	-90
Sept. 30.....	4,143.2	11,430	-1,580
WTR YR 1993.....	--	--	+2,810

UMPQUA RIVER BASIN

363

14313500 NORTH UMPQUA RIVER BELOW LEMOLO LAKE, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'20", long 122°11'40", in NW 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 0.4 mi downstream from Lemolo Lake, 13 mi east of town of Toketee Falls, and at mile 92.6.

DRAINAGE AREA.--170 mi² (see REMARKS).

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Lemolo No. 1 power canal is added to flow past station. Published as "below Lake Creek" prior to October 1952, as "below Lake Creek, near Toketee Falls" October 1952 to September 1953, and as "below Lemolo Reservoir near Toketee Falls" October 1953 to September 1960.

REVISED RECORDS.--WSP 1448: Drainage area. WDR OR-75-1: 1964(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,025 ft, from river-profile map. Prior to July 15, 1954, at site 1 mi upstream at datum about 65 ft higher. July 15, 1954, to Sept. 25, 1955, at site 400 ft upstream at datum 14.11 ft higher.

REMARKS.--Records excellent. Flow regulated since 1954 by Lemolo Lake (station 14313000); also slightly regulated by Diamond Lake. Records given herein do not include flow in Lemolo No. 1 power canal which, beginning July 1955, diverts 0.4 mi upstream from station for power generation with return flow 4.3 mi downstream.

AVERAGE DISCHARGE.--55 years (1928-83), 423 ft³/s, 33.79 in/yr, 306,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 4,600 ft³/s Dec. 25, 1964, from rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow, gage height, 9.20 ft, from floodmark; minimum discharge, 6.4 ft³/s July 17, 1954.

Combined flow, maximum discharge, 4,680 ft³/s Dec. 25, 1964, from river rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft³/s May 13, 1955.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 923 ft³/s May 25, gage height, 7.11 ft; minimum discharge, 32 ft³/s Nov. 16-20.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	35	34	33	33	36	42	45	33	36	60	39
2	36	35	35	33	33	36	41	47	36	36	60	39
3	35	35	34	33	33	36	44	105	43	37	53	39
4	35	34	33	33	33	36	44	76	145	37	45	38
5	35	34	33	33	33	35	44	61	221	37	38	38
6	35	33	33	33	33	35	44	56	221	37	38	38
7	35	33	33	35	33	36	43	439	221	37	38	38
8	34	33	33	42	33	36	44	860	219	37	38	38
9	34	33	33	42	33	37	44	842	108	38	38	38
10	105	33	33	42	33	35	43	411	39	38	38	38
11	112	33	33	41	33	35	43	58	39	38	38	38
12	35	34	79	41	33	35	42	59	39	38	38	38
13	35	33	130	40	33	35	42	57	39	39	39	38
14	35	33	124	39	35	36	42	57	39	40	39	38
15	35	33	124	39	37	38	42	57	39	41	40	38
16	35	32	124	38	36	41	41	59	40	41	41	38
17	118	32	e120	37	36	43	41	61	39	41	42	38
18	35	32	e33	37	36	53	41	166	39	40	43	39
19	35	32	e33	37	36	57	41	229	39	40	42	38
20	35	32	e33	38	36	55	40	235	39	40	42	38
21	35	33	e33	39	37	50	40	234	39	40	41	38
22	35	33	e33	39	37	48	40	258	39	40	41	38
23	34	33	33	40	37	54	41	295	39	40	41	38
24	34	33	33	41	36	56	41	334	39	39	41	38
25	33	33	33	41	36	47	42	617	39	39	41	38
26	33	33	33	41	36	45	42	779	39	38	40	37
27	33	33	33	42	36	44	43	627	39	38	40	37
28	33	33	33	37	36	44	42	336	179	38	40	37
29	33	33	33	33	---	44	43	142	549	42	39	37
30	33	33	33	33	---	44	45	120	37	50	39	37
31	34	---	33	33	---	44	---	66	---	60	39	---
TOTAL	1300	994	1530	1165	972	1306	1267	7788	2715	1232	1292	1139
MEAN	41.9	33.1	49.4	37.6	34.7	42.1	42.2	251	90.5	39.7	41.7	38.0
MAX	118	35	130	42	37	57	45	860	549	60	60	39
MIN	33	32	33	33	33	35	40	45	33	36	38	37
AC-FT	2580	1970	3030	2310	1930	2590	2510	15450	5390	2440	2560	2260
CAL YR 1992	TOTAL 22052	MEAN 60.3	MAX 288	MIN 31	AC-FT 43740							
WTR YR 1993	TOTAL 22700	MEAN 62.2	MAX 860	MIN 32	AC-FT 45030							

e Estimated

UMPQUA RIVER BASIN

14314500 CLEARWATER RIVER ABOVE TRAP CREEK, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°14'40", long 122°17'10", in SW 1/4 sec.1, T.27 S., R.4 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 900 ft downstream from Clearwater No. 1 diversion dam, 0.4 mi upstream from Trap Creek, 8.7 mi east of town of Toketee Falls, and at mile 7.8.

DRAINAGE AREA.--41.6 mi². (See REMARKS.)

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Clearwater No. 1 power canal is added to flow past station. Monthly discharge only December 1927 to March 1928, published in WSP 1318. Prior to October 1952, published as "above Trap Creek."

REVISED RECORDS.--WSP 1124: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,862.84 ft above sea level (levels by Pacific Power & Light Co.). Prior to Dec. 1, 1953, at two sites about 0.4 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Records excellent. Records after September 1983 do not include flow in Clearwater No. 1 power canal, completed in June 1953, which diverts 900 ft upstream from station for generation of power and returns water to Clearwater River 2.5 mi downstream from station.

AVERAGE DISCHARGE.--55 years (1928-83), 173 ft³/s, 125,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 848 ft³/s Dec. 23, 1964, gage height, 7.19 ft; maximum gage height, 7.87 ft Dec. 23, 1964, log jam; minimum discharge, 0.08 ft³/s Sept. 21, 1977, result of beavers plugging release gate at diversion dam 900 ft upstream.

Combined flow, maximum discharge, 1,020 ft³/s Dec. 23, 1964; minimum daily, 91 ft³/s Nov. 4-6, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 255 ft³/s May 31, gage height, 4.77 ft; minimum discharge, 2.9 ft³/s Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	6.5	6.7	7.0	7.2	7.4	7.8	22	41	6.9	6.7	5.8
2	103	6.2	7.5	7.0	7.2	7.4	7.7	16	65	6.9	9.7	5.8
3	104	5.3	6.9	6.8	7.2	7.7	13	39	75	6.9	11	5.8
4	103	5.9	6.7	7.0	7.2	7.5	16	37	37	6.7	7.3	5.8
5	104	5.9	6.6	6.9	7.2	7.4	13	27	24	6.8	6.4	5.8
6	107	5.8	6.5	6.7	7.2	6.8	8.8	62	19	8.1	6.7	12
7	106	6.1	6.5	6.7	7.2	6.9	29	76	27	98	6.7	77
8	106	6.2	6.6	6.7	7.2	7.0	17	53	29	166	7.5	6.7
9	58	6.1	6.6	6.7	7.2	7.1	20	26	21	166	15	6.6
10	4.5	6.0	7.7	6.7	7.2	7.3	15	29	13	165	12	6.2
11	5.3	6.0	7.2	6.7	7.2	7.5	11	60	13	163	7.6	6.0
12	5.4	6.0	6.9	6.7	7.2	7.7	9.2	85	10	162	6.2	6.0
13	5.4	6.0	6.7	7.0	7.2	7.7	8.8	59	12	161	6.3	6.0
14	5.4	6.0	6.7	7.0	7.2	7.8	8.0	38	18	161	6.3	6.0
15	5.4	6.0	6.9	7.0	7.2	9.3	8.5	35	15	161	6.7	5.9
16	5.4	6.0	6.9	6.9	7.2	26	8.1	38	9.1	160	7.4	6.4
17	5.4	5.9	7.1	6.8	7.2	34	8.2	61	9.6	158	6.6	6.4
18	5.5	6.0	6.8	6.7	7.2	55	8.5	80	11	157	6.0	5.8
19	5.6	6.0	6.7	6.9	7.4	63	7.9	83	13	157	6.0	5.8
20	5.6	6.0	6.7	7.6	7.7	48	7.7	79	20	156	6.1	5.8
21	6.0	28	6.8	6.8	7.7	30	7.8	65	28	156	6.0	6.0
22	6.0	11	6.7	7.6	7.5	21	9.2	51	9.8	172	6.0	6.3
23	5.8	6.8	6.7	7.4	7.4	59	11	56	11	128	6.0	6.7
24	5.8	6.6	6.7	7.4	7.4	44	8.6	70	9.9	6.4	6.0	8.4
25	5.8	6.5	7.1	7.4	7.4	26	9.3	75	9.1	6.0	5.8	7.7
26	5.8	6.5	7.3	7.2	7.4	16	9.7	37	7.4	5.9	6.0	6.3
27	5.8	6.8	7.3	7.2	7.4	11	8.7	29	7.6	6.2	6.5	6.7
28	6.0	6.8	7.2	7.2	7.4	8.6	8.6	22	7.6	6.1	6.3	8.5
29	6.3	6.6	7.2	7.2	---	8.0	14	18	8.7	5.8	6.0	7.5
30	6.7	6.5	7.2	7.2	---	7.5	27	19	7.8	5.8	6.3	6.3
31	5.6	---	7.2	7.2	---	7.5	---	83	---	5.9	6.1	---
TOTAL	1017.5	212.0	214.3	217.3	204.3	577.1	347.1	1530	588.6	2737.4	221.2	268.0
MEAN	32.8	7.07	6.91	7.01	7.30	18.6	11.6	49.4	19.6	88.3	7.14	8.93
MAX	107	28	7.7	7.6	7.7	63	29	85	75	172	15	77
MIN	4.5	5.3	6.5	6.7	7.2	6.8	7.7	16	7.4	5.8	5.8	5.8
AC-FT	2020	421	425	431	405	1140	688	3030	1170	5430	439	532

CAL YR 1992 TOTAL 3147.1 MEAN 8.60 MAX 107 MIN 4.2 AC-FT 6240
WTR YR 1993 TOTAL 8134.8 MEAN 22.3 MAX 172 MIN 4.5 AC-FT 16140

UMPQUA RIVER BASIN

365

14316000 FISH CREEK AT BIG CAMAS RANGER STATION, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°13'50", long 122°26'45", in SE 1/4 sec.10, T.27 S., R.3 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, 0.2 mi upstream from Camas Creek, 0.7 mi east of Big Camas ranger station, 3.2 mi south of town of Toketee Falls, and at mile 4.7.

DRAINAGE AREA.--68.8 mi² (see REMARKS).

PERIOD OF RECORD.--October 1947 to current year. Records since October 1983 are equivalent to earlier records if diversion to Fish Creek power canal is added to flow past station. Prior to October 1952, published as "at Big Camas ranger station."

REVISED RECORDS.--WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,858.52 ft above sea level (levels by Pacific Power & Light Co.). Prior to July 10, 1951, water-stage recorder and July 10 to Aug. 10, 1951, nonrecording gage at site 1,000 ft upstream at datum 13.72 ft higher. Aug. 11 to Nov. 3, 1951, nonrecording gage at site 200 ft downstream at different datum. Nov. 4, 1951, to Sept. 30, 1956, water-stage recorder at present site at datum 1.92 ft higher.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Records given herein do not include flow in Fish Creek power canal (diversion began June 18, 1952), which diverts water 2 mi upstream from station for power generation at Fish Creek powerplant; diversion discharged to North Umpqua River 600 ft downstream from Toketee powerplant.

AVERAGE DISCHARGE.--36 years (1947-83), 237 ft³/s, 46.78 in/yr, 171,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,100 ft³/s Dec. 22, 1964, gage height, 13.9 ft, from floodmark; minimum discharge, 2.3 ft³/s Sept. 25, 1957.

Combined flow, maximum discharge, 12,100 ft³/s Dec. 22, 1964; minimum daily, 19 ft³/s July 30, 1979, result of diversion dam manipulation.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 2,130 ft³/s Mar. 16, gage height, 6.88 ft; minimum discharge, 11 ft³/s Sept. 24, 30.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	309	61	19	27	17	280	312	751	56	26	29
2	17	260	189	17	25	18	313	354	696	54	23	28
3	20	54	101	15	27	39	794	545	584	47	26	27
4	15	22	56	16	35	55	730	511	551	39	29	26
5	13	19	34	18	66	72	572	425	553	33	27	26
6	15	20	25	14	94	114	450	599	527	27	26	25
7	14	49	22	17	92	185	450	539	526	25	25	21
8	14	33	26	17	94	260	515	459	473	26	23	12
9	14	25	25	15	97	309	575	415	421	26	71	12
10	13	17	145	22	90	376	497	468	394	26	105	13
11	13	15	102	16	84	382	407	548	368	24	104	14
12	13	22	49	26	69	323	339	553	316	34	102	13
13	14	22	31	26	50	299	298	513	282	42	100	12
14	13	19	28	45	36	414	259	450	268	39	99	13
15	13	16	26	39	31	942	295	441	256	38	126	13
16	13	14	22	38	26	1760	272	479	237	34	120	17
17	13	15	21	35	24	1820	294	530	231	30	105	17
18	13	17	18	33	24	1980	297	563	232	27	100	14
19	13	20	20	33	40	1450	262	552	237	26	97	14
20	13	17	34	155	55	1030	251	677	231	31	96	13
21	39	137	26	128	41	744	263	621	216	34	26	13
22	23	236	24	142	31	609	272	569	188	88	24	12
23	16	56	25	74	28	1240	270	501	150	123	23	12
24	15	29	23	44	25	921	300	497	126	57	22	12
25	14	23	20	43	22	635	334	612	116	45	27	14
26	14	20	22	48	20	490	351	499	115	38	37	14
27	13	60	35	43	19	399	306	446	106	49	35	13
28	17	58	31	43	18	336	282	434	89	79	34	13
29	38	34	25	40	---	293	312	422	75	78	32	12
30	56	28	21	34	---	255	336	441	64	64	31	13
31	63	---	20	29	---	246	---	665	---	29	30	---
TOTAL	590	1666	1307	1284	1290	18013	11166	15640	9379	1368	1751	487
MEAN	19.0	55.5	42.2	41.4	46.1	581	372	505	313	44.1	56.5	16.2
MAX	63	309	189	155	97	1980	794	677	751	123	126	29
MIN	13	14	18	14	18	17	251	312	64	24	22	12
AC-FT	1170	3300	2590	2550	2560	35730	22150	31020	18600	2710	3470	966
CFSM	.28	.81	.61	.60	.67	8.45	5.41	7.33	4.54	.64	.82	.24
IN.	.32	.90	.71	.69	.70	9.74	6.04	8.46	5.07	.74	.95	.26

CAL YR 1992 TOTAL 16974 MEAN 46.4 MAX 667 MIN 11 AC-FT 33670 CFSM .67 IN. 9.18
WTR YR 1993 TOTAL 63941 MEAN 175 MAX 1980 MIN 12 AC-FT 126800 CFSM 2.55 IN. 34.57

UMPQUA RIVER BASIN

367

14316700 STEAMBOAT CREEK NEAR GLIDE, OR

LOCATION.--Lat 43°21'00", long 122°43'40", in N 1/2 sec.32, T.25-1/2 S., R.1 E., Douglas County, Hydrologic Unit 17100301, in Umpqua National Forest, on right bank in Canton Creek Forest Service Park, 200 ft downstream from Canton Creek, 19 mi northeast of Glide, and at mile 0.5.

DRAINAGE AREA.--227 mi².

PERIOD OF RECORD.--Annual maximum, water year 1956, June 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,128.55 ft above sea level (levels by Federal Highway Administration). October 1955 to June 1956, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records excellent. No regulation or diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--37 years, 719 ft³/s, 43.01 in/yr, 520,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s Dec. 22, 1964, gage height, 25.6 ft, from floodmark, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at 17.96 ft; minimum discharge, 30 ft³/s Sept. 15-17, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	0700	*8,300	*9.36	No other peak greater than base discharge.			
Minimum discharge, 33 ft ³ /s Oct. 14-17, 19, 20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	1490	851	952	1220	641	803	918	2020	186	118	65
2	38	1560	2630	753	1130	796	1350	852	2060	182	113	64
3	44	473	1800	619	1410	1830	4710	1410	1860	179	109	63
4	55	258	986	596	1710	2200	4220	2060	1470	171	103	61
5	47	222	675	551	2340	2260	2770	1480	1520	164	99	60
6	41	169	517	478	2260	2310	2020	1590	1530	158	97	60
7	38	293	486	453	1860	2370	1880	1760	1480	153	97	59
8	36	494	1340	453	1790	2180	1950	2190	1320	149	93	58
9	35	677	2350	428	1800	1970	2930	1860	1040	144	91	56
10	34	460	4010	389	1580	1950	3820	1430	877	139	88	55
11	34	277	2560	358	1300	1860	3240	1210	792	135	86	53
12	34	215	1460	336	1480	1450	2420	1020	820	131	84	53
13	34	205	1060	331	1370	1260	1880	883	708	128	83	52
14	33	185	856	436	1100	1450	1640	757	605	129	82	51
15	33	159	974	608	924	3600	1520	660	533	133	125	50
16	33	140	824	585	767	6110	1340	626	476	133	149	54
17	33	129	809	555	655	6690	1340	621	428	124	112	80
18	34	130	651	541	599	7330	2280	612	392	121	98	63
19	33	268	548	554	974	4310	2190	582	363	118	92	57
20	33	363	1450	3990	1520	2920	1630	710	338	117	107	54
21	79	2140	1960	3300	1090	2190	1320	614	317	119	105	53
22	85	3970	1600	3740	909	1780	1220	602	305	232	93	52
23	55	1730	1090	2160	896	5100	1460	528	282	589	86	51
24	45	893	941	1440	781	3620	2130	501	256	290	84	50
25	41	574	828	1680	662	2230	1920	700	240	208	80	49
26	40	459	768	1780	596	1610	1750	777	229	176	77	49
27	37	782	1260	1630	564	1240	1460	676	219	159	75	48
28	40	1220	1690	1670	566	1010	1190	604	211	147	73	47
29	64	761	1390	1670	---	871	1080	609	201	145	71	46
30	313	618	984	1400	---	776	1060	600	192	132	70	45
31	527	---	902	1290	---	730	---	1750	---	124	68	---
TOTAL	2063	21314	40250	35726	33853	76644	60523	31192	23084	5215	2908	1658
MEAN	66.5	710	1298	1152	1209	2472	2017	1006	769	168	93.8	55.3
MAX	527	3970	4010	3990	2340	7330	4710	2190	2060	589	149	80
MIN	33	129	486	331	564	641	803	501	192	117	68	45
AC-FT	4090	42280	79840	70860	67150	152000	120000	61870	45790	10340	5770	3290
CFSM	.29	3.13	5.72	5.08	5.33	10.9	8.89	4.43	3.39	.74	.41	.24
IN.	.34	3.49	6.60	5.85	5.55	12.56	9.92	5.11	3.78	.85	.48	.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1993, BY WATER YEAR (WY)

MEAN	167	893	1446	1466	1384	1273	979	620	278	97.4	60.7	67.6
MAX	536	2887	5391	3415	3195	2774	2017	1337	780	193	158	260
(WY)	1957	1974	1965	1970	1986	1972	1993	1963	1984	1983	1976	1986
MIN	31.5	76.8	62.5	108	142	211	287	165	87.5	56.6	36.4	35.9
(WY)	1988	1977	1977	1977	1977	1992	1968	1992	1992	1973	1992	1987

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1957 - 1993

	1992	1993	1957-1993
ANNUAL TOTAL	150229	334430	
ANNUAL MEAN	410	916	725
HIGHEST ANNUAL MEAN			1253
LOWEST ANNUAL MEAN			239
HIGHEST DAILY MEAN	4010	7330	33000
LOWEST DAILY MEAN	31	33	30
ANNUAL SEVEN-DAY MINIMUM	31	33	31
ANNUAL RUNOFF (AC-FT)	298000	663300	524900
ANNUAL RUNOFF (CFSM)	1.81	4.04	3.19
ANNUAL RUNOFF (INCHES)	24.62	54.81	43.37
10 PERCENT EXCEEDS	1100	2150	1710
50 PERCENT EXCEEDS	156	599	334
90 PERCENT EXCEEDS	34	53	48

UMPQUA RIVER BASIN

14316800 NORTH UMPQUA RIVER BELOW STEAMBOAT CREEK, NEAR GLIDE, OR

LOCATION.--Lat 43°19'18", long 122°48'30", in SW 1/4 NW 1/4 sec.10, T.26 S., R.1 W., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank, about 4.0 mi downstream from Steamboat Creek, 12 mi northeast of Glide, and at mile 48.1.

DRAINAGE AREA.--865 mi².

PERIOD OF RECORD.--September, 1993.

REMARKS.--Unpublished records of daily discharge are available in files of Public Works Department, Douglas County Natural Resources Division.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	PH WATER WHOLE LAB (STAND- ARD UNITS)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	
SEP 1993 07... 07...	1430 1730	15.0 ---	738 ---	67 ---	9.7 ---	8.1 ---	6.8 ---	0.010 ---	<0.010 ---	<0.20 ---	<0.050 ---	
DATE		PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP 1993 07... 07...		0.050 ---	0.050 ---	0.030 ---	0.7 ---	0.3 ---	5.5 ---	2.0 ---	4.8 ---	5.1 ---	1.8 ---	1.5 ---
DATE		FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP 1993 07... 07...		<0.10 ---	25 ---	1 ---	3 ---	<1 ---	<1.0 ---	<1 ---	<1 ---	<1 ---	10 ---	<1 ---
DATE		MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	ANTI- MONY, DIS- SOLVED (UG/L AS SB)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
SEP 1993 07... 07...		<1 ---	<1 ---	<1 ---	<1.0 ---	7 ---	<1 ---	7 ---	<1 ---	<1.0 ---	29 ---	<1.0 ---
DATE		ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
SEP 1993 07... 07...		<0.1 ---	<0.1 ---	<1.0 ---	<0.1 ---	<0.1 ---	<0.1 ---	<0.1 ---	<0.1 ---	<0.1 ---	<10 ---	
DATE		HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	MERCURY DIS- SOLVED (UG/L AS HG)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM)	ALKA- LINITY LAB (MG/L AS CACO3)	
SEP 1993 07... 07...		<0.1 ---	<0.1 ---	<0.1 ---	<1 ---	<0.1 ---	62 ---	<0.1 ---	<1.00 ---	67 ---	30 ---	

UMPQUA RIVER BASIN

369

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR.

LOCATION (REVISED).--Lat 43°19'51", long 123°00'07", near line between SE 1/4 SW 1/4 sec.1, T.26 S., R.3 W., Douglas County, Hydrologic Unit 17100301, on right bank, 0.1 mi upstream from Rock Creek, 5.1 mi northeast of Glide, and at mile 35.8.

DRAINAGE AREA.--886 mi².

PERIOD OF RECORD.--November 1992 to September 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1992 to September 1993.

pH: November 1992 to September 1993.

WATER TEMPERATURE: November 1992 to September 1993.

DISSOLVED OXYGEN: November 1992 to September 1993.

INSTRUMENTATION.--Water-quality monitor and data logger since November 1992.

EXTREMES FOR PERIOD NOVEMBER 1992 TO SEPTEMBER 1993.--

SPECIFIC CONDUCTANCE: Maximum recorded, 65 microsiemens several days in November; minimum recorded,

36 microsiemens Apr. 2.

pH: Maximum, 8.5 units Sept. 15; minimum recorded, 6.9 units May 24.

WATER TEMPERATURE: Maximum, 19.5°C Aug. 3, 4; minimum recorded, 1.0°C Feb. 17.

DISSOLVED OXYGEN: Maximum recorded, 13.7 mg/L Jan. 11, 14, 15; minimum, 8.0 mg/L Aug. 3.

WATER-QUALITY DATA

DATE	TIME	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM HG)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	PH WATER WHOLE LAB (STAND- ARD UNITS)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	
SEP 1993 08... 08...	1100 1354	-- 16.5	-- 743	-- 66	-- 9.9	-- 7.9	-- 7.3	-- 0.030	-- <0.010	-- <0.20	-- <0.050	
DATE		PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)	
SEP 1993 08... 08...	-- 0.040	-- 0.050	-- 0.028	-- 0.9	-- 0.3	-- 5.4	-- 1.9	-- 4.7	-- 1.0	-- 1.8	-- 1.5	
DATE		FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP 1993 08... 08...	-- 0.10	-- 25	-- 1	-- 3	-- <1	-- <1.0	-- <1	-- <1	-- <1	-- 10	-- <1	
DATE		MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	ANTI- MONY, DIS- SOLVED (UG/L AS SB)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
SEP 1993 08... 08...	-- 2	-- <1	-- <1	-- <1.0	-- 1	-- <1	-- 4	-- <1	-- <1.0	-- <1.0		
DATE		ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
SEP 1993 08... 08...	-- <0.1	-- <0.1	-- <1.0	-- <0.1	-- <0.1	-- <0.1	-- <0.1	-- <0.1	-- <0.1	-- <0.1	-- <10	
DATE		HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	MERCURY DIS- SOLVED (UG/L AS HG)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM)	ALKA- LITY LAB (MG/L AS CACO3)	
SEP 1993 08... 08...	-- <0.1	-- <0.1	-- <0.1	-- <1	-- <0.1	-- 60	-- <0.1	-- <1.00	-- 67	-- 30	--	

UMPQUA RIVER BASIN

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	54	53	53	50	50	50
2	---	---	---	---	---	---	53	46	49	52	50	51
3	---	---	---	---	---	---	48	46	47	54	52	53
4	---	---	---	---	---	---	50	48	49	54	53	53
5	---	---	---	63	62	63	52	50	51	53	52	53
6	---	---	---	65	63	63	53	52	53	55	53	54
7	---	---	---	65	64	65	54	51	52	55	54	55
8	---	---	---	65	60	63	53	45	51	54	54	54
9	---	---	---	60	59	60	47	42	44	55	54	55
10	---	---	---	61	60	61	47	37	43	56	54	55
11	---	---	---	63	61	62	41	39	40	57	56	56
12	---	---	---	64	62	63	44	41	42	57	56	56
13	---	---	---	64	63	63	46	43	44	57	56	57
14	---	---	---	64	62	63	46	44	46	56	55	56
15	---	---	---	64	63	63	49	46	48	55	53	54
16	---	---	---	65	63	64	50	49	49	54	53	54
17	---	---	---	64	63	64	50	49	49	55	53	54
18	---	---	---	65	64	64	52	50	51	55	54	55
19	---	---	---	65	61	63	53	52	52	55	54	55
20	---	---	---	64	62	64	53	46	50	54	---	---
21	---	---	---	64	48	61	46	45	46	---	---	---
22	---	---	---	48	41	44	48	46	47	---	---	---
23	---	---	---	51	48	49	50	48	49	---	---	---
24	---	---	---	54	51	52	51	50	51	---	---	---
25	---	---	---	57	53	54	51	50	51	---	---	---
26	---	---	---	57	56	57	52	51	51	---	---	---
27	---	---	---	57	52	56	51	47	49	---	---	---
28	---	---	---	52	48	49	48	46	47	---	---	---
29	---	---	---	52	49	51	48	47	47	---	---	---
30	---	---	---	54	52	53	50	48	49	---	---	---
31	---	---	---	---	---	---	50	49	50	---	---	---
MONTH	---	---	---	---	---	---	54	37	48	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	51	50	51	43	38	38	46	44	45
2	---	---	---	53	49	51	38	36	37	52	45	47
3	---	---	---	49	44	47	---	---	---	43	40	42
4	---	---	---	44	42	43	---	---	---	46	37	40
5	---	---	---	43	41	42	---	---	---	43	40	41
6	---	---	---	43	41	42	---	---	---	43	40	42
7	---	---	---	42	40	41	---	---	---	40	39	40
8	---	---	---	42	40	41	---	---	---	42	40	41
9	---	---	---	41	40	40	---	---	---	---	---	---
10	---	---	---	41	40	40	---	---	---	---	---	---
11	---	---	---	40	39	40	---	---	---	---	---	---
12	44	41	42	42	40	41	---	---	---	---	---	---
13	44	42	43	43	42	43	---	---	---	---	---	---
14	47	44	45	43	41	43	---	---	---	---	---	---
15	49	46	47	41	33	38	---	---	---	---	---	---
16	49	46	47	---	---	---	---	---	---	---	---	---
17	50	47	49	---	---	---	---	---	---	---	---	---
18	50	48	49	---	---	---	---	---	---	---	---	---
19	49	44	48	---	---	---	---	---	---	---	---	---
20	44	40	42	---	---	---	---	---	---	---	---	---
21	44	42	43	---	---	---	52	43	45	---	---	---
22	47	44	46	---	---	---	45	43	44	---	---	---
23	48	46	47	---	---	---	45	42	43	---	---	---
24	51	47	49	---	---	---	43	41	42	---	---	---
25	53	48	50	---	---	---	47	41	43	---	---	---
26	53	49	51	---	---	---	45	43	44	43	40	42
27	---	---	---	---	---	---	45	42	43	43	42	43
28	54	49	51	---	---	---	47	44	46	44	42	43
29	---	---	---	---	---	---	50	46	48	43	42	43
30	---	---	---	---	---	---	48	44	45	44	42	43
31	---	---	---	---	---	---	---	---	---	44	42	43
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

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SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

UMPQUA RIVER BASIN

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	7.5	7.4	---	---	7.6	7.5
2	---	---	---	---	---	---	7.6	7.4	---	---	7.6	7.4
3	---	---	---	---	---	---	7.6	7.4	---	---	7.5	7.4
4	---	---	---	---	---	---	7.6	7.5	---	---	7.5	7.4
5	---	---	7.9	7.5	---	---	7.6	7.5	---	---	7.4	7.4
6	---	---	7.8	7.6	---	---	7.6	7.5	---	---	7.4	7.4
7	---	---	7.9	7.6	---	---	7.6	7.5	---	---	7.5	7.4
8	---	---	7.7	7.5	---	---	7.6	7.5	---	---	7.5	7.4
9	---	---	7.8	7.5	---	---	7.6	7.4	---	---	7.5	7.3
10	---	---	7.8	7.5	---	---	7.6	7.5	---	---	7.5	7.3
11	---	---	7.7	7.5	---	---	7.6	7.5	---	---	7.5	7.3
12	---	---	7.8	7.5	---	---	7.6	7.5	7.5	7.4	7.5	7.4
13	---	---	7.8	7.5	---	---	7.6	7.5	7.5	7.4	7.5	7.4
14	---	---	7.8	7.5	---	---	7.6	7.5	7.5	7.4	7.6	7.4
15	---	---	7.8	7.4	---	---	7.6	7.5	7.6	7.4	7.4	7.2
16	---	---	7.7	7.4	7.5	7.4	7.6	7.5	7.6	7.5	---	---
17	---	---	7.7	7.4	7.5	7.4	7.6	7.5	7.6	7.5	---	---
18	---	---	---	---	7.5	7.4	7.6	7.5	7.6	7.5	---	---
19	---	---	---	---	7.6	7.4	7.5	7.4	7.5	7.4	---	---
20	---	---	---	---	7.5	7.3	---	---	7.5	7.4	---	---
21	---	---	---	---	7.4	7.3	---	---	7.5	7.4	---	---
22	---	---	---	---	7.5	7.4	---	---	7.5	7.4	---	---
23	---	---	---	---	7.5	7.4	---	---	7.5	7.4	---	---
24	---	---	---	---	7.6	7.4	---	---	7.6	7.4	---	---
25	---	---	---	---	7.6	7.5	---	---	7.6	7.1	---	---
26	---	---	---	---	7.6	7.4	---	---	7.6	7.5	---	---
27	---	---	---	---	7.5	7.4	---	---	7.6	7.5	---	---
28	---	---	---	---	7.5	7.4	---	---	7.6	7.5	---	---
29	---	---	---	---	7.5	7.4	---	---	---	---	---	---
30	---	---	---	---	7.6	7.4	---	---	---	---	---	---
31	---	---	---	---	7.5	7.4	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	7.4	7.4	7.3	7.4	7.3	8.0	7.5	8.2	7.5	8.2	7.6
2	7.5	7.3	7.4	7.3	7.5	7.3	8.0	7.6	8.2	7.5	8.2	7.6
3	7.5	7.3	7.5	7.3	7.5	7.4	8.0	7.6	8.3	7.5	8.3	7.6
4	---	---	7.4	7.3	7.5	7.2	8.0	7.5	8.2	7.4	8.3	7.6
5	---	---	7.4	7.3	7.5	7.4	8.0	7.5	8.2	7.4	8.4	7.6
6	---	---	7.4	7.3	7.5	7.4	8.0	7.5	8.2	7.4	8.4	7.6
7	---	---	7.4	7.3	7.5	7.4	8.1	7.5	8.3	7.5	8.3	7.6
8	---	---	7.4	7.3	7.4	7.4	8.0	7.6	8.1	7.5	8.2	7.6
9	---	---	7.5	7.3	7.5	7.3	8.1	7.5	8.2	7.4	8.3	7.6
10	---	---	7.5	7.4	7.6	7.4	8.0	7.6	8.3	7.5	8.3	7.6
11	---	---	7.5	7.4	7.6	7.4	8.0	7.5	8.3	7.5	8.4	7.7
12	---	---	7.5	7.4	7.6	7.4	8.1	7.4	8.3	7.5	8.3	7.7
13	---	---	7.5	7.4	7.6	7.4	8.1	7.4	8.4	7.5	8.3	7.7
14	---	---	7.5	7.4	7.6	7.4	8.0	7.5	8.3	7.5	8.3	7.7
15	---	---	7.6	7.4	7.7	7.4	8.1	7.5	8.0	7.5	8.5	7.7
16	---	---	7.5	7.4	7.6	7.4	8.0	7.5	8.2	7.5	8.4	7.7
17	---	---	7.4	7.3	7.6	7.4	8.3	7.6	8.2	7.5	8.3	7.7
18	---	---	7.4	7.3	7.6	7.4	8.2	7.7	8.1	7.4	8.3	7.7
19	---	---	7.4	7.3	7.7	7.4	8.1	7.6	7.9	7.4	8.3	7.6
20	---	---	7.4	7.3	7.7	7.4	8.4	7.7	7.7	7.5	8.1	7.6
21	7.5	7.3	7.5	7.3	7.7	7.4	8.0	7.5	8.2	7.5	8.1	7.6
22	7.5	7.4	7.4	7.3	7.7	7.3	7.8	7.6	8.1	7.5	8.1	7.6
23	7.5	7.4	7.5	7.3	7.7	7.4	8.0	7.6	8.3	7.5	8.0	7.6
24	7.5	7.4	7.4	6.9	7.7	7.4	8.1	7.3	8.2	7.6	8.0	7.6
25	7.5	7.3	7.4	7.0	7.7	7.4	8.1	7.5	8.2	7.5	8.0	7.6
26	7.4	7.3	7.4	7.3	7.9	7.4	8.1	7.5	8.1	7.6	8.0	7.6
27	7.4	7.3	7.5	7.3	8.0	7.5	8.2	7.5	8.1	7.5	8.1	7.6
28	7.4	7.3	7.5	7.3	7.8	7.5	8.2	7.5	8.3	7.6	8.1	7.6
29	7.4	7.3	7.5	7.3	7.8	7.4	8.3	7.4	8.3	7.6	8.0	7.6
30	7.4	7.3	7.5	7.3	7.9	7.4	8.2	7.5	8.3	7.6	8.0	7.6
31	---	---	7.4	7.2	---	---	8.2	7.6	8.3	7.6	---	---
MONTH	---	---	7.6	6.9	8.0	7.2	8.4	7.3	8.4	7.4	8.5	7.6

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1				---	---	---	7.0	6.0	6.5	5.0	5.0	5.0
2				---	---	---	9.0	7.0	8.5	5.0	4.0	4.5
3				---	---	---	8.5	5.5	7.0	4.5	4.0	4.0
4				---	---	---	5.5	3.0	4.0	4.5	3.0	3.5
5				9.0	8.5	8.5	3.0	2.5	3.0	3.0	2.5	3.0
6				9.0	8.0	8.5	4.5	3.0	3.5	3.0	2.5	3.0
7				9.0	8.5	9.0	5.0	4.5	4.5	3.5	3.0	3.0
8				9.5	8.5	9.0	6.0	5.0	5.0	3.5	3.0	3.5
9				8.5	7.0	8.0	7.0	6.0	7.0	3.5	3.0	3.5
10				7.0	5.0	6.0	8.5	7.0	8.0	3.0	2.0	2.5
11				5.0	4.0	4.5	8.0	5.0	6.0	2.5	2.0	2.0
12				6.5	4.5	5.5	7.0	5.5	6.0	2.5	2.0	2.5
13				6.0	5.0	5.5	---	---	---	3.0	2.0	2.5
14				6.0	5.0	5.5	---	---	---	4.0	3.0	3.5
15				6.0	5.0	5.5	---	---	---	4.0	3.5	4.0
16				6.5	5.0	5.5	5.5	4.5	5.0	4.5	4.0	4.5
17				7.0	6.0	6.5	4.5	3.5	3.5	4.0	4.0	4.0
18				7.5	7.0	7.0	4.5	3.5	4.0	4.0	3.0	3.5
19				7.5	6.5	7.0	4.0	3.5	4.0	4.5	3.5	4.0
20				6.5	6.0	6.5	6.0	4.0	4.5	---	---	---
21				8.0	6.0	6.5	7.0	6.0	6.5	---	---	---
22				8.5	8.0	8.5	7.0	7.0	7.0	---	---	---
23				8.0	6.5	7.5	7.0	5.5	6.0	---	---	---
24				6.5	5.0	5.5	6.0	5.5	5.5	---	---	---
25				6.0	5.5	5.5	5.5	4.0	4.5	---	---	---
26				6.0	5.0	5.5	5.0	4.0	4.5	---	---	---
27				7.5	6.0	7.0	5.5	5.0	5.0	---	---	---
28				8.0	7.5	7.5	6.5	5.5	6.0	---	---	---
29				7.5	5.5	6.0	6.5	5.5	6.0	---	---	---
30				6.0	5.5	5.5	5.5	4.5	5.0	---	---	---
31				---	---	---	5.0	4.5	4.5	---	---	---
MONTH				---	---	---	---	---	---			---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	4.0	3.0	3.5	7.5	7.0	7.0	9.5	8.5	9.0
2	---	---	---	6.0	4.0	5.0	7.0	6.5	7.0	---	---	---
3	---	---	---	7.0	5.5	6.5	---	---	---	---	---	---
4	---	---	---	7.0	6.5	6.5	---	---	---	---	---	---
5	---	---	---	7.5	6.5	7.0	---	---	---	9.0	7.5	8.5
6	---	---	---	8.0	6.5	7.5	---	---	---	9.5	8.5	9.0
7	---	---	---	8.0	6.5	7.5	---	---	---	8.5	7.5	7.5
8	---	---	---	8.5	7.0	7.5	---	---	---	10.5	7.5	8.5
9	---	---	---	8.5	7.5	7.5	---	---	---	---	---	---
10	---	---	---	8.0	7.5	7.5	---	---	---	---	---	---
11	6.0	---	---	8.0	7.0	7.5	---	---	---	---	---	---
12	6.0	5.5	6.0	7.5	6.5	7.0	---	---	---	---	---	---
13	6.0	5.5	5.5	8.0	7.0	7.5	---	---	---	---	---	---
14	5.5	5.0	5.5	8.5	7.5	8.0	---	---	---	---	---	---
15	5.0	4.5	5.0	8.0	7.5	7.5	---	---	---	---	---	---
16	4.5	1.5	2.5	---	7.0	---	---	---	---	---	---	---
17	2.0	1.0	1.5	---	---	---	---	---	---	12.5	---	---
18	3.5	2.0	2.5	---	---	---	---	---	---	12.5	10.5	11.5
19	4.0	3.5	4.0	---	---	---	---	---	---	12.0	10.5	11.5
20	4.5	3.5	4.0	---	---	---	8.0	---	---	11.0	10.0	10.5
21	4.0	2.5	3.0	---	---	---	8.5	7.5	8.0	10.0	9.5	10.0
22	4.0	2.0	3.0	---	---	---	8.5	7.5	8.0	11.5	9.0	10.5
23	4.5	3.5	4.0	---	---	---	7.5	7.0	7.0	12.5	10.0	11.5
24	5.0	4.0	4.5	---	---	---	8.0	7.0	7.5	12.5	11.0	12.0
25	4.5	3.0	4.0	---	---	---	8.0	7.5	8.0	11.5	10.0	11.0
26	3.5	2.5	3.0	---	---	---	8.0	7.0	7.5	11.0	9.5	10.5
27	---	---	---	---	---	---	9.5	7.0	8.5	11.0	10.0	10.5
28	3.5	2.0	3.0	---	---	---	9.0	8.0	8.5	10.5	10.0	10.5
29	---	---	---	---	---	---	---	8.5	9.5	11.5	9.5	10.5
30	---	---	---	---	---	---	10.0	8.5	9.5	11.5	11.0	11.0
31	---	---	---	---	---	---	---	---	---	11.0	10.5	10.5
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

UMPQUA RIVER BASIN

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE		JULY				AUGUST			SEPTEMBER	
1	10.5	10.0	10.0	16.0	13.0	14.5	18.0	15.5	16.5	16.5	14.0	14.5
2	10.5	9.5	10.0	16.0	14.5	15.0	19.0	17.0	18.0	16.5	14.0	15.0
3	11.0	9.5	---	15.5	14.0	15.0	19.5	17.5	18.5	16.5	14.0	15.0
4	11.0	---	---	16.0	14.0	15.0	19.5	17.5	18.5	17.0	14.5	15.5
5	11.5	10.0	10.5	16.0	14.5	15.5	19.0	18.0	18.5	16.5	14.5	15.5
6	11.0	10.0	10.0	16.5	14.5	15.5	18.0	16.5	17.5	17.0	14.5	15.5
7	11.0	9.5	10.5	16.5	14.5	15.5	17.0	16.0	16.5	17.5	15.0	16.0
8	11.5	10.0	---	16.5	15.0	16.0	18.0	16.0	17.0	17.5	15.5	16.0
9	11.0	9.5	10.0	16.5	15.0	16.0	18.0	16.5	17.0	17.5	15.0	16.0
10	12.0	10.0	11.0	17.0	15.0	16.0	17.5	16.0	16.5	17.0	15.0	16.0
11	11.5	10.0	10.5	16.0	14.5	15.5	18.0	16.0	16.5	16.0	14.5	15.0
12	11.5	8.5	10.0	16.0	14.5	15.0	18.5	16.0	17.0	15.5	13.5	14.5
13	12.5	9.5	11.0	15.0	13.5	14.5	17.5	16.0	16.5	14.5	12.5	13.5
14	14.0	11.0	12.5	15.5	13.5	14.5	16.5	15.0	16.0	13.5	12.0	12.5
15	13.5	12.0	12.5	15.0	14.0	14.5	15.0	14.0	14.5	13.5	12.0	12.5
16	14.0	11.5	13.0	15.5	13.5	14.5	14.5	13.5	14.0	14.0	12.0	12.5
17	15.5	12.0	14.0	15.5	14.5	15.0	15.0	13.0	14.0	14.0	12.0	12.5
18	16.5	13.0	14.5	16.0	14.0	15.0	16.5	14.0	15.0	13.0	11.5	12.0
19	16.5	13.5	15.0	15.5	14.5	15.0	16.0	14.0	15.5	12.5	11.0	11.5
20	16.5	14.0	15.5	15.5	14.5	15.0	15.0	14.0	14.5	12.5	10.5	11.0
21	16.5	13.0	14.0	14.5	13.5	14.0	15.5	14.0	14.5	11.5	9.5	10.5
22	13.0	11.5	12.0	14.0	13.0	13.5	16.5	14.5	15.5	11.5	9.0	10.0
23	13.5	10.0	12.0	14.0	12.5	13.5	16.0	14.5	15.5	11.5	9.0	10.0
24	14.5	11.0	13.0	15.5	13.5	14.5	16.0	14.0	14.5	11.5	9.0	10.0
25	16.0	12.5	14.5	15.5	14.5	15.0	15.0	13.0	13.5	11.5	9.0	10.0
26	16.5	14.0	15.5	16.0	14.0	15.0	14.5	12.5	13.0	12.5	9.5	11.0
27	16.5	14.0	15.0	17.0	15.0	16.0	15.0	12.5	13.5	12.5	10.5	11.0
28	15.0	13.0	14.0	17.0	15.5	16.5	15.5	13.5	14.0	13.0	10.5	11.5
29	15.0	12.0	13.5	17.0	15.5	16.0	15.5	13.0	14.0	13.0	11.0	12.0
30	15.0	11.5	13.5	17.0	15.0	16.0	16.0	13.5	14.5	13.0	11.0	11.5
31	---	---	---	17.0	15.0	16.0	16.0	13.5	14.5	---	---	---
MONTH	16.5	---	---	17.0	12.5	15.0	19.5	12.5	15.5	17.5	9.0	13.0

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

UMPQUA RIVER BASIN

375

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	13.1	12.3	12.8	---	---	---	12.0	10.8	11.6
2	---	---	---	12.7	11.9	12.3	---	---	---	---	---	---
3	---	---	---	12.1	11.3	11.8	---	---	---	---	---	---
4	---	---	---	11.9	11.5	11.7	---	---	---	---	---	---
5	---	---	---	12.0	11.2	11.7	---	---	---	11.6	10.7	11.2
6	---	---	---	11.8	11.2	11.5	---	---	---	11.0	10.7	10.8
7	---	---	---	11.5	10.9	11.3	---	---	---	11.2	10.8	11.0
8	---	---	---	11.7	11.2	11.4	---	---	---	11.2	9.7	10.7
9	---	---	---	11.7	11.2	11.5	---	---	---	---	---	---
10	---	---	---	11.5	11.1	11.3	---	---	---	---	---	---
11	---	---	---	11.8	11.2	11.5	---	---	---	---	---	---
12	12.5	12.0	12.4	12.0	11.3	11.6	---	---	---	---	---	---
13	12.6	12.0	12.3	11.6	11.0	11.4	---	---	---	---	---	---
14	12.5	12.1	12.3	11.4	11.0	11.2	---	---	---	---	---	---
15	12.5	12.1	12.3	12.0	11.1	11.5	---	---	---	---	---	---
16	13.0	12.3	12.7	---	---	---	---	---	---	---	---	---
17	13.3	12.7	13.0	---	---	---	---	---	---	11.5	---	---
18	12.9	12.1	12.5	---	---	---	---	---	---	10.8	10.0	10.4
19	12.2	11.6	11.9	---	---	---	---	---	---	10.6	10.0	10.3
20	12.4	11.6	12.1	---	---	---	---	---	---	10.6	10.2	10.4
21	13.5	12.0	12.8	---	---	---	12.0	---	---	10.7	10.2	10.5
22	13.6	12.4	13.0	---	---	---	11.7	11.1	11.4	10.7	10.0	10.4
23	13.0	12.2	12.5	---	---	---	11.9	11.2	11.6	10.5	9.8	10.2
24	12.8	12.1	12.5	---	---	---	12.1	11.5	11.8	10.2	9.9	10.0
25	13.1	12.2	12.6	---	---	---	12.4	11.6	12.0	11.0	10.0	10.4
26	12.7	12.1	12.4	---	---	---	12.5	11.8	12.2	10.5	10.0	10.3
27	13.1	---	---	---	---	---	12.5	11.5	12.1	10.3	10.0	10.1
28	13.4	12.9	13.1	---	---	---	12.3	11.5	12.0	10.2	10.0	10.1
29	---	---	---	---	---	---	12.3	11.3	11.8	10.3	9.5	10.0
30	---	---	---	---	---	---	12.1	11.3	11.7	9.7	9.5	9.6
31	---	---	---	---	---	---	---	---	---	9.9	9.5	9.7
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.0	9.5	9.8	11.0	9.8	10.4	8.9	8.4	8.7	9.3	9.0	9.2
2	10.3	9.5	10.0	10.4	9.7	10.1	8.5	8.1	8.4	9.6	9.2	9.4
3	10.4	---	---	10.3	9.5	10.0	8.4	8.0	8.2	9.8	9.1	9.4
4	10.8	---	---	10.2	9.5	9.7	8.5	8.3	8.4	9.8	9.1	9.4
5	9.8	9.4	9.6	10.2	9.5	9.8	8.9	8.4	8.7	9.5	9.1	9.3
6	9.8	8.5	9.3	9.9	9.4	9.7	9.4	8.5	9.0	9.4	9.0	9.2
7	9.3	8.5	9.0	10.2	9.4	9.8	9.7	9.0	9.4	9.4	9.1	9.3
8	---	---	---	10.0	9.5	9.8	9.4	9.1	9.3	9.4	9.1	9.4
9	10.0	9.3	9.6	9.7	9.4	9.6	9.3	8.7	9.1	9.5	9.2	9.4
10	9.7	9.2	9.5	9.7	9.2	9.5	9.3	8.8	9.0	9.7	9.2	9.4
11	9.9	9.1	9.4	10.1	9.4	9.8	9.3	8.8	9.1	9.7	9.3	9.5
12	10.3	9.5	9.9	10.0	9.6	9.8	9.7	9.0	9.3	10.0	9.5	9.7
13	10.9	---	---	10.3	9.8	10.1	9.5	9.2	9.3	10.1	9.6	9.9
14	---	---	---	10.3	---	---	9.5	9.2	9.4	10.3	9.7	10.1
15	---	---	---	---	---	---	9.7	9.3	9.4	10.4	9.9	10.2
16	---	---	---	10.7	---	---	9.9	9.4	9.6	10.5	9.7	10.1
17	---	---	---	10.1	9.2	9.7	9.8	9.3	9.5	10.3	9.8	10.0
18	---	---	---	10.1	8.9	9.7	9.4	8.7	9.1	10.5	9.9	10.2
19	---	---	---	10.0	9.5	9.8	9.2	8.6	8.8	10.6	10.1	10.3
20	---	---	---	9.8	9.5	9.6	9.1	---	---	10.7	10.3	10.5
21	---	---	---	10.0	9.5	9.7	9.3	8.7	9.0	11.2	10.6	10.8
22	---	---	---	10.0	9.2	9.7	9.0	8.5	8.8	11.3	10.7	11.0
23	---	---	---	---	8.9	9.7	9.0	8.4	8.7	11.3	10.7	11.0
24	---	---	---	9.4	8.7	9.1	9.2	8.6	8.9	11.4	11.1	11.2
25	---	---	---	9.4	8.8	9.2	9.4	9.0	9.2	11.3	10.8	11.1
26	---	---	---	9.4	8.9	9.1	9.6	9.2	9.4	11.2	10.5	10.9
27	---	---	---	9.2	8.7	8.9	9.5	9.0	9.3	11.1	10.6	10.9
28	---	---	---	9.0	8.6	8.8	9.3	8.8	9.1	11.1	10.6	10.8
29	11.1	10.0	10.5	9.1	8.6	8.9	9.5	8.9	9.1	11.1	10.7	10.9
30	11.0	10.1	10.5	9.2	8.8	8.9	9.4	8.9	9.1	11.2	10.8	11.0
31	---	---	---	9.1	8.7	8.8	9.4	8.9	9.1	---	---	---
MONTH	---	---	---	---	---	---	9.9	---	---	11.4	9.0	10.1

UMPQUA RIVER BASIN

14319500 NORTH UMPQUA RIVER AT WINCHESTER, OR

LOCATION.--Lat 43°16'20", long 123°24'40", in NW 1/4 NE 1/4 sec.33, T.26 S., R.6 W., Douglas County, Hydrologic Unit 17100301, on left bank 400 ft downstream from county bridge, 3.0 mi west of Winchester, and at mile 1.8.

DRAINAGE AREA.--1,344 mi².

PERIOD OF RECORD.--October 1908 to December 1913, October 1923 to September 1929, August 1954 to current year. Prior to December 1908, monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1448: 1909-12, drainage area. WDR OR-65-1: 1954(M). WDR OR-72-1: 1965(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.97 ft above sea level (Douglas County Road Department bench mark). Oct. 1, 1908, to Dec. 31, 1913, and Oct. 1, 1923, to Sept. 30, 1929, nonrecording gage at site 4.8 mi upstream at different datums. Aug. 27, 1954, to Aug. 12, 1965, water-stage recorder on right bank at same datum.

REMARKS.--Records good. Occasional regulation caused by upstream powerplants; slight regulation by Lemolo Lake and Diamond Lake. Several small diversions for irrigation upstream from station. Continuous water-quality records for water years 1967-69, 1971-91, have been collected at this site.

AVERAGE DISCHARGE.--50 years (water years 1909-13, 1924-29, 1955-93), 3,702 ft³/s, 37.41 in/yr, 2,682,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s Dec. 22, 1964, gage height, 34.2 ft, from floodmark; minimum discharge, 235 ft³/s Aug. 27, 1987, result of regulation at Winchester Dam 5.2 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of 23.2 ft, from floodmark, at site 4.8 mi upstream at different datum, discharge, 88,000 ft³/s. Flood of Nov. 23, 1953, reached a stage of 28.4 ft, from floodmarks, present site and datum, discharge, 93,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	2000	20,700	10.22	Mar. 23	1930	22,100	10.63
Jan. 20	2030	22,500	10.74	Apr. 4	0100	21,500	10.44
Mar. 18	1430	*25,900	*11.69				

Minimum discharge, 671 ft³/s Oct. 10, 14, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	801	3640	2930	e7500	4310	3040	4670	5090	11000	2090	1400	1050
2	804	6730	6280	e5500	4070	3630	5610	4770	9790	1730	1310	1100
3	823	3500	6980	e4000	4230	5540	14100	5410	9250	1610	1290	1050
4	837	2080	4400	e4250	4870	7370	19400	8620	8030	1600	1320	974
5	843	1660	3390	e5000	5860	7840	14700	7390	9880	1580	1320	917
6	821	1540	2810	e4000	6850	7310	10800	7220	9560	1550	1250	948
7	807	1390	2940	e3350	5990	7440	9170	8620	8180	1520	1170	973
8	766	1930	3400	3870	5550	7280	8660	9710	7440	1530	1200	952
9	725	2670	11100	3820	5700	6900	11400	9390	6340	1550	1200	934
10	684	2580	11900	3350	5440	6770	13700	7780	5560	1550	1140	924
11	683	1910	12100	2920	5020	7050	13300	6640	4940	1550	1140	931
12	689	1520	7500	2720	5060	6040	10800	5810	4850	1550	1050	961
13	683	1510	5520	2520	5100	5370	8720	5230	4390	1470	1050	959
14	680	1430	4430	2810	4510	5320	7550	4660	3900	1390	1130	1010
15	678	1290	4140	3630	3920	8130	6960	4620	3590	1390	1170	1040
16	682	1210	3850	3570	3390	19400	6630	4400	3420	1480	1440	924
17	682	1170	4880	3350	3060	23700	6820	4390	3220	1480	1350	839
18	683	1050	e4450	3240	2870	25000	10200	4430	3080	1350	1240	874
19	684	1270	e3750	3030	3700	20700	10300	4490	2960	1360	1300	867
20	691	2360	e3500	11600	6200	14700	8060	5150	2900	1410	1300	999
21	767	2190	e4500	15400	5720	11500	6720	5060	2820	1400	1500	1020
22	1010	13500	e6500	15200	5490	9040	4870	4870	2710	1530	1380	997
23	846	7560	e5250	10700	5270	15600	5960	4510	2590	2940	1250	946
24	774	4130	e4200	6940	4570	17100	7350	4220	2340	2540	1220	969
25	738	2870	e3800	6020	3860	11500	7580	4650	2220	1900	1140	925
26	743	2370	e3450	6220	3450	8700	7680	5450	2170	1650	1190	866
27	721	2260	5040	5970	3160	6850	6830	5160	2160	1560	1120	915
28	722	3620	9310	5750	2950	5790	6000	4960	2110	1470	1090	964
29	772	3320	8290	5540	---	5100	5430	4680	2160	1510	1070	916
30	1150	2640	e6060	4980	---	4700	5470	4360	2590	1420	1060	952
31	1890	---	e6500	4610	---	4400	---	8350	---	1380	1030	---
TOTAL	24879	86900	173150	171360	130170	298810	266440	180090	146150	50040	37820	28696
MEAN	803	2897	5585	5528	4649	9639	8881	5809	4872	1614	1220	957
MAX	1890	13500	12100	15400	6850	25000	19400	9710	11000	2940	1500	1100
MIN	678	1050	2810	2520	2870	3040	4670	4220	2110	1350	1030	839
AC-FT	49350	172400	343400	339900	258200	592700	528500	357200	289900	99250	75020	56920
CFSM	.60	2.16	4.16	4.11	3.46	7.17	6.61	4.32	3.62	1.20	.91	.71
IN.	.69	2.41	4.79	4.74	3.60	8.27	7.37	4.98	4.05	1.39	1.05	.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1993, BY WATER YEAR (WY)

	1364	4180	6149	6613	6204	5653	4800	3804	2468	1338	1001	990
MEAN	1364	4180	6149	6613	6204	5653	4800	3804	2468	1338	1001	990
MAX	2752	12550	23640	15220	13290	12880	8881	7147	4992	2824	1578	1689
(WY)	1963	1974	1965	1965	1986	1972	1993	1963	1984	1913	1976	1986
MIN	683	1070	1005	1125	1019	1681	1605	1401	913	717	635	708
(WY)	1988	1929	1977	1977	1977	1992	1926	1926	1926	1926	1992	1929

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1909 - 1993

ANNUAL TOTAL	774958	1594505	
ANNUAL MEAN	2117	4369	
HIGHEST ANNUAL MEAN			3702
LOWEST ANNUAL MEAN			6116
HIGHEST DAILY MEAN	14300	25000	117000
LOWEST DAILY MEAN	597	678	578
ANNUAL SEVEN-DAY MINIMUM	605	682	600
ANNUAL RUNOFF (AC-FT)	1537000	3163000	2682000
ANNUAL RUNOFF (CFSM)	1.58	3.25	2.75
ANNUAL RUNOFF (INCHES)	21.45	44.13	37.42
10 PERCENT EXCEEDS	4410	9090	7460
50 PERCENT EXCEEDS	1300	3450	2430
90 PERCENT EXCEEDS	662	924	890

e Estimated

UMPQUA RIVER BASIN

377

14319850 GASSY CREEK NEAR NONPAREIL, OR

LOCATION.--Lat 43°25'02", long 123°07'14", in NW 1/4 NE 1/4 sec.12, T.25 S., R.4 W., Douglas County, Hydrologic Unit 17100303, on right bank 0.9 mi upstream from confluence with Calapooya Creek, and 4.2 mi northeast of community of Nonpareil.

DRAINAGE AREA.--9.19 mi².

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 790 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--5 years, 12.9 ft³/s, 19.06 in/yr, 9,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s Jan. 10, 1989, gage height, 3.61 ft, from rating curve extended above 340 ft³/s; no flow on many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 240 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 4	0100	*246	*2.92	No other peak greater than base discharge.			
No flow Oct. 1-4.							

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e5.4	9.4	64	9.5	26	20	19	115	2.6	1.3	.46
2	.00	e5.7	47	40	8.5	40	32	17	78	2.5	1.1	.41
3	.00	e2.7	37	30	8.2	45	130	20	48	2.6	.97	.36
4	.02	e1.7	18	59	7.9	39	170	28	42	2.2	.87	.34
5	.12	e1.6	12	62	7.7	32	88	23	102	2.2	.75	.33
6	e.1	e1.3	9.4	40	7.2	25	54	25	73	1.8	.75	.39
7	e.1	e1.4	35	30	6.7	21	40	28	50	1.7	.84	.41
8	e.1	e2.3	70	33	6.5	17	45	28	42	1.6	.88	.37
9	e.1	e3.7	91	37	6.3	14	59	24	32	1.6	.72	.32
10	e.1	e3.6	79	30	6.2	13	61	20	29	1.5	.61	.26
11	e.1	e2.2	58	23	7.0	12	59	15	25	1.4	.57	.24
12	e.1	e1.7	64	19	21	10	43	13	27	1.4	.54	.33
13	e.1	e1.4	44	17	22	9.3	33	11	22	1.3	.53	.42
14	e.1	e1.2	28	22	17	10	26	8.9	17	1.3	.59	.41
15	e.1	e1.0	20	31	14	17	25	7.6	13	1.3	2.0	.37
16	e.1	e.9	21	30	11	65	22	6.6	11	1.2	3.1	.38
17	e.2	e.9	53	27	9.0	104	38	5.9	9.1	1.1	1.7	.42
18	e.2	e.9	47	23	8.5	102	86	5.1	7.9	1.1	1.4	.41
19	e.2	e5.2	34	25	22	56	72	6.7	7.2	1.1	1.7	.45
20	e.3	e11	38	103	39	40	50	12	6.5	1.1	4.4	.51
21	e.5	e17	49	93	38	30	37	9.0	5.6	1.1	4.0	.50
22	e.6	e54	45	131	67	25	32	9.0	5.4	4.9	2.9	.50
23	e.4	e27	32	70	71	57	34	7.9	5.2	12	2.2	.43
24	e.3	e14	23	43	46	56	39	6.8	4.2	7.3	2.2	.41
25	e.3	e7.2	18	32	33	37	43	8.8	3.6	4.4	1.3	.36
26	e.3	e4.0	16	25	26	27	49	8.6	3.4	3.0	1.2	.34
27	e.4	e3.7	56	21	22	21	41	12	3.4	2.4	.94	.30
28	e.4	e3.2	152	18	19	16	32	23	3.5	2.0	.83	.27
29	e.7	e2.8	89	15	---	13	26	22	3.4	2.1	.76	.26
30	e5.9	e3.3	72	13	---	11	22	22	3.0	1.7	.68	.26
31	e5.8	---	96	11	---	12	---	91	---	1.5	.57	---
TOTAL	17.74	192.0	1462.8	1217	567.2	1002.3	1508	543.9	797.4	75.0	42.90	11.22
MEAN	.57	6.40	47.2	39.3	20.3	32.3	50.3	17.5	26.6	2.42	1.38	.37
MAX	5.9	54	152	131	71	104	170	91	115	12	4.4	.51
MIN	.00	.90	9.4	11	6.2	9.3	20	5.1	3.0	1.1	.53	.24
AC-FT	35	381	2900	2410	1130	1990	2990	1080	1580	149	85	.22
CFSM	.06	.70	5.13	4.27	2.20	3.52	5.47	1.91	2.89	.26	.15	.04
IN.	.07	.78	5.92	4.93	2.30	4.06	6.10	2.20	3.23	.30	.17	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993
MEAN	.68	13.2	22.8	29.8	21.4	26.9
MAX	1.50	25.9	47.2	52.3	43.5	43.4
(WY)	1991	1989	1993	1989	1990	1993
MIN	.14	2.98	2.93	10.8	11.6	4.18
(WY)	1989	1990	1990	1992	1992	1990

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1988 - 1993

	1992 CALENDAR YEAR	1993 WATER YEAR	WATER YEARS 1988 - 1993
ANNUAL TOTAL	3210.35	7437.46	
ANNUAL MEAN	8.77	20.4	
HIGHEST ANNUAL MEAN			12.9
LOWEST ANNUAL MEAN			20.4
HIGHEST DAILY MEAN	152	170	7.59
LOWEST DAILY MEAN	.00	.00	450
ANNUAL SEVEN-DAY MINIMUM	.00	.05	.00
ANNUAL RUNOFF (AC-FT)	6370	14750	9320
ANNUAL RUNOFF (CFSM)	.95	2.22	1.40
ANNUAL RUNOFF (INCHES)	13.00	30.11	19.02
10 PERCENT EXCEEDS	24	56	39
50 PERCENT EXCEEDS	2.2	9.0	3.6
90 PERCENT EXCEEDS	.00	.37	.00

e Estimated

UMPQUA RIVER BASIN

14320700 CALAPOOYA CREEK NEAR OAKLAND, OR

LOCATION.--Lat 43°24'10", long 123°21'45", in NW 1/4 sec.13, T.25 S., R.6 W., Douglas County, Hydrologic Unit 17100303, near center of span on downstream side of highway bridge, 0.9 mi downstream from Williams Creek, 2.5 mi northwest of Sutherland, 3.5 mi southwest of Oakland, and at mile 10.1

DRAINAGE AREA.--210 mi².

PERIOD OF RECORD.--October 1955 to September 1973, October 1986 to current year. Records for the years 1974-86 are available at the Douglas County Water Resources Dept. in Roseburg.

GAGE.--Water-stage recorder. Datum of gage is 371.26 ft above sea level. Prior to June 22, 1968, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Diversion upstream from station for municipal supply of cities of Sutherlin and Oakland. Small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--25 years (water years 1956-73, 1987-93), 452 ft³/s, 29.23 in/yr, 327,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s Nov. 23, 1961, gage height, 21.55 ft; no flow Sept. 9-11, 1966, Sept. 8, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1330	*4,620	*10.61				
Minimum discharge, 5.0 ft ³ /s Oct. 12.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	149	232	1750	391	534	613	393	2160	89	45	24
2	8.2	274	581	1130	352	652	922	354	1660	87	41	23
3	9.9	142	707	842	336	816	2840	507	1140	89	36	21
4	13	83	424	1350	335	846	3490	818	988	85	34	21
5	15	72	300	1460	344	779	2470	651	1530	75	31	21
6	10	58	241	1020	346	681	1570	724	1400	69	30	22
7	7.7	49	466	862	323	605	1200	794	1160	64	30	22
8	7.2	69	747	1010	304	530	1330	867	1060	67	30	22
9	6.7	140	1790	1040	297	467	1430	790	843	57	30	20
10	5.8	141	1930	804	289	458	1470	636	758	55	27	18
11	5.7	91	1500	620	285	425	1570	506	660	52	25	18
12	5.5	68	1590	528	402	371	1320	422	613	50	25	17
13	6.0	55	1130	456	397	334	1110	364	503	48	24	18
14	7.0	47	796	501	339	340	928	308	416	48	25	17
15	8.2	41	640	554	303	467	852	268	357	48	31	18
16	11	36	539	537	267	1110	736	232	319	47	68	17
17	11	31	1300	498	243	1830	930	205	272	44	52	17
18	10	29	1280	454	236	2150	1420	181	240	42	40	17
19	11	46	906	516	663	1520	1360	167	215	41	50	17
20	12	200	940	3150	1070	1260	1060	264	200	40	106	18
21	23	174	1260	2490	1360	992	841	203	181	40	111	18
22	54	987	1210	2880	2000	857	715	209	182	77	78	17
23	43	669	912	1880	1650	1500	729	183	171	277	58	16
24	28	355	709	1320	1170	1510	746	161	150	175	49	16
25	25	228	567	1040	877	1120	773	187	133	113	41	16
26	23	165	489	892	704	876	927	187	123	86	36	15
27	29	142	1050	771	591	699	807	181	115	70	33	14
28	36	159	2700	672	518	560	642	336	114	62	31	13
29	48	150	2320	585	---	470	552	346	104	64	29	13
30	101	155	1880	508	---	430	461	342	96	59	27	12
31	122	---	2660	445	---	400	---	1510	---	51	25	---
TOTAL	709.8	5005	33796	32565	16392	25589	35814	13296	17863	2265	1298	537
MEAN	22.9	167	1090	1050	585	825	1194	429	595	73.1	41.9	17.9
MAX	122	987	2700	3150	2000	2150	3490	1510	2160	277	111	24
MIN	5.5	29	232	445	236	334	461	161	96	40	24	12
AC-FT	1410	9930	67030	64590	32510	50760	71040	26370	35430	4490	2570	1070
CFSM	.11	.79	5.19	5.00	2.79	3.93	5.68	2.04	2.84	.35	.20	.09
IN.	.13	.89	5.99	5.77	2.90	4.53	6.34	2.36	3.16	.40	.23	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1993, BY WATER YEAR (WY)

MEAN	62.6	467	1055	1153	906	856	485	284	116	28.8	11.8	13.8
MAX	329	1240	3856	2296	2229	1912	1342	912	595	73.1	41.9	35.0
(WY)	1957	1962	1956	1956	1961	1961	1963	1963	1993	1993	1993	1971
MIN	6.48	48.9	104	120	290	142	164	58.0	19.9	9.05	2.58	3.06
(WY)	1988	1988	1990	1963	1973	1992	1987	1966	1992	1973	1966	1991

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1956 - 1993
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ANNUAL TOTAL	87496.63		185129.8			
ANNUAL MEAN	239		507		452	
HIGHEST ANNUAL MEAN					905	1956
LOWEST ANNUAL MEAN					216	1992
HIGHEST DAILY MEAN	2780	Apr 10	3490	Apr 4	15200	Dec 26 1955
LOWEST DAILY MEAN	.09	Sep 4	5.5	Oct 12	.00	Sep 9 1966
ANNUAL SEVEN-DAY MINIMUM	.34	Aug 30	6.3	Oct 8	.34	Aug 30 1992
ANNUAL RUNOFF (AC-FT)	173500		367200		327300	
ANNUAL RUNOFF (CFSM)	1.14		2.42		2.15	
ANNUAL RUNOFF (INCHES)	15.50		32.79		29.23	
10 PERCENT EXCEEDS	680		1350		1180	
50 PERCENT EXCEEDS	84		285		144	
90 PERCENT EXCEEDS	5.1		18		8.6	

UMPQUA RIVER BASIN

379

14321000 UMPQUA RIVER NEAR ELKTON, OR

LOCATION.--Lat 43°35'10", long 123°33'15", in NW1/4 sec.8, T.23 S., R.7 W., Douglas County, Hydrologic Unit 17100303, on left bank 3.5 mi south of Elkton, 8.3 mi upstream from Elk Creek, and at mile 56.9.

DRAINAGE AREA.--3,683 mi².

PERIOD OF RECORD.--October 1905 to current year.

REVISED RECORDS.--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M). WSP 1448: 1911-13, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 90.42 ft above sea level. Prior to June 29, 1972, at site 2,400 ft downstream at same datum. See WSP 1931 or 2135 for history of changes prior to June 29, 1972.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Regulation by powerplants on North Umpqua River ordinarily does not affect discharge at this station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--88 years, 7,382 ft³/s, 27.22 in/yr, 5,348,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 265,000 ft³/s Dec. 23, 1964, gage height, 51.95 ft, from floodmarks; minimum discharge observed, 640 ft³/s July 18, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least December 1861, that of Dec. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 52,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 21	Unknown	*70,600	a*23.09	No other peak greater than base discharge.			
Minimum discharge, 929 ft ³ /s Oct. 12, 13, 19.							
(a) From outside high-water mark.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	2470	4340	e17000	8980	7240	8120	8970	18800	3280	1900	1510
2	1040	6310	5010	15300	8290	7700	9240	8290	18400	2760	1880	1500
3	1060	8970	11300	11400	7840	8710	17100	8180	16000	2390	1780	1510
4	1050	4910	9450	10800	8350	12800	37600	11700	14400	2270	1720	1480
5	1060	3140	6760	15200	9410	14000	35200	13300	14200	2230	1730	1440
6	1100	2430	5390	12900	11300	13200	26000	11600	19500	2170	1720	1410
7	1090	2120	4660	10500	10900	12600	19800	13200	16100	2110	1670	1410
8	1060	1900	5880	9930	9850	12700	17300	14000	14500	2050	1590	1430
9	1060	2390	e21000	11600	9420	12100	19600	14800	12500	2020	1610	1400
10	1010	3420	e24000	10600	9490	11600	25400	13100	10800	1980	1620	1370
11	959	3230	e26000	8990	8860	11900	28600	11400	9340	1950	1560	1340
12	944	2620	e22000	7700	8780	11200	23700	10200	8480	1940	1550	1330
13	940	2090	15400	6800	10700	9800	19100	9120	7870	1930	1490	1340
14	949	1980	11300	6360	10000	9060	16300	8230	6900	1880	1480	1350
15	946	1830	8950	7290	8480	10100	14400	7710	6160	1810	1550	1370
16	945	1680	8170	8500	7340	20800	13200	7210	5710	1810	1620	1410
17	945	1600	9160	8050	6440	37300	12400	6940	5310	1880	1900	1360
18	948	1550	11300	7790	5840	42900	17100	6820	4970	1890	1950	1280
19	940	1520	9570	7470	6230	38800	22000	6800	4670	1770	1840	1310
20	946	1830	8350	e32000	12100	28100	18800	7050	4450	1780	1930	1300
21	961	3570	11400	e42000	16000	21500	15200	7770	4320	1820	2010	1370
22	997	e17000	14800	e37000	17300	16900	13000	7410	4170	1900	2170	1420
23	1180	e20000	12600	e29000	16600	17700	12000	7060	3990	2120	2120	1410
24	1150	10000	9850	22100	14600	31200	12200	6490	3790	4090	1890	1370
25	1070	6430	8260	16200	11900	22900	13500	6220	3440	3810	1790	1360
26	1070	4730	7260	14500	9800	17300	13300	7010	3210	2850	1680	1370
27	1020	3850	7240	13600	8600	13900	12900	7740	3090	2400	1680	1300
28	997	3730	e18000	12500	7640	11600	11300	7470	3010	2200	1630	1300
29	1010	5490	e23000	11900	---	10000	9960	7530	2940	2040	1590	1350
30	1090	4890	e16000	10900	---	8920	9380	7120	3030	2050	1560	1310
31	1430	---	e15000	9800	---	8240	---	9390	---	1960	1540	---
TOTAL	31987	137680	371400	445680	281040	512770	523700	279830	254050	69140	53750	41410
MEAN	1032	4589	11980	14380	10040	16540	17460	9027	8468	2230	1734	1380
MAX	1430	20000	26000	42000	17300	42900	37600	14800	19500	4090	2170	1510
MIN	940	1520	4340	6360	5840	7240	8120	6220	2940	1770	1480	1280
AC-FT	63450	273100	736700	884000	557400	1017000	1039000	555000	503900	137100	106600	82140
CFSM	.28	1.25	3.25	3.90	2.73	4.49	4.74	2.45	2.30	.61	.47	.37
IN.	.32	1.39	3.75	4.50	2.84	5.18	5.29	2.83	2.57	.70	.54	.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 1993, BY WATER YEAR (WY)

	1884	7090	13130	15660	15030	12310	9566	6454	3774	1730	1176	1196
MEAN	1884	7090	13130	15660	15030	12310	9566	6454	3774	1730	1176	1196
MAX	14200	29500	51220	34900	32800	27100	20480	15800	9526	5063	1867	3475
(WY)	1951	1974	1965	1956	1907	1972	1937	1921	1953	1913	1976	1920
MIN	857	832	1238	1440	1365	2909	2432	1934	1053	742	703	740
(WY)	1930	1930	1977	1977	1977	1992	1926	1934	1926	1926	1931	1931

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1906 - 1993
ANNUAL TOTAL	1361906	3002437	
ANNUAL MEAN	3721	8226	7382
HIGHEST ANNUAL MEAN			13360
LOWEST ANNUAL MEAN			2321
HIGHEST DAILY MEAN	26000	Dec 11	260000
LOWEST DAILY MEAN	814	Aug 31	663
ANNUAL SEVEN-DAY MINIMUM	824	Aug 30	663
ANNUAL RUNOFF (AC-FT)	2701000	5955000	5348000
ANNUAL RUNOFF (CFSM)	1.01	2.23	2.00
ANNUAL RUNOFF (INCHES)	13.76	30.33	27.23
10 PERCENT EXCEEDS	9250	17300	17100
50 PERCENT EXCEEDS	1940	7010	3960
90 PERCENT EXCEEDS	889	1320	1050

e. Estimated

UMPQUA RIVER BASIN

14321400 ELK CREEK NEAR ELKHEAD, OR

LOCATION.--Lat 43°35'45", long 123°11'35", in NW 1/4 SE 1/4 sec.5, T.23 S., R.4 W., Douglas County, Hydrologic Unit 17100303, on right bank downstream side of Milltown Hill Bridge, 1.5 mi upstream from Adams Creek, 4.0 mi north of Elkhead, and at mile 37.7.

DRAINAGE AREA.--28.7 mi².

PERIOD OF RECORD.--January to August 1968 (gage heights and discharge measurements only), September 1968 to June 1972, October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 463.99 ft above sea level (Douglas County Highway Department bench mark). Prior to Sept. 1, 1968, nonrecording gage at site 20 ft upstream at datum 1.70 ft lower.

REMARKS.--No estimated daily discharges. Records for flows greater than 10 ft³/s good, those below fair.

AVERAGE DISCHARGE.--10 years (water years 1969-71, 1987-93), 48.2 ft³/s, 22.81 in/yr, 34,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 ft³/s Jan. 10, 1988, gage height, 6.77 ft, from crest-stage gage; maximum gage height, 7.74 ft Dec 21, 1969; minimum discharge, 0.36 ft³/s Sept. 9, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 820 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 4	0130	*493	4.73	Apr. 4	0130	(a)	*5.08

Minimum discharge, 0.85 ft³/s Oct. 1.

(a) From crest-stage gage.

REVISIONS.--The maximum discharges for water years 1991 and 1992 have been revised to 558 ft³/s, Mar. 4, 1991, gage height, 4.94 ft and 552 ft³/s, Apr. 10, 1992, gage height, 4.92 ft. Revised figures of daily discharge for water years 1991 and 1992 are given below. These figures supercede those published in the reports for 1991 and 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	35	107	33	18	24	34	24	23	7.0	2.2	2.1
2	1.7	18	104	30	32	71	32	22	20	6.7	2.2	2.1
3	1.8	13	77	28	47	225	29	20	18	6.1	2.1	1.9
4	1.8	22	71	26	65	398	35	18	17	5.7	2.0	1.6
5	2.8	38	61	23	216	314	108	17	15	5.0	2.0	1.4
6	2.7	30	51	22	126	199	153	16	15	5.0	2.0	1.3
7	2.3	22	43	32	85	172	189	17	14	4.9	2.2	1.3
8	2.2	19	38	37	63	127	145	45	14	4.6	2.1	1.3
9	1.9	17	37	38	51	99	155	51	12	4.5	2.2	1.3
10	1.9	15	214	71	43	116	150	50	12	4.3	2.4	1.3
11	1.8	13	170	119	38	112	139	44	11	4.5	2.3	1.3
12	1.9	11	103	374	34	257	107	38	10	3.9	2.2	1.2
13	2.2	58	76	263	46	285	81	36	10	3.9	2.0	1.1
14	2.2	121	60	223	43	188	68	40	10	3.9	1.8	1.0
15	2.7	51	49	207	39	152	64	35	9.2	4.0	1.8	1.0
16	3.0	33	42	140	37	118	53	32	9.2	4.5	1.8	.98
17	3.2	27	35	99	39	90	45	225	8.9	5.8	1.7	.95
18	8.2	46	85	77	46	72	40	398	8.5	5.2	1.6	.95
19	9.0	40	109	60	56	60	36	270	11	4.2	1.7	.93
20	5.1	52	77	49	55	50	33	175	18	4.1	1.7	.93
21	5.6	105	57	42	48	47	30	116	12	3.8	1.6	.89
22	11	77	46	36	42	43	27	83	11	3.4	1.5	.85
23	7.0	50	39	33	37	65	26	62	9.5	3.3	1.4	.86
24	5.1	38	33	29	33	211	28	49	8.9	3.1	1.5	.89
25	4.7	187	30	27	30	137	32	41	8.8	3.0	1.5	.88
26	7.2	168	29	25	27	100	32	36	8.8	3.0	1.5	.87
27	8.0	103	34	22	25	73	31	31	8.2	3.0	1.6	.85
28	8.3	76	57	21	24	57	28	28	8.2	2.8	2.0	.89
29	8.9	76	48	20	24	48	27	27	8.2	2.7	2.4	.93
30	30	112	41	19	---	25	33	33	7.9	2.5	2.3	.97
31	62	---	36	18	---	42	---	26	---	2.4	2.0	---
TOTAL	217.8	1673	2059	2243	1445	3989	1982	2105	357.3	130.8	59.2	34.82
MEAN	7.03	55.8	66.4	72.4	51.6	129	66.1	67.9	11.9	4.22	1.91	1.16
MAX	62	187	214	374	216	398	189	398	23	7.0	2.4	2.1
MIN	1.6	11	29	18	18	24	25	16	7.9	2.4	1.4	.85
AC-FT	432	3320	4080	4450	2870	7910	3930	4180	709	259	117	69
CFSM	.24	1.94	2.31	2.52	1.80	4.48	2.30	2.37	.41	.15	.07	.04
IN.	.28	2.17	2.67	2.91	1.87	5.17	2.57	2.73	.46	.17	.08	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1991, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	6.59	61.9	116	163	101	96.7	47.7	29.6	11.5	3.98	1.70	2.13												
MAX	16.3	113	194	253	191	184	94.8	67.9	21.5	7.51	2.20	4.01												
(WY)	1969	1969	1969	1970	1969	1972	1972	1991	1988	1969	1989	1971												
MIN	1.51	5.55	15.6	72.4	31.1	44.4	21.0	8.16	3.38	1.79	1.00	1.01												
(WY)	1988	1988	1990	1991	1988	1988	1987	1987	1987	1970	1988	1988												

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1968 - 1991

ANNUAL TOTAL	14550.60	16295.92	50.0
ANNUAL MEAN	39.9	44.6	69.4
HIGHEST ANNUAL MEAN			31.6
LOWEST ANNUAL MEAN			1971
HIGHEST DAILY MEAN	444	398	1400
LOWEST DAILY MEAN	.96	.85	.57
ANNUAL SEVEN-DAY MINIMUM	1.0	.87	.61
ANNUAL RUNOFF (AC-FT)	28860	32320	36220
ANNUAL RUNOFF (CFSM)	1.39	1.56	1.74
ANNUAL RUNOFF (INCHES)	18.86	21.12	23.67
10 PERCENT EXCEEDS	104	117	135
50 PERCENT EXCEEDS	16	26	18
90 PERCENT EXCEEDS	1.6	1.7	1.5

UMPQUA RIVER BASIN

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14321400 ELK CREEK NEAR ELKHEAD, OR--Continued

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	3.4	41	18	77	29	13	33	3.5	5.5	.85	.58
2	1.0	3.4	36	20	61	26	12	27	3.3	4.1	.85	.54
3	1.0	3.0	30	22	47	23	11	23	3.2	3.5	.85	.61
4	.98	3.0	26	44	38	24	12	20	3.0	3.5	.85	.68
5	.91	3.6	24	54	31	31	13	18	2.9	11	.85	.66
6	.90	5.8	187	49	27	27	17	16	2.8	11	.85	.74
7	.93	7.9	336	45	24	24	17	14	2.7	7.5	.90	.70
8	.95	6.9	180	41	21	21	15	12	2.6	5.4	.89	.57
9	.92	6.8	104	37	21	20	127	12	2.5	4.2	.88	.60
10	.85	6.9	75	38	20	18	361	11	2.5	3.6	.85	.63
11	.85	6.2	57	72	18	17	160	10	2.5	3.0	.83	.62
12	.82	18	50	67	16	16	135	9.6	3.0	2.8	.76	.61
13	.81	25	45	55	19	16	116	9.5	4.7	2.5	.72	.61
14	.85	22	40	46	19	15	86	8.9	5.1	2.4	.69	.58
15	.89	16	35	40	20	16	65	8.0	5.0	2.3	.67	.58
16	.90	13	32	38	25	18	65	7.7	4.4	2.1	.68	.57
17	.90	58	29	37	42	27	160	7.0	3.9	1.8	.67	.58
18	.90	122	65	33	46	25	165	6.7	3.2	1.7	.65	.57
19	.94	54	119	29	67	22	109	8.4	2.9	1.6	.64	.58
20	.97	105	88	27	106	20	77	8.2	2.7	1.5	.65	.58
21	1.1	96	70	25	129	19	60	6.8	2.6	1.5	.65	.63
22	1.5	58	56	23	123	17	49	6.4	2.3	1.7	.65	.65
23	2.1	39	46	21	95	16	40	5.9	2.2	1.9	.72	.68
24	2.9	35	39	20	73	14	35	5.4	2.0	1.9	.70	1.2
25	5.9	41	34	21	57	14	30	4.9	1.9	1.6	.59	1.2
26	19	148	31	21	47	13	26	4.9	1.8	1.4	.60	1.1
27	8.8	254	28	25	40	12	24	4.6	1.8	1.3	.56	.95
28	5.5	123	26	34	35	12	21	4.5	2.0	1.1	.56	.90
29	5.1	77	25	30	31	11	21	4.2	7.1	.98	.54	.90
30	4.7	52	22	27	---	17	48	3.9	7.9	.92	.55	.87
31	3.9	---	20	38	---	16	---	3.6	---	.90	.56	---
TOTAL	78.73	1412.9	1996	1097	1375	596	2090	325.1	98.0	96.20	22.26	21.27
MEAN	2.54	47.1	64.4	35.4	47.4	19.2	69.7	10.5	3.27	3.10	.72	.71
MAX	19	254	336	72	129	31	361	33	7.9	11	.90	1.2
MIN	.81	3.0	20	18	16	11	11	3.6	1.8	.90	.54	.54
AC-FT	156	2800	3960	2180	2730	1180	4150	645	194	191	.44	.42
CFSM	.09	1.64	2.24	1.23	1.65	.67	2.43	.37	.11	.11	.03	.02
IN.	.10	1.83	2.59	1.42	1.78	.77	2.71	.42	.13	.12	.03	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1992, BY WATER YEAR (WY)

	MEAN	6.18	60.4	111	150	95.8	89.0	49.9	27.7	10.7	3.88	1.59	1.99
MAX	16.3	113	194	253	191	184	94.8	67.9	21.5	7.51	2.20	4.01	
(WY)	1969	1969	1969	1970	1969	1972	1972	1991	1988	1969	1989	1971	
MIN	1.51	5.55	15.6	35.4	31.1	19.2	21.0	8.16	3.27	1.79	.72	.71	
(WY)	1988	1988	1990	1992	1988	1992	1987	1987	1992	1970	1992	1992	

SUMMARY STATISTICS

FOR 1991 CALENDAR YEAR

FOR 1992 WATER YEAR

WATER YEARS 1968 - 1992

ANNUAL TOTAL	15833.75	9208.46	
ANNUAL MEAN	43.4	25.2	47.2
HIGHEST ANNUAL MEAN			69.4
LOWEST ANNUAL MEAN			25.2
HIGHEST DAILY MEAN	398	361	1400
LOWEST DAILY MEAN	.81	.54	.54
ANNUAL SEVEN-DAY MINIMUM	.85	.56	.56
ANNUAL RUNOFF (AC-FT)	31410	18260	34210
ANNUAL RUNOFF (CFSM)	1.51	.88	1.65
ANNUAL RUNOFF (INCHES)	20.52	11.94	22.36
10 PERCENT EXCEEDS	120	65	126
50 PERCENT EXCEEDS	23	11	17
90 PERCENT EXCEEDS	1.0	.69	1.5

UMPQUA RIVER BASIN

14321400 ELK CREEK NEAR ELKHEAD, OR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	20	27	213	30	79	55	46	317	9.7	4.8	3.0
2	1.0	20	72	132	28	118	80	41	250	10	4.7	2.9
3	1.4	13	67	96	25	159	349	68	182	10	4.4	2.6
4	1.5	9.2	42	167	23	134	418	110	148	9.1	4.1	2.7
5	1.3	8.6	31	175	22	102	296	86	230	8.5	3.9	2.6
6	1.2	7.3	26	121	20	79	184	85	188	7.9	3.6	2.6
7	1.2	8.0	53	93	19	64	131	77	134	7.6	3.7	2.6
8	1.2	11	105	96	19	53	154	77	99	7.3	4.1	2.5
9	1.2	15	200	95	18	45	175	67	78	6.8	4.1	2.3
10	1.1	14	233	76	17	43	183	58	64	6.7	3.6	2.3
11	1.1	10	171	63	17	38	199	48	57	6.4	3.4	2.2
12	1.0	8.7	218	55	26	34	152	42	48	6.4	3.3	2.3
13	1.1	7.5	137	48	26	31	122	36	40	6.0	3.2	2.3
14	1.1	6.7	87	49	23	32	96	31	34	6.2	3.4	2.2
15	1.2	6.2	62	54	21	50	85	28	31	6.4	6.0	2.0
16	1.2	5.7	58	56	19	110	72	25	27	5.9	8.2	2.0
17	1.4	5.6	158	58	18	197	95	22	24	5.6	6.0	2.0
18	1.4	5.6	145	55	18	261	135	20	21	5.6	4.8	2.1
19	1.4	19	99	74	49	166	133	20	19	5.4	9.8	2.2
20	1.8	32	124	341	72	135	105	30	19	5.5	11	2.3
21	2.8	45	172	262	106	101	81	22	18	5.7	12	2.3
22	2.9	141	163	326	209	89	69	23	19	12	8.5	2.1
23	2.3	71	109	204	199	186	71	20	17	20	7.0	2.0
24	1.8	37	78	138	138	165	72	18	15	12	5.9	1.8
25	1.9	25	59	100	102	113	82	25	13	8.5	5.2	1.8
26	1.9	18	50	78	83	84	105	23	13	7.3	4.5	1.8
27	2.1	17	124	63	70	65	97	26	12	6.7	4.3	1.7
28	2.3	16	348	52	62	52	78	68	12	6.1	3.8	1.7
29	4.4	14	296	43	---	43	67	59	11	6.5	3.7	1.8
30	19	16	247	38	---	39	54	55	10	6.2	3.6	1.8
31	21	---	342	34	---	37	---	222	---	5.4	3.0	---
TOTAL	87.11	633.1	4103	3455	1479	2904	3995	1578	2150	239.4	161.6	66.5
MEAN	2.81	21.1	132	111	52.8	93.7	133	50.9	71.7	7.72	5.21	2.22
MAX	21	141	348	341	209	261	418	222	317	20	12	3.0
MIN	.91	5.6	26	34	17	31	54	18	10	5.4	3.0	1.7
AC-FT	173	1260	8140	6850	2930	5760	7920	3130	4260	475	321	132
CFSM	.10	.74	4.61	3.88	1.84	3.26	4.64	1.77	2.50	.27	.18	.08
IN.	.11	.82	5.32	4.48	1.92	3.76	5.18	2.05	2.79	.31	.21	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

	MEAN	5.88	56.9	113	147	91.9	89.4	57.5	29.8	16.2	4.26	1.95	2.01
MAX	16.3	113	194	253	191	184	133	67.9	71.7	7.72	5.21	4.01	4.01
(WY)	1969	1969	1969	1970	1969	1972	1993	1991	1993	1993	1993	1993	1971
MIN	1.51	5.55	15.6	35.4	31.1	19.2	21.0	8.16	3.27	1.79	.72	.71	.71
(WY)	1988	1988	1990	1992	1988	1992	1987	1987	1992	1970	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1968 - 1993

ANNUAL TOTAL	10544.04	20851.71	48.2
ANNUAL MEAN	28.8	57.1	69.4
HIGHEST ANNUAL MEAN			25.2
LOWEST ANNUAL MEAN			1971
HIGHEST DAILY MEAN	361	418	1400
LOWEST DAILY MEAN	.54	.91	Jan 10 1988
ANNUAL SEVEN-DAY MINIMUM	.56	1.1	Aug 29 1992
ANNUAL RUNOFF (AC-FT)	20910	41360	34930
ANNUAL RUNOFF (CFSM)	1.00	1.99	1.68
ANNUAL RUNOFF (INCHES)	13.67	27.03	22.83
10 PERCENT EXCEEDS	74	164	131
50 PERCENT EXCEEDS	11	25	18
90 PERCENT EXCEEDS	.69	2.1	1.5

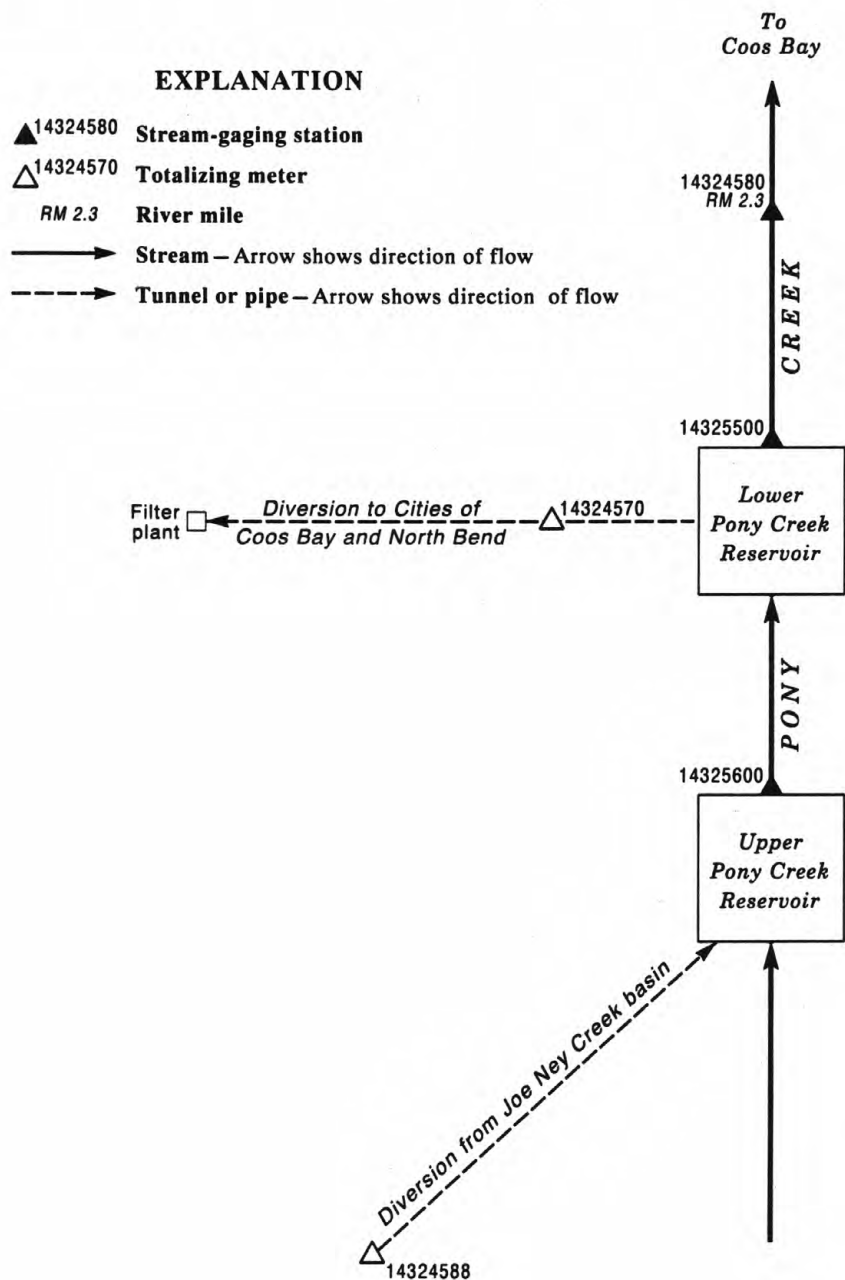


Figure 25--Schematic diagram showing gaging stations and diversions on Pony Creek.

COOS RIVER BASIN

14324580 PONY CREEK AT COOS BAY, OR

LOCATION (REVISED).--Lat 43°22'44", long 124°14'29", in NE 1/4 NE 1/4 sec.28, T.25 S., R.13 W., Coos County, Hydrologic Unit 17100304, at spillway for Lower Pony Creek Reservoir, in Coos Bay, and at mile 2.3.

DRAINAGE AREA.--3.88 mi² (revised).

PERIOD OF RECORD.--July 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (Coos Bay-North Bend Water Board bench mark). Oct. 1, 1982 to September 30, 1987, gage at site 500 ft downstream at same datum. July 1975 to Sept. 30, 1982 and Oct. 1, 1987 to Sept. 30, 1992, at site 0.1 mi downstream, at datum 12.23 ft above sea level.

REMARKS.--Records good. Records prior to 1993 were computed for site at the lower end of culvert under Ocean Boulevard. Flow regulated by Upper and Lower Pony Creek Reservoirs (stations 14324550 and 14324560), diversion upstream from station from Lower Pony Creek Reservoir to municipal water supply of Coos Bay-North Bend (station 14323570) and diversion into the basin from Joe Ney Creek (station 14324590). Approximately 5.5 ft³/s is diverted to the Coos Bay-North Bend water treatment plant, maximum capacity, 10.8 ft³/s.

COOPERATION.--Data for diversion from Joe Ney Creek into Pony Creek (14324590), and diversion from Lower Pony Creek Reservoir to City of Coos Bay (14324570) provided by Coos Bay-North Bend Water Board.

AVERAGE DISCHARGE.--18 years, 9.82 ft³/s, 34.19 in/yr, 7,110 acre-ft/yr, adjusted for Joe Ney diversion into Pony Creek, Coos Bay-North Bend diversion, and change in contents in Upper and Lower Pony Creek Reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft³/s Dec. 6, 1981, gage height, 6.19 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft³/s Mar. 23, gage height, 39.67 ft; minimum discharge, no flow many days during year.

MONTHLY DISCHARGE OF PONY CREEK, JOE NEY CREEK DIVERSION, PONY CREEK DIVERSION AND MONTHLY CHANGE IN CONTENTS OF RESERVOIRS NEAR COOS BAY, OR, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

	14324588 Diversion from Joe Ney Creek into Pony Creek (acre-feet)	14324580 Pony Creek at Coos Bay (acre-feet)	14324570 Diversion from Lower Pony Creek Reservoir to City of Coos Bay (acre-feet)	14324560 Lower Pony Creek Reservoir Change in Contents (acre-feet)	14324550 Upper Pony Creek Reservoir Change in Contents (acre-feet)	Pony Creek adjusted for diversion and change in contents (acre-feet)	
October.....	0	0	255.3	+14.1	-205.0	64.4	0.31
November.....	-85.5	0	204.1	-27.4	+152.0	243.2	1.17
December.....	-19.2	1.8	246.4	+92.4	+1,018.0	1,339.4	6.44
CAL YR 1991...	-610.4	37.6	4,008.0	+127.4	+310.0	3,872.1	18.62
January.....	0	9.3	305.1	-42.3	+617.0	889.1	4.28
February.....	0	351.1	279.1	+47.2	+17.0	694.4	3.34
March.....	0	886.0	293.4	+4.1	+3.0	1,186.5	5.71
April.....	0	1,042.7	303.5	-0.4	-18.0	1,327.8	6.39
May.....	0	287.6	345.5	+0.4	+15.0	648.5	3.12
June.....	0	216.0	335.2	-45.4	-26.0	479.8	2.31
July.....	0	0	398.3	+9.4	-205.0	202.7	0.97
August.....	0	1.4	320.4	-39.1	-176.0	106.7	0.51
September.....	0	0	287.9	+18.0	-212.0	93.9	0.45
WTR YR 1992...	-104.7	2,795.9	3,574.2	+31.1	+980.0	7,276.4	35.00

COOS RIVER BASIN

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14324580 PONY CREEK AT COOS BAY, OR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	2.0	.00	6.3	12	8.2	11	.00	.00	.00
2	.00	.00	.00	1.1	.00	6.6	17	7.6	12	.00	.00	.00
3	.00	.00	.00	.86	.00	6.5	38	10	10	.00	.00	.00
4	.00	.00	.00	.53	.00	6.0	38	14	7.4	.00	.00	.00
5	.00	.00	.00	.21	.00	5.1	28	9.9	8.5	.00	.00	.00
6	.00	.00	.00	.00	.00	4.1	22	8.0	13	.00	.00	.00
7	.00	.00	.00	.00	.03	3.4	20	8.1	12	.00	.00	.00
8	.00	.00	.00	.00	1.5	2.9	20	8.8	8.7	.00	.10	.00
9	.00	.00	.00	.00	1.8	2.8	20	7.4	6.3	.00	.61	.00
10	.00	.00	.00	.00	1.9	3.9	24	5.9	4.5	.00	.00	.00
11	.00	.00	.00	.00	5.1	6.9	21	4.6	4.1	.00	.00	.00
12	.00	.00	.00	.00	10	6.4	18	4.0	3.1	.00	.00	.00
13	.00	.00	.00	.00	7.7	3.2	15	3.1	2.2	.00	.00	.00
14	.00	.00	.00	.00	4.3	2.4	13	1.7	2.0	.00	.00	.00
15	.00	.00	.00	.00	2.4	4.9	16	1.7	2.2	.00	.00	.00
16	.00	.00	.00	.00	1.4	17	16	1.5	1.2	.00	.00	.00
17	.00	.00	.00	.00	1.2	26	15	1.3	.70	.00	.00	.00
18	.00	.00	.00	.00	1.1	30	17	.99	.01	.00	.00	.00
19	.00	.00	.00	.00	8.2	25	16	1.5	.00	.00	.00	.00
20	.00	.00	.00	.00	17	26	14	4.3	.00	.00	.00	.00
21	.00	.00	.00	.00	22	22	12	4.2	.00	.00	.00	.00
22	.00	.00	.00	.00	22	23	13	2.6	.00	.00	.00	.00
23	.00	.00	.00	.00	20	64	15	2.1	.00	.00	.00	.00
24	.00	.00	.00	.00	15	51	16	1.2	.00	.00	.00	.00
25	.00	.00	.00	.00	12	31	14	.93	.00	.00	.00	.00
26	.00	.00	.00	.00	8.6	17	14	1.5	.00	.00	.00	.00
27	.00	.00	.00	.00	7.4	11	12	1.4	.00	.00	.00	.00
28	.00	.00	.00	.00	6.4	7.1	10	1.0	.00	.00	.00	.00
29	.00	.00	.00	.00	---	6.0	10	2.7	.00	.00	.00	.00
30	.00	.00	.00	.00	---	9.4	9.7	5.6	.00	.00	.00	.00
31	.00	---	.92	.00	---	9.8	---	9.2	---	.00	.00	---
TOTAL	0.00	0.00	0.92	4.70	177.03	446.7	525.7	145.02	108.91	0.00	0.71	0.00
MEAN	.000	.000	.030	.15	6.32	14.4	17.5	4.68	3.63	.000	.023	.000
MAX	.00	.00	.92	2.0	22	64	38	14	13	.00	.61	.00
MIN	.00	.00	.00	.00	.00	2.4	9.7	.93	.00	.00	.00	.00
AC-FT	.00	.00	1.8	9.3	351	886	1040	288	216	.00	1.4	.00
CAL YR 1992	TOTAL	18.95	MEAN	.052	MAX	1.3	MIN	.00	AC-FT	38		
WTR YR 1993	TOTAL	1409.69	MEAN	3.86	MAX	64	MIN	.00	AC-FT	2800		

COQUILLE RIVER BASIN

14325000 SOUTH FORK COQUILLE RIVER AT POWERS, OR

LOCATION.--Lat 42°53'30", long 124°04'10", in SE 1/4 sec.12, T.31 S., R.12 W., Coos County, Hydrologic Unit 17100305, on left bank 0.6 mi downstream from highway bridge at Powers, 0.9 mi upstream from Woodward Creek, and at mile 64.5.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--September 1916 to September 1926, October 1928 to current year.

REVISED RECORDS.--WSP 1184: 1946(M). WSP 1448: 1917-18(M), 1919, 1920(M), 1925.

GAGE.--Water-stage recorder. Datum of gage is 197.42 ft above sea level. Prior to Nov. 17, 1938, nonrecording gage at various sites within 1 mi of present site at different datums.

REMARKS.--No estimated daily discharges. Records excellent. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--74 years (water years 1917-26, 1930-93), 778 ft³/s, 62.52 in/yr, 563,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,900 ft³/s Dec. 22, 1964, gage height, 26.51 ft, from floodmarks, from rating curve extended above 19,000 ft³/s on basis of contracted-opening measurement at gage height 18.14 ft and slope-area measurement of peak flow; minimum discharge, 8.2 ft³/s Oct. 7, 1991, but may have been less during period of estimated discharge Oct. 8-21, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0930	*17,600	*13.72	No other peak greater than base discharge.			
Minimum discharge, 11 ft ³ /s Oct. 10-20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	745	392	2360	906	718	1050	724	1360	146	65	43
2	16	784	555	1590	845	776	1670	651	1240	150	62	42
3	16	358	719	1210	878	1600	5620	1120	1040	146	58	40
4	15	205	557	1480	1020	1690	4220	1660	918	137	56	39
5	16	161	425	1640	1140	1470	2840	1270	914	127	54	38
6	14	123	379	1290	1110	1410	2030	1030	996	122	53	39
7	14	137	498	1050	1020	1440	1570	899	1100	117	52	38
8	13	170	1780	1110	942	1330	2050	988	979	114	53	37
9	12	200	2960	1070	967	1200	3200	918	847	109	50	36
10	12	202	5050	917	972	1270	4550	805	778	105	48	35
11	12	157	3160	794	1930	1530	3290	711	686	102	47	34
12	12	127	2640	711	3360	1240	2380	671	607	99	47	34
13	12	109	1720	649	2050	1060	1790	607	532	95	47	33
14	11	97	1230	711	1460	1040	1410	555	468	93	47	32
15	12	87	1070	849	1150	2010	1310	495	428	91	66	32
16	12	82	928	820	938	2720	1150	444	387	88	73	32
17	12	80	1190	846	806	4080	1230	406	347	85	63	31
18	12	83	1390	775	734	4130	1840	370	318	82	54	31
19	12	122	1140	1810	2490	2460	1590	367	292	79	58	31
20	13	187	1490	11500	2590	1960	1260	384	275	77	98	31
21	42	659	1840	5560	1990	1530	1120	680	259	78	102	31
22	43	1830	1710	6130	1970	1470	1230	637	246	109	78	30
23	28	1040	1290	3410	1640	5940	1610	519	229	135	70	30
24	22	632	1020	2210	1280	3130	2000	442	210	119	66	30
25	18	420	864	1740	1040	1980	1780	541	195	98	59	29
26	17	305	772	1510	883	1430	1680	636	184	86	55	29
27	16	345	1840	1350	783	1110	1400	760	181	80	52	28
28	16	713	5070	1290	725	905	1140	882	173	77	50	28
29	34	546	2980	1210	---	777	953	818	160	81	49	28
30	227	414	2300	1080	---	695	828	1030	151	74	47	27
31	345	---	3300	987	---	633	---	1550	---	69	45	---
TOTAL	1072	11120	52259	59659	37619	54734	59791	23570	16500	3170	1824	998
MEAN	34.6	371	1686	1924	1344	1766	1993	760	550	102	58.8	33.3
MAX	345	1830	5070	11500	3360	5940	5620	1660	1360	150	102	43
MIN	11	80	379	649	725	633	828	367	151	69	45	27
AC-FT	2130	22060	103700	118300	74620	108600	118600	46750	32730	6290	3620	1980
CFSM	.20	2.19	9.97	11.4	7.95	10.4	11.8	4.50	3.25	.61	.35	.20
IN.	.24	2.45	11.50	13.13	8.28	12.05	13.16	5.19	3.63	.70	.40	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1993, BY WATER YEAR (WY)

	MEAN	208	1022	1687	1775	1634	1338	919	453	174	61.6	34.8	46.0
MAX	1945	4232	5361	4244	4151	3818	2451	1568	699	186	101	384	384
(WY)	1951	1974	1965	1970	1958	1938	1963	1953	1937	1947	1947	1978	1978
MIN	11.1	15.8	44.1	97.3	209	330	203	78.3	50.8	27.7	17.4	12.1	12.1
(WY)	1988	1937	1977	1977	1977	1934	1990	1939	1924	1926	1939	1987	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1917 - 1993
ANNUAL TOTAL	179675	322316	778
ANNUAL MEAN	491	883	1374
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			237
HIGHEST DAILY MEAN	5070	11500	34900
LOWEST DAILY MEAN	11	11	9.5
ANNUAL SEVEN-DAY MINIMUM	12	12	9.8
ANNUAL RUNOFF (AC-FT)	356400	639300	563500
ANNUAL RUNOFF (CFSM)	2.90	5.23	4.60
ANNUAL RUNOFF (INCHES)	39.55	70.95	62.54
10 PERCENT EXCEEDS	1500	1980	1990
50 PERCENT EXCEEDS	149	632	259
90 PERCENT EXCEEDS	16	31	26

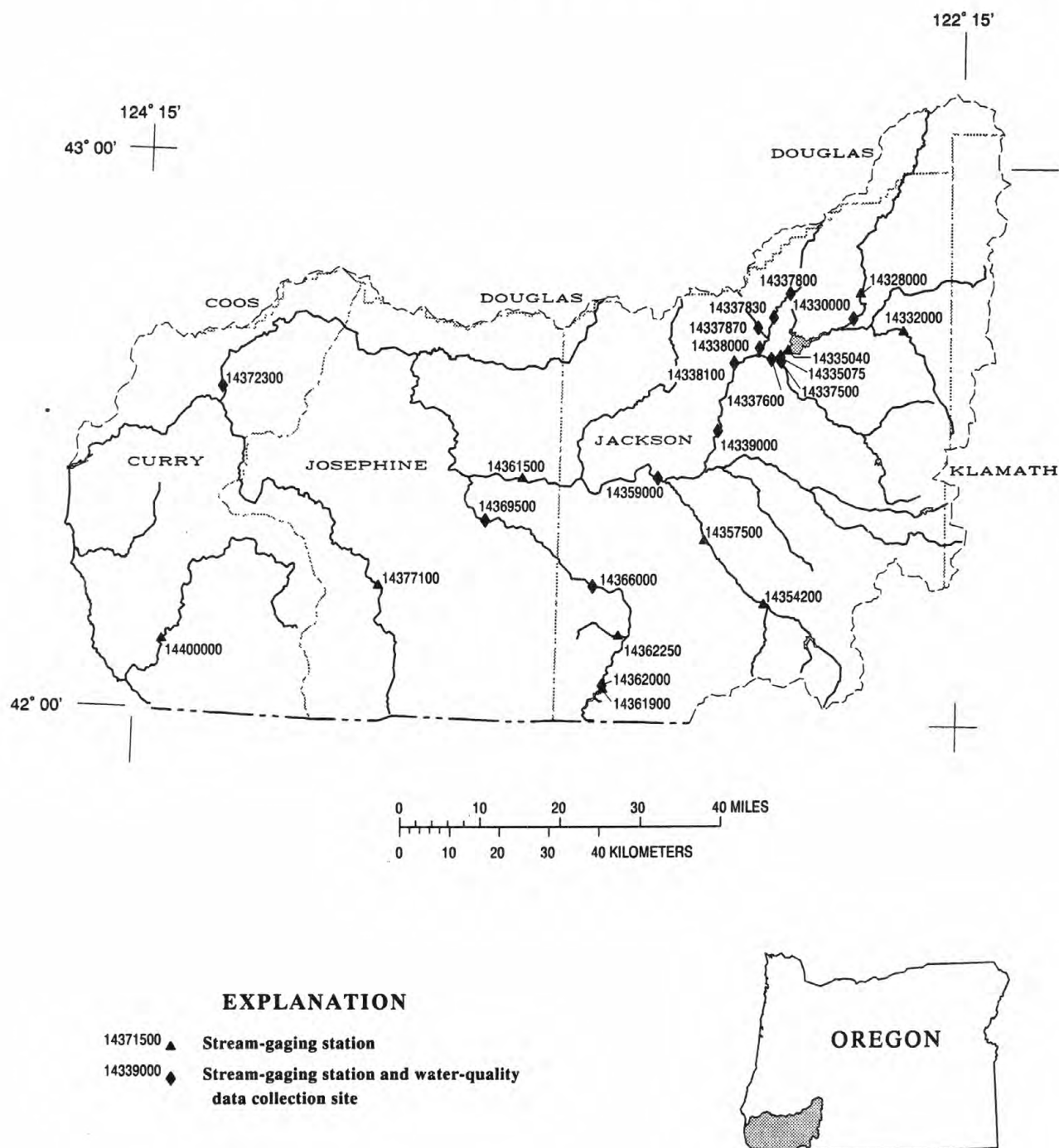


Figure 26--Location of surface-water and water-quality stations in the Rogue River, and Chetco River Basins.

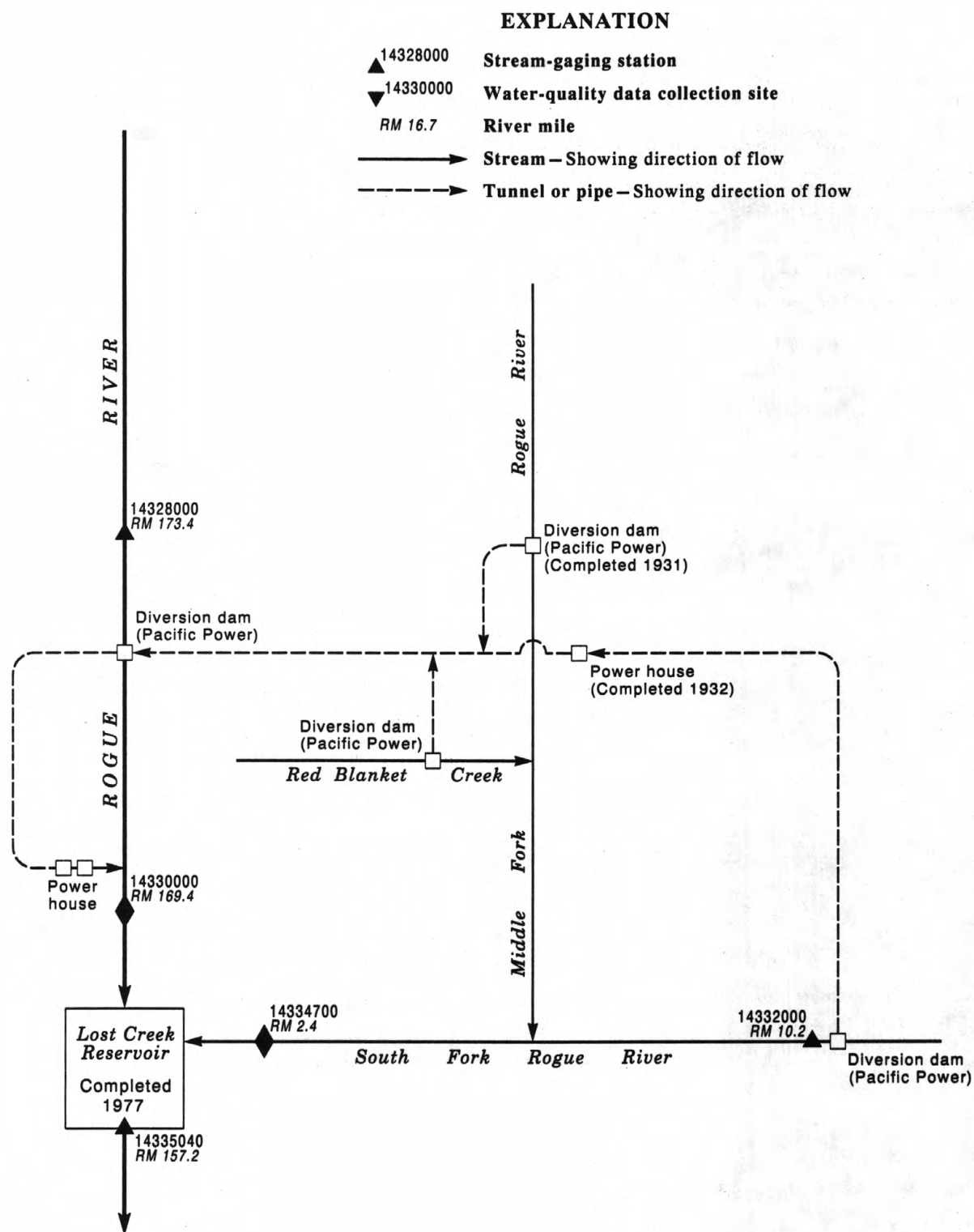


Figure 27--Schematic diagram showing gaging stations and diversions in the Rogue River Basin, above Lost Creek Reservoir.

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LOCATION.--Lat 42°46'30", long 122°29'55", in SE 1/4 NE 1/4 sec.19, T.32 S., R.3 E., Jackson County, Hydrologic Unit 17100307, Rogue River National Forest, on left bank 1.4 mi upstream from Pacific Power and Light Co. diversion dam, 1.8 mi northwest of Prospect, and at mile 173.4.

PERIOD OF RECORD.--January 1908 to February 1912, October 1923 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1925, published as "near Prospect."

GAGE.--Water-stage recorder. Elevation of gage is 2,620 ft. from river-profile map. Prior to Feb. 17, 1912, nonrecording gage at several sites within a few hundred feet upstream at various datums.

AVERAGE DISCHARGE.--73 years (water years 1909-11, 1924-93), 816 ft³/s, 35.52 in/yr, 591,200 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Minimum discharge, 222 ft³/s Oct. 13-20.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	1160	525	414	490	446	1400	1720	2290	752	570	483
2	248	1450	1020	395	483	450	1530	1730	2070	739	564	483
3	269	633	840	393	483	544	2630	2240	1870	734	558	483
4	261	466	676	406	509	691	2940	2330	1750	718	552	483
5	249	431	585	394	574	754	2340	1960	1900	704	546	483
6	241	370	550	402	699	838	1940	2360	1770	698	545	483
7	237	411	522	418	710	1010	1870	2320	1720	685	545	478
8	234	425	504	427	713	1170	1990	2010	1620	672	541	477
9	231	401	475	403	766	1310	2250	1830	1500	665	531	472
10	231	361	706	383	788	1550	2080	1940	1390	659	527	466
11	230	343	745	377	785	1810	1770	2260	1330	648	527	464
12	226	335	644	377	772	1560	1520	2320	1200	639	527	460
13	224	331	567	372	700	1440	1380	2130	1130	633	519	458
14	222	329	537	429	645	1640	1260	1950	1100	632	515	458
15	222	320	534	433	607	2870	1300	1880	1080	634	539	458
16	222	311	509	422	515	4060	1320	1980	1040	629	570	458
17	222	306	503	415	516	4830	1380	2070	1010	611	539	464
18	222	330	485	405	523	4770	1540	2130	1010	606	523	460
19	222	341	438	407	579	3960	1420	2110	1020	600	528	458
20	222	331	447	853	702	3160	1360	2400	1020	600	620	457
21	291	354	467	1070	653	2680	1400	2310	1010	596	557	452
22	285	892	434	1000	611	2260	1460	2090	908	723	529	452
23	243	612	417	773	580	3660	1490	1930	891	802	516	452
24	235	503	411	665	544	3280	1600	1880	853	670	515	452
25	231	455	395	604	481	2460	1660	2070	831	631	510	452
26	229	423	402	571	469	2000	1740	1870	830	608	509	452
27	226	504	456	543	444	1730	1530	1690	828	600	502	447
28	233	657	464	529	448	1550	1470	1620	804	595	497	446
29	275	561	451	521	---	1450	1580	1490	781	594	496	446
30	493	509	432	509	---	1350	1820	1540	761	584	490	442
31	502	---	379	499	---	1280	---	2070	---	576	484	---
TOTAL	7922	14855	16520	15809	16789	62563	50970	62230	37357	20237	16491	13879
MEAN	256	495	533	510	600	2018	1699	2007	1245	653	532	463
MAX	502	1450	1020	1070	788	4830	2940	2400	2290	802	620	483
MIN	222	306	379	372	444	446	1260	1490	761	576	484	442
AC-FT	15710	29460	32770	31360	33300	124100	101100	123400	74100	40140	32710	27530
CFSM	.82											

MEAN	451	698	905	901	948	985	1186	1344	978	545	438	418
MAX	957	2062	3368	2158	2092	2820	1888	2263	2564	1010	659	602
(WY)	1951	1910	1965	1970	1958	1972	1966	1952	1933	1953	1976	1972
MIN	256	292	313	292	325	480	649	456	335	253	222	230
(WY)	1993	1932	1931	1937	1937	1977	1926	1992	1931	1931	1931	1931

ANNUAL TOTAL	162531		335622			
ANNUAL MEAN	444		920		817	
HIGHEST ANNUAL MEAN					1268	1974
LOWEST ANNUAL MEAN					411	1931
HIGHEST DAILY MEAN	1580	Apr 10	4830	Mar 17	16000	Dec 23 1964
LOWEST DAILY MEAN	222	Oct 14	222	Oct 14	210	Jan 7 1937
ANNUAL SEVEN-DAY MINIMUM	222	Oct 14	222	Oct 14	216	Aug 30 1931
ANNUAL RUNOFF (AC-FT)	322400		665700		591700	
ANNUAL RUNOFF (CFSM)	1.42		2.95		2.62	
ANNUAL RUNOFF (INCHES)	19.38		40.02		35.57	
10 PERCENT EXCEEDS	697		1980		1480	
50 PERCENT EXCEEDS	415		580		630	
90 PERCENT EXCEEDS	253		333		357	

ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR

LOCATION.--Lat 42°43'50", long 122°30'55", in SE 1/4 NW 1/4 sec.6, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 600 ft downstream from Prospect No. 1 powerplant, 1.4 mi downstream from Mill Creek, 2.0 mi southwest of Prospect, 2.1 mi upstream from South Fork Rogue River, and at mile 169.4.

DRAINAGE AREA.--379 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1913 to September 1930, October 1968 to current year.

REVISED RECORDS.--WSP 1518: 1914-23, 1924(M), 1925, 1928.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,964.56 ft above sea level (Pacific Power and Light Co. bench mark). Prior to September 1927 nonrecording gage at site 1,000 ft upstream, above powerplants, at different datum, also concurrent nonrecording gage on headrace to obtain equivalent combined flow.

REMARKS.--Water-discharge records good. Fluctuations caused by powerplant 600 ft upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--42 years (water years 1914-30, 1969-93), 1,293 ft³/s, 936,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s Jan. 18, 1971, gage height, 7.62 ft, from high-water mark; minimum discharge, 166 ft³/s Sept. 29, 1992, result of regulation by upstream diversion gates.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 12.4 ft Dec. 22, 1964, from floodmarks, discharge, 25,000 ft³/s, from records for station upstream from Prospect (station 14328000) and for station downstream from South Fork Rogue River near Prospect (station 14335000) after adjusting for estimated intervening tributary inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,930 ft³/s Mar. 17, gage height 5.97 ft; maximum gage height, 6.93 ft, from crest-stage gage Mar. 17; minimum discharge, 251 ft³/s Oct. 9, result of regulation by upstream diversion gates.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e615	1670	964	916	955	944	2140	2530	3140	1490	1210	1020
2	615	1940	1610	864	935	948	2260	2550	2790	1480	1210	1010
3	611	1100	1370	872	958	1120	3210	3030	2540	1470	1190	1010
4	598	930	1170	882	1010	1330	3540	3080	2470	1440	1160	1000
5	579	882	1070	834	1130	1430	3060	2780	2760	1450	1160	1000
6	571	801	1040	854	1300	1570	2720	3100	2600	1460	1150	985
7	564	851	999	839	1300	1800	2640	3100	2550	1440	1150	980
8	568	877	1000	876	1330	1930	2750	2830	2360	1420	1140	983
9	562	840	982	840	1430	2030	2970	2680	2160	1410	1130	979
10	568	792	1300	822	1440	2190	2840	2770	2180	1380	1100	980
11	566	757	1340	812	1430	2370	2570	3050	2210	1370	1120	975
12	561	742	1200	799	1420	2170	2310	3100	2100	1350	1110	965
13	566	744	1080	809	1300	2070	2180	2940	2010	1340	1090	913
14	557	745	1030	907	1220	2220	2070	2800	1900	1330	1100	874
15	561	733	1020	889	1160	3280	2110	2730	1860	1350	1160	877
16	563	716	982	885	1030	4550	2100	2820	1770	1330	1180	879
17	559	714	985	868	1050	5450	2190	2890	1680	1310	1130	888
18	562	739	953	854	1060	5490	2360	2960	1770	1270	1110	878
19	555	774	911	865	1150	4720	2220	2930	1780	1240	1100	875
20	561	742	937	1410	1300	3730	2170	3160	1770	1290	1230	876
21	676	795	955	1630	1220	3310	2200	3090	1700	1270	1170	871
22	647	1440	908	1620	1150	2950	2250	2940	1750	1500	1110	878
23	594	1140	893	1290	1130	4260	2290	2800	1660	1610	1080	867
24	580	1000	882	1160	1090	3970	2400	2760	1620	1410	1080	866
25	582	936	864	1100	1000	3140	2450	2930	1610	1350	1060	860
26	569	894	883	1060	984	2740	2520	2750	1620	1310	1060	858
27	572	1010	963	1050	950	2480	2350	2590	1630	1290	1030	850
28	584	1190	968	1020	947	2310	2300	2520	1590	1270	1050	836
29	652	1050	942	1000	---	2190	2400	2420	1540	1250	1040	829
30	911	948	913	984	---	2070	2620	2460	1520	1240	1030	834
31	953	---	859	964	---	2040	---	2960	---	1220	1030	---
TOTAL	18782	28492	31973	30575	32379	82802	74190	88050	60640	42340	34670	27496
MEAN	606	950	1031	986	1156	2671	2473	2840	2021	1366	1118	917
MAX	953	1940	1610	1630	1440	5490	3540	3160	3140	1610	1230	1020
MIN	555	714	859	799	935	944	2070	2420	1520	1220	1030	829
AC-FT	37250	56510	63420	60650	64220	164200	147200	174600	120300	83980	68770	54540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	MEAN	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	958	1257	1539	1647	1642	1833	1864	2048	1665	1210	1029	955														
MAX	1342	2100	2736	2894	2722	3627	2668	3282	2923	1660	1356	1267														
(WY)	1985	1974	1982	1974	1986	1972	1989	1971	1974	1971	1984	1984														
MIN	606	817	926	946	946	1045	1272	933	765	717	632	623														
(WY)	1993	1988	1991	1977	1977	1977	1977	1992	1992	1992	1992	1992														

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1969 - 1993

ANNUAL TOTAL	335689	552389																								
ANNUAL MEAN	917	1513																								
HIGHEST ANNUAL MEAN																										
LOWEST ANNUAL MEAN																										
HIGHEST DAILY MEAN	2190																									
LOWEST DAILY MEAN	555																									
ANNUAL SEVEN-DAY MINIMUM	560																									
ANNUAL RUNOFF (AC-FT)	665800																									
10 PERCENT EXCEEDS	1320																									
50 PERCENT EXCEEDS	882																									
90 PERCENT EXCEEDS	614																									

e Estimated

ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1981.

pH: November 1976 to September 1981.

WATER TEMPERATURE: October 1968 to current year.

DISSOLVED OXYGEN: October 1979 to September 1981.

SUSPENDED SEDIMENT DISCHARGE: November 1976 to September 1981 (October to April only, 1980 water year, November to April only, 1981 water year).

INSTRUMENTATION.--Water-quality monitor since November 1976. Automatic pumping sediment sampler November 1976 to April 1981.

REMARKS.--During low flows and warm weather, water temperatures may be influenced by return flows from hydroelectric plant 600 ft upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 73 microsiemens Sept. 22, 1980; minimum recorded, 28 microsiemens Jan. 13, 1980, may have been lower during period of missing record Jan. 14-17, 1980.

pH: Maximum recorded, 8.3 units Aug. 10, 1981, may have been higher during period of no record in July and August 1981; minimum, 7.0 units Nov. 30, 1976.

WATER TEMPERATURE: Maximum, 20.5°C July 20, 1979 (result of regulation); minimum, 0.0°C at times most years.

DISSOLVED OXYGEN: Maximum, 13.6 mg/L Dec. 8, 1980, Feb. 21, 1981; minimum, 7.2 mg/L June 21, 1980, result of regulation.

SEDIMENT CONCENTRATION: Maximum daily mean (water years 1977-79), 1,270 mg/L (estimated) Jan. 11, 1979; minimum, 0 mg/L on many days each year. Maximum daily mean (period October 1979 to April 1981), 716 mg/L Oct. 25, 1979; minimum daily mean, 0 mg/L on several days in October and December 1979, Nov. 15-21, 28, Dec. 1, 1980, Jan. 19, 1981.

SEDIMENT DISCHARGE: Maximum daily (water years 1977-79), 17,790 tons Dec. 15, 1977; minimum daily, 0 tons on many days each year. Maximum daily (period October 1979 to April 1981), 5,570 tons Jan. 13, 1980; minimum daily, 0 tons on several days in October and December 1979, Nov. 15-21, 28, Dec. 1, 1980, Jan. 19, 1981.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 13.0°C June 26, July 9, 28; minimum, 1.5°C many days during December, January, and February.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	2.5	3.0	3.5	2.5	3.0	5.5	5.0	5.0	7.0	6.0	6.5
2	4.0	3.0	3.5	4.5	3.0	3.5	5.0	5.0	5.0	8.0	6.5	7.5
3	4.5	4.0	4.0	5.0	4.0	4.5	5.5	5.0	5.5	8.0	6.0	7.0
4	4.5	3.5	4.0	5.0	4.0	4.5	5.5	5.0	5.0	6.5	5.0	5.5
5	5.0	4.0	4.5	5.5	4.0	4.5	5.5	4.0	5.0	7.5	5.5	6.5
6	4.5	4.0	4.5	5.5	4.0	5.0	5.5	5.0	5.5	7.5	6.5	7.0
7	4.5	3.5	4.0	5.5	4.0	5.0	6.5	5.0	6.0	6.5	5.0	5.5
8	5.0	4.0	4.5	5.5	4.5	5.0	6.5	5.5	5.5	7.0	5.0	6.0
9	5.0	4.5	4.5	5.5	5.0	5.0	5.5	5.0	5.0	8.0	6.0	7.0
10	5.0	4.0	4.5	5.5	5.0	5.0	5.0	4.5	5.0	8.5	7.0	7.5
11	4.5	3.5	4.0	5.5	4.0	5.0	5.5	4.0	5.0	8.5	6.5	7.5
12	3.5	3.0	3.0	5.5	4.5	5.0	6.0	4.5	5.0	8.5	6.5	7.0
13	4.0	3.0	3.5	5.5	4.5	5.0	5.5	5.0	5.5	7.5	6.0	7.0
14	4.0	3.0	3.5	5.5	5.0	5.5	6.0	5.0	5.5	8.0	6.5	7.5
15	3.5	3.0	3.5	5.0	4.0	4.5	6.5	6.0	6.0	8.5	7.0	7.5
16	3.0	1.5	2.0	4.5	3.5	4.0	6.0	5.5	6.0	8.5	7.5	8.0
17	2.0	1.5	2.0	4.5	4.0	4.5	6.0	5.5	5.5	8.5	7.0	8.0
18	3.0	2.0	2.5	5.0	4.5	5.0	5.5	4.5	5.0	9.0	7.5	8.0
19	3.5	3.0	3.5	5.5	4.5	5.0	6.5	4.5	5.5	8.5	7.5	8.0
20	3.5	2.5	3.0	6.0	5.0	5.5	6.0	5.5	6.0	8.0	7.5	7.5
21	2.5	2.0	2.0	5.5	4.5	5.0	6.5	5.5	6.0	7.5	6.5	7.0
22	3.0	2.0	2.5	5.5	4.5	5.0	6.5	5.5	6.0	8.5	6.5	7.5
23	3.5	3.0	3.0	5.5	5.0	5.5	5.5	5.0	5.5	9.0	7.5	8.0
24	3.5	3.0	3.0	5.5	4.5	5.0	6.5	5.0	6.0	9.0	8.0	8.5
25	3.0	2.0	2.5	5.0	4.5	5.0	6.5	6.0	6.0	8.5	7.0	7.5
26	3.0	1.5	2.0	6.0	4.5	5.5	6.5	5.5	6.0	7.5	6.5	7.0
27	3.0	1.5	2.5	5.5	4.5	5.0	7.0	5.0	6.0	8.0	7.5	7.5
28	3.5	2.0	2.5	6.5	5.0	5.5	7.0	6.0	6.5	7.5	7.0	7.5
29	---	---	---	6.0	5.0	5.5	7.5	7.0	7.0	8.5	7.5	8.0
30	---	---	---	6.0	5.0	5.5	7.0	6.0	6.5	8.5	7.5	8.0
31	---	---	---	5.5	5.0	5.5	---	---	---	8.0	7.5	7.5
MONTH	5.0	1.5	3.5	6.5	2.5	5.0	7.5	4.0	5.5	9.0	5.0	7.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	8.0	7.0	7.5	12.0	9.5	10.5	---	---	---	---	---	---
2	8.0	7.0	7.5	11.5	10.0	10.5	---	---	---	---	---	---
3	8.0	7.0	7.5	11.5	9.0	10.0	---	---	---	---	---	---
4	8.5	8.0	8.0	12.0	9.5	10.5	---	---	---	---	---	---
5	8.0	7.0	7.5	12.5	9.5	11.0	---	---	---	---	---	---

ROGUE RIVER BASIN

393

14332000 SOUTH FORK ROGUE RIVER NEAR PROSPECT, OR

LOCATION.--Lat 42°42'30", long 122°23'30", in SE 1/4 SW 1/4 sec.7, T.33 S., R.4 E., Jackson County, Hydrologic Unit 17100307, in Rogue River National Forest, on left bank 0.3 mi downstream from South Fork dam and intake of South Fork power canal, 0.31 mi downstream from Imnaha Creek, 5.6 mi southeast of Prospect, and at mile 10.2.

DRAINAGE AREA.--83.8 mi². Drainage area at site upstream from Imnaha Creek was used October 1931 to September 1949, 61.3 mi²; and Imnaha Creek near Prospect, 22.2 mi².

PERIOD OF RECORD.--April 1924 to September 1931, October 1949 to current year. Equivalent records for period October 1931 to September 1949 may be obtained by combining flow of South Fork Rogue River above Imnaha Creek, near Prospect and Imnaha Creek near Prospect. Records for period October 1949 to September 1983 included flow of South Fork power canal.

REVISED RECORDS.--WSP 1318: 1925(M), 1927(M), 1930(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,300 ft, from topographic map. Prior to Sept. 10, 1965, at site 1,000 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. All records given herein do not include flow in South Fork power canal (completed in March 1932) which diverts 1,500 ft upstream from station and returns water to main stem Rogue River upstream from South Fork Rogue River; practically no storage upstream from diversion dam.

AVERAGE DISCHARGE.--59 years (water years 1925-83), 178 ft³/s, 129,000 acre-ft/yr (includes flow of South Fork power canal).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 7,010 ft³/s Dec. 22, 1964, gage height, 11.1 ft, from floodmark, from rating curve extended above 410 ft³/s on basis of measurement of flow over dam of 3,180 ft³/s; no flow Jan. 31, 1950, Sept. 29, 30, 1967 (entire flow diverted to canal).

Combined flow, maximum discharge, 7,010 ft³/s Dec. 22, 1964 (no flow in canal); minimum daily, about 38 ft³/s Aug. 1-31, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 918 ft³/s Mar. 19, gage height, 4.44 ft; minimum discharge, 8.7 ft³/s Feb. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	124	56	14	13	13	186	223	420	36	13	13
2	14	448	33	14	13	13	183	242	396	33	13	14
3	14	44	22	14	13	15	280	354	326	29	13	14
4	14	15	18	14	13	15	377	314	318	25	13	14
5	13	17	16	14	14	15	298	254	371	22	13	13
6	14	17	15	13	15	16	249	409	373	20	13	13
7	14	17	14	13	15	18	261	360	370	16	13	13
8	14	16	15	13	17	19	292	305	348	16	13	13
9	14	14	16	12	21	20	319	269	287	14	12	12
10	14	14	22	12	19	37	284	299	273	14	13	12
11	14	13	16	12	19	69	239	372	260	15	13	13
12	14	13	14	13	17	70	207	365	221	18	13	14
13	14	14	13	14	16	81	194	292	198	17	12	57
14	13	15	15	16	15	132	177	269	189	16	12	78
15	13	15	14	14	15	275	191	270	180	16	18	78
16	13	14	14	14	14	453	180	298	164	15	15	78
17	13	15	15	13	14	583	197	312	153	14	13	79
18	13	17	15	13	14	780	209	336	146	14	13	78
19	13	18	14	13	14	649	187	335	138	14	13	77
20	13	17	15	34	13	509	177	417	128	14	14	76
21	14	22	14	38	12	416	174	378	117	14	13	76
22	12	46	13	56	12	354	175	311	99	43	13	75
23	12	14	14	35	12	513	171	291	86	101	13	75
24	12	13	14	20	11	482	182	295	76	34	13	74
25	12	14	14	17	11	378	196	345	69	20	13	74
26	13	14	14	16	12	317	221	305	63	18	13	73
27	13	16	16	14	13	276	180	264	57	16	14	73
28	14	19	15	13	13	243	169	237	52	15	13	73
29	14	15	15	13	---	220	205	224	46	14	13	72
30	19	50	14	13	---	210	239	223	41	13	13	72
31	24	---	14	13	---	180	---	401	---	13	13	---
TOTAL	431	1100	529	537	400	7371	6599	9569	5965	679	409	1496
MEAN	13.9	36.7	17.1	17.3	14.3	238	220	309	199	21.9	13.2	49.9
MAX	24	448	56	56	21	780	377	417	420	101	18	79
MIN	12	13	13	12	11	13	169	223	41	13	12	12
AC-FT	855	2180	1050	1070	793	14620	13090	18980	11830	1350	811	2970

CAL YR 1992 TOTAL 6704 MEAN 18.3 MAX 448 MIN 11 AC-FT 13300
WTR YR 1993 TOTAL 35085 MEAN 96.1 MAX 780 MIN 11 AC-FT 69590

ROGUE RIVER BASIN

14335040 LOST CREEK LAKE NEAR MCLEOD, OR

LOCATION.--Lat 42°40'16", long 122°40'25", in SW 1/4 sec.26, T.33 S., R. 1 E., Jackson County, Hydrologic Unit 17100307, in outlet structure of Lost Creek Dam on Rogue River, 1.0 mi northeast of McLeod and at mile 157.2.

DRAINAGE AREA.--686 mi².

PERIOD OF RECORD.--February 1977 to current year.

REVISED RECORDS.--WDR OR-85-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers). Prior to Nov. 28, 1977, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed in October 1976. Storage began in February 1977. Total capacity, 465,000 acre-ft between elevations 1,551.0 ft and 1,872.0 ft, maximum pool elevation. Elevation of gated spillway crest, 1,823.0 ft. Usable storage, 315,000 acre-ft between elevation 1,751.0 ft and 1,872.0 ft. Water is used for flood control, recreation, power generation, pollution abatement, domestic use and other purposes.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 465,800 acre-ft June 1, 2, 1988, elevation, 1,872.24 ft; minimum contents since first filling, 100,800 acre-ft Oct. 29, 1977, elevation, 1,720.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 464,700 acre-ft May 11, elevation, 1,871.92 ft; minimum contents, 171,900 acre-ft Oct. 29, elevation, 1,762.67 ft.

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

1,720	100,100	1,850	393,100
1,750	148,200	1,872	465,000
1,800	254,600	1,899	562,900

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1766.32	1765.18	1774.94	1790.53	1806.52	1822.85	1860.15	1869.41	1871.35	1868.08	1847.81	1825.90
2	1766.20	1767.90	1775.99	1790.86	1806.91	1823.24	1860.59	1869.73	1871.49	1867.62	1846.94	1825.24
3	1766.11	1768.60	1776.75	1791.17	1807.38	1823.75	1861.58	1870.35	1871.48	1867.16	1846.08	1824.58
4	1766.00	1768.96	1777.28	1791.52	1807.86	1824.38	1862.01	1870.79	1871.52	1866.67	1845.22	1823.91
5	1765.88	1769.13	1777.69	1791.82	1808.45	1825.06	1861.71	1870.96	1871.66	1866.16	1844.43	1823.23
6	1765.75	1769.17	1778.06	1792.09	1809.16	1825.82	1861.04	1871.39	1871.62	1865.63	1843.64	1822.53
7	1765.61	1769.26	1778.44	1792.42	1809.89	1826.75	1860.70	1871.38	1871.68	1865.07	1842.89	1821.83
8	1765.47	1769.38	1779.17	1792.78	1810.68	1827.81	1860.95	1871.36	1871.75	1864.50	1842.14	1821.11
9	1765.31	1769.44	1779.82	1793.04	1811.55	1829.00	1861.33	1871.45	1871.75	1863.88	1841.44	1820.38
10	1765.17	1769.45	1780.95	1793.26	1812.42	1830.26	1861.51	1871.75	1871.75	1863.20	1840.74	1819.65
11	1765.02	1769.46	1781.91	1793.45	1813.30	1831.57	1861.66	1871.75	1871.73	1862.52	1840.04	1819.07
12	1764.87	1769.48	1782.61	1793.62	1814.19	1832.68	1861.99	1871.45	1871.71	1861.83	1839.35	1818.55
13	1764.71	1769.48	1783.12	1793.82	1814.92	1833.72	1862.25	1870.85	1871.74	1861.13	1838.63	1818.02
14	1764.55	1769.48	1783.60	1794.26	1815.56	1834.96	1862.52	1870.06	1871.82	1860.43	1837.92	1817.50
15	1764.39	1769.50	1784.03	1794.61	1816.14	1837.35	1862.89	1869.24	1871.86	1859.73	1837.35	1816.96
16	1764.24	1769.50	1784.43	1794.95	1816.60	1841.09	1863.22	1868.60	1871.86	1859.03	1836.73	1816.44
17	1764.07	1769.49	1784.82	1795.24	1817.06	1845.80	1863.67	1868.34	1871.83	1858.34	1836.04	1815.94
18	1763.92	1769.40	1785.18	1795.52	1817.56	1850.37	1864.26	1868.91	1871.85	1857.64	1835.34	1815.42
19	1763.75	1769.51	1785.49	1795.84	1818.17	1853.11	1864.68	1869.77	1871.87	1856.94	1834.65	1814.89
20	1763.62	1769.60	1785.88	1797.35	1818.82	1854.30	1865.06	1870.61	1871.83	1856.25	1834.06	1814.58
21	1763.64	1770.00	1786.33	1799.01	1819.42	1854.92	1865.44	1870.23	1871.75	1855.57	1833.38	1814.47
22	1763.56	1771.16	1786.70	1800.68	1819.97	1855.14	1865.86	1870.02	1871.54	1855.15	1832.67	1814.38
23	1763.45	1771.79	1787.02	1801.70	1820.54	1856.67	1866.31	1870.01	1871.26	1854.78	1831.92	1814.29
24	1763.30	1772.21	1787.29	1802.49	1821.01	1857.92	1866.84	1870.27	1870.93	1854.18	1831.19	1814.21
25	1763.15	1772.55	1787.55	1803.15	1821.40	1858.39	1867.25	1870.50	1870.58	1853.53	1830.42	1814.12
26	1763.00	1772.85	1787.86	1803.74	1821.79	1858.44	1867.68	1870.46	1870.23	1852.83	1829.75	1814.04
27	1762.85	1773.25	1788.27	1804.27	1822.14	1858.63	1867.93	1870.36	1869.87	1852.06	1829.12	1813.95
28	1762.72	1773.79	1788.76	1804.77	1822.49	1858.83	1868.16	1870.31	1869.45	1851.22	1828.50	1813.86
29	1762.75	1774.19	1789.16	1805.23	---	1859.12	1868.52	1870.24	1869.01	1850.39	1827.84	1813.77
30	1763.10	1774.53	1789.55	1805.68	---	1859.47	1869.05	1870.33	1868.53	1849.54	1827.20	1813.67
31	1763.54	---	1790.09	1806.11	---	1859.79	---	1870.92	---	1848.68	1826.55	---
MAX	1766.32	1774.53	1790.09	1806.11	1822.49	1859.79	1869.05	1871.75	1871.87	1868.08	1847.81	1825.90
MIN	1762.72	1765.18	1774.94	1790.53	1806.52	1822.85	1860.15	1868.34	1868.53	1848.68	1826.55	1813.67
(†)	173500	196000	230800	269900	313000	424200	454900	461300	453200	389000	324100	289400
(‡)	-6100	+22500	+34800	+39100	+43100	+111200	+30700	+6400	-8100	-64200	-64900	-34700

CAL YR 1992 MAX 1850.47 MIN 1762.72 AC-FT† -53900

WTR YR 1993 MAX 1871.87 MIN 1762.72 AC-FT‡ +109800

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

‡ Change in contents, in acre-feet.

ROGUE RIVER BASIN

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14335075 ROGUE RIVER AT MCLEOD, OR

LOCATION.--Lat 42°39'35", long 122°41'30", in SW 1/4 NW 1/4 sec.34, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.3 mi upstream from Big Butte Creek, 0.1 southwest of McLeod, and at mile 155.6.

DRAINAGE AREA.--689 mi².

PERIOD OF RECORD.--May 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1981.

pH: November 1976 to September 1981.

WATER TEMPERATURE: November 1976 to current year.

DISSOLVED OXYGEN: November 1976 to September 1981.

SUSPENDED SEDIMENT DISCHARGE: October 1976 to September 1981 (October to April only, 1980 water year, November to April only, 1981 water year).

INSTRUMENTATION.--Water-quality monitor since November 1976. Automatic pumping sediment sampler November 1976 to April 1981.

REMARKS.--Water-discharge records, obtained by subtracting Big Butte Creek near McLeod (station 14337500) from Rogue River near McLeod (station 14337600), were used for computation of daily sediment loads.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 76 microsiemens Nov. 11, 1977; minimum, 45 microsiemens Dec. 24, 25, 1977.

pH: Maximum, 9.2 units May 8, 9, 11, 12, 1981; minimum, 6.7 units Nov. 8-13, 1978.

WATER TEMPERATURE: Maximum, 15.5°C June 23, 1985; minimum, 0.5°C Jan. 9, 1977; minimum since full operation of Lost Creek Lake, 3.5°C several days in February 1979, February 1985, February and March 1989. The minimum may have been lower during period of missing record Feb. 1-20, 1985.

DISSOLVED OXYGEN: Maximum, 15.7 mg/L Jan. 8, 1977; minimum, 6.8 mg/L Aug. 20, 1977.

SEDIMENT CONCENTRATION: Maximum recorded daily mean, 75 mg/L Dec. 14, 1977; minimum daily, 0 mg/L many days.

SEDIMENT DISCHARGE: Maximum recorded daily, 1,570 tons Dec. 14, 1977; minimum daily, 0 tons many days.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.0°C Aug. 29, but may have been higher during period of missing record Aug. 15-27; minimum, 4.5°C many days during January through March.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10.5	9.0	9.5	8.0	7.5	7.5	7.0	7.0	7.0	5.5	5.0	5.0
2	9.5	9.0	9.0	8.0	7.5	8.0	7.0	7.0	7.0	5.5	5.0	5.0
3	9.5	9.0	9.0	8.0	7.5	7.5	7.0	6.5	7.0	5.5	5.0	5.5
4	10.0	9.0	9.0	8.0	7.5	7.5	7.0	6.5	6.5	5.5	5.0	5.0
5	10.0	9.0	9.5	8.0	7.5	7.5	7.0	6.5	6.5	5.5	5.0	5.0
6	10.0	9.0	9.5	8.0	7.5	8.0	7.0	6.5	7.0	5.5	5.0	5.0
7	10.0	8.5	9.0	8.0	7.5	8.0	7.0	6.5	6.5	5.5	5.0	5.5
8	9.5	6.5	8.0	8.0	7.5	7.5	6.5	6.5	6.5	5.5	5.0	5.5
9	7.5	6.5	7.0	8.0	7.5	7.5	6.5	6.5	6.5	5.0	5.0	5.0
10	7.5	6.5	7.0	8.0	7.0	7.5	6.5	6.5	6.5	5.5	5.0	5.0
11	7.5	6.5	7.0	8.0	7.0	7.5	6.5	6.0	6.5	5.0	5.0	5.0
12	7.5	6.5	7.0	8.0	7.5	7.5	6.5	6.0	6.5	5.0	5.0	5.0
13	7.5	6.5	7.0	8.0	7.0	7.5	6.5	6.0	6.0	5.0	5.0	5.0
14	7.0	6.5	6.5	8.0	7.0	7.5	6.0	6.0	6.0	5.5	5.0	5.0
15	7.0	6.5	6.5	8.0	7.0	7.5	6.5	6.0	6.0	5.0	5.0	5.0
16	7.5	6.5	7.0	7.5	7.5	7.5	6.0	6.0	6.0	5.5	4.5	5.0
17	7.5	6.5	7.0	7.5	7.5	7.5	6.5	5.5	6.0	5.0	4.5	5.0
18	7.5	6.5	7.0	8.0	7.5	7.5	6.0	5.5	6.0	5.0	4.5	5.0
19	7.5	6.5	7.0	7.5	7.5	7.5	6.0	5.5	6.0	5.0	4.5	5.0
20	7.0	6.5	7.0	8.0	7.0	7.5	6.0	5.5	6.0	5.0	5.0	5.0
21	7.5	7.0	7.0	7.5	7.0	7.5	6.0	5.5	6.0	5.0	4.5	5.0
22	8.0	7.0	7.0	7.5	7.0	7.5	6.0	5.5	5.5	5.0	4.5	5.0
23	8.0	7.0	7.5	7.5	7.0	7.0	6.0	5.5	5.5	5.0	4.5	5.0
24	8.0	7.0	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.5	5.0	5.0
25	8.0	7.0	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.5	4.5	5.0
26	8.0	7.0	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.0	4.5	5.0
27	8.0	7.0	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.0	4.5	5.0
28	8.0	7.5	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.5	5.0	5.0
29	8.0	7.5	7.5	7.0	7.0	7.0	5.5	5.0	5.5	5.5	5.0	5.0
30	8.0	7.5	7.5	7.0	7.0	7.0	5.5	5.0	5.5	5.5	4.5	5.0
31	7.5	7.5	7.5	---	---	---	5.5	5.0	5.5	5.5	5.0	5.0
MONTH	10.5	6.5	7.5	8.0	7.0	7.5	7.0	5.0	6.0	5.5	4.5	5.0

ROGUE RIVER BASIN

14335075 ROGUE RIVER AT MCLEOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

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LOCATION.--Lat 42°39'05", long 122°41'25", in NE 1/4 NW 1/4 sec.3, T.34 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 225 ft upstream from county road bridge, 0.9 mi south of McLeod, and at mile 0.64.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,525.95 ft above sea level. Oct. 9, 1945, to Sept. 30, 1957, nonrecording gage at site 260 ft downstream at datum 0.53 ft higher.

REMARKS.--No estimated daily discharges. Records good. Slight regulation by fish hatchery 600 ft upstream from station. Several diversions in the vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District Canal.

AVERAGE DISCHARGE.--38 years (water years 1946-57, 1968-93), 260 ft³/s, 188,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft³/s Dec. 22, 1955, gage height, 12.75 ft, site and datum then in use, from rating curve extended above 3,300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.4 ft³/s June 23, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 18.6 ft, present site, from floodmark by local resident, discharge, 16,800 ft³/s, from rating curve, at former site, extended above 9,000 ft³/s and field estimate of overflow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 21	2200	*2,280	*7.31	No other peak greater than base discharge.			
Minimum discharge, 49 ft ³ /s several days in October.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	164	89	346	189	165	413	265	310	86	71	54
2	85	220	156	212	179	194	382	254	288	83	69	53
3	89	91	128	165	177	306	484	301	252	80	68	53
4	89	72	99	173	187	343	783	298	279	78	62	53
5	87	66	89	188	208	339	691	259	842	75	59	55
6	85	61	86	165	231	327	590	321	670	74	57	55
7	83	60	96	253	234	322	534	342	600	72	58	53
8	83	59	383	338	245	314	610	338	501	73	58	54
9	84	60	693	263	288	304	767	306	417	72	57	54
10	84	59	840	197	276	409	783	290	363	70	58	54
11	83	57	468	164	287	463	800	275	319	70	58	54
12	82	56	343	145	327	490	703	255	286	70	58	56
13	83	56	212	139	260	501	627	238	256	76	57	56
14	83	55	162	298	224	551	561	213	231	73	58	55
15	82	54	149	246	205	752	534	196	214	73	85	54
16	51	54	127	252	179	881	475	185	199	73	78	59
17	49	55	140	217	166	1160	540	175	182	72	67	66
18	49	56	137	189	161	1130	750	165	168	70	62	63
19	49	71	116	220	181	993	618	158	158	69	65	66
20	50	77	182	1100	209	861	548	198	150	71	77	64
21	61	131	299	1130	189	757	516	205	142	70	64	64
22	57	351	221	1330	227	678	468	169	139	119	62	63
23	53	160	167	726	289	965	450	149	129	149	60	64
24	51	110	144	519	245	952	452	137	120	87	60	65
25	49	93	126	403	186	816	410	148	111	76	59	65
26	49	84	119	331	163	733	385	146	104	73	58	66
27	49	85	212	290	153	657	341	128	99	74	58	67
28	51	89	226	261	154	595	318	120	93	73	58	67
29	56	85	199	236	---	474	299	124	91	73	58	66
30	78	81	177	217	---	388	283	117	88	72	56	65
31	87	---	355	205	---	367	---	291	---	72	55	---
TOTAL	2124	2772	6970	10918	6019	18187	16115	6766	7801	2418	1930	1783
MEAN	68.5	92.4	225	352	215	587	537	218	260	78.0	62.3	59.4
MAX	89	351	840	1330	327	1160	800	342	842	149	85	67
MIN	49	54	86	139	153	165	283	117	88	69	55	53
AC-FT	4210	5500	13820	21660	11940	36070	31960	13420	15470	4800	3830	3540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1993, BY WATER YEAR (WY)

MEAN	126	197	390	465	473	507	374	237	140	80.5	68.1	70.5
MAX	330	535	1334	1325	1121	1362	723	492	450	148	121	106
(WY)	1951	1974	1956	1956	1982	1972	1974	1953	1953	1948	1956	1948
MIN	64.4	60.2	58.0	64.2	91.7	92.2	73.4	57.0	43.7	36.7	43.0	43.8
(WY)	1982	1988	1977	1977	1977	1992	1977	1968	1968	1968	1992	1988

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1946 - 1993
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ANNUAL TOTAL	30892		83803			
ANNUAL MEAN	84.4		230		260	
HIGHEST ANNUAL MEAN					501	1956
LOWEST ANNUAL MEAN					76.6	1992
HIGHEST DAILY MEAN	840	Dec 10	1330	Jan 22	7190	Jan 22 1972
LOWEST DAILY MEAN	38	Aug 17	49	Oct 17	15	Jun 24 1977
ANNUAL SEVEN-DAY MINIMUM	40	Aug 17	51	Oct 23	30	Jun 23 1977
ANNUAL RUNOFF (AC-FT)	61270		166200		188200	
10 PERCENT EXCEEDS	131		549		586	
50 PERCENT EXCEEDS	66		149		144	
90 PERCENT EXCEEDS	45		56		57	

ROGUE RIVER BASIN

14337500 BIG BUTTE CREEK NEAR MCLEOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1970 to current year.

INSTRUMENTATION.--Temperature recorder since August 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0°C at times in 1973, 1977, 1979-81, 1990; minimum, 0.0°C at times most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 21.5°C Aug. 3, 4; minimum, 2.0°C Dec. 5, Feb. 16, 25-28.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.0	11.5	12.5	10.5	9.5	10.0	7.5	6.5	7.0	4.5	3.5	4.0
2	11.5	10.0	10.5	11.5	9.5	10.5	7.5	7.0	7.0	4.0	3.0	3.5
3	12.0	10.0	10.5	9.5	7.5	8.5	7.0	4.5	6.0	5.0	3.5	4.0
4	12.0	8.0	10.0	9.5	8.5	9.0	4.5	3.0	3.5	5.0	3.5	4.0
5	12.0	8.0	10.0	10.5	9.0	9.5	4.0	2.0	3.0	4.5	3.0	4.0
6	12.0	8.0	10.0	10.5	8.5	9.5	6.0	4.0	5.0	4.5	3.5	4.0
7	11.5	7.5	9.5	10.5	8.5	10.0	6.5	5.5	6.0	5.0	4.0	4.5
8	11.0	7.5	9.5	9.0	7.5	8.5	5.5	5.5	5.5	5.0	3.5	4.5
9	11.5	7.5	9.5	8.5	6.0	7.5	6.0	5.0	5.5	4.0	3.5	4.0
10	12.0	8.0	10.0	6.5	4.5	5.5	6.5	5.5	6.0	4.5	3.5	4.0
11	12.5	8.5	10.5	6.5	4.0	5.0	5.5	4.5	5.0	4.5	3.5	4.0
12	12.5	8.5	10.5	7.5	5.0	6.0	6.0	5.0	5.5	4.5	3.5	4.0
13	12.0	8.5	10.0	7.5	5.0	6.0	5.0	3.5	4.5	5.0	4.0	4.5
14	10.5	7.5	9.0	7.5	5.0	6.5	4.5	3.5	4.5	5.5	4.5	5.0
15	9.0	6.0	8.0	7.0	5.0	6.0	5.5	4.5	5.0	5.0	3.5	4.5
16	10.5	7.0	9.0	7.0	5.0	6.0	4.5	3.5	4.0	5.5	4.5	5.0
17	11.0	7.5	9.5	8.0	6.5	7.5	5.0	3.5	4.5	4.5	3.0	4.0
18	12.0	8.5	10.0	8.5	7.0	7.5	5.0	4.0	4.5	5.0	3.0	4.0
19	11.5	8.5	10.0	8.0	6.5	7.5	4.0	3.0	3.5	5.5	4.0	4.5
20	9.5	8.0	9.0	6.5	5.5	6.0	5.0	4.0	4.5	6.0	5.0	5.5
21	12.0	9.5	10.5	7.0	6.0	6.5	5.5	4.5	5.0	5.5	4.5	5.0
22	11.5	9.0	10.0	7.5	7.0	7.0	5.0	4.0	5.0	4.5	4.5	5.0
23	11.5	8.0	10.0	7.0	5.0	6.0	5.5	5.0	5.0	4.5	3.5	4.0
24	11.0	8.0	9.5	5.5	4.0	5.0	5.0	4.5	5.0	6.0	4.5	5.5
25	11.0	7.5	9.0	7.0	5.5	6.5	5.0	3.5	4.0	5.5	4.5	5.0
26	10.5	7.5	9.0	7.5	5.0	6.0	5.0	3.5	4.5	5.0	4.0	4.5
27	11.0	8.0	9.5	8.5	7.5	8.0	5.0	4.5	5.0	5.0	3.5	4.5
28	11.0	9.5	10.0	7.5	6.0	7.0	5.5	5.0	5.5	6.0	5.0	5.5
29	10.0	9.0	9.5	6.0	4.5	5.0	5.0	3.5	4.5	6.0	5.0	5.5
30	9.5	9.0	9.5	6.5	5.0	5.5	4.0	3.5	4.0	5.5	3.5	4.5
31	9.5	9.0	9.0	---	---	---	4.5	3.5	4.0	5.5	3.5	4.5
MONTH	14.0	6.0	10.0	11.5	4.0	7.0	7.5	2.0	5.0	6.0	3.0	4.5

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ROGUE RIVER BASIN

14337600 ROGUE RIVER NEAR MCLEOD, OR

LOCATION.--Lat 42°39'20", long 122°42'50", in SW 1/4 sec.33, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on left bank at Obstinate J Ranch, 1.3 mi downstream from Big Butte Creek, 1.6 mi southwest of McLeod, and at mile 154.0.

DRAINAGE AREA.--938 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,489.08 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek is diverted near Butte Falls.

AVERAGE DISCHARGE.--28 years, 2,069 ft³/s, 1,499,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s Mar. 3, 1972, gage height, 12.24 ft; minimum discharge, 468 ft³/s Feb. 18, 1977, result of closure of Lost Creek Dam, minimum prior to that time, 604 ft³/s Sept. 5, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 20.35 ft Dec. 22, 1964, from floodmarks, discharge, 74,300 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,860 ft³/s Apr. 4, gage height, 4.98 ft; minimum discharge, 782 ft³/s Nov. 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	914	838	1100	987	939	2760	2970	4160	2620	2680	2140
2	943	968	908	936	988	968	2740	3040	4300	2600	2680	2130
3	903	863	885	878	930	1080	3380	3510	4150	2600	2650	2140
4	899	868	861	886	937	1150	5310	3780	3990	2600	2620	2130
5	882	916	847	914	980	1180	5660	3680	4990	2600	2550	2130
6	884	969	843	878	998	1170	5540	4010	4690	2600	2530	2160
7	889	957	852	980	999	1170	4860	4730	4360	2600	2490	2180
8	897	957	1120	1100	992	1160	4150	4250	4010	2600	2460	2170
9	898	972	1450	1040	1020	1150	4460	3750	3800	2640	2410	2180
10	896	962	1600	967	1020	1420	4560	3460	3600	2670	2380	2180
11	898	924	1240	927	1060	1680	4200	4450	3510	2670	2390	1960
12	892	901	1100	903	1140	1700	3440	5060	3200	2660	2380	1830
13	905	932	946	898	1060	1710	3260	5180	2930	2670	2380	1850
14	902	901	887	1090	1010	1760	3020	5240	2790	2640	2380	1840
15	900	885	873	1020	993	1970	2860	5220	2770	2670	2410	1840
16	869	890	847	1030	962	2130	2810	5020	2760	2630	2400	1830
17	865	903	861	991	943	2440	2860	4540	2730	2610	2380	1840
18	873	909	857	958	934	2890	3060	3190	2630	2600	2370	1840
19	868	930	829	999	959	4170	2950	2710	2600	2590	2370	1850
20	881	893	904	1950	998	4920	2890	3170	2690	2600	2410	1540
21	893	851	1050	1960	972	4800	2860	5220	2710	2610	2390	1230
22	888	1080	960	2180	1020	4720	2810	4490	2730	2640	2390	1200
23	883	890	898	1550	1090	5040	2770	3860	2710	2680	2380	1200
24	879	824	870	1340	1040	5020	2780	3370	2700	2630	2380	1190
25	875	803	848	1240	969	4860	2950	3750	2690	2610	2390	1190
26	876	787	837	1170	940	4560	3040	3930	2680	2610	2240	1190
27	878	815	942	1120	930	3980	2990	3720	2670	2670	2160	1190
28	879	835	948	1080	928	3600	2930	3550	2670	2720	2150	1190
29	890	823	935	1050	---	3130	2880	3390	2670	2680	2160	1190
30	889	826	903	1030	---	2740	2860	3250	2670	2690	2150	1190
31	841	---	1160	1020	---	2720	---	3590	---	2690	2150	---
TOTAL	27725	26948	29899	35185	27799	81927	103640	123080	97560	81700	74260	51720
MEAN	894	898	964	1135	993	2643	3455	3970	3252	2635	2395	1724
MAX	1110	1080	1600	2180	1140	5040	5660	5240	4990	2720	2680	2180
MIN	841	787	829	878	928	939	2740	2710	2600	2590	2150	1190
AC-FT	54990	53450	59300	69790	55140	162500	205600	244100	193500	162100	147300	102600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1282	1626	2176	1733	1651	1989	2384	2613	2323	2182	2173	1705				
MAX	1905	3544	5081	3061	3962	3556	3821	4022	3755	3024	2921	2195				
(WY)	1984	1985	1982	1980	1982	1986	1989	1984	1984	1984	1984	1983				
MIN	894	898	964	1049	844	843	920	1578	1658	1123	1866	1290				
(WY)	1993	1993	1993	1992	1988	1988	1992	1992	1992	1992	1978	1980				

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1978 - 1993

	1992	1993	1978-1993
ANNUAL TOTAL	445049	761443	
ANNUAL MEAN	1216	2086	
HIGHEST ANNUAL MEAN			1989
LOWEST ANNUAL MEAN			3114
HIGHEST DAILY MEAN	2410	5660	13000
LOWEST DAILY MEAN	787	787	730
ANNUAL SEVEN-DAY MINIMUM	816	816	734
ANNUAL RUNOFF (AC-FT)	882800	1510000	1441000
10 PERCENT EXCEEDS	2010	3980	3090
50 PERCENT EXCEEDS	1040	1960	1850
90 PERCENT EXCEEDS	884	882	1020

ROGUE RIVER BASIN
14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued
WATER-QUALITY RECORDS

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PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1970 to current year.

INSTRUMENTATION.--Temperature recorder since August 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 18.0°C July 17, 18, Aug. 7, 1973; minimum, 0.5°C Jan. 3-5, 14, 15, 1971. Maximum since full operation of Lost Creek Lake, 15.0°C July 1, 1980, June 22, 23, July 24-30, 1992; minimum, 3.0°C Feb. 2, 1979, Feb. 6, 7, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.5°C Aug. 24; minimum, 4.0°C Feb. 16.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.0	10.5	10.5	8.5	8.0	8.0	7.0	7.0	7.0	5.0	5.0	5.0
2	10.5	10.0	10.0	9.0	8.5	8.5	7.0	7.0	7.0	5.0	4.5	5.0
3	10.0	9.5	10.0	8.5	8.0	8.0	7.0	6.5	7.0	5.5	5.0	5.0
4	10.0	9.5	9.5	8.0	8.0	8.0	6.5	6.0	6.0	5.5	5.0	5.0
5	10.0	9.5	9.5	8.0	8.0	8.0	6.0	5.5	6.0	5.0	5.0	5.0
6	9.5	9.5	9.5	8.5	8.0	8.0	6.5	6.0	6.5	5.0	5.0	5.0
7	9.5	9.0	9.5	8.5	8.0	8.0	7.0	6.5	6.5	5.5	5.0	5.0
8	9.5	8.5	9.0	8.0	8.0	8.0	6.5	6.0	6.5	5.5	5.0	5.5
9	8.5	7.5	7.5	8.0	7.5	8.0	6.5	6.0	6.0	5.0	5.0	5.0
10	7.5	7.0	7.5	7.5	7.0	7.5	6.5	6.5	6.5	5.0	4.5	5.0
11	7.5	7.0	7.5	7.5	7.0	7.0	6.5	6.0	6.0	5.0	5.0	5.0
12	7.5	7.0	7.5	7.5	7.0	7.5	6.5	6.0	6.0	5.0	5.0	5.0
13	7.5	7.0	7.5	7.5	7.0	7.5	6.0	5.5	6.0	5.0	5.0	5.0
14	7.5	7.0	7.0	7.5	7.0	7.5	6.0	5.5	5.5	5.5	5.0	5.5
15	7.0	6.5	7.0	7.5	7.0	7.5	6.0	6.0	6.0	5.5	5.0	5.0
16	7.5	7.0	7.0	7.5	7.0	7.5	6.0	5.5	5.5	5.5	5.0	5.0
17	7.5	7.0	7.0	7.5	7.5	7.5	6.0	5.5	5.5	5.5	4.5	5.0
18	7.5	7.0	7.5	8.0	7.5	7.5	6.0	5.5	5.5	5.0	4.5	4.5
19	7.5	7.0	7.5	7.5	7.5	7.5	5.5	5.5	5.5	5.0	4.5	5.0
20	7.5	7.0	7.0	7.5	7.0	7.5	6.0	5.5	5.5	5.5	5.0	5.0
21	7.5	7.5	7.5	7.5	7.0	7.5	6.0	5.5	5.5	5.5	5.0	5.5
22	8.0	7.5	7.5	7.5	7.5	7.5	6.0	5.5	5.5	5.5	5.0	5.5
23	8.0	7.0	7.5	7.5	7.0	7.5	6.0	5.5	5.5	5.0	4.5	5.0
24	8.0	7.5	7.5	7.0	6.5	6.5	6.0	5.5	5.5	5.5	5.0	5.0
25	8.0	7.5	7.5	7.5	7.0	7.0	5.5	5.5	5.5	5.5	5.0	5.5
26	8.0	7.5	7.5	7.5	6.5	7.0	5.5	5.0	5.5	5.5	5.0	5.0
27	8.0	7.5	8.0	7.5	7.5	7.5	5.5	5.5	5.5	5.0	5.0	5.0
28	8.0	7.5	8.0	7.5	7.0	7.5	5.5	5.5	5.5	5.5	5.0	5.0
29	8.0	8.0	8.0	7.0	6.5	7.0	5.5	5.5	5.5	5.5	5.0	5.5
30	8.0	8.0	8.0	7.0	6.5	7.0	5.5	5.0	5.0	5.5	4.5	5.0
31	8.0	8.0	8.0	---	---	---	5.0	5.0	5.0	5.0	4.5	5.0
MONTH	11.0	6.5	8.0	9.0	6.5	7.5	7.0	5.0	6.0	5.5	4.5	5.0

ROGUE RIVER BASIN

14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

ROGUE RIVER BASIN

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14337800 ELK CREEK NEAR CASCADE GORGE, OR

LOCATION.--Lat 42°46'25", long 122°40'15", in NW 1/4 sec.23, T.32 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.1 mi downstream from Sugarpine Creek, 6.5 mi northwest of town of Cascade Gorge, and at mile 10.7.

DRAINAGE AREA.--78.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1973 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,813.83 ft above sea level (levels by Corps of Engineers).

REMARKS.--No estimated daily discharges. Water-discharge records good. No regulation. Some diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--20 years, 136 ft³/s, 23.44 in/yr, 98,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,780 ft³/s Jan. 15, 1974, gage height, 8.9 ft, from floodmark; minimum discharge, 0.45 ft³/s Aug. 31, Sept. 1, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1300	*2,700	*6.67	No other peak greater than base discharge.			
Minimum discharge, 1.5 ft ³ /s Oct. 1-3.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	182	73	190	258	161	219	191	332	31	14	6.2
2	1.5	250	168	148	250	188	243	186	269	30	13	5.9
3	2.9	83	169	124	321	361	473	230	287	30	13	5.4
4	4.9	44	120	114	403	465	727	274	276	28	12	5.7
5	4.1	32	91	107	519	455	621	254	561	27	9.8	6.0
6	3.6	24	72	94	508	447	494	282	440	25	9.2	5.7
7	2.8	25	71	108	426	476	409	265	331	24	9.8	5.4
8	2.4	29	225	162	429	473	393	256	269	23	9.6	4.6
9	2.3	38	359	163	433	464	458	240	220	22	9.8	4.7
10	2.3	39	697	137	360	482	544	231	185	21	9.4	4.6
11	2.3	31	400	117	360	466	521	225	160	20	9.4	4.6
12	2.3	26	255	104	460	383	435	207	140	20	9.2	4.4
13	2.3	23	187	99	395	346	363	184	124	19	8.7	4.8
14	2.4	22	145	225	307	372	317	165	112	19	8.5	4.9
15	2.6	19	138	260	255	640	297	154	102	18	15	4.7
16	2.6	17	125	231	211	901	264	149	93	18	16	4.8
17	3.0	16	115	222	181	1270	267	145	86	17	13	6.3
18	3.4	17	98	190	170	1150	354	140	80	17	11	5.8
19	3.4	35	85	203	245	803	408	134	75	16	11	5.6
20	3.5	64	96	1700	356	594	342	149	68	16	14	5.7
21	11	114	186	1090	289	469	293	136	60	16	13	5.5
22	9.9	405	201	1170	245	396	256	127	57	58	11	5.5
23	6.4	200	155	574	253	730	241	115	55	63	9.8	4.9
24	5.3	114	135	377	231	678	257	107	50	34	8.9	4.9
25	4.8	78	127	321	196	509	258	109	46	26	8.4	4.7
26	4.7	61	117	322	174	404	254	107	43	22	7.9	4.6
27	4.7	76	204	325	161	330	230	100	40	20	7.2	4.5
28	4.8	116	334	322	157	277	214	96	39	18	6.9	4.5
29	11	92	260	322	---	240	206	95	37	18	6.4	4.4
30	49	72	183	300	---	214	203	92	34	16	6.3	4.1
31	50	---	194	276	---	202	---	242	---	15	6.2	---
TOTAL	217.8	2344	5785	10097	8553	15346	10561	5387	4671	747	317.4	153.4
MEAN	7.03	78.1	187	326	305	495	352	174	156	24.1	10.2	5.11
MAX	50	405	697	1700	519	1270	727	282	561	63	16	6.3
MIN	1.5	16	71	94	157	161	203	92	34	15	6.2	4.1
AC-FT	432	4650	11470	20030	16960	30440	20950	10690	9260	1480	630	304
CFSM	.09	.99	2.37	4.13	3.88	6.28	4.47	2.21	1.98	.31	.13	.06
IN.	.10	1.11	2.73	4.77	4.04	7.24	4.99	2.54	2.21	.35	.15	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1993, BY WATER YEAR (WY)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	13.2	137	268	270	303	266	196	120	49.5	12.5	5.38	6.49									
MAX	39.8	656	828	802	713	556	352	300	156	24.1	16.3	33.7									
(WY)	1980	1974	1982	1974	1986	1974	1993	1975	1993	1993	1976	1986									
MIN	2.47	9.60	8.00	11.3	11.2	34.1	54.5	18.3	7.10	6.33	.94	.91									
(WY)	1989	1977	1977	1977	1977	1992	1992	1992	1992	1992	1992	1992									

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1973 - 1993

ANNUAL TOTAL	16884.26	64179.6	
ANNUAL MEAN	46.1	176	
HIGHEST ANNUAL MEAN			136
LOWEST ANNUAL MEAN			292
HIGHEST DAILY MEAN	697	1700	5200
LOWEST DAILY MEAN	.52	1.5	.52
ANNUAL SEVEN-DAY MINIMUM	.60	2.3	.60
ANNUAL RUNOFF (AC-FT)	33490	127300	98830
ANNUAL RUNOFF (CFSM)	.59	2.23	1.73
ANNUAL RUNOFF (INCHES)	7.97	30.30	23.52
10 PERCENT EXCEEDS	120	434	348
50 PERCENT EXCEEDS	20	114	49
90 PERCENT EXCEEDS	.84	4.8	3.8

ROGUE RIVER BASIN
14337800 ELK CREEK NEAR CASCADE GORGE, OR--Continued
WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to October 1976, August 1977 to current year.

INSTRUMENTATION.--Temperature recorder August 1973 to October 1976 and since August 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5°C July 29, 30, 1973, Aug. 9-11, 1981; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.0°C Aug. 4; minimum, 1.5°C Jan. 5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	13.5	14.5	11.0	9.5	10.5	7.0	6.5	6.5	4.5	3.5	4.0
2	13.5	12.0	12.5	11.0	9.0	10.5	7.5	7.0	7.0	4.5	3.5	4.0
3	14.5	12.0	13.0	10.5	8.0	9.0	7.0	5.0	6.0	4.5	3.5	4.0
4	14.0	9.5	11.5	10.0	8.5	9.5	5.0	3.5	4.5	3.5	2.5	3.0
5	14.0	9.5	11.5	10.5	8.5	9.5	4.5	2.5	3.5	3.5	1.5	2.5
6	14.0	9.0	11.5	11.0	8.5	9.5	6.0	4.5	5.0	4.0	3.0	3.5
7	13.0	7.5	10.5	10.5	8.5	9.5	6.0	5.0	5.5	4.5	3.5	4.0
8	13.0	8.0	10.5	9.0	7.5	8.0	5.0	4.5	4.5	4.5	4.0	4.0
9	13.0	8.0	10.5	8.5	5.5	7.0	6.5	5.0	6.0	4.5	4.0	4.5
10	14.0	9.0	11.5	6.5	4.0	5.0	7.0	6.5	6.5	4.5	3.5	4.0
11	14.5	9.5	12.0	6.5	3.5	5.0	6.5	5.0	6.0	4.5	3.5	4.0
12	14.5	9.5	12.0	7.5	4.5	6.0	6.5	5.0	5.5	4.0	2.5	3.5
13	13.5	9.5	11.5	7.5	4.0	5.5	5.5	4.5	5.0	4.5	3.0	4.0
14	11.5	7.5	9.5	7.0	4.5	5.5	5.5	4.5	5.0	5.0	3.5	4.5
15	10.0	5.5	8.0	6.5	4.0	5.5	6.0	4.5	5.0	5.5	4.0	5.0
16	11.0	6.5	9.0	7.0	4.5	5.5	5.0	3.5	4.5	6.0	4.5	5.0
17	12.0	7.5	9.5	7.5	5.5	6.5	4.5	3.5	4.0	5.0	4.0	4.5
18	12.5	9.0	10.5	8.0	6.5	7.0	5.0	3.0	4.0	5.5	4.0	4.5
19	12.5	8.0	10.0	7.0	5.5	6.5	4.0	2.5	3.0	5.5	4.5	5.0
20	11.0	8.5	10.0	6.5	5.0	6.0	4.5	3.5	4.0	6.0	4.0	5.0
21	13.0	11.0	11.5	7.0	5.0	6.0	5.5	4.0	5.0	6.0	4.0	5.5
22	13.0	9.5	11.0	8.0	7.0	7.5	6.0	5.0	5.5	---	---	---
23	12.5	8.5	10.5	7.5	6.0	7.0	6.0	5.0	5.5	5.5	4.5	5.0
24	12.0	8.0	10.0	6.5	5.0	6.0	5.5	5.0	5.0	6.0	5.0	5.5
25	12.0	8.0	9.5	7.5	5.5	6.5	5.0	3.5	4.0	6.0	4.5	5.0
26	11.5	8.0	9.5	7.5	5.0	6.5	5.0	4.0	4.5	6.0	4.5	5.0
27	11.5	8.0	10.0	8.0	7.0	7.5	5.0	4.0	4.5	6.0	4.5	5.0
28	12.0	10.0	10.5	7.0	5.0	6.0	5.5	5.0	5.5	6.5	5.5	6.0
29	10.5	9.5	10.0	5.5	4.0	5.0	5.5	5.0	5.5	6.5	5.0	5.5
30	9.5	9.0	9.5	6.5	4.5	5.5	5.0	3.5	4.0	6.0	4.5	5.0
31	10.0	9.0	9.5	---	---	---	3.5	2.5	3.0	6.0	4.5	5.0
MONTH	16.5	5.5	10.5	11.0	3.5	7.0	7.5	2.5	5.0	---	---	---

ROGUE RIVER BASIN

14337800 ELK CREEK NEAR CASCADE GORGE, OR--Continued

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.0	4.5	5.0	5.0	3.5	4.0	7.5	5.5	6.5	---	7.0	---
2	7.0	5.0	5.5	7.0	4.5	5.5	7.5	6.5	7.0	13.5	9.0	11.0
3	7.0	5.5	6.0	6.5	5.0	5.5	8.0	7.0	7.5	10.5	8.0	9.0
4	7.5	5.5	6.5	6.5	5.5	6.0	7.5	6.5	7.0	---	7.0	---
5	7.5	6.5	7.0	8.0	5.0	6.5	8.0	5.5	6.5	11.5	6.5	9.0
6	7.5	6.0	6.5	8.0	5.5	6.5	---	6.0	---	10.0	8.5	---
7	7.0	5.5	6.5	8.0	5.5	6.5	---	6.5	---	---	6.0	---
8	7.0	6.5	6.5	8.5	5.5	7.0	---	---	---	---	---	---
9	7.5	6.5	6.5	7.5	6.5	7.0	---	---	---	12.0	---	---
10	6.5	5.5	6.0	8.0	6.0	7.0	---	---	---	13.5	---	---
11	6.5	5.0	6.0	8.0	5.5	6.5	8.5	6.0	6.5	---	---	---
12	6.0	4.5	5.0	8.0	6.0	7.0	---	5.0	---	10.5	9.0	---
13	6.5	4.5	5.5	8.0	5.0	7.0	---	---	---	11.0	8.0	9.5
14	6.0	4.5	5.0	7.5	5.0	7.0	---	---	---	13.0	8.5	10.5
15	6.0	4.0	5.0	7.0	6.5	7.0	---	---	---	14.5	9.5	11.5
16	4.5	2.5	3.5	7.0	6.5	7.0	---	---	---	14.5	10.0	12.0
17	4.5	3.5	4.0	7.5	7.0	7.0	---	---	---	15.5	10.0	12.5
18	5.5	4.0	4.5	8.0	7.0	7.5	---	---	---	15.0	11.0	13.0
19	5.5	4.5	5.0	8.5	6.5	7.5	---	---	---	15.0	11.0	13.0
20	4.5	4.0	4.0	9.0	6.5	7.5	---	---	---	13.5	11.0	12.0
21	4.0	3.5	4.0	8.5	2.0	6.5	---	---	---	13.0	10.0	11.5
22	6.0	4.0	4.5	8.0	2.0	7.0	---	---	---	15.0	9.5	12.0
23	5.0	4.0	4.5	7.5	4.0	7.5	---	---	---	16.0	9.5	12.5
24	5.5	3.5	4.5	7.5	6.0	7.0	---	---	---	14.5	11.5	13.0
25	5.0	2.5	3.5	7.0	5.5	---	---	---	---	14.0	11.5	12.5
26	5.5	2.5	3.5	---	5.5	---	---	---	---	14.0	10.0	12.0
27	5.5	2.0	3.5	8.5	5.0	---	11.5	---	---	13.5	10.5	12.0
28	6.5	2.5	4.0	9.5	5.5	---	11.5	---	---	13.0	10.5	11.5
29	---	---	---	---	6.0	---	12.5	8.5	---	13.5	9.5	11.5
30	---	---	---	9.0	6.0	7.5	12.5	7.0	9.5	12.0	11.0	11.5
31	---	---	---	9.0	6.5	7.5	---	---	---	12.0	10.5	11.0
MONTH	7.5	2.0	5.0	---	2.0	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	11.5	10.0	10.5	17.5	12.0	14.5	20.5	14.5	17.5	16.5	14.5	15.5
2	10.5	9.0	10.0	---	12.5	---	21.0	16.0	18.5	17.0	14.5	15.5
3	11.0	9.0	10.0	---	---	---	21.0	16.5	19.0	16.5	14.5	15.5
4	11.0	9.5	10.0	---	---	---	22.0	17.0	19.5	17.0	15.0	16.0
5	10.0	9.0	9.5	---	---	---	21.0	17.0	19.0	17.0	15.5	16.5
6	10.0	9.5	9.5	---	---	---	20.0	17.0	18.5	17.5	15.5	16.5
7	10.5	9.0	9.5	---	---	---	21.0	17.0	18.5	18.0	16.0	17.0
8	12.0	8.0	10.0	---	---	---	20.0	15.0	17.5	18.0	16.0	17.0
9	11.0	9.0	10.0	17.5	---	---	19.5	15.0	17.5	18.0	16.0	17.0
10	13.0	10.0	11.0	17.5	12.5	15.0	19.5	15.0	17.0	18.5	16.5	17.5
11	11.0	9.0	10.0	17.5	13.0	15.0	19.0	15.0	17.0	18.5	16.5	17.5
12	12.5	7.0	9.5	16.5	12.0	14.5	19.0	15.0	17.0	17.0	14.5	16.0
13	14.0	8.5	11.0	16.0	11.5	14.0	19.0	15.0	16.5	15.5	13.0	14.5
14	14.5	10.0	12.0	17.0	11.5	14.0	16.5	14.5	15.5	15.0	12.5	14.0
15	13.5	11.0	12.0	16.5	11.5	14.0	15.5	14.5	15.0	15.5	12.5	14.0
16	15.5	9.5	12.0	16.5	11.5	14.0	16.0	14.0	15.0	15.0	13.0	14.0
17	16.5	10.5	13.5	17.5	12.0	14.5	17.5	13.0	15.0	14.5	12.0	13.5
18	17.5	11.5	14.5	17.5	11.5	14.5	19.0	14.5	16.5	15.0	12.0	13.5
19	18.5	12.5	15.5	17.0	13.5	15.0	17.5	16.0	16.5	14.5	11.5	13.0
20	18.5	13.0	15.5	16.0	13.5	14.5	16.0	15.0	15.5	13.5	10.5	12.0
21	15.5	11.5	13.5	15.0	11.5	13.5	18.5	14.5	16.0	13.0	9.5	11.5
22	14.0	10.0	11.5	14.0	13.0	13.5	18.5	14.0	16.0	12.5	9.5	11.5
23	14.5	8.5	11.5	17.0	13.0	14.5	18.5	15.0	16.5	12.5	10.0	11.0
24	16.0	9.5	12.5	17.0	11.5	14.0	17.0	13.5	15.0	12.5	10.0	11.0
25	18.0	11.5	14.5	16.5	12.0	14.5	16.0	12.0	14.0	12.5	10.0	11.5
26	18.5	13.0	15.5	17.5	12.0	14.5	16.0	12.0	14.0	14.0	10.5	12.0
27	16.0	13.0	14.5	19.0	13.0	16.0	16.0	13.0	14.5	14.0	11.0	12.5
28	16.0	11.0	13.5	19.0	14.5	16.5	16.5	13.5	15.0	14.5	12.0	13.0
29	16.0	11.0	13.5	18.5	15.0	16.5	16.0	13.0	15.0	15.0	12.0	13.5
30	16.5	11.0	14.0	18.0	13.0	15.5	16.0	13.5	14.5	14.5	12.0	13.5
31	---	---	---	19.0	13.0	16.0	16.5	13.5	15.0	---	---	---
MONTH	18.5	7.0	12.0	---	---	---	22.0	12.0	16.5	18.5	9.5	14.0

ROGUE RIVER BASIN

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR

LOCATION.--Lat 42°40'46", long 122°42'37", in NW 1/4 sec.4, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Corps of Engineers' Land, on right bank 500 ft downstream from Alco Creek, and 7.5 mi northeast of Trail.

DRAINAGE AREA.--111 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1986 to current year (operated as a low-flow station only).

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation. Some diversions upstream from station for irrigation. Operated as a low-flow station only. Discharges above 585 ft³/s not estimated.

EXTREMES FOR PERIOD OF RECORD.--Minimum discharge recorded, 0.54 ft³/s Sept. 23, 1992, but may have been less during period of estimated discharge during that year.

EXTREMES FOR CURRENT YEAR.--Minimum discharge, 0.86 ft³/s Oct. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	230	76	304	319	244	273	217	386	36	16	e6.4
2	2.3	379	195	220	220	263	250	205	309	36	13	e6.0
3	3.7	114	221	174	e375	---	---	235	336	35	13	e5.6
4	5.0	64	146	157	---	---	---	326	325	34	13	e5.4
5	4.8	48	104	146	---	---	---	283	---	32	12	e5.8
6	3.7	37	83	126	---	---	---	330	---	30	11	e5.8
7	3.1	34	79	142	---	---	---	301	422	28	9.1	e5.6
8	2.0	40	280	246	---	---	---	297	334	27	8.3	e5.0
9	1.96	56	---	249	---	---	---	287	265	26	8.9	e4.8
10	1.3	59	---	198	---	---	---	290	216	24	9.0	e4.7
11	1.7	46	---	162	---	---	---	235	184	23	9.0	e4.4
12	2.0	37	417	137	---	457	---	220	158	23	9.0	e4.2
13	2.3	32	277	128	---	417	---	194	136	22	9.0	e4.5
14	2.6	29	198	351	435	413	401	168	120	21	9.0	e4.7
15	2.8	26	195	440	360	---	384	162	108	16	15	e4.8
16	2.9	23	173	379	308	---	322	150	98	19	21	4.8
17	3.1	21	155	366	254	---	308	139	89	19	17	5.8
18	3.1	21	130	296	222	---	---	134	81	19	15	e6.0
19	3.1	39	111	310	297	---	---	126	74	19	13	e5.8
20	3.3	89	126	---	---	---	444	146	69	20	16	e6.0
21	11	151	279	---	422	---	376	126	66	19	18	e5.8
22	14	---	331	---	352	---	315	120	64	54	15	e5.8
23	7.9	306	232	---	376	---	283	104	61	73	12	e5.4
24	5.9	152	192	---	345	---	315	98	55	46	11	e5.0
25	5.4	98	175	415	319	---	311	100	50	36	9.7	e4.9
26	4.5	76	156	e425	280	---	283	98	47	29	9.1	e4.7
27	4.5	84	296	e430	280	426	266	98	44	25	8.1	e4.5
28	4.5	131	---	e415	238	360	247	89	44	23	7.9	e4.3
29	8.7	106	434	e390	---	304	241	91	43	22	7.1	e4.1
30	54	81	278	374	---	273	235	89	40	20	6.4	e4.3
31	66	---	298	346	---	247	---	248	---	18	e6.0	---
TOTAL	242.16	---	---	---	---	---	---	5706	---	874	356.6	154.9
MEAN	7.81	---	---	---	---	---	---	184	---	28.2	11.5	5.16
MAX	66	---	---	---	---	---	---	330	---	73	21	6.4
MIN	.96	---	---	---	---	---	---	89	---	16	6.0	4.1
AC-FT	480	---	---	---	---	---	---	11320	---	1730	707	307
CFSM	.07	---	---	---	---	---	---	1.66	---	.25	.10	.05
IN.	.08	---	---	---	---	---	---	1.91	---	.29	.12	.05

e Estimated

ROGUE RIVER BASIN

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1986 to current year.

INSTRUMENTATION.--Temperature recorder since April 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5°C June 22, 1992, but may have been higher during period of missing record in August 1992; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 26.0°C Aug. 4, Sept. 7-10; minimum recorded, 1.0°C Feb. 27, but may have been lower during period of missing record in February.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.0	---	---	10.5	9.5	10.0	7.0	6.0	6.5	5.0	4.0	4.5
2	15.0	---	---	11.5	10.0	11.0	7.0	6.5	7.0	4.5	3.5	4.0
3	16.0	13.0	14.0	10.0	8.0	9.0	6.5	4.5	5.5	5.0	4.0	4.5
4	17.5	11.5	14.0	10.0	9.0	9.5	4.5	3.0	4.0	4.5	3.0	4.0
5	17.0	11.5	14.0	11.0	9.0	10.0	4.0	2.0	3.0	3.5	2.0	3.0
6	17.0	11.0	14.0	11.5	9.0	10.0	5.5	4.0	4.5	4.0	3.0	3.5
7	---	---	---	12.0	10.0	11.0	5.5	5.0	5.5	4.5	4.0	4.0
8	---	---	---	10.0	8.5	9.0	5.5	4.5	5.0	5.0	4.0	4.5
9	---	---	---	---	---	---	7.0	5.5	6.5	4.5	4.0	4.5
10	16.5	11.5	14.0	6.5	4.5	5.5	7.0	6.5	6.5	4.5	3.5	4.0
11	17.0	12.0	14.5	6.0	4.0	5.0	6.5	5.5	6.0	4.5	3.5	4.0
12	17.0	12.5	14.5	7.5	5.0	6.0	6.5	5.5	6.0	4.0	3.0	3.5
13	16.0	12.0	13.5	7.5	5.0	6.0	5.5	4.5	5.0	4.5	3.5	4.0
14	14.0	10.0	12.0	7.5	5.0	6.0	5.5	4.5	5.0	5.0	4.0	4.5
15	11.5	8.5	10.5	7.0	4.5	6.0	5.5	4.5	5.0	5.5	4.0	5.0
16	12.5	8.5	11.0	7.0	5.0	6.0	4.5	2.5	4.0	6.0	4.5	5.0
17	14.0	9.0	11.5	8.0	6.0	7.0	4.5	2.5	4.0	5.0	4.0	4.5
18	14.0	10.5	12.5	8.5	7.0	7.5	4.5	2.5	3.5	5.0	4.0	4.5
19	14.5	10.0	12.5	7.5	6.0	7.0	---	---	---	5.5	4.5	5.0
20	12.5	10.5	11.5	6.5	5.0	6.0	---	---	---	6.0	4.5	5.5
21	14.5	12.0	13.0	7.0	5.5	6.0	---	---	---	6.0	5.5	6.0
22	15.0	11.0	12.5	7.5	7.0	7.5	6.0	5.0	5.5	6.0	5.5	6.0
23	15.0	10.0	12.5	7.5	5.5	7.0	5.5	5.0	5.5	5.5	4.5	5.0
24	14.5	10.0	12.0	6.0	4.5	5.5	5.5	4.5	5.0	6.5	5.5	5.5
25	14.0	9.0	11.5	7.5	6.0	6.5	5.0	3.5	4.0	6.0	4.5	5.0
26	14.0	10.0	12.0	7.0	5.0	6.0	4.5	3.5	4.0	5.5	4.5	5.0
27	14.0	10.0	12.0	8.5	7.0	7.5	5.0	4.5	4.5	6.0	4.0	5.0
28	13.0	11.5	12.5	7.5	5.0	6.0	5.5	5.0	5.5	6.5	5.0	5.5
29	12.0	11.0	11.5	5.0	3.5	4.5	5.5	5.0	5.0	6.0	5.0	5.5
30	11.0	9.5	10.0	6.0	4.5	5.0	5.0	3.5	4.0	5.5	4.0	4.5
31	10.0	9.5	9.5	---	---	---	4.0	3.0	3.5	5.5	4.0	4.5
MONTH	---	---	---	---	---	---	---	---	---	6.5	2.0	4.5

ROGUE RIVER BASIN

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6.0	4.0	5.0	4.0	2.0	3.0	7.5	6.0	6.5	11.0	7.5	9.5
2	6.5	4.5	5.5	5.5	3.5	4.5	7.0	6.0	6.5	13.5	9.0	11.0
3	7.0	5.5	6.0	6.0	4.0	5.0	8.0	6.5	7.0	11.0	8.5	10.0
4	7.0	5.0	6.0	6.0	4.5	5.0	7.5	6.5	7.0	10.0	7.5	8.5
5	7.5	6.0	6.5	7.0	4.0	5.5	8.0	5.5	6.5	11.0	7.0	9.0
6	7.5	5.5	6.5	7.5	5.0	6.0	7.5	6.0	7.0	10.5	8.5	9.5
7	7.0	5.0	6.0	7.5	5.0	6.0	9.5	6.5	8.0	8.5	6.5	7.5
8	7.0	6.5	6.5	8.0	5.5	6.5	8.5	7.0	7.5	10.5	7.5	8.5
9	7.5	6.5	6.5	7.0	6.0	6.5	7.5	6.5	7.0	12.0	7.0	9.0
10	6.5	5.5	6.0	7.5	6.0	6.5	7.5	6.5	7.0	13.0	9.0	11.0
11	6.5	5.0	6.0	8.0	5.0	6.5	8.0	6.0	6.5	12.5	8.5	10.5
12	6.0	5.0	---	7.5	5.5	6.5	8.5	5.0	6.5	11.0	9.0	10.0
13	---	---	---	7.5	5.5	6.5	7.5	6.0	7.0	11.5	8.5	10.0
14	---	---	---	7.0	6.5	7.0	8.5	5.5	7.0	13.0	9.0	10.5
15	---	---	---	7.0	6.5	6.5	9.5	7.0	8.0	14.0	9.5	11.5
16	---	---	---	7.0	6.5	6.5	9.0	6.5	7.5	14.0	10.0	12.0
17	---	---	---	7.5	7.0	7.0	8.0	7.0	7.5	15.0	10.5	12.5
18	---	---	---	8.0	7.0	7.0	8.0	6.5	7.0	14.5	11.5	13.0
19	---	---	---	8.0	6.5	7.0	9.0	5.5	7.5	13.5	11.0	12.5
20	---	---	---	8.5	6.5	7.5	8.5	6.5	7.5	13.0	11.0	12.0
21	---	---	---	8.5	5.5	6.5	10.0	7.0	8.5	12.5	10.0	11.0
22	---	---	---	8.0	6.0	7.0	8.5	7.5	8.0	14.5	9.5	12.0
23	---	---	---	7.5	6.5	7.0	8.0	7.0	7.5	15.5	10.0	12.5
24	---	---	---	7.5	6.0	6.5	9.5	7.0	8.0	14.0	11.5	13.0
25	4.0	1.5	2.5	7.0	5.5	6.0	10.0	7.5	8.5	13.5	11.5	12.5
26	4.0	1.5	2.5	8.0	5.5	6.5	10.0	6.5	8.0	13.5	10.5	12.0
27	4.0	1.0	2.5	8.0	5.0	6.5	11.0	6.0	8.5	13.5	10.5	12.0
28	5.0	1.5	3.0	9.0	5.5	7.0	11.0	7.0	9.0	13.5	11.0	12.0
29	---	---	---	8.5	6.0	7.0	12.5	9.0	10.0	15.0	11.0	12.5
30	---	---	---	9.0	6.0	7.0	12.0	7.5	10.0	13.0	12.0	12.5
31	---	---	---	8.0	6.5	7.5	---	---	---	13.0	11.5	---
MONTH	---	---	---	9.0	2.0	6.5	12.5	5.0	7.5	15.5	6.5	11.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	20.5	14.0	17.0	24.5	16.5	20.5	24.0	16.5	19.5
2	---	---	---	19.5	14.5	16.5	25.5	18.0	22.0	24.0	16.5	20.0
3	---	---	---	20.0	13.5	16.5	25.5	19.0	22.5	24.5	16.5	20.0
4	---	---	---	20.5	13.0	16.5	26.0	19.0	22.5	24.5	17.0	20.5
5	---	---	---	21.0	14.0	17.5	25.0	19.0	22.5	24.5	17.0	20.5
6	---	---	---	21.5	14.0	17.5	24.5	19.0	21.5	25.0	17.5	21.0
7	---	---	---	21.0	14.0	17.5	25.5	18.5	21.5	26.0	18.5	21.5
8	---	---	---	21.5	14.0	18.0	24.5	16.5	20.5	26.0	18.5	22.0
9	---	---	---	22.0	15.0	18.0	24.0	17.0	20.5	26.0	18.0	21.5
10	---	---	---	21.5	14.5	18.0	24.0	17.0	20.0	26.0	18.5	22.0
11	---	---	---	21.5	15.0	18.0	23.5	16.5	20.0	24.0	18.0	21.0
12	---	---	---	21.0	13.5	17.0	23.5	16.5	20.0	22.0	16.0	18.5
13	---	---	---	19.0	13.5	16.5	22.5	16.5	19.5	21.5	13.5	17.0
14	---	---	---	19.5	13.5	16.5	19.0	15.5	17.5	19.0	13.0	16.0
15	---	---	---	20.0	14.5	17.0	17.0	15.5	16.5	20.0	13.5	16.5
16	---	---	---	20.0	13.5	17.0	18.0	14.5	16.0	18.0	13.5	15.5
17	---	---	---	20.5	14.0	17.0	21.0	14.0	17.0	18.5	12.5	15.5
18	---	---	---	21.5	13.5	17.5	22.5	15.5	19.0	18.0	12.5	15.0
19	---	---	---	20.0	15.5	18.0	19.5	18.0	18.5	18.5	12.0	15.0
20	---	---	---	18.5	15.5	17.0	18.0	16.0	17.0	17.0	11.0	13.5
21	---	---	---	18.5	13.5	16.0	21.5	15.0	17.5	16.5	9.5	13.0
22	15.0	---	---	16.5	14.5	15.0	22.0	15.0	18.5	17.0	9.5	13.0
23	16.5	9.5	13.0	19.0	13.5	16.0	21.5	16.5	19.0	17.0	10.0	13.0
24	18.5	11.0	14.5	19.5	13.0	16.0	20.5	15.0	17.5	17.5	10.0	13.5
25	20.5	13.0	16.5	19.5	13.5	16.5	19.5	13.0	16.0	18.0	10.5	14.0
26	21.0	15.0	18.0	20.5	13.5	17.0	20.5	13.0	16.5	19.0	11.5	15.0
27	19.0	14.5	16.5	22.0	15.0	18.5	22.0	14.5	18.0	18.5	12.0	15.5
28	18.5	12.5	15.0	22.0	16.5	19.0	21.5	15.0	18.0	19.5	13.0	16.0
29	19.0	12.5	15.5	22.0	16.0	18.5	21.5	14.5	17.5	20.0	13.0	16.5
30	19.5	12.5	16.0	21.5	14.5	18.0	22.5	15.0	18.5	19.5	13.0	16.5
31	---	---	---	22.5	14.5	18.5	23.5	15.5	19.0	---	---	---
MONTH	---	---	---	22.5	13.0	17.0	26.0	13.0	19.0	26.0	9.5	17.5

14337870 WEST BRANCH ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°42'40", long 122°44'55", in SW 1/4 sec.7, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Bureau of Land Management land, on left bank 300 ft upstream from Spot Creek and 5.3 mi northeast of Trail.

 DRAINAGE AREA.--14.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to September 1976, October 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,773.24 ft above sea level (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. No regulation or diversions upstream from station.

 AVERAGE DISCHARGE.--19 years, 19.5 ft³/s, 18.65 in/yr, 14,130 acre-ft/yr.

 EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft³/s Jan. 15, 1974, gage height, 5.30 ft, from rating curve extended above 600 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.18 ft³/s Aug. 17-19, 21, 1992.

 EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1130	*486	*3.15	Jan. 22	0130	304	2.62

Minimum discharge, 0.33 ft³/s Oct. 1.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	18	4.5	33	34	19	15	10	30	3.5	2.2	1.2
2	.64	26	13	19	32	26	14	9.7	27	3.5	2.1	1.2
3	.72	7.1	16	12	56	72	34	12	28	3.5	2.0	1.2
4	.77	3.9	9.0	13	70	76	39	13	26	3.3	1.9	1.1
5	.56	2.9	6.0	12	81	64	83	13	100	3.1	1.8	1.2
6	.54	2.2	4.8	9.4	70	64	58	15	69	3.0	1.9	1.2
7	.51	2.3	4.9	12	58	63	40	15	43	3.0	2.0	1.2
8	.47	2.8	50	33	56	54	35	15	33	2.9	1.9	1.1
9	.46	4.1	74	32	53	46	47	14	23	2.9	1.8	1.0
10	.47	4.3	115	21	43	41	81	13	16	2.8	1.8	1.0
11	.49	3.3	59	15	49	33	70	11	14	2.7	1.7	.99
12	.50	2.8	30	12	67	24	51	10	11	2.7	1.8	1.0
13	.51	2.4	19	11	55	21	39	9.1	9.5	2.7	1.8	1.1
14	.54	2.0	12	46	41	24	31	8.2	8.4	2.7	1.8	1.1
15	.58	1.9	11	66	33	58	26	7.6	7.6	2.7	3.3	1.1
16	.59	1.7	11	55	24	87	22	7.1	6.8	2.6	3.0	1.2
17	.59	1.6	9.2	57	19	154	23	6.5	6.3	2.5	2.3	1.3
18	.59	1.7	8.3	43	16	110	38	6.0	5.7	2.4	1.9	1.2
19	.59	4.3	6.8	48	28	78	51	5.8	5.2	2.4	1.9	1.2
20	.58	5.8	7.6	329	46	55	40	6.5	5.1	2.5	2.6	1.2
21	1.4	23	24	168	41	37	29	6.0	5.0	2.6	2.4	1.3
22	.88	72	26	211	28	29	23	5.7	5.0	2.6	1.9	1.2
23	.71	22	18	86	30	40	21	5.2	4.6	2.6	1.8	1.1
24	.64	10	14	52	28	48	20	5.0	4.4	2.6	1.7	1.1
25	.64	6.0	15	38	21	39	20	5.1	4.1	3.1	1.6	1.1
26	.64	5.0	13	49	18	32	17	5.0	4.0	2.9	1.5	1.0
27	.64	5.3	33	54	16	25	15	4.9	3.9	2.7	1.4	.95
28	.67	6.4	77	58	16	20	14	4.9	3.9	2.6	1.4	.98
29	2.2	5.8	43	53	---	17	12	4.7	3.8	2.7	1.4	.95
30	6.8	4.7	23	44	---	15	11	5.4	3.6	2.5	1.3	.93
31	5.4	---	32	41	---	14	---	19	---	2.3	1.3	---
TOTAL	31.71	261.3	789.1	1732.4	1129	1485	1079	278.4	516.9	92.4	59.2	33.40
MEAN	1.02	8.71	25.5	55.9	40.3	47.9	36.0	8.98	17.2	2.98	1.91	1.11
MAX	6.8	72	115	329	81	154	99	19	100	5.0	3.3	1.3
MIN	.39	1.6	4.5	9.4	16	14	11	4.7	3.6	2.3	1.3	.93
AC-FT	63	518	1570	3440	2240	2950	2140	552	1030	183	117	66
CFSM	.07	.61	1.79	3.94	2.84	3.37	2.53	.63	1.21	.21	.13	.08
IN.	.08	.68	2.07	4.54	2.96	3.89	2.83	.73	1.35	.24	.16	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1993, BY WATER YEAR (WY)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	3.18	21.1	36.9	40.9	47.2	39.2	25.1	10.9	5.29	2.25	1.69	1.87									
MAX	7.27	102	104	140	100	124	52.4	28.2	17.2	4.94	4.29	4.44									
(WY)	1980	1974	1982	1974	1983	1974	1974	1979	1993	1983	1976	1986									
MIN	.75	2.68	3.45	6.53	9.47	3.18	4.54	1.67	1.20	.97	.26	.37									
(WY)	1989	1988	1990	1992	1988	1992	1990	1992	1992	1992	1992	1992									

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1973 - 1993

ANNUAL TOTAL	2022.33	7487.81	
ANNUAL MEAN	5.53	20.5	19.5
HIGHEST ANNUAL MEAN			49.8
LOWEST ANNUAL MEAN			4.38
HIGHEST DAILY MEAN	115	329	904
LOWEST DAILY MEAN	.20	.39	.20
ANNUAL SEVEN-DAY MINIMUM	.21	.49	.21
ANNUAL RUNOFF (AC-FT)	4010	14850	14120
ANNUAL RUNOFF (CFSM)	.39	1.44	1.37
ANNUAL RUNOFF (INCHES)	5.30	19.62	18.65
10 PERCENT EXCEEDS	11	55	50
50 PERCENT EXCEEDS	2.1	7.6	5.4
90 PERCENT EXCEEDS	.33	1.1	1.0

ROGUE RIVER BASIN
14337870 WEST BRANCH ELK CREEK NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1977 to current year.

INSTRUMENTATION.--Temperature recorder since August 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 27.0°C Aug. 14, 1992; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 21.0°C Aug. 4; minimum, 1.5°C Dec. 5, 31, Jan. 5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.5	11.5	13.5	10.5	9.5	10.0	6.5	5.5	6.0	5.0	4.0	4.5
2	11.5	10.5	11.0	10.5	8.5	10.0	7.0	6.5	7.0	4.5	3.5	4.0
3	13.5	11.0	12.0	9.5	7.5	8.5	6.5	4.0	5.5	4.5	3.5	4.0
4	13.0	9.0	11.0	9.5	8.5	9.0	4.0	3.0	3.5	4.0	2.5	3.5
5	13.5	9.0	11.0	10.0	8.5	9.0	3.5	1.5	3.0	3.0	1.5	2.5
6	13.5	9.0	11.0	10.0	8.5	9.0	5.0	3.5	4.5	3.5	3.0	3.0
7	12.5	8.0	10.0	10.0	8.0	9.5	5.5	4.5	5.0	4.0	3.5	3.5
8	12.5	8.5	10.0	8.5	7.0	7.5	6.0	4.0	5.0	5.0	4.0	4.5
9	13.0	8.5	10.5	7.5	5.5	7.0	7.0	6.0	6.5	4.5	4.0	4.5
10	13.5	9.0	11.0	5.5	4.5	5.0	7.0	6.5	7.0	4.0	3.5	4.0
11	14.0	9.5	11.5	6.0	3.5	5.0	6.5	5.5	6.0	4.0	3.0	3.5
12	14.0	9.5	11.5	6.5	4.5	5.5	6.0	5.0	5.5	3.5	2.5	3.0
13	14.0	9.5	11.0	6.5	4.5	5.5	5.0	4.0	4.5	4.0	3.0	3.5
14	11.0	8.0	9.5	6.5	4.5	5.5	4.5	4.0	4.0	5.0	3.5	4.5
15	9.5	6.0	8.5	6.5	4.5	5.5	5.0	4.0	4.5	5.0	4.0	4.5
16	11.0	7.0	9.0	7.0	5.0	6.0	4.0	3.5	3.5	5.5	4.5	5.0
17	11.0	7.5	9.5	7.5	5.5	6.5	3.5	3.0	3.5	4.5	4.0	4.5
18	11.5	9.0	10.0	7.5	6.5	7.0	4.0	3.0	3.5	4.5	4.0	4.0
19	12.0	8.5	10.0	7.0	5.5	6.5	3.5	2.5	3.0	5.0	4.0	4.5
20	10.5	8.5	9.5	5.5	5.0	5.5	4.0	3.0	3.5	6.0	5.0	5.5
21	12.0	10.0	11.0	7.0	5.0	5.5	5.5	4.0	5.0	6.5	6.0	6.0
22	11.5	9.0	10.0	7.5	7.0	7.5	5.5	5.0	5.0	6.0	5.5	6.0
23	11.0	8.5	9.5	7.0	5.0	6.5	5.0	4.5	4.5	5.5	5.0	5.0
24	11.0	8.0	9.5	5.5	4.0	5.0	5.0	4.0	4.5	6.0	5.0	5.5
25	10.5	8.0	9.5	6.5	5.5	6.0	4.0	2.5	3.0	5.5	4.5	5.0
26	10.5	8.0	9.5	7.0	5.0	6.0	4.5	3.0	3.5	5.5	4.5	5.0
27	10.5	8.0	9.5	8.0	7.0	7.5	5.0	4.0	4.5	6.0	4.0	5.0
28	11.0	9.5	10.0	7.0	4.5	5.5	6.0	5.0	5.5	6.0	5.0	5.5
29	10.0	9.5	9.5	4.5	3.5	4.0	5.5	4.5	5.0	6.0	5.0	5.5
30	9.5	9.0	9.0	6.0	4.0	5.0	4.5	2.5	3.5	5.5	4.0	5.0
31	9.5	9.0	9.5	---	---	---	4.5	1.5	3.0	5.5	4.0	4.5
MONTH	14.5	6.0	10.0	10.5	3.5	6.5	7.0	1.5	4.5	6.5	1.5	4.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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

ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°40'30", long 122°44'38", in NE 1/4 sec.30, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 3.7 mi northeast of Trail and at mile 1.2.

DRAINAGE AREA.--129 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Prior to March 1946 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-89-2: Drainage area. WDR OR-92-1: 1989(M), 1990(M), 1991(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,493.91 ft above sea level. Prior to July 5, 1946, nonrecording gage at various sites within 1.0 mi of present site at different datums. July 5, 1946, to June 22, 1950, nonrecording gage, and June 23, 1950, to May 23, 1954, water-stage recorder, at site 0.5 mi downstream at datum 25.21 ft lower, May 24, 1954, to Sept. 30, 1988 at site 0.8 mi downstream at datum 37.35 ft lower.

REMARKS.--No estimated daily discharges. Water-discharge records good. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--48 years, 220 ft³/s, 159,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s Dec. 22, 1964, gage height, 18.84 ft, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement of peak flow, site and datum then in use; minimum discharge, 0.01 ft³/s Oct. 8, 1987, result of dam construction 1.3 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1400	*4,680	*9.18	No other peak greater than base discharge.			
Minimum discharge, 0.22 ft ³ /s Oct. 26.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	196	83	386	375	258	280	224	415	38	17	7.4
2	1.7	375	206	276	359	292	293	217	338	36	15	6.2
3	2.2	131	242	220	457	561	586	261	366	36	14	6.0
4	3.9	69	169	191	587	689	1120	322	351	35	14	5.5
5	4.1	50	119	176	735	649	971	301	815	33	13	5.9
6	3.4	38	94	163	725	624	700	330	646	31	12	6.0
7	2.8	33	91	185	581	650	555	316	463	29	11	5.8
8	2.5	39	319	306	576	627	518	304	369	27	9.0	5.3
9	1.8	56	730	312	575	602	626	287	292	27	9.8	4.6
10	1.4	62	1040	250	477	603	828	270	240	25	9.4	4.4
11	1.5	47	783	208	475	594	761	259	205	24	10	4.2
12	1.7	38	445	174	707	479	613	237	175	23	9.8	4.0
13	1.7	33	307	162	633	429	504	213	149	22	10	4.2
14	2.0	29	229	365	482	449	437	190	130	22	9.7	4.7
15	2.1	26	219	478	391	825	396	173	115	18	16	4.7
16	2.4	22	199	418	318	1270	348	164	104	20	21	5.4
17	2.5	20	182	409	268	1910	343	157	94	20	18	6.1
18	2.6	21	156	339	249	1740	477	148	85	20	15	6.3
19	2.6	30	133	323	345	1290	560	141	76	20	14	5.9
20	2.7	90	150	2810	540	858	471	156	70	20	18	6.0
21	7.1	110	307	1940	446	634	393	143	66	20	20	6.0
22	11	642	365	2170	385	518	336	132	65	49	16	6.1
23	7.4	325	264	1130	428	923	312	118	61	70	14	5.8
24	5.8	179	223	618	396	1010	327	110	55	46	12	5.3
25	4.9	113	206	496	329	725	321	113	51	37	11	5.0
26	4.2	86	183	503	288	550	312	110	46	31	10	4.9
27	3.9	94	299	507	265	446	284	105	44	26	9.2	4.7
28	4.1	142	581	496	254	369	260	101	44	24	8.7	4.1
29	5.9	117	465	491	---	315	246	99	42	23	8.3	3.7
30	50	90	319	452	---	283	240	97	39	21	8.0	4.1
31	68	---	373	407	---	261	---	260	---	19	6.4	---
TOTAL	219.3	3303	9481	17361	12646	21433	14418	6058	6011	892	389.3	158.3
MEAN	7.07	110	306	560	452	691	481	195	200	28.8	12.6	5.28
MAX	68	642	1040	2810	735	1910	1120	330	815	70	21	7.4
MIN	1.4	20	83	162	249	258	240	97	39	18	6.4	3.7
AC-FT	435	6550	18810	34440	25080	42510	28600	12020	11920	1770	772	314

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1993, BY WATER YEAR (WY)

	MEAN	32.9	192	432	514	509	435	286	161	59.9	14.7	6.59	7.42
MAX	404	1008	1851	1283	1131	1074	565	358	254	36.1	25.1	43.7	
(WY)	1951	1974	1965	1958	1972	1956	1975	1953	1953	1953	1976	1986	
MIN	3.17	9.13	13.1	19.8	23.1	45.4	65.8	21.6	7.42	3.68	4.47	6.60	
(WY)	1953	1953	1977	1977	1977	1992	1968	1992	1992	1973	1992	1992	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1946 - 1993

ANNUAL TOTAL	24247.05	92369.9	219	
ANNUAL MEAN	66.2	253	438	1974
HIGHEST ANNUAL MEAN			41.7	1977
LOWEST ANNUAL MEAN			12200	Dec 22 1964
HIGHEST DAILY MEAN	1040	Dec 10		1987
LOWEST DAILY MEAN	.27	Aug 25	.17	Oct 7 1987
ANNUAL SEVEN-DAY MINIMUM	.29	Aug 24	.29	Aug 24 1992
ANNUAL RUNOFF (AC-FT)	48090	183200	158800	
10 PERCENT EXCEEDS	181	615	556	
50 PERCENT EXCEEDS	24	149	69	
90 PERCENT EXCEEDS	.50	5.0	4.7	

ROGUE RIVER BASIN

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14338000 ELK CREEK NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1973 to current year.

INSTRUMENTATION.--Temperature recorder since June 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 31.5°C July 17, 1979, Aug. 16, 18, 1992; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 26.0°C Aug. 4; minimum, 2.0°C Feb. 16, 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.5	15.5	16.5	10.5	10.0	10.0	7.0	6.0	6.5	5.0	4.0	4.5
2	16.5	15.5	15.5	11.5	10.0	11.0	7.0	7.0	7.0	5.0	4.0	4.5
3	18.0	15.0	16.0	10.0	8.5	9.5	7.0	5.0	6.0	5.0	4.0	4.5
4	18.0	14.5	16.0	10.0	9.0	9.5	5.0	3.5	4.0	4.5	3.5	4.0
5	17.0	14.0	15.5	10.5	9.5	10.0	4.0	2.5	3.0	3.5	2.5	3.0
6	17.5	13.5	15.5	11.0	9.5	10.5	5.5	3.5	4.5	4.0	3.5	3.5
7	17.0	13.0	14.5	11.0	10.5	11.0	6.0	5.5	5.5	5.0	4.0	4.5
8	16.0	12.5	14.5	10.5	9.0	9.5	5.5	5.0	5.0	5.0	4.0	4.5
9	17.5	12.5	14.5	9.0	7.5	8.5	7.0	5.5	6.5	5.0	4.0	4.5
10	17.5	12.5	14.5	7.5	5.5	6.0	7.0	6.5	7.0	4.5	4.0	4.5
11	17.5	13.0	15.0	6.0	4.5	5.0	7.0	6.0	6.5	4.5	4.0	4.0
12	17.5	13.5	15.0	6.5	5.0	6.0	6.5	5.5	6.0	4.5	3.5	4.0
13	17.0	13.0	14.5	6.5	5.5	6.0	5.5	4.5	5.0	4.5	3.5	4.0
14	16.0	12.0	13.5	6.5	6.0	6.5	5.5	4.5	5.0	5.0	4.5	4.5
15	14.5	11.0	12.5	6.5	5.5	6.0	5.5	4.5	5.0	5.0	4.0	4.5
16	14.5	11.0	12.5	6.5	6.0	6.0	4.5	4.0	4.0	6.0	4.5	5.5
17	15.0	11.0	13.0	7.0	6.0	6.5	4.5	3.5	4.0	5.0	3.5	4.5
18	15.5	12.0	13.0	7.5	7.0	7.5	5.0	3.5	4.0	5.0	3.5	4.5
19	15.0	11.5	13.0	8.0	7.0	7.5	4.0	3.0	3.5	5.0	4.5	5.0
20	13.0	12.0	12.5	7.0	5.5	6.0	5.0	3.5	4.0	6.0	4.5	5.5
21	13.5	12.0	13.0	7.0	6.0	6.0	5.5	4.5	5.0	6.0	5.5	6.0
22	14.0	12.0	13.0	7.5	7.0	7.5	6.0	5.0	5.5	6.0	5.5	6.0
23	14.5	12.0	13.0	7.5	6.0	7.0	6.0	5.5	5.5	5.5	4.5	5.0
24	14.0	11.5	13.0	6.0	4.5	5.5	5.5	5.0	5.0	6.5	5.5	5.5
25	14.0	11.5	12.5	7.5	6.0	6.5	5.0	4.0	4.5	6.0	4.5	5.5
26	14.0	11.5	12.5	7.0	5.5	6.5	4.5	4.0	4.0	5.5	4.5	5.0
27	14.0	11.5	12.5	8.5	7.0	8.0	5.0	4.5	4.5	5.5	4.0	5.0
28	13.0	12.0	12.5	8.0	6.0	7.0	5.5	5.0	5.5	6.5	5.0	5.5
29	12.0	11.5	12.0	6.0	4.0	5.0	5.5	4.5	5.0	6.0	5.0	5.5
30	11.5	10.0	10.5	6.0	4.5	5.0	4.5	3.5	4.0	5.5	3.5	4.5
31	10.0	9.5	10.0	---	---	---	4.0	3.5	3.5	5.5	3.5	4.5
MONTH	19.5	9.5	13.5	11.5	4.0	7.5	7.0	2.5	5.0	6.5	2.5	4.5

ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.5	3.5	4.5	5.0	3.5	4.0	8.5	7.0	7.5	11.5	8.5	10.5
2	6.5	4.5	5.5	7.0	4.5	5.5	8.0	7.0	7.5	14.0	10.0	12.0
3	7.0	5.0	6.0	7.0	5.5	6.0	9.0	7.5	8.0	13.5	9.5	11.0
4	7.0	4.5	6.0	7.0	5.5	6.5	9.0	7.0	8.0	11.0	8.0	9.5
5	7.5	6.0	6.5	8.0	5.0	6.5	9.5	6.5	7.5	12.0	7.0	9.5
6	7.0	5.0	6.0	8.5	5.0	6.5	8.5	7.0	7.5	11.0	9.5	10.5
7	7.0	5.0	6.0	8.5	5.0	7.0	11.0	7.5	9.0	9.5	7.0	8.5
8	7.0	6.0	6.5	9.0	5.5	7.0	9.5	7.5	8.5	12.0	7.5	9.5
9	7.5	6.0	6.5	8.0	6.5	7.0	8.5	7.0	8.0	13.0	7.5	10.0
10	6.5	5.5	6.0	8.0	6.5	7.5	8.5	7.0	7.5	14.5	10.0	12.0
11	6.0	5.5	6.0	8.5	6.0	7.0	9.0	6.0	7.5	13.5	10.0	12.0
12	6.0	4.5	5.0	8.5	6.0	7.0	9.5	5.5	7.5	12.5	10.5	11.0
13	6.5	4.5	5.0	8.5	6.0	7.5	8.5	6.5	7.5	12.5	9.0	10.5
14	6.0	4.0	5.0	8.0	7.0	7.5	9.5	6.0	8.0	14.0	9.5	12.0
15	5.5	4.0	5.0	8.0	7.0	7.5	10.5	8.0	9.0	15.5	11.0	13.0
16	4.5	2.0	3.5	7.5	7.0	7.5	9.5	7.0	8.5	15.5	11.5	14.0
17	4.0	3.0	3.5	8.0	7.5	7.5	9.0	7.5	8.0	16.5	12.0	14.0
18	5.0	4.0	4.5	8.5	7.5	8.0	9.0	7.0	8.0	16.5	13.0	15.0
19	5.5	4.5	5.0	8.5	7.0	8.0	10.0	6.0	8.0	15.5	13.0	14.0
20	4.5	3.5	4.0	9.5	7.5	8.0	9.0	6.5	8.0	14.5	12.5	13.5
21	4.0	3.5	3.5	9.0	6.0	7.5	11.0	7.5	9.0	13.5	11.5	12.5
22	6.0	3.5	4.5	8.5	6.5	7.5	9.5	8.0	8.5	16.0	11.0	13.5
23	5.0	4.0	4.5	8.5	7.0	8.0	8.5	7.0	8.0	17.0	12.0	14.5
24	5.5	4.0	4.5	8.0	6.5	7.0	10.0	7.5	8.5	16.0	13.5	15.0
25	5.0	2.5	4.0	7.5	6.0	6.5	10.0	8.0	9.0	15.0	13.0	14.0
26	5.0	2.5	4.0	9.0	6.0	7.0	10.0	7.0	8.5	15.0	12.0	13.5
27	5.0	2.0	3.5	9.0	5.5	7.0	11.5	6.0	8.5	15.0	12.5	13.5
28	5.5	2.5	4.0	9.5	6.0	8.0	11.5	7.5	9.5	14.5	12.5	13.5
29	---	---	---	9.0	6.5	8.0	13.0	9.5	11.0	15.5	12.0	14.0
30	---	---	---	9.5	7.0	8.0	13.0	8.5	11.0	15.0	13.0	14.0
31	---	---	---	9.0	7.0	8.5	---	---	---	13.5	12.0	12.5
MONTH	7.5	2.0	5.0	9.5	3.5	7.0	13.0	5.5	8.5	17.0	7.0	12.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	13.0	11.0	12.0	20.0	17.0	18.5	24.0	19.0	21.5	22.0	18.0	20.0
2	12.0	10.0	11.0	19.5	17.5	18.5	25.0	20.5	23.0	22.0	18.5	20.5
3	12.5	10.0	11.0	19.5	17.0	18.0	25.5	21.5	23.5	22.5	18.5	20.5
4	12.0	10.5	11.5	20.0	17.0	18.5	26.0	22.0	24.0	23.0	19.0	21.0
5	11.0	10.0	10.5	20.5	17.5	19.0	25.5	22.5	24.0	23.0	19.5	21.0
6	10.5	10.0	10.5	20.5	18.0	19.0	25.0	22.0	23.5	23.0	19.5	21.5
7	12.5	9.5	11.0	20.5	17.5	19.0	25.0	21.5	23.0	24.0	20.0	22.0
8	13.5	9.0	11.0	21.0	18.0	19.5	24.0	20.5	22.5	24.0	20.5	22.5
9	12.5	10.5	11.5	21.5	18.5	19.5	23.5	20.5	22.0	24.0	20.5	22.5
10	15.0	11.0	12.5	21.0	18.5	19.5	24.0	20.0	22.0	23.5	20.5	22.5
11	13.5	10.5	12.0	21.0	18.5	19.5	23.5	19.5	21.5	23.0	20.5	21.5
12	14.0	9.0	11.5	20.0	18.0	19.0	24.0	19.5	21.5	22.0	19.0	20.5
13	15.5	10.5	13.0	19.0	17.5	18.0	23.5	19.0	21.0	20.5	17.5	19.5
14	16.5	12.0	14.5	18.5	16.0	17.5	21.5	18.5	19.5	19.0	17.0	18.5
15	15.5	13.0	14.5	19.0	17.0	18.0	19.0	17.5	18.5	19.0	16.5	18.0
16	16.5	12.0	14.0	19.5	17.0	18.0	18.5	17.0	17.5	18.0	16.5	17.5
17	18.0	13.5	16.0	20.0	17.0	18.5	21.0	16.5	18.5	18.5	15.5	17.0
18	19.5	15.0	17.5	20.5	17.0	19.0	22.5	18.0	20.0	18.5	15.5	17.0
19	20.5	16.5	18.5	20.5	18.0	19.5	20.5	19.5	20.0	17.5	15.0	16.5
20	20.5	17.0	19.0	19.5	18.0	18.5	19.5	17.5	18.5	17.5	14.5	15.5
21	20.0	15.5	17.0	18.5	17.0	18.0	20.5	17.0	18.5	17.0	13.5	15.0
22	15.5	13.0	14.0	17.5	16.0	16.5	21.0	17.5	19.5	16.0	13.0	14.5
23	16.5	12.0	14.0	18.5	15.0	16.5	21.5	18.5	20.0	15.5	13.0	14.5
24	18.0	13.5	15.5	19.0	16.0	17.5	21.0	18.0	19.0	16.0	12.5	14.5
25	20.5	16.0	17.5	19.5	16.5	18.0	20.5	16.5	18.5	16.5	13.0	14.5
26	21.5	17.5	19.5	20.0	17.0	18.5	21.0	16.0	18.5	17.0	13.5	15.5
27	20.0	17.5	18.5	22.0	18.0	19.5	21.5	16.5	19.0	17.0	14.0	16.0
28	18.5	15.5	17.0	22.5	19.0	20.5	21.5	17.0	19.0	18.0	14.5	16.5
29	18.5	15.5	17.0	22.0	19.5	20.5	22.0	16.5	19.0	18.5	15.0	17.0
30	19.5	16.0	17.5	21.5	18.5	20.0	22.0	16.5	19.5	18.5	15.0	17.0
31	---	---	---	22.0	18.0	20.0	22.0	17.0	19.5	---	---	---
MONTH	21.5	9.0	14.5	22.5	15.0	18.5	26.0	16.0	20.5	24.0	12.5	18.5
YEAR	26.0	2.0	11.5									

ROGUE RIVER BASIN

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14338100 ROGUE RIVER AT TRAIL, OR

LOCATION.--Lat 42°38'51", long 122°48'18", in NW 1/4 NE 1/4 sec.3, T.34 S., R.1 W., Jackson County, Hydrologic Unit 17100307, on right bank 0.2 mi upstream from Trail Creek, and at mile 148.9.

DRAINAGE AREA.--Not determined.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1988 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1988.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 19.0°C July 27, 29, 1992; minimum, 2.0°C Feb. 5, 6, 1989, Feb. 14, 15, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 15.5°C several days in August; minimum, 3.0°C Feb. 16, 25-27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.5	9.0	10.5	---	---	---	7.0	6.5	7.0	5.0	4.0	4.5
2	10.0	9.0	9.5	---	---	---	7.0	6.5	7.0	5.0	4.0	4.5
3	11.0	9.5	10.0	9.0	---	---	6.5	5.5	6.0	5.0	4.5	5.0
4	12.0	8.5	10.0	8.5	8.0	8.0	6.0	5.0	5.5	5.0	4.0	4.5
5	12.0	8.5	10.0	9.0	7.5	8.0	6.0	4.5	5.5	5.0	4.0	4.5
6	11.5	8.5	9.5	9.0	8.0	8.5	6.5	5.5	6.0	5.0	4.0	4.5
7	11.5	8.0	9.5	9.0	7.5	8.5	6.5	6.0	6.5	5.0	4.5	5.0
8	11.0	7.0	9.0	9.0	7.5	8.0	6.0	5.5	6.0	5.0	4.5	5.0
9	9.5	6.0	7.5	8.5	7.0	7.5	6.5	5.5	6.0	4.5	4.0	4.5
10	9.5	6.5	7.5	8.0	6.5	7.0	6.5	6.0	6.5	5.0	4.0	4.5
11	10.0	6.5	7.5	8.0	6.0	7.0	6.0	5.5	6.0	5.0	4.0	4.5
12	10.0	6.5	7.5	8.0	6.5	7.0	6.0	5.5	6.0	5.0	4.0	4.5
13	9.5	6.5	7.5	8.5	6.5	7.0	5.5	5.0	5.5	5.0	4.5	4.5
14	9.0	6.0	7.0	8.5	6.5	7.0	5.5	5.0	5.0	5.0	4.5	5.0
15	8.0	5.5	7.0	8.0	6.5	7.0	6.0	5.0	5.5	5.0	4.0	4.5
16	9.0	6.0	7.0	8.0	6.5	7.0	5.0	4.5	5.0	5.5	4.5	5.0
17	9.0	6.0	7.5	8.0	7.0	7.5	5.5	4.5	5.0	5.0	4.0	4.5
18	9.0	6.5	7.5	8.0	7.0	7.5	5.5	4.5	5.0	5.0	3.5	4.5
19	---	6.5	---	8.0	7.0	7.5	5.0	4.5	4.5	5.0	4.5	4.5
20	---	---	---	7.5	6.5	7.0	5.5	5.0	5.0	5.5	4.5	5.0
21	---	---	---	7.5	6.5	7.0	6.0	5.0	5.5	5.5	5.0	5.5
22	---	---	---	7.5	7.0	7.5	5.5	5.0	5.5	5.5	5.0	5.5
23	---	---	---	7.5	6.0	7.0	5.5	5.5	5.5	5.0	4.0	4.5
24	---	---	---	6.5	5.5	6.0	5.5	5.0	5.5	5.5	4.5	5.0
25	---	---	---	7.5	6.5	7.0	5.0	4.5	5.0	5.5	4.5	5.0
26	---	---	---	7.5	6.0	7.0	5.5	4.5	5.0	5.0	4.5	4.5
27	---	---	---	8.0	7.0	7.5	5.5	5.0	5.0	5.0	4.0	4.5
28	---	---	---	7.5	6.0	7.0	5.5	5.0	5.0	6.0	4.5	5.0
29	---	---	---	6.5	5.5	6.0	5.0	4.5	5.0	6.0	4.5	5.0
30	---	---	---	7.0	6.0	6.5	4.5	4.5	4.5	5.5	3.5	4.5
31	---	---	---	---	---	---	4.5	4.0	4.5	5.5	4.0	4.5
MONTH	---	---	---	---	---	---	7.0	4.0	5.5	6.0	3.5	4.5

ROGUE RIVER BASIN

14338100 ROGUE RIVER AT TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.5	4.0	4.5	5.0	4.0	4.5	6.5	6.0	6.5	8.0	6.5	7.5
2	6.0	4.5	5.0	6.5	4.5	5.5	7.0	6.0	6.5	9.0	7.0	7.5
3	6.5	5.0	5.5	6.5	5.5	6.0	7.0	6.5	6.5	8.0	7.0	7.5
4	6.5	4.5	5.5	6.5	5.5	6.0	7.0	6.0	6.5	9.5	7.0	7.5
5	7.0	6.0	6.5	7.5	5.0	6.0	7.0	6.0	6.5	10.0	8.0	9.0
6	6.5	5.0	6.0	8.0	5.0	6.5	6.0	6.0	6.0	9.5	8.5	9.0
7	6.0	5.0	5.5	7.5	5.0	6.5	7.5	6.0	6.5	9.0	8.0	8.5
8	6.5	5.5	6.0	8.0	5.5	6.5	7.0	6.5	6.5	9.5	8.0	9.0
9	7.0	6.0	6.0	7.0	6.0	6.5	7.0	6.5	6.5	10.0	9.0	9.5
10	6.0	5.0	5.5	7.5	6.0	6.5	7.0	6.0	6.5	11.0	9.0	9.5
11	5.5	5.0	5.5	7.5	5.5	6.5	7.5	6.0	6.5	10.0	8.5	9.5
12	6.0	5.0	5.5	7.0	5.5	6.5	7.5	5.5	6.5	9.5	8.5	9.0
13	6.0	4.5	5.0	7.0	6.0	6.5	7.0	6.5	6.5	10.0	9.0	9.0
14	6.0	4.0	5.0	7.0	6.5	6.5	7.5	6.0	6.5	10.0	8.5	9.0
15	5.5	4.0	4.5	7.5	6.5	7.0	8.0	6.5	7.0	10.5	9.0	9.5
16	5.0	3.0	4.0	7.5	6.5	7.0	7.5	6.5	7.0	10.5	9.0	10.0
17	4.5	3.5	4.0	7.5	7.0	7.5	7.0	6.5	6.5	10.0	8.0	9.0
18	5.0	4.5	4.5	8.0	7.0	7.5	7.5	6.5	7.0	10.5	8.5	9.5
19	5.0	4.5	5.0	7.0	6.0	6.5	8.0	6.0	7.0	11.0	8.0	9.5
20	4.5	3.5	4.0	7.0	6.0	6.5	7.0	6.5	7.0	10.0	8.5	9.0
21	4.0	3.5	4.0	6.5	5.5	6.0	8.0	6.5	7.5	9.5	8.5	9.0
22	6.0	4.0	4.5	6.0	5.5	6.0	7.5	6.5	7.0	10.5	8.5	9.5
23	5.0	4.0	4.5	6.5	6.0	6.5	7.0	6.5	7.0	11.0	9.0	10.0
24	5.0	4.0	4.5	6.5	6.0	6.0	8.0	6.5	7.0	10.5	9.0	9.5
25	5.5	3.0	4.0	---	5.5	---	8.0	6.5	7.0	10.5	9.0	10.0
26	6.0	3.0	4.0	6.5	5.5	6.0	8.0	6.5	7.0	10.5	9.0	9.5
27	6.0	3.0	4.5	6.5	5.5	6.0	8.5	6.0	7.0	10.5	9.0	10.0
28	6.5	3.5	4.5	7.0	5.5	6.5	8.0	6.5	7.0	10.5	8.5	9.5
29	---	---	---	7.0	5.5	6.0	8.5	7.0	7.5	11.0	9.0	10.0
30	---	---	---	7.0	6.0	6.5	8.5	6.5	7.5	10.0	9.0	9.5
31	---	---	---	7.0	6.0	6.5	---	---	---	10.5	9.0	10.0
MONTH	7.0	3.0	5.0	---	4.0	---	8.5	5.5	7.0	11.0	6.5	9.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	10.5	9.0	10.0	12.0	9.5	10.5	14.0	11.0	12.5	15.0	12.0	13.5
2	10.5	9.0	9.5	11.5	9.5	10.0	14.0	11.0	12.5	15.0	12.0	13.5
3	10.0	9.0	9.5	12.0	9.5	10.5	14.0	11.5	12.5	14.5	12.0	13.0
4	10.5	9.0	9.5	12.0	9.5	10.5	14.0	11.5	12.5	15.0	12.0	13.0
5	10.5	9.0	10.0	12.0	9.5	10.5	14.0	11.5	12.5	15.0	12.0	13.0
6	10.0	9.0	9.5	11.5	9.5	10.5	14.5	11.5	12.5	15.0	12.0	13.5
7	10.5	9.0	10.0	11.5	9.0	10.0	14.5	11.5	13.0	13.5	11.5	12.5
8	11.0	9.0	10.0	11.5	9.0	10.0	14.5	11.5	13.0	12.5	10.0	11.5
9	10.0	9.5	10.0	11.5	9.0	10.0	14.5	11.5	13.0	12.5	10.0	11.0
10	11.0	9.5	10.0	11.5	9.0	10.0	15.0	11.5	13.0	13.0	10.0	11.0
11	10.5	9.5	10.0	11.5	9.0	10.5	13.5	10.5	12.0	13.0	10.0	11.5
12	11.0	9.0	10.0	11.5	9.0	10.5	13.5	11.0	12.0	13.0	10.0	11.5
13	11.5	9.5	10.5	11.0	9.0	10.0	13.5	11.0	12.0	13.0	10.0	11.0
14	11.5	9.5	10.5	11.5	9.0	10.0	12.5	11.0	12.0	12.0	10.5	11.0
15	11.0	9.5	10.5	11.0	9.0	10.0	12.5	11.0	12.0	12.0	9.0	10.5
16	12.0	9.0	10.5	11.5	9.5	10.5	13.5	11.5	12.5	10.0	8.0	9.0
17	12.0	9.5	11.0	11.5	9.5	10.5	15.0	12.5	13.5	11.0	8.5	9.5
18	12.5	9.5	11.0	12.0	9.0	10.5	15.5	12.5	14.0	11.0	8.0	9.5
19	12.5	10.0	11.0	11.0	9.5	10.5	14.5	13.0	13.5	11.0	8.0	9.5
20	12.5	10.0	11.0	11.0	9.5	10.0	14.0	12.5	13.5	11.0	8.0	9.5
21	11.0	9.0	10.0	11.0	9.0	10.0	15.5	13.0	14.0	11.5	8.0	9.5
22	10.5	8.5	9.5	11.5	9.5	10.5	15.5	13.0	14.0	11.0	7.0	9.0
23	11.5	8.5	10.0	12.0	10.0	11.0	15.5	13.0	14.0	10.0	6.5	7.5
24	11.5	9.0	10.0	12.0	9.5	11.0	15.5	12.0	13.5	10.0	6.5	7.5
25	12.0	9.0	10.5	12.0	9.5	10.5	14.0	11.5	12.5	10.0	6.5	7.5
26	12.0	9.5	10.5	12.0	9.5	11.0	14.5	11.5	12.5	10.0	6.5	8.0
27	11.5	9.5	10.5	13.0	10.0	11.5	14.5	11.5	12.5	9.5	6.5	7.5
28	11.5	9.0	10.0	13.0	10.5	12.0	14.5	11.5	13.0	9.5	7.0	8.0
29	12.0	9.5	10.5	13.0	10.5	12.0	15.5	11.5	13.0	10.0	6.5	8.0
30	12.0	9.5	10.5	13.0	11.0	12.0	15.5	12.5	13.5	10.0	6.5	8.0
31	---	---	---	13.5	10.5	12.0	14.5	12.0	13.0	---	---	---
MONTH	12.5	8.5	10.0	13.5	9.0	10.5	15.5	10.5	13.0	15.0	6.5	10.5

ROGUE RIVER BASIN

417

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR

LOCATION.--Lat 42°31'30", long 122°50'30", in SE 1/4 sec.17, T.35 S., R.1 W., Jackson County, Hydrologic Unit 17100307, on right bank 50 ft upstream from Dodge Bridge, 0.7 mi downstream from Reese Creek, 4.3 mi northwest of Eagle Point, and at mile 138.6.

DRAINAGE AREA.--1,215 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1094: 1942(M), 1943, 1945(M), 1946. WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.99 ft above sea level. Prior to Dec. 21, 1938, nonrecording gage, Dec. 21, 1938, to Aug. 15, 1968, water-stage recorder, at datum 2.27 ft higher, Aug. 16, 1968, to Sept. 30, 1976, water-stage recorder, at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek (station 14337500) is diverted near Butte Falls.

AVERAGE DISCHARGE.--39 years (water years 1939-77), 2,636 ft³/s, 1,910,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,600 ft³/s Dec. 22, 1964, gage height, 12.78 ft, datum then in use, from rating curve extended above 23,000 ft³/s; minimum discharge, 567 ft³/s Feb. 18, 1977, result of closure of Lost Creek dam, minimum prior to that time, 611 ft³/s Aug. 6, 14, 29, Sept. 9, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,200 ft³/s Jan. 20, gage height, 6.67 ft; minimum discharge, 817 ft³/s Oct. 2, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1180	880	2460	1580	1430	3240	3190	4950	2600	2720	2090
2	867	1480	1120	1700	1540	1500	3220	3290	5010	2550	2700	2090
3	882	1070	1250	1430	1600	1980	4060	e3800	4840	2540	2660	2090
4	873	940	1070	1400	1780	2230	7030	e4500	4650	2550	2610	2090
5	858	924	972	1490	2000	2200	7170	e4400	6730	2540	2530	2100
6	850	997	918	1400	2070	2120	6680	e4400	6040	2540	2480	2120
7	856	967	915	1620	1860	2130	5930	e5400	5280	2540	2430	2140
8	866	973	1610	2030	1810	2090	5000	4810	4780	2550	2390	2130
9	869	995	3430	1920	1870	2040	5510	4250	4380	2590	2330	2120
10	866	1010	3660	1600	1740	2190	5900	3850	4080	2650	2260	2130
11	869	945	2900	1430	1760	2530	5570	4670	3920	2650	2260	1980
12	864	916	2170	1340	2370	2360	4480	5450	3590	2640	2260	1790
13	868	912	1610	1290	2100	2310	4060	5580	3180	2650	2270	1810
14	875	899	1370	1890	1790	2360	3740	5600	2940	2630	2270	1800
15	874	864	1310	1980	1620	3130	3450	5560	2900	2650	2350	1790
16	844	859	1240	1900	1480	3940	3290	5400	2850	2620	2330	1790
17	838	872	1270	1810	1390	5610	3350	4950	2810	2570	2300	1800
18	843	876	1240	1630	1350	5380	3980	3570	2690	2560	2280	1800
19	840	914	1170	1650	1530	5830	3910	2790	2620	2550	2300	1810
20	855	991	1240	7360	1970	6180	3660	3120	2700	2550	2360	1630
21	892	904	1680	5740	1820	5760	3470	5440	2750	2570	2340	1250
22	874	2180	1690	6580	1900	5490	3300	4910	2760	2690	2320	1200
23	865	1410	1430	3640	2190	6410	3210	4160	2740	2790	2310	1190
24	858	1060	1320	2580	1970	6550	3240	3580	2710	2670	2310	1190
25	858	926	1250	2180	1680	6030	3380	3890	2690	2630	2320	1190
26	857	859	1200	2050	1530	5510	3500	4190	2680	2610	2210	1180
27	856	864	1550	1970	1460	4730	3390	4000	2670	2670	2100	1180
28	859	945	2200	1890	1420	4240	3270	3810	2670	2750	2090	1180
29	888	930	1940	1840	---	3720	3170	3620	2650	2730	2100	1180
30	968	884	1640	1750	---	3210	3140	3460	2650	2730	2100	1190
31	932	---	2620	1660	---	3140	---	4100	---	2730	2090	---
TOTAL	27104	30546	49865	71210	49180	114330	126300	133740	107910	81290	72380	51030
MEAN	874	1018	1609	2297	1756	3688	4210	4314	3597	2622	2335	1701
MAX	1040	2180	3660	7360	2370	6550	7170	5600	6730	2790	2720	2140
MIN	838	859	880	1290	1350	1430	3140	2790	2620	2540	2090	1180
AC-FT	53760	60590	98910	141200	97550	226800	250500	265300	214000	161200	143600	101200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

MEAN	1320	1944	2929	2386	2536	2582	2758	2790	2396	2207	2210	1744
MAX	1931	4925	7983	4749	6045	4645	4520	4330	3939	3152	3092	2200
(WY)	1983	1985	1982	1980	1982	1989	1989	1984	1984	1984	1984	1983
MIN	874	928	1274	1232	1080	920	969	1577	1656	1116	1941	1288
(WY)	1993	1988	1990	1992	1988	1992	1992	1992	1992	1992	1978	1980

SUMMARY STATISTICS FOR 1992 CALENDAR YEAR FOR 1993 WATER YEAR WATER YEARS 1978 - 1993

ANNUAL TOTAL	479924	914885										
ANNUAL MEAN	1311	2507										
HIGHEST ANNUAL MEAN												1984
LOWEST ANNUAL MEAN												1992
HIGHEST DAILY MEAN												1977
LOWEST DAILY MEAN												1981
ANNUAL SEVEN-DAY MINIMUM												1981
ANNUAL RUNOFF (AC-FT)	951900	1815000										
10 PERCENT EXCEEDS	2090	4820										
50 PERCENT EXCEEDS	1130	2200										
90 PERCENT EXCEEDS	875	896										

e Estimated

ROGUE RIVER BASIN

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE:

Prior to construction of Lost Creek Dam and Lake: Maximum, 20.0°C July 27, 28, 1975; minimum, 0.0°C Jan. 6-8, 10, 11, 1974, Jan. 6-9, 1977.

After full operation of Lost Creek Dam and Lake: Maximum, 21.0°C July 26-29, 1992; minimum, 0.5°C Feb. 5, 6, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 17.5°C Aug. 18, 22; minimum, 2.5°C Feb. 16.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	10.5	11.5	9.5	8.5	9.0	7.0	6.5	7.0	5.0	4.0	4.5
2	11.0	9.5	10.0	11.0	9.0	10.0	7.5	7.0	7.0	5.0	3.5	4.0
3	11.5	9.5	10.5	9.5	7.5	8.5	7.0	5.5	6.5	5.0	4.0	4.5
4	12.5	8.5	10.5	9.0	8.0	8.5	5.5	4.0	5.0	5.0	4.0	4.5
5	12.5	8.5	10.5	9.5	8.0	9.0	5.5	3.5	4.5	4.5	3.5	4.0
6	12.0	8.5	10.5	10.0	8.0	9.0	6.5	5.5	6.0	4.5	4.0	4.5
7	11.5	8.0	10.0	9.5	8.5	9.0	7.0	6.0	6.5	5.0	4.5	5.0
8	11.5	8.0	10.0	9.0	7.5	8.0	6.0	5.5	6.0	5.0	4.5	5.0
9	10.0	7.0	8.5	8.5	7.0	7.5	6.5	5.5	6.0	4.5	4.0	4.5
10	10.5	7.0	8.5	7.5	5.5	7.0	7.0	6.5	6.5	5.0	4.0	4.5
11	10.5	7.0	9.0	7.5	5.5	6.5	6.5	5.5	6.0	4.5	4.0	4.5
12	10.5	7.0	9.0	8.0	6.0	7.0	6.5	5.5	6.0	5.0	3.5	4.5
13	10.0	7.0	8.5	8.5	6.0	7.0	5.5	5.0	5.0	5.0	4.0	4.5
14	9.5	6.0	8.0	8.0	6.0	7.5	5.5	5.0	5.0	5.5	4.5	5.0
15	8.0	5.5	7.0	8.0	6.0	7.0	6.0	5.0	5.5	5.0	4.0	4.5
16	9.0	6.0	7.5	8.0	6.0	7.0	5.0	4.5	5.0	6.0	4.5	5.0
17	9.5	6.5	8.0	8.5	6.5	7.5	5.5	4.5	5.0	5.0	3.5	4.5
18	9.5	7.0	8.5	8.5	7.0	8.0	5.5	4.5	5.0	5.0	3.5	4.0
19	9.5	6.5	8.5	8.0	7.0	7.5	5.0	4.0	4.5	5.0	4.5	4.5
20	9.0	7.0	7.5	7.5	6.5	7.0	5.5	4.5	5.0	5.5	4.5	5.0
21	10.0	7.5	8.5	7.5	6.5	7.0	6.0	5.0	5.5	5.5	5.0	5.5
22	10.0	7.0	8.5	8.0	7.0	7.5	5.5	5.0	5.5	6.0	5.0	5.5
23	10.0	7.0	8.5	8.0	6.5	7.0	6.0	5.5	5.5	5.0	4.0	4.5
24	9.5	7.0	8.5	6.5	5.0	6.0	5.5	5.0	5.5	6.0	4.5	5.0
25	9.5	7.0	8.5	8.0	6.5	7.0	5.0	4.5	5.0	5.5	4.5	5.0
26	9.5	7.0	8.5	7.5	6.0	7.0	5.0	4.0	4.5	5.0	4.5	5.0
27	10.0	7.0	8.5	8.5	7.0	8.0	5.5	5.0	5.0	5.0	4.0	4.5
28	9.0	8.0	8.5	7.5	6.5	7.0	5.5	5.0	5.5	6.0	4.5	5.5
29	8.5	8.0	8.5	6.5	5.0	6.0	5.0	4.5	5.0	6.0	5.0	5.5
30	8.5	8.0	8.5	7.0	5.5	6.5	4.5	4.0	4.5	5.5	3.5	4.5
31	8.5	8.0	8.5	---	---	---	4.5	4.0	4.0	5.5	3.5	4.5
MONTH	13.0	5.5	9.0	11.0	5.0	7.5	7.5	3.5	5.5	6.0	3.5	4.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.5	3.5	4.5	5.5	4.0	4.5	8.0	6.0	7.0	9.5	7.0	8.0
2	6.5	4.5	5.5	7.0	5.0	6.0	7.5	6.0	7.0	10.5	7.5	8.5
3	6.5	5.5	6.0	7.0	5.5	6.5	8.0	6.5	7.0	9.0	7.5	8.0
4	6.5	4.5	6.0	7.0	6.0	6.5	8.0	6.5	7.0	9.0	7.0	8.0
5	7.0	6.0	6.5	8.0	5.5	6.5	8.0	6.0	7.0	11.5	8.5	9.5
6	6.5	5.5	6.0	8.5	5.5	7.0	7.0	6.0	6.5	10.0	8.5	9.5
7	6.5	5.0	5.5	8.0	5.5	7.0	8.5	6.0	7.0	9.5	8.0	9.0
8	6.5	6.0	6.5	8.5	6.0	7.5	8.0	7.0	7.0	11.0	8.0	9.5
9	7.0	6.0	6.5	8.0	6.5	7.5	8.0	6.5	7.0	12.0	8.5	10.0
10	6.5	5.5	6.0	8.5	6.5	7.5	8.0	6.5	7.0	12.5	9.0	10.5
11	6.0	5.5	5.5	8.5	6.0	7.0	8.0	6.5	7.0	11.5	9.0	10.0
12	6.0	5.0	5.5	7.5	6.0	7.0	8.5	6.0	7.0	10.0	8.5	9.5
13	6.0	4.5	5.5	8.0	6.0	7.0	8.0	7.0	7.5	11.0	9.0	9.5
14	6.0	4.0	5.0	8.0	7.0	7.0	8.5	6.5	7.5	11.0	9.0	10.0
15	5.5	4.0	5.0	8.0	7.0	7.5	9.0	7.0	8.0	11.5	9.0	10.0
16	4.5	2.5	4.0	7.5	7.0	7.5	8.5	7.0	7.5	12.0	9.0	10.5
17	4.5	3.5	4.0	8.0	7.5	8.0	7.5	7.0	7.5	11.5	8.5	10.0
18	5.0	4.5	4.5	8.5	7.5	8.0	8.5	7.0	7.5	12.0	9.0	10.0
19	5.5	4.5	5.0	7.5	6.5	7.0	9.0	6.5	7.5	12.5	9.0	10.5
20	4.5	3.5	4.0	8.0	6.5	7.0	8.0	7.0	7.5	11.5	9.5	10.0
21	4.0	3.5	3.5	7.0	5.5	6.5	9.5	7.0	8.0	10.5	8.5	9.5
22	6.0	3.5	4.5	6.5	6.0	6.0	8.0	7.0	7.5	12.0	9.0	10.0
23	5.0	4.0	4.5	7.0	6.5	6.5	8.0	7.0	7.5	12.5	9.0	10.5
24	5.5	4.0	4.5	7.0	6.0	6.5	9.0	7.0	8.0	12.0	9.5	10.5
25	5.5	3.0	4.5	7.0	5.5	6.0	9.0	7.0	8.0	11.5	9.5	10.5
26	6.0	3.0	4.5	7.0	5.5	6.0	9.0	6.5	7.5	12.0	9.5	10.5
27	6.0	3.0	4.5	7.5	5.5	6.5	10.0	6.5	8.0	11.5	9.0	10.5
28	6.5	3.0	5.0	8.0	5.5	7.0	9.5	7.0	8.0	11.5	9.0	10.0
29	---	---	---	8.0	6.0	6.5	10.0	7.5	8.5	12.0	9.5	10.5
30	---	---	---	8.0	6.0	7.0	10.5	7.0	8.5	10.5	9.5	10.0
31	---	---	---	8.0	6.5	7.0	---	---	---	11.5	9.5	10.5
MONTH	7.0	2.5	5.0	8.5	4.0	7.0	10.5	6.0	7.5	12.5	7.0	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	11.5	9.5	10.5	14.5	10.0	12.0	16.0	11.5	13.5	17.0	12.5	14.0
2	11.5	9.0	10.0	13.5	9.5	11.5	16.0	11.5	13.5	17.0	12.5	14.5
3	11.5	9.5	10.0	14.0	9.5	11.5	16.0	11.5	14.0	16.5	12.0	14.0
4	11.0	9.5	10.0	14.5	9.5	11.5	16.0	12.0	14.0	16.5	12.0	14.0
5	11.5	9.5	10.5	14.5	9.5	12.0	16.0	12.0	14.0	16.5	12.0	14.0
6	10.0	10.0	10.0	14.0	9.5	11.5	16.0	12.0	14.0	16.5	12.5	14.5
7	11.5	9.5	10.5	14.0	9.0	11.0	17.0	12.0	14.0	15.5	12.5	14.0
8	12.5	9.5	11.0	14.0	9.0	11.5	16.5	11.5	14.0	15.5	11.5	13.0
9	11.5	10.0	10.5	14.0	9.0	11.5	16.5	12.0	14.0	14.5	10.0	12.0
10	12.5	10.0	11.0	14.0	9.0	11.5	16.5	12.0	14.0	14.5	10.5	12.5
11	11.5	9.5	10.5	14.0	9.5	11.5	16.0	11.0	13.5	15.0	10.5	12.5
12	13.0	9.0	11.0	14.0	9.0	11.5	16.0	11.0	13.5	14.5	10.0	12.5
13	13.5	9.5	11.5	13.0	9.5	11.0	16.0	11.0	13.5	14.5	9.5	12.0
14	14.0	10.0	11.5	13.5	9.5	11.0	14.0	11.0	12.5	13.5	10.0	11.5
15	12.5	10.0	11.5	13.0	9.5	11.0	13.5	11.5	12.5	14.5	10.5	11.5
16	14.0	9.5	11.5	14.0	9.5	11.5	14.5	11.5	13.0	12.0	8.5	10.0
17	14.5	10.0	12.0	14.0	9.5	11.5	17.0	12.5	14.5	12.0	8.5	10.5
18	15.0	10.0	12.5	14.0	9.5	11.5	17.5	12.5	15.0	12.5	8.0	10.0
19	15.0	10.5	12.5	13.5	10.0	11.5	15.5	13.0	14.5	12.5	8.0	10.0
20	15.0	10.5	12.5	12.5	10.0	11.0	14.5	13.0	14.0	12.5	8.0	10.0
21	12.0	10.0	11.0	13.0	9.5	11.0	17.0	13.5	15.0	12.5	8.0	10.0
22	12.5	9.0	10.5	12.0	10.0	11.0	17.5	13.0	15.0	12.5	8.0	10.0
23	13.5	8.5	11.0	14.5	11.5	12.5	17.0	13.5	15.0	11.0	6.5	9.0
24	14.0	9.0	11.0	14.5	10.0	12.0	17.0	13.0	14.5	11.0	6.5	9.0
25	14.0	9.5	11.5	14.0	9.5	11.5	15.5	11.0	13.5	11.0	6.5	9.0
26	14.5	10.0	12.0	14.5	9.5	12.0	16.0	11.5	13.5	11.5	7.0	9.0
27	13.5	9.5	11.5	15.0	10.0	12.5	16.5	11.5	13.5	11.0	7.0	9.0
28	13.5	9.5	11.5	15.5	11.0	13.0	16.0	11.5	13.5	11.0	7.5	9.5
29	14.0	9.5	11.5	15.0	11.5	13.0	16.0	11.5	14.0	11.5	7.5	9.5
30	14.0	9.5	11.5	15.0	11.0	13.0	16.5	12.0	14.0	11.5	7.0	9.5
31	---	---	---	15.5	11.0	13.0	16.5	12.0	14.0	---	---	---
MONTH	15.0	8.5	11.0	15.5	9.0	11.5	17.5	11.0	14.0	17.0	6.5	11.5
YEAR	17.5	2.5	8.5									

ROGUE RIVER BASIN

14354200 BEAR CREEK BELOW ASHLAND CREEK, AT ASHLAND, OR

LOCATION.--Lat 42°12'58", long 122°43'16", in SE 1/4 SE 1/4 sec.32, T.38 S., R.1 E, Jackson County, Hydrologic Unit 17100308, on left bank, 0.1 mi downstream from Ashland Creek, and at mile 21.0.

DRAINAGE AREA.--168 mi².

PERIOD OF RECORD.--July 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,686.64 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1924 by Emigrant Lake. Water is diverted into basin from the Klamath River basin. Many diversions for irrigation and municipal use upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,920 ft³/s May 16, 1991, gage height 3.92 ft; minimum discharge, 0.33 ft³/s Oct. 18, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft³/s Jan. 20, gage height, 4.04 ft; minimum discharge, 4.3 ft³/s Oct. 8, 13, 20, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	14	9.9	27	42	37	62	48	134	16	31	32
2	7.7	10	11	19	44	54	56	51	101	39	29	39
3	6.7	7.8	11	17	52	104	61	72	108	50	28	35
4	6.4	7.2	10	17	60	91	148	66	171	36	28	36
5	6.3	8.7	8.7	15	88	78	110	56	374	36	41	37
6	6.0	8.1	9.5	15	89	83	82	68	245	35	36	38
7	5.8	7.7	11	17	81	95	80	64	384	31	36	36
8	5.7	7.2	27	24	89	104	93	70	221	33	34	34
9	5.9	7.1	27	25	84	111	99	63	163	37	34	26
10	5.9	8.3	76	24	75	123	90	64	127	39	33	26
11	5.8	8.1	41	22	69	122	86	68	106	41	44	29
12	5.7	7.8	25	20	55	101	79	68	92	41	49	30
13	5.7	6.3	19	21	44	101	75	60	102	40	48	27
14	5.8	6.2	16	32	40	117	72	57	84	41	50	29
15	5.7	6.2	16	31	37	121	77	51	64	42	69	29
16	5.9	7.5	17	27	31	122	69	47	56	39	49	32
17	5.8	7.7	19	21	26	187	87	47	47	36	48	29
18	6.0	6.6	17	18	25	128	111	47	42	36	46	25
19	5.9	11	14	20	28	97	82	51	39	37	52	24
20	5.9	11	14	492	44	82	54	63	40	38	40	24
21	8.2	16	16	332	41	71	54	60	40	36	32	26
22	5.8	23	16	337	39	53	61	54	39	54	30	25
23	5.6	14	15	128	67	76	65	47	35	58	29	28
24	5.5	11	15	90	52	93	62	51	35	36	28	27
25	5.8	9.9	13	77	38	76	60	58	28	19	29	25
26	5.8	9.0	13	63	34	61	57	55	24	13	32	23
27	5.8	9.8	15	55	31	53	49	48	24	31	30	25
28	6.3	13	24	51	32	49	49	49	23	25	36	27
29	6.5	11	18	47	---	48	50	48	20	27	37	26
30	12	9.7	16	44	---	55	50	78	17	30	29	36
31	7.4	---	25	42	---	54	---	250	---	33	32	---
TOTAL	198.1	290.9	585.1	2170	1437	2747	2230	1979	2985	1105	1169	885
MEAN	6.39	9.70	18.9	70.0	51.3	88.6	74.3	63.8	99.5	35.6	37.7	29.5
MAX	12	23	76	492	89	187	148	250	384	58	69	39
MIN	5.5	6.2	8.7	15	25	37	49	47	17	13	28	23
AC-FT	393	577	1160	4300	2850	5450	4420	3930	5920	2190	2320	1760

CAL YR 1992 TOTAL 7238.7 MEAN 19.8 MAX 76 MIN 5.5 AC-FT 14360
WTR YR 1993 TOTAL 17781.1 MEAN 48.7 MAX 492 MIN 5.5 AC-FT 35270

ROGUE RIVER BASIN

14357500 BEAR CREEK AT MEDFORD, OR

421

LOCATION.--Lat 42°19'28", long 122°51'55", in NW 1/4 sec.30, T.37 S., R.1 W., Jackson County, Hydrologic Unit 17100308, on left bank 300 ft upstream from 10th street Bridge, in Medford, and at mile 10.1.

DRAINAGE AREA.--289 mi².

PERIOD OF RECORD.--March 1915 to June 1920 (no low-flow records), October 1920 to September 1981, December 1983 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1044: 1944. WSP 1448: 1916, 1917(M), 1918-20, 1922, 1924, 1927(M), 1928, 1930. WSP 1568: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,343.27 ft above sea level. Prior to Sept. 19, 1991, at site 0.2 mi downstream, at datum 1.29 ft lower, Dec. 31, 1947, to Sept. 23, 1985, at datum 2.00 ft higher. See WSP 1738 for history of changes prior to Dec. 31, 1947.

REMARKS.--No estimated daily discharges. Records good. Flow partly regulated since 1924 by Emigrant Lake. Water is diverted into basin from the Klamath River basin. Many diversions for irrigation and municipal use upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s Dec. 2, 1962, gage height, 10.04 ft, present datum; maximum gage height, about 13.0 ft Feb. 20, 1927, from floodmarks, present datum, site then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 2,020 ft³/s Jan. 20, gage height, 6.80 ft; minimum discharge, 7.7 ft³/s Oct. 8, 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	48	19	76	72	63	98	89	222	35	29	34
2	18	26	20	46	72	85	93	96	134	49	42	35
3	13	19	20	37	81	146	104	135	135	53	31	37
4	12	17	18	40	88	123	290	133	217	39	24	42
5	11	17	18	35	111	107	217	107	837	45	28	45
6	11	18	18	32	121	101	153	118	359	47	24	63
7	9.6	18	20	35	111	113	139	123	656	34	23	66
8	9.0	17	56	61	112	121	150	131	304	28	26	61
9	9.7	17	88	61	113	127	180	116	203	34	30	48
10	9.6	18	216	52	104	137	172	108	155	32	30	42
11	10	18	105	44	101	144	159	112	124	36	29	38
12	10	18	61	40	84	121	136	114	110	33	32	40
13	9.6	17	42	38	69	119	136	104	113	31	35	43
14	9.6	16	34	58	64	135	136	92	113	34	39	45
15	10	16	32	59	60	135	138	75	85	37	141	44
16	11	17	31	51	52	142	126	73	78	34	89	41
17	11	18	41	43	45	208	156	76	65	31	66	47
18	10	17	34	38	44	159	223	65	56	35	63	44
19	9.9	25	30	36	52	125	175	80	54	41	85	46
20	11	20	34	986	72	113	128	110	54	42	104	45
21	20	28	36	577	70	104	121	115	51	39	92	41
22	11	44	34	896	66	91	127	106	52	75	74	45
23	10	28	30	263	199	129	133	92	48	136	62	43
24	10	21	28	174	144	177	140	85	50	83	54	40
25	9.9	19	27	145	75	156	126	87	45	49	46	37
26	10	18	26	123	61	115	115	84	43	41	35	37
27	10	18	29	107	55	99	103	84	48	43	34	36
28	12	20	43	98	55	92	98	101	53	39	34	30
29	17	20	34	89	---	88	96	106	44	33	40	36
30	35	19	31	81	---	95	95	153	33	32	35	38
31	21	---	51	76	---	92	---	537	---	27	30	---
TOTAL	396.9	632	1306	4497	2353	3762	4263	3607	4541	1347	1506	1289
MEAN	12.8	21.1	42.1	145	84.0	121	142	116	151	43.5	48.6	43.0
MAX	35	48	216	986	199	208	290	537	837	136	141	66
MIN	9.0	16	18	32	44	63	93	65	33	27	23	30
AC-FT	787	1250	2590	8920	4670	7460	8460	7150	9010	2670	2990	2560

CAL YR 1992 TOTAL 8617.9 MEAN 23.5 MAX 216 MIN 9.0 AC-FT 17090
WTR YR 1993 TOTAL 29499.9 MEAN 80.8 MAX 986 MIN 9.0 AC-FT 58510

ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR

LOCATION.--Lat 42°26'15", long 122°59'10", in SW 1/4 sec.18, T.36 S., R.2 W., Jackson County, Hydrologic Unit 17100308, on right bank at Raygold, 0.1 mi downstream from Gold Ray Dam, 1.0 mi downstream from Bear Creek, 5.6 mi northwest of Central Point, and at mile 125.8.

DRAINAGE AREA.--2,053 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1905 to current year. Prior to October 1921, published as "near Tolo."

REVISED RECORDS.--WSP 1248: 1906, 1914(M), 1915. WSP 1398: 1910(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,121.78 ft above sea level. Prior to Sept. 19, 1914, nonrecording gage and Sept. 19, 1914, to Sept. 30, 1956, water-stage recorder, at site 300 ft upstream at same datum.

REMARKS.--Water-discharge records excellent except for estimated daily discharges, which are good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Slight regulation by Fish Lake and Emigrant Lake. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--72 years (water years 1906-77), 2,976 ft³/s, 2,156,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 131,000 ft³/s Dec. 23, 1964, gage height, 23.43 ft, from rating curve extended above 63,000 ft³/s on basis of slope-area measurement of 113,000 ft³/s; minimum discharge recorded, 418 ft³/s Sept. 19, 1968, as result of regulation, but may have been lowered during periods of no record during water years 1931-34.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,900 ft³/s Jan. 20, gage height, 8.35 ft; minimum discharge, 916 ft³/s Oct. 17, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1220	1670	1100	3630	2000	1970	3920	3730	6150	2690	2760	2120
2	1060	2000	1280	2310	1940	2060	3830	3790	5860	2650	2760	2120
3	1050	1450	1530	1830	2000	2760	4440	4250	5500	2640	2710	2120
4	1030	1220	1320	1770	2170	2980	8930	4800	5600	2630	2630	2160
5	1010	1150	1210	1940	2400	2930	9050	4690	11700	2620	2560	2180
6	977	1210	1150	1880	2580	2770	7860	4770	8290	2610	2510	2220
7	966	1170	1140	2060	2380	2790	7100	5860	8650	2590	2470	2230
8	976	1170	1620	2780	2290	2760	5990	5500	6780	2610	2410	2230
9	980	1180	5360	2860	2400	2720	6780	4900	5660	2600	2360	2210
10	977	1210	5960	2200	2270	2850	7250	4380	5100	2680	2280	2210
11	973	1140	4540	1890	2220	3480	7290	4920	4710	2680	2270	2100
12	973	1110	3100	1700	2740	3100	5740	5810	4320	2680	2260	1870
13	956	1080	2140	1610	2550	2940	5090	5940	3860	2680	2280	1910
14	962	1090	1740	2340	2200	3040	4710	5940	3540	2660	2300	1900
15	957	1030	1620	2540	1990	3800	4370	5860	3400	2700	2640	1900
16	948	1030	1520	2350	1820	4790	4160	5690	3300	2670	2630	1890
17	935	1050	1600	2230	1710	7120	4240	5290	3200	2610	2510	1910
18	949	1070	1580	2000	1640	6810	5610	4030	3030	2610	2470	1910
19	949	1140	1450	1910	1790	6890	5210	3140	2890	2630	2510	e1920
20	944	1240	1510	10700	2440	7260	4670	3410	2930	2680	2630	e1710
21	1100	1140	2230	9000	2390	6690	4400	5520	2960	2660	2590	e1330
22	1020	2580	2200	12600	2650	6270	4160	5310	2950	2680	2530	e1230
23	1000	1880	1770	5640	3670	7420	4050	4500	2900	3220	2480	e1210
24	985	1380	1580	3840	3440	8370	4050	3860	2860	2970	2410	e1210
25	982	1210	1480	3100	2500	7440	4090	4020	2820	2820	2410	e1210
26	976	1100	1400	2770	2190	6620	4220	4420	2770	2760	2330	e1190
27	975	1080	1720	2600	2040	5620	4070	4240	2770	2730	2180	e1190
28	992	1160	2580	2480	1980	5040	3920	4100	2780	2820	2150	e1180
29	1040	1170	2340	2370	---	4490	3800	3960	2750	2810	2160	e1190
30	1270	1110	2050	2240	---	3880	3740	3840	2740	2790	2150	e1200
31	1250	---	3220	2110	---	3770	---	5570	---	2780	2120	---
TOTAL	31382	38220	65040	101280	64390	141430	156740	146040	132770	84150	75460	52960
MEAN	1012	1274	2098	3267	2300	4562	5225	4711	4426	2715	2434	1765
MAX	1270	2580	5960	12600	3670	8370	9050	5940	11700	3220	2760	2230
MIN	935	1030	1100	1610	1640	1970	3740	3140	2740	2590	2120	1180
AC-FT	62250	75810	129000	200900	127700	280500	310900	289700	263300	166900	149700	105000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1464	2385	3881	3072	3411	3364	3472	3242	2590	2249	2250	1887				
MAX	2110	6184	10780	6006	8002	6151	5596	4968	4426	3161	3115	2508				
(WY)	1984	1985	1982	1980	1986	1989	1983	1983	1993	1984	1984	1983				
MIN	1012	1089	1512	1446	1407	1111	1125	1605	1649	1117	1843	1434				
(WY)	1993	1988	1990	1992	1992	1992	1992	1992	1992	1992	1992	1980				

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1978 - 1993
ANNUAL TOTAL	529831	1089862	
ANNUAL MEAN	1448	2986	2769
HIGHEST ANNUAL MEAN			4532
LOWEST ANNUAL MEAN			1491
HIGHEST DAILY MEAN	5960	Dec 10	12600
LOWEST DAILY MEAN	935	Oct 17	935
ANNUAL SEVEN-DAY MINIMUM	949	Oct 14	949
ANNUAL RUNOFF (AC-FT)	1051000	2162000	2006000
10 PERCENT EXCEEDS	2140	5650	4800
50 PERCENT EXCEEDS	1290	2560	2190
90 PERCENT EXCEEDS	1030	1100	1320

e Estimated

ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 22.0°C July 25, 26, 1976; minimum, 0.0°C Jan. 7, 1974. Maximum since full operation of Lost Creek Lake, 21.5°C June 22, 23, 1992; minimum, 1.0°C Dec. 30, 1978, Jan. 30, 1980, Feb. 5, 6, 1989, Dec. 21, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.5°C Aug. 18, 19, 21, 22; minimum, 3.0°C Feb. 21.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.5	11.5	12.5	10.0	9.0	9.5	7.5	6.5	7.0	5.0	4.5	4.5
2	12.0	11.0	11.5	11.0	10.0	10.0	7.5	7.5	7.5	5.0	4.0	4.5
3	12.0	10.5	11.0	10.5	8.5	9.5	7.5	6.5	7.0	5.0	4.5	5.0
4	12.0	10.5	11.0	9.5	8.5	9.0	6.5	4.5	5.0	5.0	5.0	5.0
5	12.5	10.5	11.5	9.5	9.0	9.0	5.0	4.0	4.5	5.0	4.5	5.0
6	12.0	10.5	11.5	10.0	9.0	9.5	6.0	4.5	5.5	5.0	4.5	4.5
7	11.5	10.0	10.5	10.5	9.5	10.0	7.0	6.0	6.5	5.5	5.0	5.0
8	11.5	9.5	10.5	9.5	8.0	9.0	6.5	6.0	6.5	5.5	5.5	5.5
9	12.0	9.5	10.5	8.5	7.5	8.0	6.5	6.0	6.0	5.5	4.5	4.5
10	11.0	9.0	10.0	7.5	6.0	6.5	7.0	6.5	6.5	5.0	4.0	4.5
11	11.0	9.0	10.0	6.5	5.5	6.0	6.5	6.0	6.0	5.0	4.5	4.5
12	11.0	9.0	10.0	7.0	6.0	6.5	6.5	6.0	6.0	5.0	4.5	4.5
13	11.0	9.0	9.5	7.5	6.5	7.0	6.5	5.5	5.5	5.0	4.5	5.0
14	10.0	8.0	9.0	7.5	6.5	7.0	5.5	5.0	5.0	6.0	5.0	5.5
15	9.0	7.0	8.0	7.5	6.5	6.5	6.0	5.5	5.5	6.0	4.5	5.0
16	9.0	7.0	8.0	7.5	6.5	6.5	5.5	5.0	5.0	6.0	4.5	5.0
17	10.0	7.5	8.5	8.0	7.0	7.5	5.5	5.0	5.0	5.5	4.5	5.0
18	10.0	8.5	9.0	8.0	7.5	8.0	5.5	5.0	5.5	5.0	4.0	4.5
19	10.5	8.5	9.0	8.0	7.5	8.0	5.5	4.5	5.0	5.0	4.5	5.0
20	9.0	8.5	9.0	7.5	6.5	7.0	5.5	4.5	5.0	6.0	5.0	5.5
21	10.5	8.0	9.0	7.5	6.5	7.0	6.0	5.5	6.0	6.0	5.5	5.5
22	10.5	9.0	9.5	7.5	7.0	7.5	6.0	5.0	5.5	6.0	5.0	5.5
23	10.5	9.0	9.5	7.5	7.0	7.0	6.0	5.5	6.0	5.5	4.0	4.5
24	10.5	8.5	9.5	7.0	5.5	6.0	6.0	5.5	5.5	6.0	4.5	5.0
25	10.5	8.5	9.0	7.5	6.0	6.5	5.5	5.0	5.0	6.0	5.0	5.5
26	10.5	8.5	9.0	7.5	6.5	7.0	5.0	4.5	5.0	5.5	5.0	5.0
27	10.5	8.5	9.5	8.5	7.5	8.0	5.5	5.0	5.5	5.0	4.5	5.0
28	10.0	9.0	9.5	8.5	7.0	7.5	6.0	5.5	5.5	6.0	4.5	5.0
29	9.5	9.0	9.0	7.0	5.5	6.0	6.0	5.0	5.5	6.5	5.5	6.0
30	9.0	8.5	9.0	6.5	5.5	6.0	5.0	4.5	4.5	6.0	4.5	5.0
31	9.0	8.5	9.0	---	---	---	5.0	4.5	4.5	5.5	4.5	5.0
MONTH	13.5	7.0	9.5	11.0	5.5	7.5	7.5	4.0	5.5	6.5	4.0	5.0

ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	4.5	5.0	6.0	5.0	5.5	9.0	7.0	8.0	11.0	8.5	10.0
2	6.5	5.0	5.5	7.0	5.5	6.0	8.5	7.0	8.0	12.5	9.0	10.5
3	7.0	6.0	6.5	8.0	6.5	7.0	9.0	7.5	8.0	11.0	9.0	10.0
4	7.0	5.5	6.5	7.5	6.5	7.0	9.0	8.0	8.5	10.5	8.0	9.5
5	8.0	7.0	7.5	8.0	6.0	7.0	9.0	7.0	8.0	12.5	9.0	10.5
6	7.5	6.5	7.0	8.5	7.0	8.0	8.0	7.0	7.5	11.5	9.5	10.5
7	6.5	5.5	6.0	9.0	7.0	8.0	9.5	7.0	8.0	10.5	9.0	10.0
8	7.0	6.5	7.0	9.0	7.5	8.5	9.0	7.5	8.0	12.0	9.0	10.5
9	7.5	6.5	7.0	9.0	8.0	8.5	9.0	7.5	8.0	13.5	9.5	11.5
10	7.5	6.0	6.5	9.5	8.0	8.5	9.0	7.5	8.0	14.0	10.5	12.5
11	6.5	5.5	6.0	9.0	7.5	8.5	9.0	7.0	8.0	13.0	10.0	11.5
12	6.5	5.5	6.0	8.5	7.5	8.0	9.5	6.5	8.0	11.0	9.5	10.5
13	6.5	5.0	5.5	8.5	7.0	8.0	9.5	7.5	8.5	12.0	9.5	10.5
14	6.0	4.5	5.0	9.0	8.0	8.5	9.0	7.5	8.5	12.5	9.5	11.0
15	5.5	4.5	5.0	8.5	7.5	8.0	10.5	8.0	9.5	13.5	10.0	11.5
16	5.5	3.5	4.0	8.5	8.0	8.0	10.0	8.0	9.0	13.5	10.5	12.0
17	4.5	3.5	4.0	9.0	8.5	8.5	9.0	8.0	8.5	13.0	10.0	11.5
18	5.0	4.5	4.5	9.5	8.5	9.0	10.0	7.5	9.0	14.0	10.0	12.0
19	6.0	5.0	5.5	9.0	7.5	8.0	10.0	7.5	9.0	13.5	10.5	12.0
20	5.5	4.0	4.5	9.0	7.0	8.0	9.5	8.0	9.0	13.5	11.0	12.0
21	4.0	3.0	3.5	8.0	6.5	7.0	11.0	8.0	9.5	12.0	9.5	11.0
22	5.5	3.5	4.5	7.5	6.5	7.0	9.5	8.5	9.0	13.5	9.5	11.5
23	5.5	4.5	5.0	8.0	7.0	7.5	9.0	8.0	8.5	14.5	10.5	12.5
24	5.0	4.0	4.5	8.0	7.0	7.5	10.0	8.0	9.0	13.0	11.0	12.0
25	5.5	4.0	4.5	7.5	6.5	7.0	10.5	8.5	9.5	13.5	10.5	12.0
26	---	---	---	8.0	6.0	7.0	10.5	7.5	9.0	13.5	10.5	12.0
27	6.0	4.0	5.0	8.0	6.0	7.0	11.0	7.5	9.5	13.0	10.0	11.5
28	6.5	4.0	5.0	9.0	6.5	8.0	11.0	8.0	10.0	13.0	10.5	12.0
29	---	---	---	9.0	7.0	8.0	12.0	9.0	10.5	13.5	10.5	12.0
30	---	---	---	9.0	7.0	8.0	12.0	9.0	10.5	12.5	11.0	11.5
31	---	---	---	8.5	7.5	8.0	---	---	---	13.5	11.5	12.5
MONTH	---	---	---	9.5	5.0	7.5	12.0	6.5	8.5	14.5	8.0	11.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	13.5	11.5	12.5	16.5	11.5	14.0	17.5	13.0	15.5	17.5	14.0	16.0
2	13.5	10.5	12.0	15.5	12.0	13.5	18.0	13.5	16.0	17.5	14.0	16.0
3	13.0	10.5	11.5	16.0	11.0	13.5	18.0	14.0	16.0	17.5	14.0	16.0
4	12.5	11.0	11.5	16.0	11.5	14.0	18.0	14.0	16.0	17.5	14.0	16.0
5	13.0	11.5	12.0	16.5	11.5	14.0	18.0	14.0	16.0	17.5	14.5	16.0
6	12.0	11.0	11.5	16.0	11.5	14.0	18.0	14.0	16.0	17.5	14.5	16.0
7	13.0	11.0	12.0	15.5	11.0	13.5	18.0	14.0	16.0	17.5	15.0	16.5
8	14.0	11.0	12.5	16.0	11.0	13.5	17.5	14.0	16.0	17.0	13.5	15.5
9	13.5	11.0	12.0	16.0	11.5	13.5	17.5	13.5	16.0	16.5	12.5	14.5
10	14.5	11.5	13.0	16.0	11.0	13.5	17.5	14.0	16.0	16.0	12.5	14.5
11	13.5	11.5	12.5	16.0	11.0	13.5	17.5	13.5	15.5	16.0	12.5	14.5
12	14.5	10.5	12.5	15.5	11.0	13.5	17.0	13.0	15.0	16.0	12.5	14.5
13	15.5	11.0	13.0	15.0	11.0	12.5	17.0	13.0	15.0	15.5	12.0	14.0
14	15.5	12.0	14.0	14.5	11.0	13.0	16.5	12.5	14.5	15.0	11.5	13.0
15	15.5	11.5	13.5	15.0	11.5	13.0	15.0	13.5	14.5	15.0	12.0	13.5
16	16.0	11.5	13.5	15.5	11.0	13.5	16.5	13.5	15.0	15.0	11.0	12.5
17	16.5	12.0	14.5	15.5	11.5	13.5	18.0	14.0	15.5	13.0	11.0	12.0
18	17.0	12.5	14.5	16.0	11.0	13.5	18.5	14.5	16.5	13.5	11.0	12.0
19	17.0	13.0	15.0	15.5	12.0	13.5	18.5	15.5	16.5	13.5	10.5	12.0
20	17.0	13.0	15.0	15.0	12.0	13.5	16.0	15.0	15.5	13.5	10.5	12.0
21	16.0	12.5	13.5	14.5	11.5	13.0	18.5	14.5	16.0	12.5	11.0	12.0
22	14.0	10.5	12.5	14.0	11.5	12.5	18.5	14.5	16.5	13.0	11.5	12.0
23	15.0	10.5	12.5	17.0	13.0	14.5	18.0	14.5	16.5	13.0	10.5	11.5
24	15.5	10.5	13.0	16.5	12.0	14.5	17.5	14.5	16.0	12.0	10.5	11.0
25	16.0	11.5	14.0	16.0	12.0	14.0	17.0	13.0	15.0	12.0	10.5	11.0
26	16.0	11.5	14.0	16.5	12.0	14.0	17.0	13.0	15.0	12.5	11.0	11.5
27	15.0	12.0	13.5	16.5	12.0	14.5	17.0	13.5	15.5	12.5	11.0	12.0
28	15.5	11.5	13.5	17.0	13.0	15.0	17.0	13.5	15.5	12.5	11.0	12.0
29	15.5	11.0	13.5	16.5	13.5	15.0	17.0	13.5	15.0	13.0	11.5	12.0
30	16.0	11.0	13.5	16.5	12.5	15.0	17.0	14.0	15.5	13.0	11.5	12.0
31	---	---	---	17.0	12.5	15.0	17.0	14.0	15.5	---	---	---
MONTH	17.0	10.5	13.0	17.0	11.0	14.0	18.5	12.5	15.5	17.5	10.5	13.5

ROGUE RIVER BASIN

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14361500 ROGUE RIVER AT GRANTS PASS, OR

LOCATION.--Lat 42°25'50", long 123°19'00", in NW 1/4 sec.20, T.36 S., R.5 W., Josephine County, Hydrologic Unit 17100308, on right bank at city of Grants Pass filter plant, 0.6 mi upstream from bridge on State Highway 99 at Grants Pass, and at mile 101.8. Prior to Sept. 3, 1983, at site 300 ft upstream.

DRAINAGE AREA.--2,459 mi².

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 884.28 ft above sea level. Prior to Aug. 8, 1957, at site 300 ft upstream at datum 4.00 ft higher and Aug. 8, 1957, to Sept. 2, 1983, at site 300 ft upstream at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since February 1977 by Lost Creek Lake (station 14355040), slight regulation by Fish Lake and Emigrant Lake. Large fluctuations at times caused by Savage Rapids Dam 5.5 mi upstream from station. Many diversions from Rogue River and tributaries upstream from station, the largest of which is at Savage Rapids Dam of Grants Pass Irrigation District, 5.5 mi upstream from station. Continuous water-quality records for the period August 1973 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--55 years (water years 1939-93), 3,397 ft³/s, 2,461,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft³/s Dec. 23, 1964, gage height, 35.15 ft, present datum, from rating curve extended above 93,000 ft³/s; minimum discharge, 195 ft³/s Jan. 30, 1961; minimum daily, 606 ft³/s Sept. 10, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1861 reached a stage of about 43 ft, present datum (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 36 ft, present datum, and that of Feb. 21, 1927, about 32 ft, present datum, according to local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,800 ft³/s Jan. 20, gage height, 10.25 ft; minimum discharge, 678 ft³/s Oct. 8, result of regulation at Savage Rapids Dam.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1580	1800	1180	5350	2540	2560	4380	4010	6460	2700	2710	2010
2	1230	2350	1300	3380	2400	2630	4300	4080	6150	2610	2680	1960
3	1040	1840	1760	2510	2460	3500	4700	4450	5700	2610	2650	1990
4	992	1380	1540	2390	2710	3940	8940	5130	5660	2580	2550	2020
5	974	1260	1350	2560	2990	3860	9930	5030	11000	2600	2470	2040
6	936	1280	1260	2600	3290	3590	8640	4940	9180	2550	2400	2080
7	916	1250	1250	2540	2990	3560	7980	6070	8880	2570	2410	2110
8	876	1240	1400	3480	2840	3490	6610	5850	7450	2580	2320	2120
9	880	1250	6110	3860	2930	3410	7580	5240	6070	2560	2310	2110
10	915	1300	6490	2950	2790	3370	8300	4670	5440	2660	2210	2120
11	907	1240	6360	2470	2800	4070	8390	4880	4970	2660	2190	2090
12	918	1190	4110	2190	3620	3690	6800	5990	4590	2660	2190	1800
13	909	1130	2790	2020	3460	3470	5920	6150	4070	2660	2190	1810
14	927	1170	2180	2590	2900	3520	5490	6120	3690	2670	2210	1820
15	940	1080	1930	3230	2570	4200	5030	6010	3520	2660	2480	1820
16	938	1070	1820	2890	2330	5250	4800	5880	3430	2680	2660	1830
17	907	1090	1890	2790	2140	8420	4820	5540	3280	2590	2500	1820
18	924	1110	1900	2530	2050	8460	6850	4540	3100	2580	2450	1850
19	943	1190	1750	2360	2250	7890	6450	3370	2960	2580	2540	1860
20	929	1320	1640	11800	3250	8190	5670	3370	2950	2640	2640	1870
21	1090	1280	2390	12600	3280	7490	5250	4970	3030	2610	2620	1390
22	1050	2720	2660	16100	3490	7020	4890	5630	3000	2750	2550	1290
23	1010	2400	2130	8120	4600	7820	4710	4670	2970	3230	2440	1230
24	995	1710	1860	5330	4900	9150	4670	4110	2870	3060	2400	1140
25	987	1380	1730	4200	3550	8240	4600	4010	2870	2840	2370	1200
26	982	1230	1620	3690	3010	7410	4700	4530	2800	2760	2340	1200
27	981	1140	2050	3400	2740	6360	4370	4370	2770	2670	2130	1250
28	999	1220	4180	3200	2590	5670	4320	4230	2800	2770	2100	1100
29	1100	1280	3560	3040	---	5090	4170	4090	2760	2800	2070	1120
30	1390	1200	2900	2880	---	4410	4090	3960	2740	2770	2080	1140
31	1470	---	4200	2690	---	4260	---	5460	---	2750	2030	---
TOTAL	31635	42100	79290	131740	83470	163990	177490	151350	137160	83410	73890	51160
MEAN	1020	1403	2558	4250	2981	5290	5916	4882	4572	2691	2384	1705
MAX	1580	2720	6490	16100	4900	9150	9930	6150	11000	3230	2710	2120
MIN	876	1070	1180	2020	2050	2560	4090	3370	2740	2550	2030	1100
AC-FT	62750	83510	157300	261300	165600	325300	352100	300200	272100	165400	146600	101500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1528	2727	4659	3793	4398	4047	3990	3423	2600	2181	2180	1842				
MAX	2282	7669	14030	7754	10960	8119	6843	5587	4572	3127	3080	2642				
(WY)	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995				
MIN	1020	1160	1557	1575	1641	1099	1329	1857	1549	1059	1752	1333				
(WY)	1993	1988	1990	1992	1992	1992	1992	1992	1992	1992	1992	1980				

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1978 - 1993
ANNUAL TOTAL	559859	1206685	
ANNUAL MEAN	1530	3306	3108
HIGHEST ANNUAL MEAN			5276
LOWEST ANNUAL MEAN			1538
HIGHEST DAILY MEAN	6490	Dec 10	50400
LOWEST DAILY MEAN	876	Oct 8	876
ANNUAL SEVEN-DAY MINIMUM	903	Oct 7	903
ANNUAL RUNOFF (AC-FT)	1110000	2393000	2251000
10 PERCENT EXCEEDS	2200	6110	5740
50 PERCENT EXCEEDS	1400	2670	2240
90 PERCENT EXCEEDS	996	1140	1340

ROGUE RIVER BASIN

14361900 APPLEGATE LAKE NEAR COPPER, OR

LOCATION.--Lat 42°03'25", long 123°06'30", in SE 1/4 sec.25, T.40 S., R.4 W., Jackson County, Hydrologic Unit 17100309, in outlet structure of Applegate Dam on Applegate River, 2.5 mi northeast of former town of Copper, 13 mi south of Ruch, and at mile 46.3.

DRAINAGE AREA.--223 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in October 1980. Storage began Dec. 2, 1980. Total capacity, 82,200 acre-ft between elevations 1,763.0 ft and 1,987.0 ft, maximum pool elevation. Elevation of gated spillway crest, 1,943.7 ft. Usable contents, 75,200 acre-ft between elevations 1,854.0 ft and 1,987.0 ft. Water is used for flood control, recreation, pollution abatement, irrigation, and other purposes.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 82,220 acre-ft May 9, 1989, May 10, 1993, elevation, 1,987.02 ft; minimum contents since first filling, 7,230 acre-ft Jan. 11, 1991, elevation, 1,855.1 ft, from graph of gage readings furnished by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 82,220 acre-ft May 10, elevation, 1,987.02 ft; minimum contents, 11,750 acre-ft Dec. 8, elevation, 1,873.06 ft.

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

1,840.0	4,400	1,900.0	21,380	1,960.0	58,060
1,860.0	8,330	1,920.0	30,960	1,980.0	75,470
1,880.0	13,890	1,940.0	43,090	1,990.0	85,190

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1919.21	1891.16	1875.04	1885.91	1899.29	1925.68	1961.68	1983.66	1985.62	1986.41	1978.71	1964.90
2	1918.34	1891.85	1874.79	1886.29	1899.71	1926.15	1962.40	1984.43	1985.56	1986.38	1978.32	1964.46
3	1917.41	1891.55	1874.55	1886.55	1900.57	1927.01	1963.62	1985.46	1985.64	1986.33	1977.91	1964.02
4	1916.45	1890.92	1874.22	1886.76	1901.59	1927.95	1964.68	1985.67	1986.09	1986.26	1977.49	1963.58
5	1915.48	1890.21	1873.85	1886.94	1902.94	1928.87	1964.92	1985.94	1986.24	1986.17	1977.03	1963.14
6	1914.50	1889.40	1873.48	1887.04	1904.44	1929.93	1964.88	1986.37	1986.23	1986.06	1976.63	1962.69
7	1913.50	1888.57	1873.16	1887.31	1905.91	1931.37	1964.95	1986.39	1986.30	1985.94	1976.19	1962.24
8	1912.51	1887.72	1873.68	1887.63	1907.51	1933.21	1965.90	1986.49	1986.67	1985.80	1975.75	1961.78
9	1911.51	1886.82	1874.52	1887.93	1909.24	1935.33	1966.82	1986.83	1986.78	1985.63	1975.29	1961.32
10	1910.48	1885.89	1878.21	1888.14	1910.85	1937.80	1967.58	1986.92	1986.76	1985.47	1974.82	1960.85
11	1909.46	1884.93	1880.10	1888.31	1912.37	1940.29	1968.05	1986.22	1986.73	1985.27	1974.36	1960.07
12	1908.43	1883.93	1880.90	1888.43	1913.59	1942.52	1968.70	1985.76	1986.81	1985.06	1973.90	1958.92
13	1907.35	1882.86	1881.30	1888.57	1914.60	1944.86	1969.35	1985.10	1986.86	1984.85	1973.43	1957.76
14	1906.25	1881.78	1881.53	1888.88	1915.46	1948.00	1969.93	1984.54	1986.92	1984.63	1972.97	1956.59
15	1905.09	1880.67	1881.74	1889.15	1916.22	1951.97	1970.60	1984.45	1986.94	1984.41	1972.58	1955.42
16	1903.99	1879.84	1881.89	1889.43	1916.87	1954.66	1971.25	1984.36	1986.90	1984.14	1972.15	1954.26
17	1902.94	1879.21	1882.07	1889.68	1917.46	1962.59	1972.67	1984.37	1986.82	1983.84	1971.69	1953.13
18	1901.87	1878.54	1882.09	1889.89	1918.04	1965.81	1974.23	1984.34	1986.85	1983.52	1971.19	1951.97
19	1900.79	1877.97	1882.05	1890.55	1918.96	1962.44	1975.52	1984.38	1986.95	1983.21	1970.76	1950.80
20	1899.75	1877.35	1882.05	1900.30	1920.04	1957.15	1976.55	1984.64	1986.98	1982.88	1970.36	1949.61
21	1898.76	1876.92	1882.12	1905.28	1920.92	1953.63	1977.52	1984.22	1986.97	1982.55	1969.90	1948.38
22	1897.67	1877.86	1882.23	1909.65	1921.69	1953.05	1978.33	1984.12	1986.97	1982.24	1969.40	1947.14
23	1896.54	1877.82	1882.29	1909.93	1922.54	1955.27	1979.04	1984.17	1986.99	1981.95	1968.91	1945.87
24	1895.38	1877.55	1882.33	1909.95	1923.26	1955.82	1979.65	1984.46	1986.96	1981.63	1968.40	1944.61
25	1894.15	1877.18	1882.33	1910.00	1923.86	1956.23	1980.25	1984.64	1986.96	1981.28	1967.88	1943.31
26	1892.95	1876.75	1882.34	1909.44	1924.39	1957.02	1980.87	1984.67	1986.93	1980.93	1967.44	1942.03
27	1891.73	1876.49	1882.64	1907.61	1924.85	1957.67	1981.33	1984.59	1986.86	1980.57	1967.03	1940.72
28	1890.51	1876.23	1883.49	1904.97	1925.27	1958.32	1981.75	1984.57	1986.77	1980.21	1966.62	1939.41
29	1889.66	1875.88	1884.03	1902.66	---	1959.14	1982.42	1984.64	1986.63	1979.85	1966.20	1938.09
30	1889.74	1875.46	1884.43	1901.03	---	1959.97	1983.15	1985.49	1986.49	1979.47	1965.77	1936.79
31	1889.50	---	1885.25	1899.76	---	1960.82	---	1985.72	---	1979.09	1965.34	---
MAX	1919.21	1891.85	1885.25	1910.00	1925.27	1965.81	1983.15	1986.92	1986.99	1986.41	1978.71	1964.90
MIN	1889.50	1875.46	1873.16	1885.91	1899.29	1925.68	1961.68	1983.66	1985.56	1979.09	1965.34	1936.79
(†)	17190	12470	15660	21270	33870	58690	78460	80950	81700	74620	62440	40940
(‡)	-13720	-4720	+3190	+5610	+12600	+24820	+19770	+2490	+750	-7080	-12180	-21500

CAL YR 1992 MAX 1955.20 MIN 1873.16 AC-FT† +730
WTR YR 1993 MAX 1986.99 MIN 1873.16 AC-FT† +10030

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

ROGUE RIVER BASIN

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14362000 APPLEGATE RIVER NEAR COPPER, OR

LOCATION.--Lat 42°03'50", long 123°06'37", in SW 1/4 NW 1/4 sec.30, T.40 S., R.3 W., Jackson County, Hydrologic Unit 17100309, U.S. Corps of Engineers land, on left bank 0.1 mi downstream from Brushy Gulch, 0.6 mi downstream from Applegate Dam, 3.1 mi northeast of former town of Copper, and at mile 45.7.

DRAINAGE AREA.--225 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-78-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,747.51 ft above sea level. Prior to Oct. 1, 1977, at site 0.6 mi upstream at datum 12.15 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Some storage during winter in Squaw Lakes Reservoir, capacity, 1,100 acre-ft on Squaw Creek upstream from station. Diversions upstream from station from Carberry Creek for irrigation in Thompson Creek basin. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--55 years, 430 ft³/s, 311,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s Jan. 15, 1974, gage height, 25.38 ft, site and datum then in use, from high-water mark in well, from rating curve extended above 12,000 ft³/s on basis of four slope-area measurements of peak flows made in 1950, 1955, 1964, and 1974; minimum discharge, 1.5 ft³/s Dec. 20, 1980, result of regulation at Applegate dam, 0.6 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,250 ft³/s Mar. 19, gage height, 8.18 ft; minimum discharge, 109 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	255	155	117	417	153	521	801	1610	284	277	237
2	274	235	149	117	205	153	522	824	1260	258	276	236
3	273	227	137	117	121	154	589	1310	993	254	280	236
4	272	226	137	117	119	155	1030	1290	851	252	284	236
5	271	226	137	117	120	155	1030	1020	1020	252	292	236
6	270	224	137	117	122	156	987	998	983	252	286	235
7	270	224	137	117	123	157	882	1080	848	251	286	238
8	268	224	139	117	124	157	768	915	640	251	284	239
9	268	223	140	117	126	157	873	779	720	251	283	238
10	267	223	141	117	127	160	874	1210	759	250	287	239
11	265	221	143	117	127	161	841	1680	687	250	283	355
12	265	225	144	117	129	163	660	1490	573	250	282	509
13	275	235	144	119	129	164	583	1340	553	249	280	506
14	279	232	144	119	129	166	559	1210	555	249	281	499
15	283	231	144	119	130	161	555	1050	556	249	281	499
16	271	188	144	119	131	1130	537	1210	556	273	280	496
17	260	155	144	119	131	1500	518	1280	558	285	285	492
18	258	155	144	119	131	2100	522	1360	484	285	289	487
19	258	155	144	120	126	3610	522	1380	447	284	288	486
20	256	155	144	129	119	3820	572	1440	461	284	288	488
21	255	155	130	218	119	2860	643	1520	439	285	287	494
22	262	155	115	276	119	1610	676	1190	391	282	287	500
23	264	155	115	709	128	1970	673	1040	372	282	287	500
24	263	155	115	543	145	1820	675	934	362	281	286	497
25	262	155	115	444	152	1390	674	951	345	282	285	496
26	261	155	115	550	153	978	673	960	345	281	252	492
27	260	155	115	835	153	865	676	964	341	278	236	491
28	258	155	116	1020	153	731	678	946	338	277	236	487
29	257	155	117	912	---	589	677	856	337	277	236	485
30	256	155	117	718	---	521	743	896	336	277	236	472
31	255	---	118	619	---	522	---	1570	---	276	237	---
TOTAL	8190	5789	4136	9211	4008	28688	20733	35494	18720	8291	8537	12101
MEAN	264	193	133	297	143	925	691	1145	624	267	275	403
MAX	283	255	155	1020	417	3820	1030	1680	1610	285	292	509
MIN	234	155	115	117	119	153	518	779	336	249	236	235
AC-FT	16240	11480	8200	18270	7950	56900	41120	70400	37130	16450	16930	24000
MEAN†	41.0	114	185	388	370	1329	1023	1185	637	152	77.2	42.0
AC-FT†	2520	6760	11390	23880	20550	81720	60890	72890	37880	9370	4750	2500

CAL YR 1992 TOTAL 53272 MEAN 146 MAX 283 MIN 107 AC-FT 105700 MEAN† 147 AC-FT† 106400
WTR YR 1993 TOTAL 163898 MEAN 449 MAX 3820 MIN 115 AC-FT 325100 MEAN† 463 AC-FT† 335100

† Adjusted for change in contents of Applegate Lake.

ROGUE RIVER BASIN

14362000 APPLEGATE RIVER NEAR COPPER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1980 to September 1987.

pH: September 1980 to September 1987.

WATER TEMPERATURE: January 1977 to current year.

DISSOLVED OXYGEN: September 1980 to September 1987.

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

REMARKS.--Temperatures are controlled by releases from Applegate Lake.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 188 microsiemens Sept. 13, 1980; minimum, 61 microsiemens Dec. 3, 1980, Dec. 20, 1981, June 19, 20, 1983.

pH: Maximum, 9.0 units Sept. 4, 1980; minimum recorded, 7.1 units Oct. 8-10, 13, 16, 17, 1986.

WATER TEMPERATURE: Maximum, 26.5°C Aug. 7, 1978; minimum, 0.0°C on many days during winter periods prior to filling of Applegate Lake.

DISSOLVED OXYGEN: Maximum, 15.2 mg/L Feb. 17, 18, 1986; minimum, 4.9 mg/L Sept. 28-30, 1981.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.0°C Aug. 3; minimum, 3.5°C Jan. 12, 17, 18.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.5	12.0	12.5	12.5	12.0	12.0	8.0	8.0	8.0	5.0	4.5	4.5
2	13.0	12.5	12.5	12.0	11.5	12.0	8.0	7.5	8.0	4.5	4.0	4.5
3	12.5	12.5	12.5	12.0	11.5	12.0	8.0	7.5	8.0	4.5	4.0	4.5
4	12.5	12.0	12.5	11.5	11.5	11.5	8.0	7.5	8.0	4.5	4.0	4.5
5	12.5	12.0	12.5	12.0	11.5	11.5	8.0	7.5	7.5	4.5	4.0	4.5
6	12.5	12.0	12.5	12.0	11.5	11.5	7.5	7.0	7.5	4.5	4.0	4.5
7	12.5	12.0	12.0	12.0	11.5	11.5	7.5	7.0	7.0	4.5	4.0	4.5
8	12.5	12.0	12.0	12.0	11.5	11.5	7.0	7.0	7.0	4.5	4.0	4.0
9	12.5	12.0	12.0	12.0	11.5	11.5	7.0	7.0	7.0	4.0	4.0	4.0
10	12.5	12.0	12.0	11.5	11.5	11.5	7.5	6.5	7.0	4.5	4.0	4.0
11	12.5	12.0	12.0	11.5	11.0	11.0	7.0	6.5	6.5	4.0	4.0	4.0
12	12.5	12.0	12.0	11.0	10.5	11.0	6.5	6.0	6.5	4.0	3.5	4.0
13	12.5	12.0	12.0	11.0	10.5	10.5	6.0	5.5	6.0	4.0	4.0	4.0
14	12.5	12.0	12.0	10.5	10.5	10.5	5.5	5.5	5.5	4.5	4.0	4.0
15	12.0	8.5	9.5	10.5	10.5	10.5	5.5	5.5	5.5	4.0	4.0	4.0
16	9.0	8.5	9.0	10.5	10.0	10.5	6.5	5.5	5.5	4.0	4.0	4.0
17	9.5	9.0	9.0	10.5	10.0	10.5	6.0	5.5	6.0	4.0	3.5	4.0
18	9.5	9.0	9.5	10.5	10.0	10.0	6.0	5.5	6.0	4.0	3.5	4.0
19	10.5	9.5	10.0	10.5	10.0	10.0	5.5	5.5	5.5	4.5	4.0	4.0
20	10.5	9.5	10.0	10.0	10.0	10.0	5.5	5.0	5.5	4.5	4.0	4.5
21	11.0	10.5	11.0	10.0	9.5	10.0	5.5	5.0	5.5	4.0	4.0	4.0
22	11.0	7.5	8.5	10.0	9.0	9.5	5.5	5.0	5.0	4.0	4.0	4.0
23	7.5	7.5	7.5	9.0	8.5	9.0	5.0	5.0	5.0	4.0	4.0	4.0
24	8.0	7.5	7.5	8.5	8.5	8.5	5.0	5.0	5.0	4.0	4.0	4.0
25	8.0	7.5	8.0	8.5	8.0	8.5	5.0	5.0	5.0	4.0	4.0	4.0
26	9.0	8.0	8.5	8.0	8.0	8.0	5.0	4.5	5.0	4.0	4.0	4.0
27	9.5	9.0	9.5	8.5	8.0	8.0	5.5	4.5	5.0	4.0	4.0	4.0
28	11.0	9.5	10.0	8.5	8.0	8.0	5.0	4.5	5.0	4.0	4.0	4.0
29	12.0	11.0	11.5	8.5	8.0	8.0	5.0	4.5	5.0	4.0	4.0	4.0
30	13.0	12.0	12.5	8.5	8.0	8.0	5.0	4.5	5.0	4.5	4.0	4.0
31	12.5	12.0	12.5	---	---	---	5.0	4.5	5.0	4.5	4.0	4.0
MONTH	13.0	7.5	11.0	12.5	8.0	10.0	8.0	4.5	6.0	5.0	3.5	4.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.5	4.0	4.5	5.0	4.5	5.0	6.5	6.5	6.5	7.0	7.0	7.0
2	4.5	4.0	4.5	5.0	4.5	5.0	6.5	6.5	6.5	7.0	7.0	7.0
3	4.5	4.0	4.5	5.0	5.0	5.0	7.0	6.5	6.5	7.0	7.0	7.0
4	5.0	4.0	4.5	5.0	5.0	5.0	6.5	6.5	6.5	8.0	7.0	7.5
5	4.5	4.5	4.5	5.5	4.5	5.0	6.5	6.5	6.5	8.5	8.0	8.5
6	5.0	4.5	4.5	5.5	4.5	5.0	6.5	6.5	6.5	9.0	8.0	8.0
7	5.0	4.5	4.5	5.5	4.5	5.0	7.0	6.5	6.5	9.0	8.0	8.5
8	5.0	4.5	4.5	5.5	4.5	5.0	6.5	6.5	6.5	8.0	8.0	8.0
9	5.0	4.5	5.0	5.0	5.0	5.0	6.5	6.5	6.5	9.0	8.0	8.5
10	5.0	4.5	4.5	5.5	5.0	5.0	6.5	6.5	6.5	8.5	7.5	8.0
11	5.0	4.5	5.0	5.5	5.0	5.0	7.0	6.5	6.5	8.0	7.5	8.0
12	5.0	4.5	5.0	5.5	5.0	5.0	7.0	6.5	6.5	8.5	8.0	8.0
13	5.0	4.5	5.0	5.5	5.0	5.0	7.0	6.5	6.5	8.5	8.0	8.5
14	5.0	4.5	4.5	5.5	5.0	5.0	7.0	6.5	6.5	8.5	8.0	8.5
15	5.0	4.5	4.5	5.0	5.0	5.0	7.0	6.5	6.5	9.0	8.5	8.5
16	5.0	4.5	4.5	5.0	5.0	5.0	7.0	6.5	6.5	10.0	9.0	9.5
17	5.0	4.5	4.5	5.0	5.0	5.0	7.0	6.5	6.5	10.0	9.5	9.5
18	5.0	4.5	5.0	5.5	5.0	5.5	7.0	6.5	7.0	10.0	9.5	9.5
19	5.0	5.0	5.0	6.0	5.5	6.0	7.0	6.5	7.0	10.0	9.5	9.5
20	5.0	4.5	5.0	6.0	6.0	6.0	7.0	6.5	7.0	10.5	9.0	9.5
21	5.0	4.5	5.0	6.0	6.0	6.0	7.0	6.5	7.0	10.5	9.5	10.0
22	5.0	5.0	5.0	6.0	6.0	6.0	7.0	6.5	6.5	10.5	10.0	10.5
23	5.0	5.0	5.0	6.0	6.0	6.0	7.0	6.5	6.5	11.0	10.5	11.0
24	5.0	5.0	5.0	6.5	6.0	6.0	7.0	6.5	6.5	11.0	10.5	10.5
25	5.0	4.5	5.0	6.5	6.0	6.5	7.0	6.5	7.0	10.5	10.0	10.5
26	5.5	4.5	5.0	6.5	6.5	6.5	7.0	6.5	7.0	10.5	10.5	10.5
27	5.5	4.5	5.0	6.5	6.5	6.5	7.0	6.5	7.0	11.0	10.5	10.5
28	5.5	4.5	5.0	6.5	6.5	6.5	7.0	6.5	7.0	11.0	10.0	10.5
29	---	---	---	6.5	6.5	6.5	7.0	7.0	7.0	10.5	10.0	10.5
30	---	---	---	6.5	6.5	6.5	7.0	7.0	7.0	10.5	9.0	10.0
31	---	---	---	6.5	6.5	6.5	---	---	---	9.5	9.0	9.0
MONTH	5.5	4.0	5.0	6.5	4.5	5.5	7.0	6.5	6.5	11.0	7.0	9.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.0	9.0	9.5	14.5	13.5	14.0	17.5	16.5	17.0	15.5	14.5	15.0
2	9.5	9.5	9.5	15.0	14.0	14.5	17.5	17.0	17.5	16.0	14.5	15.5
3	10.5	9.5	10.0	15.0	13.5	14.0	18.0	16.5	17.0	15.5	14.5	15.0
4	10.5	10.0	10.0	15.0	14.0	14.5	17.0	16.0	16.5	15.5	15.0	15.5
5	10.5	9.5	10.0	15.5	14.0	14.5	16.0	15.0	15.5	16.0	15.0	15.5
6	10.0	9.5	10.0	15.5	14.0	15.0	16.5	13.5	15.0	16.0	15.0	15.5
7	10.5	10.0	10.0	15.5	14.0	15.0	16.5	14.5	15.5	16.0	14.5	15.0
8	11.0	10.0	11.0	15.5	14.5	15.0	16.0	14.5	15.5	15.0	14.5	15.0
9	12.5	11.0	11.5	15.5	14.5	15.0	16.0	14.5	15.0	15.0	14.5	15.0
10	11.5	10.0	10.5	16.0	15.0	15.5	15.5	14.0	15.0	15.5	15.0	15.5
11	11.5	10.5	11.0	16.0	14.5	15.5	15.5	14.5	15.0	15.5	13.0	14.5
12	11.5	10.5	11.0	16.0	15.0	15.5	15.5	15.0	15.5	15.5	13.5	14.5
13	12.0	11.0	11.5	16.5	14.5	15.5	16.0	15.0	15.5	15.5	14.5	15.0
14	12.5	11.0	12.0	16.5	15.5	16.0	16.0	15.0	15.5	15.5	14.0	15.0
15	12.0	11.0	11.5	16.5	15.5	16.0	16.0	15.0	15.5	15.5	14.5	15.0
16	12.0	11.0	11.5	16.5	15.0	15.5	16.0	15.5	15.5	15.5	14.5	15.0
17	12.5	11.5	12.0	16.0	14.5	15.0	16.0	14.5	15.5	15.5	15.0	15.5
18	12.5	11.5	12.0	16.0	15.0	15.5	15.5	13.5	15.0	15.5	14.0	15.0
19	12.5	11.5	12.0	16.5	15.0	15.5	14.5	14.0	14.5	15.0	14.0	14.5
20	13.0	12.0	12.5	16.5	15.0	15.5	15.0	14.0	14.5	15.0	14.0	14.5
21	13.5	12.0	12.5	16.5	14.5	16.0	15.0	14.0	14.5	15.0	14.0	14.5
22	13.5	12.0	13.0	16.0	15.5	16.0	15.0	14.5	15.0	14.5	13.0	14.0
23	13.5	12.0	13.0	17.0	15.5	16.0	15.0	14.0	14.5	14.0	14.0	14.0
24	14.0	12.5	13.0	17.5	15.5	16.0	15.5	14.5	14.5	14.0	14.0	14.0
25	14.0	13.0	13.5	16.5	15.5	16.0	15.5	14.5	15.0	14.0	13.5	14.0
26	14.5	13.0	13.5	16.5	15.5	16.0	15.5	14.0	14.5	14.5	14.0	14.0
27	14.5	13.0	13.5	16.5	16.0	16.0	15.0	14.5	14.5	14.5	14.0	14.0
28	14.0	13.0	13.5	17.0	15.5	16.5	15.0	14.0	14.5	14.5	14.0	14.0
29	14.5	13.0	14.0	17.0	15.0	16.0	15.0	14.5	15.0	14.5	14.0	14.0
30	14.5	13.5	14.0	17.0	16.0	16.5	15.0	14.5	15.0	14.5	12.5	14.0
31	---	---	---	17.0	16.5	16.5	15.0	14.5	15.0	---	---	---
MONTH	14.5	9.0	12.0	17.5	13.5	15.5	18.0	13.5	15.5	16.0	12.5	14.5
YEAR	18.0	3.5	9.5									

ROGUE RIVER BASIN

14362250 STAR GULCH NEAR RUCH, OR

LOCATION.--Lat 42°09'15", long 123°04'27", in NE 1/4 NE 1/4 sec.29, T.39 S., R.3 W., Jackson County, Hydrologic Unit 17100309, Bureau of Land Management land, on left bank 1.0 mi downstream from Benson Gulch, 6.0 mi southwest of Ruch, and at mile 1.1.

DRAINAGE AREA.--16.0 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,667.04 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--10 years, 3.30 ft³/s, 2,391 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153 ft³/s Dec. 14, 1983, Nov. 28, 1985, gage height, 3.11 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1300	*144	*3.07	Jan. 21	2330	131	3.00

No flow many days during October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.30	.25	12	7.0	7.1	5.5	5.0	3.4	1.2	.52	.20
2	e.00	e.50	.29	8.1	6.5	8.8	5.0	4.7	3.1	1.2	.45	.17
3	e.00	e.25	.31	6.2	6.9	19	4.9	4.9	2.9	1.2	.38	.15
4	e.00	e.15	.28	5.3	9.1	21	6.8	4.6	3.0	1.2	.32	.13
5	e.00	e.15	.25	4.6	12	19	7.8	4.3	3.4	1.1	.27	.12
6	e.00	e.10	.24	4.1	13	16	7.9	4.2	3.3	1.1	.25	.11
7	e.00	e.10	.35	4.4	10	15	7.4	3.9	3.1	1.0	.30	.09
8	e.00	e.15	4.9	6.8	9.1	14	7.6	3.8	2.8	1.0	.28	.09
9	e.00	e.15	8.9	7.8	8.7	13	8.7	3.6	2.7	.98	.28	.08
10	e.00	e.15	15	6.7	7.8	12	12	3.5	2.5	.94	.27	.07
11	e.00	e.15	12	5.5	8.5	10	13	3.4	2.4	.92	.28	.06
12	e.00	e.10	7.7	4.6	7.8	8.9	12	3.5	2.4	.90	.30	.06
13	e.00	e.10	4.9	4.1	7.0	8.2	11	3.4	2.3	.94	.30	.08
14	e.00	e.10	3.4	5.3	6.2	8.0	9.6	3.2	2.1	.98	.31	.11
15	e.00	e.10	2.6	6.6	5.6	7.7	8.5	3.1	2.1	.98	.68	.11
16	e.00	e.10	2.3	6.7	5.0	7.3	7.4	3.0	2.0	.95	.84	.13
17	e.00	e.10	2.5	6.3	4.5	8.8	11	2.9	1.9	.89	.65	.18
18	e.00	e.10	2.2	6.0	4.3	11	24	2.7	1.8	.86	.57	.21
19	e.00	e.10	2.0	7.1	4.7	9.6	26	2.8	1.7	.81	.63	.22
20	e.00	e.15	1.9	102	5.3	8.5	21	2.9	1.6	.81	1.0	.24
21	e.00	e.30	2.3	6.9	5.3	7.4	16	2.7	1.6	.80	.83	.26
22	e.00	e.85	2.5	8.8	5.3	6.8	13	2.6	1.6	1.1	.63	.27
23	e.00	e.55	2.4	3.8	7.8	7.7	11	2.5	1.6	1.2	.54	.26
24	e.00	e.50	2.2	21	12	8.5	9.7	2.4	1.5	1.0	.49	.23
25	e.00	.35	1.9	15	11	10	8.5	2.5	1.4	.89	.47	.20
26	e.00	.28	1.8	12	8.8	10	7.5	2.5	1.3	.81	.44	.17
27	e.00	.26	1.8	12	7.8	9.4	6.6	2.4	1.3	.73	.39	.16
28	e.05	.26	8.7	12	7.2	8.1	6.1	2.7	1.3	.66	.35	.15
29	e.10	.26	8.3	11	---	7.0	5.6	2.5	1.3	.65	.32	.15
30	e.25	.23	6.2	9.3	---	6.3	5.2	2.8	1.3	.63	.29	.14
31	e.25	---	10	8.1	---	5.9	---	4.0	---	.58	.24	---
TOTAL	0.65	6.94	120.37	515.6	214.2	320.0	306.3	103.0	64.7	29.01	13.87	4.60
MEAN	.021	.23	3.88	16.6	7.65	10.3	10.2	3.32	2.16	.94	.45	.15
MAX	.25	.85	15	102	13	21	26	5.0	3.4	1.2	1.0	.27
MIN	.00	.10	.24	4.1	4.3	5.9	4.9	2.4	1.3	.58	.24	.06
AC-FT	1.3	14	239	1020	425	635	608	204	128	58	28	9.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	.73	3.52	6.15	5.45	7.27	7.59	4.70	2.27	1.20	.71	.44
MAX	1.98	18.0	36.5	16.6	18.6	20.5	12.5	5.68	3.27	3.14	2.00
(WY)	1984	1985	1984	1993	1986	1984	1984	1984	1984	1983	1983
MIN	.021	.23	.87	1.13	1.58	.95	1.12	.22	.012	.067	.000
(WY)	1993	1993	1990	1992	1992	1992	1992	1992	1992	1988	1991

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1983 - 1993
ANNUAL TOTAL	285.76	1699.24	
ANNUAL MEAN	.78	4.66	
HIGHEST ANNUAL MEAN			3.30
LOWEST ANNUAL MEAN			9.81
HIGHEST DAILY MEAN			.60
LOWEST DAILY MEAN	15	102	139
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
ANNUAL RUNOFF (AC-FT)	567	3370	2390
10 PERCENT EXCEEDS	1.9	11	7.7
50 PERCENT EXCEEDS	.17	2.2	1.2
90 PERCENT EXCEEDS	.00	.10	.04

e Estimated

ROGUE RIVER BASIN

431

14366000 APPLGATE RIVER NEAR APPLGATE, OR

LOCATION.--Lat 42°14'30", long 123°08'20", in NE 1/4 sec.26, T.38 S., R.4 W., Jackson County, Hydrologic Unit 17100309, on left bank 0.9 mi downstream from Keeler Creek, 1.8 mi southeast of Applegate, and at mile 26.7.

DRAINAGE AREA.--483 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

RECORDS.--WSP 1738: Drainage area. WSP 1935: 1953(M). WDR OR-76-1: 1956(M), 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 1,285.33 ft above sea level. Prior to Dec. 23, 1938, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. McDonald Creek Canal diverts from McDonald Creek upstream from station for irrigation in Bear Creek basin. Thompson Creek Irrigation Association ditch diverts upstream from station for irrigation in Thompson Creek basin. Fowler-Keeler and Berryman ditches divert upstream from station for irrigation downstream. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1939-80), 548 ft³/s, 397,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft³/s Jan. 15, 1974, gage height, 20.41 ft, from rating curve extended above 18,000 ft³/s on basis of slope-area measurements of flow at gage heights 18.00 ft and 19.57 ft; minimum discharge, 4.6 ft³/s Sept. 22-25, 1979. Minimum since first filling of Applegate Lake, 65 ft³/s Aug. 2, 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 20, 1927, reached a stage of 18.7 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,390 ft³/s Mar. 19, gage height, 7.20 ft; minimum discharge, 88 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	273	162	259	575	256	666	931	2130	322	258	223
2	270	263	163	252	372	258	641	961	1720	275	260	222
3	267	244	151	244	232	312	644	1600	1400	272	256	222
4	265	238	148	237	233	333	1270	1720	1140	262	260	222
5	262	237	146	234	244	330	1300	1380	1440	259	265	223
6	262	235	147	230	249	322	1240	1210	1400	253	264	222
7	261	235	148	229	246	325	1050	1430	1220	256	262	223
8	261	235	170	231	246	328	941	1200	931	255	262	224
9	260	236	205	232	246	326	1040	992	935	256	254	224
10	258	235	235	232	247	346	1090	1350	985	252	259	223
11	259	234	228	227	253	359	1060	2140	910	249	258	261
12	259	231	201	212	241	332	850	1980	764	247	257	470
13	261	242	183	205	226	329	717	1710	700	246	255	470
14	273	241	175	211	220	341	677	1600	682	241	253	455
15	275	240	175	212	216	505	655	1330	671	235	274	459
16	274	224	173	212	208	1310	643	1530	651	249	284	457
17	256	166	199	212	208	2070	679	1630	647	268	281	458
18	255	165	206	212	205	2550	824	1740	590	267	285	456
19	257	166	203	217	209	4440	810	1800	518	270	287	456
20	261	165	206	923	210	4980	807	1880	522	271	302	461
21	265	165	201	866	208	3870	870	1970	508	271	289	462
22	266	172	178	1130	209	2120	881	1590	462	280	284	469
23	269	169	175	1200	234	2460	862	1350	428	288	283	470
24	268	164	174	893	290	2420	849	1190	421	282	282	465
25	269	163	173	702	281	1960	838	1190	391	282	281	463
26	269	163	173	713	271	1330	831	1210	377	281	259	462
27	266	165	178	989	262	1280	816	1210	369	275	231	461
28	266	166	212	1280	259	1280	808	1210	367	266	230	459
29	269	164	217	1220	---	984	809	1060	362	265	228	458
30	289	162	208	874	---	653	862	1090	356	260	226	453
31	271	---	244	801	---	648	---	2040	---	259	226	---
TOTAL	8133	6158	5757	15891	7100	39357	26030	45224	23997	8214	8155	11253
MEAN	262	205	186	513	254	1270	868	1459	800	265	263	375
MAX	289	273	244	1280	575	4980	1300	2140	2130	322	302	470
MIN	170	162	146	205	205	256	641	931	356	235	226	222
AC-FT	16130	12210	11420	31520	14080	78060	51630	89700	47600	16290	16180	22320

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	337	503	741	531	732	664	556	705	449	208	174	243
MAX	507	1261	3077	1201	2552	1596	1304	1705	1237	370	263	425
(WY)	1983	1985	1982	1982	1983	1983	1982	1983	1983	1983	1993	1983
MIN	218	195	158	142	148	142	139	160	119	86.5	74.5	83.8
(WY)	1982	1988	1991	1991	1992	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1982 - 1993

ANNUAL TOTAL	53684	205269	486
ANNUAL MEAN	147	562	1072
HIGHEST ANNUAL MEAN			153
LOWEST ANNUAL MEAN			7230
HIGHEST DAILY MEAN	289	Oct 30	4980
LOWEST DAILY MEAN	67	Aug 2	146
ANNUAL SEVEN-DAY MINIMUM	71	Jul 31	152
ANNUAL RUNOFF (AC-FT)	106500	407200	351900
10 PERCENT EXCEEDS	240	1290	1050
50 PERCENT EXCEEDS	144	271	265
90 PERCENT EXCEEDS	78	202	139

WATER-QUALITY RECORDS

WATER TEMPERATURE: August 1973 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.0°C July 29, 30, Aug. 3, 4, 1974; minimum, 0.0°C on several days during winter periods most years. Maximum since full operation of Applegate Lake, 25.5°C July 5, 1984, July 16, 19, 27, 1992; minimum, 0.0°C on several days during winter periods most years.

WATER TEMPERATURE: Maximum, 23.0°C Aug. 3; minimum, 2.5°C Feb. 16.

[illegible]

ROGUE RIVER BASIN

433

14366000 APPLGATE RIVER NEAR APPLGATE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	3.5	4.5	6.0	4.5	5.5	9.5	6.5	8.0	11.0	7.0	9.0
2	6.0	4.0	5.0	8.0	5.5	7.0	9.0	7.0	8.0	12.0	8.0	9.5
3	7.5	6.0	6.5	8.0	6.0	7.0	9.5	7.5	8.5	9.5	7.5	8.5
4	7.0	4.5	6.0	7.5	6.5	7.0	8.5	7.0	7.5	10.5	7.0	8.5
5	8.0	7.0	7.5	9.0	5.0	7.0	9.5	6.0	7.5	11.5	7.5	9.5
6	7.5	5.5	6.5	9.5	5.5	7.5	8.5	6.5	7.5	11.0	8.5	9.5
7	6.5	4.5	5.5	9.5	6.0	7.5	10.0	6.5	8.0	10.5	8.0	9.0
8	7.0	6.0	6.5	10.0	6.5	8.0	9.0	6.5	7.5	12.0	8.0	9.5
9	8.0	6.5	7.0	8.5	7.5	8.0	9.5	6.5	7.5	13.0	8.0	10.0
10	7.0	5.0	5.5	9.0	7.5	8.5	8.5	6.5	7.5	12.5	9.0	10.5
11	7.0	5.0	6.0	10.0	7.0	8.5	9.0	6.0	7.5	11.0	8.0	9.5
12	7.0	5.0	6.0	9.5	7.0	8.5	10.0	6.0	8.0	9.0	8.5	9.0
13	7.0	5.0	6.0	9.5	7.0	8.0	9.5	7.0	8.0	11.0	8.5	9.5
14	6.5	4.0	5.0	9.0	7.5	8.5	9.5	6.5	8.0	12.0	8.5	10.0
15	5.5	4.0	4.5	9.0	6.5	8.0	10.5	7.0	8.5	13.0	9.0	10.5
16	5.0	2.5	4.0	7.0	6.0	6.5	9.5	6.5	8.0	13.5	9.5	11.0
17	5.0	3.5	4.5	7.0	6.0	6.0	8.5	7.5	8.0	13.0	10.0	11.0
18	5.5	4.0	4.5	7.0	5.5	6.5	10.0	6.5	8.0	13.0	10.0	11.0
19	7.0	5.0	5.5	7.0	6.0	6.5	10.0	6.5	8.0	12.0	10.0	11.0
20	5.5	3.5	4.5	7.5	6.5	6.5	9.5	7.0	8.0	12.0	10.0	11.0
21	4.0	3.0	3.5	7.5	6.0	6.5	10.5	7.0	8.5	12.0	10.5	11.0
22	7.0	4.0	5.5	7.5	6.0	6.5	9.5	7.0	8.0	14.0	10.5	12.0
23	6.0	4.5	5.5	7.5	6.5	7.0	9.5	7.0	8.0	15.0	10.0	12.0
24	5.5	4.5	5.0	7.5	6.5	7.0	9.5	7.0	8.0	12.5	11.0	11.5
25	6.0	3.5	4.5	8.0	6.5	7.0	11.0	7.5	9.0	13.0	11.0	12.0
26	6.5	3.5	5.0	8.5	6.0	7.0	10.0	6.5	8.5	13.0	11.0	12.0
27	6.5	3.0	4.5	8.5	6.0	7.0	11.5	7.5	9.0	12.5	10.5	11.5
28	7.0	3.5	5.0	9.5	6.5	8.0	11.5	7.0	9.0	13.0	11.0	12.0
29	---	---	---	10.0	6.5	8.0	12.0	8.0	9.5	13.5	11.0	12.0
30	---	---	---	8.5	6.5	7.5	11.5	7.5	9.0	12.0	11.0	11.5
31	---	---	---	9.0	7.0	8.0	---	---	---	11.5	10.0	10.5
MONTH	8.0	2.5	5.5	10.0	4.5	7.5	12.0	6.0	8.0	15.0	7.0	10.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.0	10.0	10.5	19.5	13.0	16.5	22.0	16.0	19.0	19.5	15.0	17.0
2	12.5	10.0	11.0	18.5	14.5	16.5	22.5	17.0	20.0	19.5	15.0	17.5
3	12.5	10.0	11.0	19.5	13.5	16.5	23.0	17.5	20.5	19.5	15.5	17.5
4	12.0	10.5	11.0	19.5	14.5	17.0	22.0	17.5	20.0	20.0	15.5	18.0
5	12.0	10.0	10.5	20.0	14.0	17.0	21.0	16.5	19.0	20.0	16.0	18.0
6	11.5	10.0	10.5	20.0	14.0	17.0	21.0	16.0	18.5	20.5	16.0	18.5
7	13.5	10.0	11.5	19.5	14.0	17.0	21.0	15.5	18.5	20.5	16.5	18.5
8	15.0	10.5	12.5	20.0	14.0	17.5	20.5	15.0	18.0	20.0	16.0	18.0
9	14.5	11.0	12.5	20.5	15.0	18.0	20.0	15.0	17.5	20.0	16.0	18.0
10	15.0	12.0	13.0	20.0	14.5	17.5	19.5	15.0	17.5	20.0	16.0	18.0
11	15.0	10.5	12.5	20.0	14.5	17.5	20.0	15.5	17.5	19.0	15.5	17.5
12	15.5	10.0	12.5	19.5	14.5	17.0	20.0	15.0	17.5	17.5	13.5	15.5
13	16.5	10.5	13.5	19.5	14.5	16.5	20.0	15.0	17.5	17.5	13.0	15.5
14	16.5	11.5	14.0	19.5	14.0	17.0	18.0	15.0	17.0	17.0	13.5	15.0
15	17.0	12.5	14.5	19.0	15.0	17.0	18.0	15.5	17.0	17.0	13.0	15.5
16	17.0	12.0	14.0	19.5	14.0	17.0	19.5	15.0	17.5	17.0	14.0	15.5
17	17.5	11.5	14.5	19.5	14.0	17.0	20.0	14.5	17.5	18.0	14.0	16.0
18	18.5	12.0	15.0	20.0	14.0	17.0	20.0	15.0	17.5	17.5	14.0	16.0
19	19.0	12.5	15.5	19.0	15.5	17.5	19.0	15.5	16.5	16.5	13.5	15.0
20	18.5	12.5	15.5	20.0	15.5	17.5	16.5	14.5	15.5	16.5	12.5	14.5
21	15.5	12.5	14.0	18.0	14.0	16.5	19.5	15.0	17.0	16.0	12.0	14.0
22	16.5	10.5	13.5	17.5	15.5	16.5	19.5	14.5	17.0	16.0	12.0	14.0
23	17.5	11.0	14.0	20.0	15.5	17.5	19.5	15.0	17.5	16.0	12.0	14.0
24	18.0	11.0	14.5	20.0	15.0	17.5	18.0	14.5	16.5	16.5	12.0	14.5
25	19.5	12.5	16.0	20.0	14.5	17.5	18.0	13.0	15.5	16.5	12.5	14.5
26	19.5	13.5	17.0	20.5	14.5	17.5	18.5	13.0	16.0	17.0	12.5	14.5
27	17.5	13.5	15.5	21.0	15.0	18.0	19.0	14.0	16.5	16.5	13.5	15.0
28	18.0	13.0	15.5	20.0	16.0	18.5	18.5	14.5	16.5	17.0	13.0	15.0
29	18.5	12.5	15.5	20.0	16.0	18.0	18.5	14.0	16.5	17.0	13.5	15.5
30	19.0	12.5	16.0	20.5	14.5	17.5	19.0	14.0	16.5	17.0	13.5	15.5
31	---	---	---	21.0	15.5	18.5	19.0	14.5	17.0	---	---	---
MONTH	19.5	10.0	13.5	21.0	13.0	17.5	23.0	13.0	17.5	20.5	12.0	16.0

ROGUE RIVER BASIN

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR

LOCATION.--Lat 42°21'15", long 123°24'20", in SE 1/4 NE 1/4 sec.16, T.37 S., R.6 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.3 mi downstream from Jackson Creek, 3.6 mi southeast of Wilderville, and at mile 7.6.

DRAINAGE AREA.--698 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1955, September 1978 to current year.

REVISED RECORDS.--WSP 1318: 1943. WSP 1738: 1951, 1953, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 947.18 ft above sea level (Corps of Engineers bench mark). Prior to Sept. 1, 1978, nonrecording gage at site 1,100 ft upstream at datum 2.36 ft higher.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. Wilderville ditch diverts up to 16 ft³/s 0.3 mi upstream and at the mouth of Jackson Creek. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1939-55, 1979, 1980), 717 ft³/s, 519,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft³/s Jan. 18, 1953, gage height, 18.3 ft, from floodmark, site and datum then in use, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.78 ft³/s Aug. 22-24, 1979. Minimum since first filling of Applegate Lake, 34 ft³/s Aug. 4, 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached a stage of 20.3 ft, from floodmark, former site and datum, discharge, 66,500 ft³/s, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow.

Flood of February 1927 reached a stage of 22 ft at former site, from local resident. Floods of Dec. 22, 1964, and Jan. 15, 1974, are known to have exceeded the December 1955 flood.

No flow was observed at present site during the late summer of 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,660 ft³/s Mar. 20, gage height, 7.03 ft; minimum discharge, 88 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	363	205	903	872	504	957	1120	2130	324	226	205
2	238	406	210	603	633	523	933	1120	1880	272	229	201
3	260	333	209	469	474	670	970	1410	1640	266	227	200
4	258	302	201	429	475	764	1560	1470	1400	254	223	203
5	270	287	196	448	499	728	1740	1190	1550	249	220	206
6	270	285	194	441	521	702	1630	958	1600	238	228	210
7	270	280	197	421	491	717	1430	1130	1450	229	225	207
8	270	275	298	459	473	715	1370	1010	1210	233	221	204
9	270	273	809	497	470	695	1450	e920	1110	231	219	203
10	267	269	1110	436	457	706	1870	e1300	1150	226	222	204
11	265	264	819	387	540	726	1760	e2100	1090	224	222	201
12	265	260	601	356	598	656	1480	e2000	944	221	221	352
13	265	260	426	336	518	621	1220	e1700	829	218	224	417
14	277	265	351	344	468	624	1140	e1500	773	218	224	408
15	280	265	319	355	432	725	1050	e1300	748	213	235	418
16	285	262	302	355	401	1410	1010	e1400	715	210	253	427
17	276	219	318	354	380	2580	1080	e1600	695	224	252	432
18	270	204	309	342	376	2860	1680	e1700	665	236	250	429
19	267	208	292	373	398	4280	1540	1760	559	241	260	435
20	272	204	285	3110	490	5330	1370	1800	542	259	290	437
21	289	208	304	3030	499	4270	1350	1890	542	256	283	438
22	282	252	307	3460	562	2570	1300	1690	503	264	273	444
23	285	255	283	2190	687	2660	1250	1430	444	273	266	447
24	285	227	265	1660	850	2830	1210	1280	424	270	261	445
25	285	217	255	1250	704	2500	1160	1250	396	264	256	443
26	285	212	243	1070	616	1790	1140	1270	373	262	252	441
27	285	212	296	1200	556	1590	1100	1260	356	257	224	442
28	289	214	625	1520	523	1390	1060	1290	351	243	219	439
29	299	206	554	1500	---	1190	1040	1190	346	236	219	439
30	332	203	460	1210	---	997	1050	1190	336	231	209	436
31	338	---	892	1110	---	957	---	1820	---	227	206	---
TOTAL	8441	7690	12135	30618	14963	49280	38900	44048	26751	7569	7339	10413
MEAN	272	256	391	988	534	1590	1297	1421	892	244	237	347
MAX	338	406	1110	3460	872	5330	1870	2100	2130	324	290	447
MIN	92	203	194	336	376	504	933	920	336	210	206	200
AC-FT	16740	15250	24070	60730	29680	97750	77160	87370	53060	15010	14560	20650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	372	716	1185	894	1269	1064	852	776	484	196	155	242
MAX	569	2099	4719	1963	4241	2715	2177	1916	1333	390	239	482
(WY)	1984	1985	1982	1982	1983	1983	1982	1983	1983	1983	1984	1983
MIN	272	239	196	209	283	236	197	166	98.4	65.3	39.3	66.0
(WY)	1993	1988	1991	1991	1991	1992	1988	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1982 - 1993

ANNUAL TOTAL	73377	258147	681	1983
ANNUAL MEAN	200	707	1546	1992
HIGHEST ANNUAL MEAN			198	1992
LOWEST ANNUAL MEAN			16200	Feb 18 1983
HIGHEST DAILY MEAN	1110	5330	36	Aug 3 1992
LOWEST DAILY MEAN	36	92	37	Jul 31 1992
ANNUAL SEVEN-DAY MINIMUM	37	202	37	Jul 31 1992
ANNUAL RUNOFF (AC-FT)	145500	512000	493100	
10 PERCENT EXCEEDS	308	1550	1540	
50 PERCENT EXCEEDS	212	427	343	
90 PERCENT EXCEEDS	45	219	137	

e Estimated

14369500 APPLGATE RIVER NEAR WILDERVILLE, OR--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE: September 1978 to current year.

INSTRUMENTATION.--Temperature recorder since September 1978.

WATER TEMPERATURE: Maximum, 29.0°C June 22, 1992; minimum, 0.0°C Feb. 6, 7, 1989.

WATER TEMPERATURE: Maximum, 25.5°C Aug. 3; minimum, 3.5°C Feb. 16, 21.

[illegible]

ROGUE RIVER BASIN

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	4.5	5.0	7.0	5.5	6.0	10.5	8.0	9.0	12.0	9.5	11.0
2	7.0	5.0	6.0	8.5	6.5	7.5	10.5	9.0	9.5	14.0	10.5	12.0
3	8.5	6.5	7.5	8.5	7.5	8.0	10.0	9.5	10.0	12.5	10.0	11.0
4	7.5	6.0	7.0	8.5	7.5	8.0	10.0	8.5	9.5	11.5	8.5	10.0
5	8.5	7.5	8.0	9.5	6.5	8.0	10.0	7.0	8.5	11.5	8.5	10.5
6	8.5	7.0	7.5	10.0	7.0	8.5	9.5	7.5	8.5	12.0	10.0	11.0
7	7.5	6.0	7.0	10.0	7.5	9.0	10.5	7.5	9.0	11.0	8.5	10.0
8	8.0	7.0	7.5	10.5	8.0	9.5	10.5	8.5	9.5	12.5	9.0	10.5
9	9.0	7.5	8.0	10.0	9.0	9.5	10.0	8.5	9.0	---	---	---
10	8.0	6.5	7.0	10.5	9.0	9.5	9.5	8.0	9.0	---	---	---
11	7.0	6.0	6.5	11.5	9.0	10.0	10.0	7.5	8.5	---	---	---
12	8.0	6.5	7.0	11.0	9.0	10.0	10.5	7.0	9.0	---	---	---
13	7.5	6.5	7.0	10.5	8.5	9.5	10.5	8.0	9.0	---	---	---
14	7.5	6.0	6.5	10.5	9.0	10.0	10.0	8.5	9.5	---	---	---
15	6.5	5.0	6.0	11.0	9.0	10.0	11.5	9.0	10.0	---	---	---
16	6.0	3.5	5.0	9.5	8.0	8.5	10.5	8.5	10.0	---	---	---
17	5.5	4.5	5.0	8.5	7.5	8.0	10.0	9.0	9.5	---	---	---
18	5.5	5.0	5.5	9.0	7.5	8.0	10.5	8.0	9.0	---	---	---
19	6.5	5.5	6.0	8.0	6.5	7.5	10.5	8.0	9.5	---	---	---
20	6.0	4.0	5.0	9.0	7.0	8.0	10.0	8.5	9.5	13.5	11.0	12.0
21	4.5	3.5	4.0	8.5	6.5	7.5	11.0	8.5	10.0	13.0	11.0	12.0
22	6.5	4.0	5.0	8.5	7.0	7.5	10.0	8.5	9.5	15.0	10.5	12.5
23	6.5	5.5	6.0	8.5	8.0	8.5	10.0	8.5	9.5	15.5	11.0	13.5
24	6.5	4.5	5.5	8.5	7.5	8.0	10.0	9.0	9.5	15.0	12.5	13.0
25	7.0	4.5	5.5	8.5	7.0	7.5	11.5	8.5	10.0	14.5	12.0	13.0
26	7.0	4.0	5.5	9.0	6.5	8.0	11.0	8.5	10.0	14.5	11.5	13.0
27	7.0	4.0	5.5	9.5	7.0	8.0	12.5	9.0	10.5	13.5	11.5	12.5
28	7.5	4.5	6.0	10.5	7.5	9.0	12.0	9.0	11.0	14.0	11.5	12.5
29	---	---	---	10.5	8.0	9.5	13.5	10.5	12.0	14.5	11.5	13.0
30	---	---	---	9.5	8.5	9.0	13.0	10.0	12.0	13.5	12.0	13.0
31	---	---	---	9.5	8.5	9.0	---	---	---	12.5	11.5	12.0
MONTH	9.0	3.5	6.0	11.5	5.5	8.5	13.5	7.0	9.5	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.5	10.5	11.5	21.5	16.5	19.0	24.0	19.0	21.5	21.5	18.0	20.0
2	13.5	10.5	12.0	20.5	17.5	19.0	25.0	20.0	22.5	21.5	17.5	19.5
3	13.0	10.5	12.0	21.5	16.5	19.0	25.5	20.5	23.0	22.0	18.0	20.0
4	13.0	11.0	12.0	22.0	16.5	19.5	24.5	20.5	23.0	22.0	18.5	20.0
5	13.0	11.0	12.0	22.0	17.0	19.5	24.0	20.0	22.0	22.5	18.5	20.5
6	12.0	10.5	11.5	22.0	17.0	19.5	24.0	19.5	22.0	22.5	18.5	20.5
7	14.5	11.0	12.5	22.0	17.5	19.5	24.0	20.0	22.0	22.5	19.0	20.5
8	15.5	11.0	13.5	22.0	17.0	19.5	23.0	19.0	21.0	23.0	19.5	21.0
9	14.5	12.5	13.5	22.5	18.0	20.5	22.0	18.0	20.5	23.0	19.5	21.0
10	16.0	13.0	14.5	22.5	17.5	20.0	22.5	18.0	20.0	23.0	19.5	21.0
11	15.0	12.0	13.5	22.0	18.0	20.0	22.0	18.5	20.0	21.5	18.5	20.5
12	15.5	11.5	13.5	21.5	17.0	19.5	22.5	18.0	20.0	20.0	17.0	18.5
13	16.5	13.0	14.5	20.0	16.5	18.0	22.5	18.5	20.5	18.0	15.0	16.5
14	17.5	14.0	15.5	20.0	16.0	18.0	20.5	18.0	19.5	17.0	15.0	16.0
15	17.5	14.0	16.0	21.0	17.0	19.0	20.0	17.5	19.0	17.5	14.5	16.0
16	18.0	14.0	16.0	21.5	17.0	19.0	21.0	17.5	19.0	18.0	15.5	16.5
17	18.5	14.5	16.5	22.0	17.0	19.5	22.0	17.5	20.0	18.5	15.5	17.0
18	19.0	15.5	17.0	22.0	17.0	19.5	22.5	18.0	20.5	18.0	15.5	16.5
19	20.5	16.5	18.5	21.5	18.0	20.0	21.5	18.0	19.5	17.0	15.0	16.0
20	20.0	17.0	18.5	21.5	17.0	19.0	18.0	16.5	17.5	16.5	13.5	15.0
21	18.5	15.0	16.0	20.0	17.0	19.0	21.5	17.0	19.0	16.0	13.0	14.5
22	16.0	13.0	14.5	19.0	17.0	17.5	22.0	17.5	19.5	16.0	13.0	14.5
23	18.5	13.5	16.0	21.5	16.5	18.5	21.5	18.0	20.0	16.0	13.0	14.5
24	19.0	14.0	16.5	21.5	17.0	19.5	20.0	17.0	18.5	16.0	13.0	14.5
25	21.0	15.5	18.5	21.0	17.0	19.0	19.0	15.0	17.5	16.5	13.5	15.0
26	21.5	17.5	19.5	21.5	16.5	19.0	19.5	15.0	17.5	17.0	14.0	15.5
27	19.5	16.5	18.0	23.0	17.5	20.0	20.5	16.0	18.5	17.0	14.5	16.0
28	19.5	15.5	17.5	22.5	18.5	20.5	20.5	17.0	19.0	17.5	15.0	16.0
29	20.0	15.0	17.5	22.0	18.0	20.0	20.5	16.5	18.5	18.0	15.0	16.5
30	21.0	15.5	18.0	22.0	17.5	20.0	21.0	17.0	19.0	17.5	15.0	16.5
31	---	---	---	23.0	18.0	20.5	21.5	17.5	19.5	---	---	---
MONTH	21.5	10.5	15.0	23.0	16.0	19.5	25.5	15.0	20.0	23.0	13.0	17.5

ROGUE RIVER BASIN

437

14372300 ROGUE RIVER NEAR AGNESS, OR
(National stream-quality accounting network station)

LOCATION.--Lat 42°34'50", long 124°03'30", in NE 1/4 NW 1/4 sec.6, T.35 S., R.11 W., Curry County, Hydrologic Unit 17100310, on left bank 0.8 mi upstream from Shasta Costa Creek, 1.5 mi north of Agness, 2.6 mi upstream from Illinois River, and at mile 29.7.

DRAINAGE AREA.--3,939 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 113.81 ft above sea level (levels by U.S. Bureau of Public Roads).

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040), since December 1980 by Applegate Lake (station 14361900), slight regulation by Fish Lake and Emigrant Lake. Many diversions for irrigation and mining.

AVERAGE DISCHARGE.--33 years, 5,771 ft³/s, 4,181,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 290,000 ft³/s Dec. 23, 1964, from slope-area measurement; maximum gage height, 68.03 ft Dec. 23, 1964, from floodmark (backwater from Illinois River); minimum discharge, 608 ft³/s July 9, 10, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,100 ft³/s Jan. 20, gage height, 15.12 ft; minimum discharge, 1,230 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1480	2820	1720	11800	6120	5280	7220	6690	10100	3340	3030	2240
2	1840	3170	1850	8770	5610	5330	7890	6650	9900	3220	3000	2220
3	1570	3000	2120	6260	5440	6580	10800	7100	8870	3110	2970	2160
4	1470	2250	2320	5860	5850	8030	13300	8820	8360	3100	2890	2220
5	1440	1920	2040	6350	6340	7880	16900	8720	9540	3060	2810	2260
6	1440	1790	1880	6250	6760	7540	14400	8050	14600	3010	2680	2290
7	1410	1780	1950	5600	6470	7490	12700	8360	11200	2940	2670	2320
8	1390	1730	2830	6360	6000	7380	11700	9040	10900	2940	2640	2330
9	1350	1720	8030	7450	5880	7080	13400	8290	8620	2940	2580	2330
10	1360	1720	12700	6560	5690	7000	18000	7490	7710	2930	2530	2300
11	1390	1710	15000	5380	6630	7340	17000	7340	7110	2990	2430	2290
12	1390	1650	9890	4580	10000	7150	14000	8650	6620	3000	2410	2200
13	1390	1590	6750	4100	9170	6530	11400	8960	6000	2980	2410	2190
14	1370	1550	4840	4110	7400	6320	10100	8710	5470	3010	2420	2270
15	1390	1560	3890	5580	6320	7240	9070	8440	5060	2980	2560	2250
16	1410	1490	3490	5630	5540	9560	8340	8110	4830	3010	2970	2290
17	1420	1490	3650	5480	4890	15000	8130	7980	4670	2960	2920	2310
18	1370	1450	3820	5180	4580	21300	12300	7520	4450	2920	2780	2320
19	1370	1520	3580	5200	6060	17100	13400	6480	4120	2930	2870	2320
20	1410	1630	3690	29300	7850	16900	11300	5960	3960	2960	3220	2370
21	1430	2030	4250	35900	8060	15700	10100	6280	4010	3010	3160	2340
22	1520	3050	5030	33700	8240	13600	9250	8360	3970	3070	3040	1990
23	1460	4180	4410	23300	8730	16500	8810	7320	3910	3370	2900	1960
24	1440	2830	3640	13900	9780	17800	8700	6500	3800	3660	2760	1940
25	1420	2210	3220	10300	8030	15500	8430	6000	3670	3350	2720	1870
26	1420	1890	2950	8600	6690	13100	8360	6420	3570	3210	2700	1930
27	1410	1780	3790	7800	5960	11300	8080	6570	3460	3120	2570	1920
28	1410	1750	11400	7550	5500	9800	7640	6540	3460	3050	2380	1970
29	1510	1790	11400	7410	---	8630	7210	6360	3450	3110	2340	1790
30	1940	1770	7990	7110	---	7630	6930	6270	3380	3100	2350	1850
31	2280	---	9050	6590	---	6980	---	7120	---	3060	2310	---
TOTAL	45900	60820	163170	307960	189590	320570	324860	231100	188770	95440	84020	65040
MEAN	1481	2027	5264	9934	6771	10340	10830	7455	6292	3079	2710	2168
MAX	2280	4180	15000	35900	10000	21300	18000	9040	14600	3660	3220	2370
MIN	1350	1450	1720	4100	4580	5280	6930	5960	3380	2920	2310	1790
AC-FT	91040	120600	323600	610800	376100	635900	644400	458400	374400	189300	166700	129000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1985	4908	8769	7731	9739	7804	6609	4821	3309
MAX	3497	16650	29250	16570	30280	17750	15090	8158	6292
(WY)	1983	1985	1982	1980	1983	1983	1982	1983	1993
MIN	1421	1386	2124	2839	3071	2048	2455	2124	1821
(WY)	1989	1988	1990	1992	1988	1992	1988	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1978 - 1993

ANNUAL TOTAL	888660	2077240	
ANNUAL MEAN	2428	5691	
HIGHEST ANNUAL MEAN			5179
LOWEST ANNUAL MEAN			9827
HIGHEST DAILY MEAN	15000	Dec 11	35900
LOWEST DAILY MEAN	1100	Aug 7	1350
ANNUAL SEVEN-DAY MINIMUM	1120	Aug 1	1380
ANNUAL RUNOFF (AC-FT)	1763000		4120000
10 PERCENT EXCEEDS	3910		11000
50 PERCENT EXCEEDS	2010		4110
90 PERCENT EXCEEDS	1280		1640
			5179
			9827
			2286
			148000
			979
			1020
			3752000
			10500
			2970
			1670

ROGUE RIVER BASIN

14372300 ROGUE RIVER NEAR AGNESS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to September 1987.

INSTRUMENTATION.--Temperature recorder from October 1960 to September 1987.

REMARKS.--Some samples were analyzed by different methods and may have data with different levels of detection.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.5°C on several days in 1962, Aug. 3, 6, 9-11, 1977; minimum, 1.0°C Jan. 22-25, 1962, Dec. 9-16, 1972, Jan. 9, 10, 1977, Jan. 1-3, 1979.

WATER-QUALITY DATA

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, KF AGAR (COLS. PER 100 ML)	HARDNESS, TOTAL (MG/L AS CaCO3)
OCT 1992											
22...	1130	1560	112	7.6	14.0	1.5	10.2	100	K8	K3	45
DEC 15...	1000	3930	115	7.5	6.5	7.2	10.8	87	73	64	49
FEB 1993											
09...	1030	5910	103	7.5	7.5	3.4	12.0	101	K10	K1	42
APR 13...	1200	11400	84	7.6	10.0	7.9	10.9	99	K15	K9	38
JUN 15...	1100	5080	90	7.8	16.5	3.5	9.9	101	K13	K5	37
AUG 10...	1200	2560	82	7.7	21.5	1.6	8.9	102	K12	K19	31
DATE	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, DIS IT FIELD (MG/L AS CaCO3)	BICARBONATE, DIS IT FIELD (MG/L AS HCO3)	CARBONATE, DIS IT FIELD (MG/L AS CO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)
OCT 1992											
22...	11	4.3	5.6	21	0.4	1.2	48	58	0	2.9	3.6
DEC 15...	11	5.2	5.4	19	0.3	0.9	48	58	0	5.0	3.9
FEB 1993											
09...	9.3	4.5	4.2	18	0.3	0.6	44	54	0	3.5	2.5
APR 13...	8.6	4.1	4.0	18	0.3	0.8	42	51	0	2.8	1.9
JUN 15...	8.7	3.7	3.9	18	0.3	0.8	43	52	0	2.9	1.8
AUG 10...	7.3	3.0	4.0	21	0.3	1.1	36	44	0	1.8	1.7
DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
OCT 1992											
22...	<0.1	22	65	80	0.09	274	0.02	0.02	<0.01	<0.01	<0.2
DEC 15...	<0.1	20	86	82	0.12	913	0.05	0.05	0.02	0.02	<0.2
FEB 1993											
09...	<0.1	19	59	72	0.08	941	0.04	--	--	0.05	<0.2
APR 13...	<0.1	19	64	67	0.09	1970	0.02	--	--	<0.01	<0.2
JUN 15...	<0.1	20	68	68	0.09	933	0.02	--	--	<0.01	<0.2
AUG 10...	<0.1	23	73	64	0.10	505	0.03	--	--	<0.01	<0.2

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

ROGUE RIVER BASIN

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14372300 ROGUE RIVER NEAR AGNESS, OR--Continued

WATER-QUALITY DATA

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 1992										
22...	0.22	0.23	0.07	0.06	0.05	0.05	20	8	<3	23
DEC 15...	0.46	0.45	0.04	0.06	0.03	0.05	--	--	--	--
FEB 1993										
09...	--	0.32	0.03	0.03	0.03	--	70	9	<3	50
APR 13...	--	0.10	0.04	0.04	0.03	--	100	8	<3	52
JUN 15...	--	0.13	0.09	0.11	0.03	--	--	--	--	--
AUG 10...	--	0.15	0.05	0.04	0.03	--	<10	7	<3	20

DATE	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT 1992										
22...	<4	2	<10	<1	<1	<1	80	<6	4	17
DEC 15...	--	--	--	--	--	--	--	--	8	85
FEB 1993										
09...	<4	4	<10	1	<1	<1	64	<6	4	64
APR 13...	<4	5	<10	3	<1	<1	61	<6	14	431
JUN 15...	--	--	--	--	--	--	--	--	13	178
AUG 10...	<4	2	<10	<1	<1	<1	56	<6	10	69

ROGUE RIVER BASIN

14377100 ILLINOIS RIVER NEAR KERBY, OR

LOCATION.--Lat 42°13'55", long 123°39'45", in SE 1/4 SE 1/4 sec.29, T.38 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 1.6 mi upstream from Josephine Creek, 2.5 mi northwest of Kerby, and at mile 50.3.

DRAINAGE AREA.--380 mi².

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,198.8 ft above sea level. Prior to Jan. 28, 1965, water-stage recorder, and Jan. 28 to Sept. 30, 1965, nonrecording gage 700 ft downstream at datum 2.99 ft lower.

REMARKS.--Records good. No regulation. Diversions for irrigation upstream from station. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE.--32 years, 1,244 ft³/s, 44.46 in/yr, 901,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft³/s Dec. 22, 1964, gage height, 45.28 ft, from floodmark, site and datum then in use, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 12 ft³/s Aug. 24, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1300	*26,200	*25.70	Mar. 17	2100	11,200	16.67
Jan. 22	0100	13,600	18.44				

Minimum discharge, 16 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	2540	349	3780	1500	1370	1950	1620	3840	358	118	76
2	26	2170	398	2360	1380	1670	2860	1560	3260	342	113	71
3	24	916	467	1750	1400	3110	5050	2380	2440	327	105	68
4	26	542	423	1870	1630	3140	6380	3370	2280	316	94	65
5	26	394	377	2180	1890	2650	5560	2470	2410	283	93	61
6	25	313	356	1840	2050	2500	3780	2140	2180	264	91	61
7	25	266	434	1780	1920	2660	3000	1880	1960	250	88	61
8	26	248	1950	1920	1820	2700	3080	1800	1710	236	83	60
9	25	222	4650	1860	1990	2610	4370	1660	1510	225	84	58
10	27	207	6200	1540	2020	2700	6740	1600	1370	201	88	56
11	27	194	4240	1280	3290	2720	5280	1600	1230	195	86	55
12	25	178	2870	1110	4150	2430	3640	1400	1100	191	86	53
13	27	164	1840	1020	2770	2300	2860	1290	998	187	82	52
14	26	154	1350	1270	2120	2450	2400	1170	930	188	82	53
15	27	145	1100	1630	1760	4620	2310	1110	877	201	83	53
16	28	138	956	1570	1500	5790	2150	1110	814	191	93	55
17	30	133	1140	1510	1320	9110	2800	1150	760	181	87	56
18	31	129	1000	1330	1350	8630	4920	1250	723	177	79	53
19	32	145	881	2110	1930	5390	3880	1310	688	169	123	52
20	44	217	1090	18300	2720	4030	2990	1450	648	165	209	54
21	47	292	1590	10700	2330	3290	2680	1260	610	165	170	52
22	64	2260	1490	10300	2560	2770	2600	1210	578	171	138	53
23	62	1060	1150	5180	2690	7720	2970	1100	532	180	120	57
24	56	690	966	3360	2550	5310	3510	1100	488	168	112	59
25	54	520	854	2600	2030	3660	3020	1070	455	154	109	61
26	57	423	771	2220	1710	2850	3040	1080	436	145	102	59
27	57	406	1280	1990	1500	2350	2470	1040	423	139	99	58
28	57	449	3900	1880	1380	2030	2090	1170	411	133	92	56
29	73	414	2880	1870	---	1800	1860	1150	389	135	85	58
30	255	367	2090	1800	---	1630	1780	1930	373	134	84	58
31	671	---	3610	1650	---	1540	---	4120	---	125	79	---
TOTAL	2004	16296	52652	95560	57260	107530	102020	49550	36423	6296	3157	1744
MEAN	64.6	543	1698	3083	2045	3469	3401	1598	1214	203	102	58.1
MAX	671	2540	6200	18300	4150	9110	6740	4120	3840	358	209	76
MIN	24	129	349	1020	1320	1370	1780	1040	373	125	79	52
AC-ET	3970	32320	104400	189500	113600	213300	202400	98280	72250	12490	6260	3460
CFSM	.17	1.43	4.47	8.11	5.38	9.13	8.95	4.21	3.19	.53	.27	.15
IN.	.20	1.60	5.15	9.35	5.61	10.53	9.99	4.85	3.57	.62	.31	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	241	1546	2561	2771	2486	2334	1580	892	367	95.0	47.2	67.5																					
MAX	1771	6344	9242	7184	6686	4867	4518	2439	1214	280	116	358																					
(WY)	1963	1974	1965	1976	1986	1983	1963	1993	1983	1983	1976	1978																					
MIN	25.0	82.4	115	236	358	508	433	315	82.7	36.5	19.0	15.5																					
(WY)	1988	1988	1977	1977	1977	1988	1977	1992	1992	1987	1992	1992																					

SUMMARY STATISTICS

	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1962 - 1993	
ANNUAL TOTAL	236610		530492			
ANNUAL MEAN	646		1453			
HIGHEST ANNUAL MEAN					1243	
LOWEST ANNUAL MEAN					2372	1974
HIGHEST DAILY MEAN	6200	Dec 10	18300	Jan 20	275	1977
LOWEST DAILY MEAN	13	Aug 22	24	Oct 1	64000	Dec 22 1964
ANNUAL SEVEN-DAY MINIMUM	14	Sep 8	25	Oct 1	13	Aug 22 1992
ANNUAL RUNOFF (AC-FT)	469300		1052000		14	Sep 8 1992
ANNUAL RUNOFF (CFSM)	1.70		3.82		900900	
ANNUAL RUNOFF (INCHES)	23.16		51.93		3.27	
10 PERCENT EXCEEDS	1850		3290		44.46	
50 PERCENT EXCEEDS	290		1060		3060	
90 PERCENT EXCEEDS	17		56		504	

e Estimated

CHETCO RIVER BASIN

14400000 CHETCO RIVER NEAR BROOKINGS, OR

441

LOCATION.--Lat 42°07'25", long 124°11'10", in SE 1/4 sec.12, T.40 S., R.13 W., Curry County, Hydrologic Unit 17100312, on right bank 16 ft upstream from bridge, 0.5 mi upstream from Elk Creek, 6.8 mi northeast of Brookings, and at mile 10.7.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years, 2,212 ft³/s, 110.84 in/yr, 1,603,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,800 ft³/s Jan. 16, 1971, gage height, 27.45 ft; minimum discharge, 42 ft³/s Oct. 14, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 32.25 ft, from high-water mark on bridge pier, discharge, 85,400 ft³/s, from rating curve extended above 45,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1200	*42,100	20.40	Mar. 17	2100	26,600	15.69
Jan. 20	1200	(a)	*21.09	Mar. 23	0800	22,400	14.13

Minimum discharge, 53 ft³/s Oct. 15, 16.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	10200	1400	7610	e2200	2100	e4000	2770	6920	437	194	110
2	85	6610	1960	5380	e2100	2580	e6500	2430	7860	419	182	109
3	78	2950	2110	4140	e2200	6280	e9000	4460	5820	401	173	105
4	71	1810	1790	4190	e2400	5550	e12000	5700	5030	390	169	104
5	66	1260	1480	4330	e2700	4390	e10000	4160	4900	376	166	103
6	63	930	1450	3770	e3000	3910	e7500	3420	4160	359	163	104
7	61	865	1580	3490	e2800	3700	e5400	2970	3480	346	160	104
8	59	704	4670	3600	e2600	3400	e5600	2890	2920	335	160	102
9	59	591	7240	3500	2810	3060	e8000	2590	2520	324	156	100
10	59	508	13700	3040	2910	3120	e14000	2300	2240	313	155	97
11	59	450	10200	2570	5880	3250	e11000	2060	1930	305	155	96
12	58	410	7680	2230	7590	2660	e8000	1850	1670	293	151	96
13	58	378	5510	2010	5550	2460	e5000	1640	1470	285	148	92
14	56	350	4210	2770	4330	3040	e4050	1500	1300	280	145	89
15	54	325	3360	3540	3530	8100	e4170	1340	1180	274	149	89
16	55	310	2930	3560	2960	11900	e3700	1220	1060	268	155	91
17	56	312	3060	3530	2600	20100	e5000	1120	971	264	145	89
18	56	308	2660	3030	2470	19900	e8000	1040	892	255	139	89
19	58	434	2380	5070	4700	12000	e6800	1120	823	248	135	89
20	77	540	3740	e27800	5620	8770	e5600	1420	769	244	247	88
21	165	2540	4600	17300	4790	6920	e5200	2620	722	238	201	86
22	158	6860	4070	16100	4900	7050	e4840	2700	684	325	161	84
23	111	3420	3230	9440	4490	18500	e6000	2170	644	344	146	82
24	86	2430	2700	6520	3850	11400	e10000	1810	606	285	136	81
25	76	1850	2330	e5000	3250	7750	e8000	1660	574	249	128	80
26	71	1460	2050	e4000	2780	5900	e8160	1540	542	234	126	80
27	67	1750	4530	e3300	2460	e4700	5850	1530	514	223	123	78
28	67	1850	10500	e2900	2200	e3800	4640	1700	493	212	118	77
29	325	1580	7490	e2700	---	e3300	3900	2060	469	216	115	77
30	2910	1340	5670	e2600	---	e3000	3270	3710	453	209	111	77
31	4210	---	9720	e2400	---	e2800	---	6980	---	202	110	---
TOTAL	9519	55325	140000	171420	99670	205390	203180	76480	63616	9153	4722	2748
MEAN	307	1844	4516	5530	3560	6625	6773	2467	2121	295	152	91.6
MAX	4210	10200	13700	27800	7590	20100	14000	6980	7860	437	247	110
MIN	54	308	1400	2010	2100	2100	3270	1040	453	202	110	77
AC-FT	18880	109700	277700	340000	197700	407400	403000	151700	126200	18150	9370	5450
CFSM	1.13	6.81	16.7	20.4	13.1	24.4	25.0	9.10	7.82	1.09	.56	.34
IN.	1.31	7.59	19.22	23.53	13.68	28.19	27.89	10.50	8.73	1.26	.65	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	614	3366	4834	4760	4453	3981	2382	1123	621	196	121	217	2540	10230	12770	13150	11490	7041	6956	2508	2121	442	310	1531
MAX	1982	1974	1982	1970	1986	1989	1982	1979	1993	1983	1983	1978	1982	1974	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977
MIN	48.3	229	121	479	619	859	673	430	221	121	69.1	54.9	1988	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977
(WY)	1988	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1970 - 1993
ANNUAL TOTAL	600035	1041223	
ANNUAL MEAN	1639	2853	
HIGHEST ANNUAL MEAN			2212
LOWEST ANNUAL MEAN			3911
HIGHEST DAILY MEAN	18800	Feb 20	27800
LOWEST DAILY MEAN	52	Sep 22	54
ANNUAL SEVEN-DAY MINIMUM	54	Sep 16	56
ANNUAL RUNOFF (AC-FT)	1190000		2065000
ANNUAL RUNOFF (CFSM)	6.05		10.5
ANNUAL RUNOFF (INCHES)	82.37		142.93
10 PERCENT EXCEEDS	4550		5820
50 PERCENT EXCEEDS	514		748
90 PERCENT EXCEEDS	62		82

e Estimated

CHEMICAL QUALITY OF PRECIPITATION

SILVER LAKE BASIN

430701121040001 SILVER LAKE RANGER STATION, OR

LOCATION.--Lat 43°07'01", Long 121°04'00", in NE 1/4 SW 1/4 sec.21, T.28 S., R.14 E., Lake County, Hydrologic Unit 17120005, at Silver Lake Ranger Station, 0.5 mi south of State Highway 31, and 1 mi southwest of town of Silver Lake.

PERIOD OF RECORD.--August 1983 to current year (weekly composite).

INSTRUMENTATION.--The wet-deposition sample collector is an Aerochem Metrics Model 301 wet/dry deposition collector. Collector efficiency equals total precipitation collected in wet deposition collector divided by total precipitation collected in recording weighing-bucket gage. Refer to WDR OR-92-1 for further description of instrumentation.

REMARKS.--Inches of precipitation obtained from an on-site recording weighing-bucket gage. Samples are collected by Silver Lake Ranger Station personnel and analyzed by the Illinois State Water Survey Central Analytical Laboratory.

WATER-QUALITY DATA

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	COL- LECTOR EFFI- CIENCY WET DEPOS. PERCENT	SPEC. CONDUCT- TANCE CK.SOL.* ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM)	PH CK.SOL.* ATM DEP WET TOT (UNITS)	PH FIELD ATM DEP WET TOT (UNITS)	PH LAB ATM DEP WET TOT (UNITS)
OCT 1992									
20-27	1413	0.22	99	22.5	4.3	9.5	4.33	5.11	4.91
OCT 27- NOV 03	1620	0.70	88	22.3	3.4	3.9	4.36	4.70	5.17
NOV 03-10	1525	0.04	92	--	--	4.8	--	--	6.40
NOV 17-24	1925	0.20	67	22.5	4.0	2.5	4.35	4.97	5.48
NOV 24- DEC 01	1520	E0.07	E71	22.5	4.8	2.9	4.30	4.82	5.58
DEC 01-08	1535	E0.49	E73	21.7	3.7	2.8	4.34	5.05	5.53
DEC 08-15	1535	0.73	74	22.8	4.2	2.1	4.31	4.96	5.45
DEC 15-22	1540	0.16	30	22.2	3.9	7.0	4.33	5.37	6.52
DEC 22-29	1612	0.22	55	22.3	3.3	2.6	4.33	5.23	5.46
DEC 29 1992- JAN 05 1993	1620	0.71	56	22.1	2.5	2.1	4.34	4.78	5.77
JAN 05-12	1625	0.93	56	22.7	4.4	2.7	4.32	5.11	5.73
JAN 19-26	1655	0.89	1.5	--	--	6.9	--	--	5.99
FEB 02-09	1605	0.16	91	22.2	7.1	6.3	4.28	4.73	6.19
FEB 09-16	1527	0.04	119	22.4	10.7	7.6	4.34	4.74	6.25
FEB 16-23	1540	0.54	66	22.2	6.1	3.6	4.21	4.72	5.41
FEB 23- MAR 02	1505	0.27	75	22.5	4.1	3.1	4.32	5.09	5.50
MAR 02-09	1455	0.05	115	21.9	5.5	5.1	4.28	4.57	6.49
MAR 09-16	1520	0.16	77	22.6	6.0	4.1	4.36	5.02	5.84
MAR 16-23	1520	0.61	98	22.4	3.6	2.5	--	--	5.35
MAR 23-30	1730	0.74	93	22.3	3.1	2.5	4.34	5.10	5.87
MAR 30- APR 06	1459	0.20	116	22.9	6.1	4.1	4.35	5.06	5.56
APR 06-13	1649	0.18	116	22.6	4.1	2.6	4.35	5.11	5.62
APR 13-20	1536	0.33	105	22.9	3.7	2.1	4.35	4.80	5.80
APR 20-27	1534	0.10	88	22.8	5.8	4.2	4.38	5.04	6.04
APR 27- MAY 04	1500	E0.52	E52	21.8	2.7	2.3	4.37	4.89	6.06
MAY 04-11	1600	E0.01	--	--	--	14.3	--	--	6.76
MAY 11-18	1600	0.08	84	--	--	43.2	4.32	7.10	7.16
MAY 18-25	1450	0.77	99	22.0	6.4	4.8	4.35	4.84	6.09
MAY 25- JUN 01	1520	1.54	97	22.2	5.0	3.6	4.31	5.19	5.64
JUN 01-08	1435	0.91	97	21.8	4.4	2.7	4.33	5.04	5.51
JUL 13-20	1600	0.51	109	21.8	8.0	7.2	4.33	4.73	4.91
JUL 20-27	1445	0.42	91	21.4	4.4	2.7	4.33	4.98	5.73
AUG 03-10	1500	E0.01	--	--	--	30.1	--	--	7.20
AUG 10-17	1500	0.69	96	21.9	6.1	5.6	4.34	4.83	5.05
AUG 17-24	1420	0.34	107	21.9	7.8	7.4	4.34	4.95	5.19
SEP 1993 14-21	1530	0.30	97	21.8	13.1	8.9	4.29	4.54	5.27

* Measurements of check solution (ck.sol.), with theoretical values of conductance 21.8 us/cm +/- 3 us/cm, pH 4.30 +/- 0.1, made prior to the corresponding sample measurement.
E - Estimated.

CHEMICAL QUALITY OF PRECIPITATION

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SILVER LAKE BASIN

430701121040001 SILVER LAKE RANGER STATION, OR--Continued

WATER-QUALITY DATA

DATE	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP WET DIS AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	PHOS- PHORUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
OCT 1992									
20-27	0.08	0.021	0.049	0.019	0.18	0.04	<0.02	0.26	<0.02
OCT 27-									
NOV 03	0.02	0.005	0.017	0.005	0.22	<0.03	0.07	0.39	<0.02
NOV									
03-10	0.10	0.022	0.247	0.089	0.24	0.23	0.05	0.28	<0.02
NOV									
17-24	0.02	0.006	0.061	0.014	0.09	0.06	<0.02	0.14	<0.02
NOV 24-									
DEC 01	0.02	0.003	0.063	0.018	0.13	0.10	0.08	0.35	<0.02
DEC									
01-08	0.02	0.003	0.039	0.026	0.14	0.05	0.05	0.22	<0.02
DEC									
08-15	<0.01	<0.003	0.024	0.006	0.07	<0.03	<0.02	0.12	<0.02
DEC									
15-22	0.06	0.069	0.148	0.020	0.29	0.20	0.05	0.20	<0.02
DEC									
22-29	0.01	0.005	0.040	0.020	0.10	0.06	0.03	0.27	<0.02
DEC 29 1992-									
JAN 05 1993	0.01	0.003	0.022	0.005	0.11	0.13	0.03	0.22	<0.02
JAN									
05-12	0.12	0.004	0.028	<0.003	0.09	0.03	0.03	0.38	<0.02
JAN									
19-26	0.08	0.029	0.193	<0.014	0.39	0.29	<0.10	0.92	<0.10
FEB									
02-09	0.09	0.011	0.053	0.005	0.42	0.06	0.22	0.94	<0.02
FEB									
09-16	0.06	0.016	0.086	0.017	0.54	0.12	0.13	1.04	<0.02
FEB									
16-23	0.01	0.006	0.027	0.025	0.11	0.05	0.05	0.40	<0.02
FEB 23-									
MAR 02	0.01	0.007	0.020	0.005	0.11	0.04	0.04	0.38	<0.02
MAR									
02-09	0.05	0.012	0.031	0.003	0.17	0.10	0.02	0.36	<0.02
MAR									
09-16	0.04	0.009	0.020	0.007	0.33	0.05	0.27	0.75	<0.02
MAR									
16-23	0.01	<0.003	0.010	<0.003	0.14	0.04	<0.02	0.22	<0.02
MAR									
23-30	0.16	0.024	0.025	<0.003	0.22	0.04	0.04	0.22	<0.02
MAR 30-									
APR 06	0.07	0.012	0.028	0.009	0.40	0.06	0.16	0.61	<0.02
APR									
06-13	0.06	0.011	0.078	<0.003	0.16	0.09	0.05	0.37	<0.02
APR									
13-20	0.03	0.006	0.012	<0.003	0.12	0.03	<0.02	0.22	<0.02
APR									
20-27	0.07	0.018	0.076	0.021	0.48	0.10	0.22	0.56	<0.02
APR 27-									
MAY 04	0.05	0.009	0.034	0.007	0.16	0.05	0.03	0.14	<0.02
MAY									
04-11	0.16	0.027	0.250	0.043	0.33	0.27	<0.11	0.33	<0.11
MAY									
11-18	3.46	0.350	3.13	0.406	3.77	2.45	0.13	1.42	<0.02
MAY									
18-25	0.17	0.020	0.165	0.033	0.46	0.08	0.21	0.50	<0.02
MAY 25-									
JUN 01	0.06	0.011	0.043	0.005	0.31	0.05	0.17	0.45	<0.02
JUN									
01-08	0.03	0.006	0.015	0.003	0.25	0.03	<0.02	0.28	<0.02
JUL									
13-20	0.05	0.012	0.044	0.038	0.44	0.10	0.04	0.58	<0.02
JUL									
20-27	0.01	0.006	0.048	0.003	0.25	0.05	0.03	0.27	<0.02
AUG									
03-10	0.48	0.084	1.26	0.230	1.30	0.84	<0.15	<0.23	0.61
AUG									
10-17	0.02	0.004	0.024	0.014	0.42	0.04	0.04	0.41	<0.02
AUG									
17-24	0.14	0.019	0.075	0.039	0.53	0.08	0.25	1.05	<0.02
SEP 1993									
14-21	0.13	0.038	0.180	0.062	0.91	0.14	0.120	1.42	<0.02

CHEMICAL QUALITY OF PRECIPITATION

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR

LOCATION.--Lat 45°26'55", long 122°08'45", in SE 1/4 SE 1/2 sec.26, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on headworks dam on Bull Run River, 4.4 mi northeast of town of Bull Run, and approximately 20 mi east of Portland.

PERIOD OF RECORD.--June 1980 to September 1981 (event sampling), September 1981 to November 1981 (weekly composite), July 1982 to current year (weekly composite).

INSTRUMENTATION.--A bulk-type plastic double cylinder with receiving funnel directing deposition to inner cylinder was used for the period of record June 1980 to September 1981. The wet-deposition sample collector is an Aerochem Model 301 wet/dry deposition collector. Collector efficiency equals total precipitation collected in wet deposition collector divided by total precipitation collected in recording weighing-bucket gage. Refer to WDR OR-92-1 for further description of instrumentation.

REMARKS.--Inches of precipitation obtained from an on-site recording weighing-bucket gage. The sample collector is located in the restricted access area of the city of Portland's Bull Run River Watershed. Samples are collected by Bull Run Headworks Water Quality Laboratory personnel and analyzed by the Illinois State Water Supply Central Analytical Laboratory.

WATER-QUALITY DATA

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	COL- LECTOR EFFI- CIENCY WET DEPOS. PERCENT	SPEC. CONDUCT- TANCE CK.SOL.* ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM)	PH CK.SOL.* ATM DEP WET TOT (UNITS)	PH FIELD ATM DEP WET TOT (UNITS)	PH LAB ATM DEP WET TOT (UNITS)
OCT 1992									
06-13	1545	0.23	113	22.2	11.6	9.4	4.31	4.95	5.58
OCT 13-20	1500	0.14	104	22.4	7.5	6.2	4.29	5.36	6.02
OCT 20-27	1610	0.85	104	21.8	6.3	6.0	4.33	5.65	5.90
OCT 27-NOV 03	1500	0.22	91	22.6	7.0	6.0	4.30	5.17	5.31
NOV 03-10	1615	2.08	101	22.7	11.9	10.6	4.30	5.27	5.38
NOV 10-17	1615	0.23	86	22.6	6.8	4.6	4.31	5.00	5.20
DEC 08-15	1715	2.55	117	23.0	8.1	9.0	4.29	4.99	5.09
DEC 15-22	1635	E1.81	--	23.5	7.6	7.4	4.32	5.21	5.27
DEC 22-29	1630	E2.58	--	24.6	4.6	4.4	4.32	5.01	5.28
JAN 1993									
06-12	1640	E0.05	--	23.4	11.3	8.1	4.27	4.72	5.38
JAN 12-19	1610	0.16	92	23.2	4.5	2.5	4.30	5.21	5.81
JAN 19-26	1725	2.92	100	22.8	6.9	6.8	4.31	5.21	5.21
JAN 26-FEB 02	1635	1.23	101	21.5	9.0	8.5	4.31	5.20	5.34
FEB 02-09	1710	0.01	100	--	--	5.7	--	--	6.18
FEB 09-16	1635	0.21	106	23.4	2.4	6.3	4.32	5.00	5.57
FEB 16-23	1640	0.25	1.7	--	--	17.6	--	--	6.90
FEB 23-MAR 02	1720	0.57	108	23.6	3.7	2.9	4.30	5.13	5.39
MAR 02-09	1700	1.40	100	23.2	4.2	3.4	4.29	5.34	5.37
MAR 16-24	1745	5.09	101	22.9	4.3	2.9	4.30	5.23	5.38
MAR 24-30	1510	0.13	112	22.7	16.9	17.4	4.33	6.27	6.55
MAR 30-APR 06	1725	3.98	96	23.0	3.4	2.5	4.31	5.25	5.56
APR 06-13	1545	2.52	101	22.9	5.6	5.7	4.32	5.46	5.57
APR 13-20	1520	1.77	102	22.9	4.5	3.8	4.31	5.25	5.57
APR 20-27	1450	2.60	102	23.1	6.4	5.9	4.33	5.16	5.45
APR 27-MAY 04	1540	2.35	108	23.2	4.3	3.9	4.27	5.18	5.48
MAY 04-11	1555	E2.09	--	22.7	8.2	11.6	4.32	5.97	6.73
MAY 11-18	1630	E0.05	--	22.4	19.4	17.4	4.31	6.53	5.97
MAY 18-25	1505	E1.62	--	22.7	5.8	5.1	4.30	5.19	5.49
MAY 25-JUN 01	1540	2.97	106	22.2	4.0	3.6	4.29	5.31	5.23
JUN 01-15	1500	1.31	104	22.7	6.4	6.6	4.30	5.26	5.30
JUN 15-22	1535	0.75	99	22.8	8.2	8.2	4.31	4.98	5.14
JUN 22-29	1525	1.50	94	21.8	6.7	6.7	4.31	5.37	5.28
JUN 29-JUL 06	1520	0.11	121	21.5	22.1	15.8	4.31	4.45	4.85
JUL 13-20	1605	1.49	102	21.9	10.8	9.9	4.35	4.75	4.82
JUL 27-AUG 03	1625	0.55	95	21.6	6.3	5.6	4.28	4.98	5.04
AUG 10-17	1550	E0.28	--	21.8	29.7	26.1	4.31	4.29	4.35
AUG 17-24	1605	0.65	108	22.0	12.2	11.2	4.33	5.01	5.23
AUG 24-31	1545	0.15	122	22.2	18.3	17.0	4.32	4.77	4.72

* Measurements of check solution (ck. sol.), with theoretical values of conductance 21.8 us/cm +/- 3 us/cm, pH 4.30 +/- 0.1, made prior to the corresponding sample measurement.
E - Estimated.

CHEMICAL QUALITY OF PRECIPITATION

445

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR--Continued

WATER-QUALITY DATA

DATE	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP WET DIS AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	PHOS- PHORUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
OCT 1992									
06-13	0.26	0.032	0.329	0.030	1.15	0.26	0.42	1.27	<0.02
OCT									
13-20	0.28	0.044	0.156	0.047	0.60	0.28	0.15	0.85	<0.02
OCT									
20-27	0.03	0.017	0.243	0.148	0.46	0.39	0.07	0.57	0.03
OCT 27-									
NOV 03	0.03	0.054	0.440	0.022	0.29	0.78	0.03	0.22	<0.02
NOV									
03-10	0.06	0.136	1.09	0.047	0.55	1.96	0.07	0.24	<0.02
NOV									
10-17	0.08	0.011	0.068	0.007	0.42	0.09	<0.02	0.56	<0.02
DEC									
08-15	0.04	0.080	0.697	0.040	0.35	1.26	0.03	0.44	<0.02
DEC									
15-22	0.03	0.075	0.627	0.024	0.39	1.08	0.02	0.26	<0.02
DEC									
22-29	0.01	0.016	0.151	0.009	0.25	0.24	0.07	0.27	<0.02
JAN 1993									
06-12	0.10	0.024	0.143	0.019	0.87	0.20	0.23	1.30	<0.02
JAN									
12-19	0.02	0.008	0.053	<0.003	0.25	0.10	<0.02	0.22	<0.02
JAN									
19-26	0.03	0.058	0.505	0.020	0.35	0.86	<0.02	0.25	<0.02
JAN 26-									
FEB 02	0.04	0.108	0.950	0.031	0.41	1.66	0.04	0.25	<0.02
FEB									
02-09	<0.06	<0.021	0.112	<0.021	<0.21	<0.21	<0.14	0.77	<0.14
FEB									
09-16	0.04	0.012	0.096	0.021	0.71	0.20	0.35	1.00	<0.02
FEB									
16-23	<0.14	0.063	0.283	<0.047	<0.47	0.47	<0.31	0.47	<0.31
FEB 23-									
MAR 02	0.02	0.013	0.077	0.009	0.18	0.13	<0.02	0.17	<0.02
MAR									
02-09	0.02	0.021	0.161	0.014	0.16	0.27	<0.02	0.22	<0.02
MAR									
16-24	0.03	0.011	0.084	0.010	0.15	0.12	0.04	0.23	<0.02
MAR									
24-30	1.17	0.202	0.955	0.054	1.80	1.08	0.31	1.52	<0.02
MAR 30-									
APR 06	0.04	0.011	0.036	0.006	0.23	0.07	0.06	0.18	<0.02
APR									
06-13	0.13	0.056	0.344	0.049	0.46	0.59	0.10	0.36	<0.02
APR									
13-20	0.03	0.024	0.130	0.049	0.31	0.21	0.09	0.32	<0.02
APR									
20-27	0.04	0.032	0.252	0.048	0.35	0.42	0.10	0.29	<0.02
APR 27-									
MAY 04	0.06	0.018	0.095	0.024	0.36	0.14	0.11	0.34	<0.02
MAY									
04-11	0.83	0.067	0.403	0.074	0.63	0.61	0.52	0.46	0.11
MAY									
11-18	1.02	0.126	0.691	0.161	2.44	0.63	0.59	2.97	<0.02
MAY									
18-25	0.09	0.029	0.151	0.032	0.47	0.21	0.16	0.59	<0.02
MAY 25-									
JUN 01	0.03	0.004	0.020	0.005	0.24	<0.03	0.09	0.37	<0.02
JUN									
09-15	0.04	0.040	0.340	0.023	0.48	0.60	0.15	0.49	<0.02
JUN									
15-22	0.06	0.047	0.385	0.025	0.70	0.61	0.23	0.59	<0.02
JUN									
22-29	0.03	0.034	0.281	0.020	0.67	0.47	0.25	0.43	<0.02
JUN 29-									
JUL 06	0.09	0.054	0.562	0.040	2.09	0.69	0.22	1.03	<0.02
JUL									
13-20	0.03	0.012	0.077	0.027	0.89	0.10	0.25	0.91	<0.02
JUL 27-									
AUG 03	0.02	0.008	0.102	0.012	0.25	0.17	0.08	0.59	<0.02
AUG									
10-17	0.06	0.027	0.225	0.031	2.35	0.31	0.51	2.04	<0.02
AUG									
17-24	0.08	0.076	0.606	0.040	1.05	1.03	0.31	0.85	<0.02
AUG									
24-31	0.09	0.092	0.740	0.037	1.27	1.27	0.20	1.06	<0.02

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to these events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1993

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum		Period of record maximum			
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
NESTUCCA RIVER BASIN								
Walker Creek near Fairdale (14302850)	Lat 45°18'12", long 123°24'51", in SW 1/4 SW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, at culvert, 0.5 mi upstream from confluence with Nestucca River, and 5.3 mi southwest of Fairdale. Drainage area is 2.72 mi ² .	1992-93	1-20-93	2.90	129	1-31-92	3.74	240

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements at miscellaneous sites during water year 1993

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLIAMSON RIVER BASIN						
Williamson River	Upper Klamath Lake	Lat 42°43'55", long 121°25'05", in NE 1/4 NW 1/4 sec.9, T.33 S., R.11 E., Klamath County, Hydrologic Unit 18010201, 1.5 mi upstream from Coyote Spring, and 21.7 mi east of Fuego, on USFS road 4648.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-22-93	2.5 4.0 6.9 6.8 4.2
Deep Creek	Williamson River	Lat 42°51'16", long 121°26'03", in NW 1/4 SE 1/4 sec.29, T.31 S., R.11 E., Klamath County, Hydrologic Unit 18010201, 1.8 mi upstream from Williamson River, and 20.6 mi east of Fuego, on USFS road 4648.	---	1992	11-17-92 5-11-93 7-13-93	0.48 23 7.4
Williamson River	Upper Klamath Lake	Lat 42°54'41", long 121°28'29", in NE 1/4 SW 1/4 sec.1, T.31 S., R.10 E., Klamath County, Hydrologic Unit 18010201, 0.7 mi east of Gordon Lake, and 19.6 mi east of Fuego, on USFS road 49.	---	1992	11-17-92 5-11-93 7-13-93 9-23-93	42 130 49 44
Jackson Creek	Williamson River	Lat 42°58'45", long 121°27'31", in SE 1/4 SW 1/4 sec.7, T.30 S., R.11 E., Klamath County, Hydrologic Unit 18010201, 2.2 mi upstream from Williamson River, and 22.3 mi northeast of Fuego, on USFS road 49.	---	1992	11-17-92 3-30-93 5-11-93 7-13-93 9-23-93	0.34 1.5 2.2 5.2 1.3
Jackson Creek	.....do.....	Lat 42°58'43", long 121°27'30", in SE 1/4 SW 1/4 sec.7, T.30 S., R.11 E., Klamath County, Hydrologic Unit 18010201, 2.2 mi upstream from Williamson River, and 22.4 mi northeast of Fuego, on USFS road 49.	---	---	11-17-92 3-30-93 5-11-93 7-13-93 9-23-93	0.65 2.8 14 3.7 0.81
Jack Creek	.....do.....	Lat 43°00'03", long 121°32'38", in SW 1/4 NW 1/4, sec.4, T.30 S., R.10 E., Klamath County, Hydrologic Unit 18010201, 1.5 mi upstream from Williamson River, and 20 mi southeast of Chemult, on road 676.	---	---	5-11-93	24
Williamson River	Upper Klamath Lake	Lat 42°57'56", long 121°34'38", in SE 1/4 SW 1/4 sec.18, T.30 S., R.10 E., Klamath County, Hydrologic Unit 18010201, 2.3 mi downstream from Jack Creek, and 16.8 mi northeast of Fuego, on road 676.	---	1992	11-17-92 3-30-93 5-11-93 7-13-93 9-23-93	41 101 110 37 37
11492099 Williamson River	.....do.....	Lat 42°57'02", long 121°39'50", in SW 1/4 SW 1/4 sec.21, T.30 S., R.9 E., Klamath County, Hydrologic Unit 18010201, at easterly bridge, at Military crossing.	---	1992	3-24-93 3-30-93 4- 5-93 4-21-93 5- 6-93 5-17-93 6-10-93 6-22-93	145 15 24 14 13 no flow 26 8.8
11492100 Williamson River	.....do.....	Lat 42°57'13", long 121°40'22", in SW 1/4 SE 1/4 sec.20, T.30 S., R.9 E., Klamath County, Hydrologic Unit 18010201, at Military Crossing, on Klamath Marsh, and 13 mi northeast of Fuego, on road 676.	---	1992	10-22-92 11- 5-92 11-17-92 12-11-92 1- 4-93 1-13-93 1-19-93 1-28-93 2-24-93 3-24-93 3-30-93 4- 5-93 4-21-93 5- 6-93 5-12-93 5-17-93 6-10-93 6-22-93 7-13-93 7-27-93 8-10-93 8-27-93 9-10-93	1.9 6.0 7.9 25 no flow no flow no flow no flow no flow a436 159 170 99 90 95 64 70 12 no flow 12 no flow no flow no flow
Miller Creek	Williamson River	Lat 43°11'01", long 121°52'21", in SW 1/4 SE 1/4 sec.34, T.27 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 5.0 mi downstream from Miller Lake, and 4.8 mi northwest of Beaver Marsh, on USFS road 9772.	---	---	11-17-92 7-13-93 9-21-93	3.9 26 6.0

a Estimated.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLIAMSON RIVER BASIN--Continued						
Miller Creek	.....do.....	Lat 43°09'14", long 121°49'40", in SE 1/4 SE 1/4, sec.12, T.28 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 8.5 mi downstream from Miller Lake, and 6 mi southwest of Chemult, on USFS road 9770.	---	---	5-11-93	10
11492400 Big Springs Creek	.....do.....	Lat 42°55'26", long 121°44'21", in SE 1/4 SW 1/4 sec.35, T.30 S., R.8 E., Klamath County, Hydrologic Unit 18010201, on right bank, 1.8 mi upstream from Klamath Marsh, 2.7 mi southeast of Lenz Ranch, and 4.1 mi east of Lenz, off road 677.	---	1992	11-17-92 7-13-93 9-21-93	2.5 0.97 1.2
Scott Creek	.....do.....	Lat 42°53'06", long 121°53'16", in NE 1/4 SW 1/4 sec.16, T.31 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 0.3 mi upstream from Sand Creek Canal, and 5.9 mi northwest of Fuego, on road 3104.	---	1992	11-17-92 3-30-93 5-11-93 7-13-93 9-21-93	0.42 1.9 7.6 11 4.2
Sand Creek	.....do.....	Lat 42°52'15", long 121°50'49", in NE 1/4 SW 1/4 sec.23, T.31 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 2.3 mi downstream from Sand Creek Canal, and 4.4 mi north of Fuego, on road 3104.	---	1992	11-17-92 3-30-93 5-12-93 7-13-93 9-21-93	4.6 0.20 11 1.7 9.4
Williamson River	Upper Klamath Lake	Lat 42°44'24", long 121°49'58", in NW 1/4 SW 1/4 sec.1, T.33 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 2.5 mi upstream from Buckaroo Spring, and 4.7 mi south of Fuego, on USFS road 43.	---	1992	3-25-93 3-31-93 4- 7-93 4-13-93 4-22-93 4-29-93 5-12-93 6-16-93 7-14-93	255 757 720 650 485 373 230 79 1.1
Williamson River	.....do.....	Lat 42°39'23", long 121°51'00", in SE 1/4 NW 1/4 sec.2, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 0.7 mi upstream from Larkin Creek, and 5.8 mi north of Chiloquin, on USFS road 9730.	---	1992	11-18-92 7-14-93 9-22-93	36 24 21
Spring Creek	Williamson River	Lat 42°38'37", long 121°52'43", in NE 1/4 NE 1/4 sec.9, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 0.2 mi upstream from Williamson River, and 4.5 mi north of Chiloquin, on US Highway 97.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-22-93	272 280 274 284 278
Williamson River	Upper Klamath Lake	Lat 42°35'39", long 121°51'36", in NE 1/4 SE 1/4 sec.27, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 1.9 mi upstream from Sprague River, and 1.3 mi north of Chiloquin, on Pine Ridge Road.	---	1992	11-18-92 3-31-93 5-14-93 7-14-93 9-22-93	325 1,080 584 313 342
Williamson River	.....do.....	Lat 42°34'18", long 121°52'32", in NE 1/4 NE 1/4 sec.4, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 0.3 mi downstream from Sprague River, and 0.8 mi southwest of Chiloquin, on US Highway 97.	---	1992	10-20-92 11-18-92 12-16-92 1-28-93 2-25-93 3-10-93 3-15-93 3-18-93 3-22-93 3-25-93 3-31-93 4- 8-93 4-14-93 4-23-93 4-30-93 5-12-93 6-17-93 7-14-93 8-20-93 9-22-93	500 510 498 555 623 1,270 2,180 3,650 6,070 4,600 4,100 3,400 3,900 2,500 2,150 2,500 1,150 500 609 582
Williamson River	.....do.....	Lat 42°30'50", long 121°54'57", in NE 1/4 NE 1/4 sec.30, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010201, 4.7 mi upstream from Upper Klamath Lake, and 5.2 mi southwest of Chiloquin, on Modoc Point Road.	---	1992	9-24-93	494

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SPRAGUE RIVER BASIN						
South Fork Sprague River	Sprague River	Lat 42°27'09", long 120°46'57", in SE 1/4 NE 1/4 sec.14, T.36 S., R.16 E., Lake County, Hydrologic Unit 18010202, 0.2 mi downstream from Corral Creek, and 8.9 mi north of Quartz Mountain, on USFS road 34.	---	1992	11-19-92 5-13-93 7-14-93 9-21-93	1.7 83 6.2 4.4
Round Spring	Buckboard Creek	Lat 42°24'49", long 120°44'53", in SE 1/4 SE 1/4 sec.30, T.36 S., R.17 E., Lake County, Hydrologic Unit 18010202, on Buckboard Creek, and 7 mi northeast of Quartz Mountain, on USFS road 3660.	---	---	5-13-93	0.80
Blonde Spring	.....do.....	Lat 42°25'00", long 120°44'54", in NE 1/4 SE 1/4 sec.3, T.36 S., R.17 E., Lake County Hydrologic Unit 18010202, 0.2 mi upstream from Buckboard Creek, and 7 mi northeast of Quartz Mountain, on USFS road 3660.	---	---	5-13-93 9-23-93	3.2 0.01
Whitworth Creek	South Fork Sprague River	Lat 42°20'52", long 120°44'09", in SE 1/4 NW 1/4 sec.20, T.37 S., R.17 E., Lake County, Hydrologic Unit 18010202, 0.3 mi upstream from Dutch Oven Flat Creek, and 4.5 mi east of Quartz Mountain, on USFS road 3660.	---	1992	11-19-92 5-13-93 7-15-93 9-23-93	1.1 21 2.2 1.2
Unnamed Creek from Lantern Flat	Pothole Creek	Lat 42°23'27", long 120°45'00", in SW 1/4 NE 1/4 sec.6, T.37 S., R.17 E., Lake County, Hydrologic Unit 18010202, 1 mi upstream from Pothole Creek, and 6 mi northeast of Quartz Mountain, on USFS road 3660.	---	---	5-13-93 7-15-93 9-23-93	6.4 0.23 0.07
Pothole Creek	Whitworth Creek	Lat 42°22'53", long 120°44'33", in NW 1/4 NW 1/4 sec.8, T.37 S., R. 17 E., Lake County, Hydrologic Unit 18010202, 1.0 mi upstream from Lantern Flat Creek, and 5.6 mi northeast of Quartz Mountain, on road USFS 3660.	---	---	11-19-92 4- 1-93 5-13-93 7-15-93 9-23-93	0.05 3.8 19 0.22 0.02
South Fork Sprague River	Sprague River	Lat 42°22'23", long 120°57'55", in NW 1/4 SE 1/4 sec.8, T.37 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.4 mi downstream from Ish Tish Creek, and 3.9 mi east of Bly on road 140.	---	1992	11-18-92 4- 1-93 5-12-93 7-14-93 9-23-93	10 109 346 39 16
South Fork Sprague River	.....do.....	Lat 42°23'55", long 120°59'27", in SE 1/4 SW 1/4 sec.31, T.36 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.8 mi upstream from Paradise Creek, and 2.3 mi east of Bly, on USFS road 49.	---	1992	11-19-92 3-31-93 5-12-93 7-14-93 9-22-93	11 222 420 26 11
Paradise Creek	South Fork Sprague River	Lat 42°19'30", long 120°54'54", in NW 1/4 NW 1/4 sec.35, T.37 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.6 mi upstream from Badger Creek, and 4.8 mi west of Quartz Mountain, on USFS road 3716.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-23-93	0.27 12 0.98 0.09 0.28
Paradise Creek	.....do.....	Lat 42°23'39", long 120°59'49", in NW 1/4 NW 1/4, sec.6, T.37 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 0.3 mi upstream from South Fork Sprague River, and 2 mi east of Bly, on USFS road 34.	---	---	5-12-93	0.16
South Fork Sprague River	Sprague River	Lat 42°24'56", long 121°00'59", in SW 1/4 SW 1/4 sec.25, T.36 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 3.3 mi upstream from Deming Creek, and 1.8 mi northeast of Bly, on road 1210.	---	1992	11-18-92 4- 1-93	11 386
Fishhole Creek	South Fork Sprague River	Lat 42°15'57", long 120°51'10", in NE 1/4 NW 1/4 sec.20, T.38 S., R.16 E., Lake County Hydrologic Unit 18010202, at outflow from Holbrook Reservoir, and 4.5 mi southwest of Quartz Mountain, on USFS road 3817.	---	---	11-19-92 5-13-93 7-15-93 9-23-93	0.40 5.5 5.0 0.50
Fishhole Creek	.....do.....	Lat 42°17'24", long 120°56'42", in SW 1/4 NE 1/4 sec.9, T.38 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.6 mi upstream from Devil Lake, and 6.9 mi west of Quartz Mountain, on USFS road 3790.	---	---	11-18-92 4- 1-93 5-13-93 7-15-93 9-23-93	0.19 101 15 2.6 0.65

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SPRAGUE RIVER BASIN--Continued						
Robinson Creek	Fishhole Creek	Lat 42°17'20", long 120°58'49", in NE 1/4 SE 1/4 sec.7, T.38 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 3.3 mi upstream from Fishhole Creek, and 8.1 mi south of Bly, on USFS road 3752.	---	---	11-18-92 4-1-93 5-13-93 7-15-93 9-21-93	0.09 4.5 2.3 0.79 0.51
Pole Creek	.....do.....	Lat 42°21'09", long 121°02'03", in NW 1/4 NW 1/4 sec.23, T.37 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 2 mi upstream from Fishhole Creek, and 3 mi south of Bly, on USFS road 3752.	---	---	4-1-93 5-13-93 7-14-93 9-21-93	27 2.7 0.27 0.07
Deming Creek	South Fork Sprague River	Lat 42°27'10", long 120°56'52", in NE 1/4 NW 1/4 sec.16, T.36 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.5 mi upstream from Swing Field, and 6.0 mi northeast of Bly, on USFS road 018.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-22-93	1.6 8.0 35 5.9 0.81
Long Creek	Deming Creek	Lat 42°25'43", long 120°52'49", in SE 1/4 SE 1/4 sec.24, T.36 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 1.0 mi upstream from Swede Cabin Flat, and 8.4 mi east of Bly, on USFS road 3752.	---	---	11-19-92 3-31-93 5-13-93 7-14-93 9-21-93	0.08 5.4 7.3 0.30 0.04
Long Creek	.....do.....	Lat 42°24'50", long 120°57'00", in SE 1/4 SW 1/4 sec.28, T.36 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 0.1 mi upstream from Campbell Reservoir, and 4 mi east of Bly, on USFS road 34.	---	---	3-31-93 5-13-93	2.9 4.0
Long Creek	.....do.....	Lat 42°25'37", long 120°58'26", in SW 1/4 SW 1/4 sec.20, T.36 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 0.8 mi downstream from Campbell Reservoir, and 3.9 mi northeast of Bly, near USFS road 335.	---	1992	3-31-93 5-13-93 7-14-93 9-21-93	0.72 33 6.1 6.3
Deming Creek	South Fork Sprague River	Lat 42°26'02", long 121°00'57", in NW 1/4 SW 1/4 sec.24, T.36 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 0.3 mi downstream from Long Creek, and 2.7 mi northeast of Bly, on road 1210.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-22-93	0.50 4.8 20 7.2 1.8
South Fork Sprague River	Sprague River	Lat 42°26'23", long 121°05'39", in NW 1/4 NW 1/4 sec.20, T.36 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 0.1 mi downstream from Leonard Slough, and 4.0 mi northwest of Bly, on road 1257.	---	1992	11-18-92 3-31-93 5-12-93 7-14-93 9-22-93	11 413 439 28 20
North Fork Sprague River	.....do.....	Lat 42°31'44", long 120°49'04", in SE 1/4 SW 1/4 sec.15, T.35 S., R.16 E., Lake County Hydrologic Unit 18010202, 4.8 mi upstream from Dead Cow Creek, and 14.4 mi north of Quartz Mountain, on USFS road 3372.	---	---	11-17-92 7-13-93 9-21-93	0.23 3.5 2.6
North Fork Sprague River	.....do.....	Lat 42°35'31", long 120°50'13", in NE 1/4 SW 1/4 sec.28, T.34 S., R.16 E., Lake County, Hydrologic Unit 18010202, 0.2 mi downstream from Dead Cow Creek, and 16.8 mi northeast of Bly, on USFS road 3411.	---	1992	11-17-92 7-13-93 9-21-93	5.7 18 11
North Fork Sprague River	.....do.....	Lat 42°35'41", long 120°52'47", in SW 1/4 NW 1/4 sec.30, T.34 S., R.16 E., Klamath County, Hydrologic Unit 18010202, 1.2 mi upstream from Cold Creek, and 15.7 mi northeast of Bly, on USFS road 3411.	---	1992	11-17-92 7-13-93 9-21-93	5.7 20 9.1
11495800# North Fork Sprague River	.....do.....	Lat 42°30'06", long 120°59'13", in SW 1/4 SE 1/4 sec.30, T.35 S., R.15 E., Klamath County, Hydrologic Unit 18010202, at Fred D. Ehler power plant 0.1 mi upstream from Yaden Creek and 7.6 mi northeast of Bly. Measurements made in diverted channel upstream from powerplant.	---	1990-92	11-6-92 11-6-92 1-22-93 3-16-93 3-16-93 3-16-93	c20 b27 b25 c44 b71 c37

Operated as a continuous-record gaging station after 5-1-93.

b Plant shut down.

c Plant operating.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SPRAGUE RIVER BASIN--Continued						
North Fork Sprague River	Sprague River	Lat 42°29'49", long 121°00'25", in NE 1/4 NW 1/4 sec.36, T.35 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 1.2 mi downstream from Yaden Creek, and 7.0 mi north of Bly, on USFS road 3411.	---	1992	11-18-92 3-31-93 7-14-93 9-23-93	29 140 72 48
North Fork Sprague River	.....do.....	Lat 42°29'07", long 121°05'41", in SE 1/4 SE 1/4 sec.31, T.35 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 0.5 mi upstream from Meryl Creek, and 6.6 mi northwest of Bly, on road 1257.	---	1992	11-19-92 3-31-93 5-13-93 7-15-93 9-23-93	31 195 557 39 12
Meryl Creek	North Fork Sprague River	Lat 42°30'21", long 121°05'45", in NE 1/4 SE 1/4 sec.30, T.35 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 1.7 mi upstream from North Fork Sprague River, and 6.1 mi north of Bly, on road 1257.	---	1992	11-18-92 3-30-93 5-13-93 7-15-93 9-23-93	3.8 57 69 22 10
Fivemile Creek	.....do.....	Lat 42°34'00", long 121°06'59", in SE 1/4 NE 1/4 sec.1, T.35 S., R.13 E., Klamath County, Hydrologic Unit 18010202, 1.0 mi upstream from Swamp Creek, and 13.3 mi northeast of Beatty, on USFS road 30.	---	1992	11-18-92 3-30-93 5-13-93 7-15-93 9-22-93	18 83 28 22 22
Fivemile Creek	North Fork Sprague River	Lat 42°28'51", long 121°07'15", in SW 1/4 NE 1/4 sec.1, T.36 S., R.13 E., Klamath County, Hydrologic Unit 18010202, 1.7 mi upstream from North Fork Sprague River, and 6.4 mi northwest of Bly, on road 1257.	---	1992	11-19-92 3-31-93 5-13-93 7-15-93 9-23-93	19 95 28 18 15
North Fork Sprague River	Sprague River	Lat 42°27'21", long 121°06'43", in NW 1/4 NW 1/4 sec.18, T.36 S., R.14 E., Klamath County, Hydrologic Unit 18010202, 2.0 mi upstream from Sprague River, and 5.4 mi northwest of Bly, on road 1210.	---	1992	11-19-92 4- 1-93 5-13-93 7-15-93 9-23-93	53 211 667 63 32
Sprague River	Williamson River	Lat 42°26'51", long 121°14'14", in NW 1/4 SE 1/4 sec.13, T.36 S., R.12 E., Klamath County, Hydrologic Unit 18010202, 4.5 mi upstream from Sycan River, and 1.7 mi east of Beatty, on road 140.	---	1992	11-17-92 12-28-92 1-29-93 2-26-93 3-11-93 3-16-93 3-17-93 3-23-93 3-25-93 3-31-93 4- 8-93 4-13-93 4-22-93 4-29-93 5-11-93 6-16-93 7-14-93 8-19-93 9-21-93	112 88 88 139 1,170 1,730 1,520 1,300 2,520 931 830 460 720 820 1,050 450 195 245 169
Brown Creek	Sprague River	Lat 42°23'45", long 121°13'30", in NE 1/4 NW 1/4 sec.6, T.37 S., R.13 E., Klamath County, Hydrologic Unit 18010202, 0.8 mi downstream from Mineral Creek, and 4 mi southeast of Beatty, on USFS road 25.	---	---	4- 1-93 5-12-93 7-13-93	15 4.2 0.56
West Fork Brown Creek	Brown Creek	Lat 42°23'50", long 121°16'22", in NE 1/4 NE 1/4 sec.3, T.37 S., R.12 E., Klamath County, Hydrologic Unit 18010202, 1.5 mi upstream from Brown Creek, and 3 mi south of Beatty, on road 1193.	---	---	3-31-93 5-12-93 7-13-93 9-23-93	11 4.0 2.9 0.03
Sprague River	Williamson River	Lat 42°27'37", long 121°16'12", in NW 1/4 SW 1/4 sec.11, T.36 S., R.12 E., Klamath County, Hydrologic Unit 18010202, 1.2 mi upstream from Sycan River, and 1.3 mi north of Beatty, on road 1194.	---	1992	11-17-92 3-30-93 5-11-93 7-13-93 9-21-93	164 1,100 1,090 202 160
Watson Creek	Paradise Creek	Lat 42°37'59", long 120°52'37", in NE 1/4 SW 1/4 sec.7, T.34 S., R.16 E., Lake County, Hydrologic Unit 18010202, 3.0 mi upstream from Paradise Creek, and 17.4 mi west of Paisley, on USFS road 3372.	---	---	11-17-93 7-13-93 9-21-93	2.7 1.2 0.32

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SPRAGUE RIVER BASIN--Continued						
Sycan River	Sprague River	Lat 42°41'52", long 120°55'51", in NW 1/4 NE 1/4 sec.22, T.33 S., R.15 E., Klamath County, Hydrologic Unit 18010202, 0.5 mi downstream from Paradise Creek, and 19.6 mi west of Paisley, on USFS road 30.	---	1992	11-17-92 5-11-93 7-13-93 9-21-93	3.0 510 24 8.1
Coyote Creek	Sycan River	Lat 42°51'03", long 121°09'07", in SW 1/4 SW 1/4 sec.26, T.31 S., R.13 E., Lake County Hydrologic Unit 18010202, 3.2 mi west of Sycan Marsh, and 28.8 mi north of Beatty, on USFS road 27.	---	---	11-18-92 5-12-93 7-14-93 9-22-93	0.36 12 1.2 1.2
Cold Spring	.....do.....	Lat 42°50'28", long 121°09'57", in SE 1/4 NW 1/4 sec.34, T.31 S., R.13 E., Lake County Hydrologic Unit 18010202, 3.0 mi west of Sycan Marsh, and 28.3 mi north of Beatty, on USFS road 27.	---	---	11-18-92 5-12-93 7-14-93	0.18 0.47 0.16
Long Creek	.....do.....	Lat 42°49'44", long 121°10'55", in SE 1/4 NW 1/4 sec.4, T.32 S., R.13 E., Lake County, Hydrologic Unit 18010202, 5.5 mi downstream from Calahan Creek, and 27.2 mi north of Beatty, on USFS road 27.	---	---	11-18-92 5-12-93 7-14-93 9-22-93	12 129 28 13
Sycan River	Sprague River	Lat 42°42'46", long 121°11'09", in SE 1/4 NW 1/4 sec.16, T.33 S., R.13 E., Klamath County, Hydrologic Unit 18010202, 2 mi downstream from Sycan Marsh, and 20 mi north of Beatty, on USFS road 27.	---	---	5-13-93 7-14-93 9-22-93	670 9.1 4.2
Snake Creek	Sycan River	Lat 42°30'09", long 121°15'50", in SE 1/4 SW 1/4 sec.26, T.35 S., R.12 E., Klamath County, Hydrologic Unit 18010202, 2.0 mi upstream from Sycan River, and 4.9 mi north of Beatty, on road 1193.	---	---	11-18-92 3-30-93 5-11-93 7-13-93 9-21-93	0.52 1.8 2.8 0.58 0.20
Sycan River	Sprague River	Lat 42°29'08", long 121°16'39", in SW 1/4 SE 1/4 sec.34, T.35 S., R.12 E., Klamath County, Hydrologic Unit 18010202, 3.7 mi upstream from Sprague River, and 3.1 mi north of Beatty, on road CO 599.	---	1992	11-17-92 3-30-93 5-11-93 7-13-93 9-21-93	21 971 557 32 22
Unnamed Tributary to Whiskey Creek	.....do.....	Lat 42°23'31", long 121°22'08", in SW 1/4 NW 1/4 sec.1, T.37 S., R.11 E., Klamath County, Hydrologic Unit 18010202, 0.7 mi upstream from Whiskey Creek, and 6 mi south- west of Beatty, on road 140.	---	---	5-12-93	1.4
Whiskey Creek	.....do.....	Lat 42°23'48", long 121°21'38", in NE 1/4 NW 1/4 sec.1, T.37 S., R.11 E., Klamath County, Hydrologic Unit 18010202, 7.2 mi upstream from Sprague River, and 5.6 mi southwest of Beatty, on road 140.	---	---	11-19-92 3-31-93 5-12-93	0.03 27 1.9
Whiskey Creek	.....do.....	Lat 42°24'28", long 121°21'03", in SE 1/4 NE 1/4 sec.36, T.36 S., R.11 E., Klamath County, Hydrologic Unit 18010202, 6.0 mi upstream from Sprague River, and 4.7 mi southwest of Beatty, on road 858.	---	---	11-18-92 3-31-93 5-12-93	0.07 26 2.4
Rock Creek	.....do.....	Lat 42°25'58", long 121°26'45", in NW 1/4 SW 1/4 sec.20, T.36 S., R.11 E., Klamath County, Hydrologic Unit 18010202, 3 mi upstream from Sprague River, and 3.5 mi southeast of Sprague River, on road 858.	---	---	3-31-93 5-12-93 7-13-93	18 1.9 0.02
Sprague River	Williamson River	Lat 42°27'48", long 121°30'17", in NW 1/4 SW 1/4 sec.11, T.36 S., R.10 E., Klamath County, Hydrologic Unit 18010202, 12.4 mi upstream from Trout Creek, and 0.8 mi north of Sprague River, on road 858.	---	---	11-19-92 3-31-93 5-13-93 5-13-93 7-14-93 9-22-93	153 2,530 2,920 1,990 193 184
Trout Creek	Sprague River	Lat 42°29'45", long 121°36'10", in SE 1/4 NE 1/4 sec.35, T.35 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 0.3 mi upstream from Sprague River, and 4 mi south of Lone Pine, on USFS road 5850.	---	---	5-12-93 7-14-93 9-22-93	25 3.9 1.5

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SPRAGUE RIVER BASIN--Continued						
Sprague River	Williamson River	Lat 42°33'05", long 121°37'07", in NW 1/4 SW 1/4 sec.11, T.35 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 3.8 mi upstream from Cedar Spring Creek, and 0.3 mi south of Lone Pine, on USFS road 5850.	---	1992	11-19-92 199 3-30-93 2,900 5-12-93 2,140 7-14-93 206 9-22-93 202	
Cedar Creek	Sprague River	Lat 42°31'04", long 121°40'44", in SW 1/4 SW 1/4 sec.20, T.35 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 3 mi upstream from Sprague River, and 4 mi southwest of Lone Pine, on USFS road 22.	---	---	3-30-93 1.2 5-11-93 0.51	
Cedar Creek	.....do.....	Lat 42°32'38", long 121°39'32", in NW 1/4 NW 1/4 sec.16, T.35 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 1 mi upstream from Sprague River, and 2 mi west of Lone Pine, on USFS road 22.	---	---	7-14-93 0.12	
Unnamed Creek from Dockney Flat	.....do.....	Lat 42°30'36", long 121°42'14", in SE 1/4 NE 1/4 sec.25, T.34 S., R.8 E., Klamath County, Hydrologic Unit 18010202, 5 mi upstream from Sprague River, and 6 mi southwest of Lone Pine, on USFS road 22.	---	---	5-11-93 0.10	
Sprague River	Williamson River	Lat 42°33'55", long 121°40'55", in NE 1/4 SE 1/4 sec.6, T.35 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 0.8 mi downstream from Dockney Flat Creek, and 3.5 mi west of Lone Pine, on road 858.	---	1992	11-17-92 196 3-30-93 2,990 5-11-93 2,220 7-13-93 187 9-23-93 174	
Prairie Creek	Sprague River	Lat 42°36'50", long 121°40'48", in NW 1/4 NW 1/4 sec.25, T.34 S., R.9 E., Klamath County, Hydrologic Unit 18010202, 0.6 mi upstream from Sprague River, and 11 mi east of Chiloquin, on road 600.	---	---	5-12-93 0.34	
Whitehorse Springs	.....do.....	Lat 42°36'46", long 121°45'39", in SE 1/4 SE 1/4 sec.21, T.34 S., R.8 E., Klamath County, Hydrologic Unit 18010202, 0.3 mi upstream Sprague River, and 6.2 mi east of Chiloquin, on Green Forest Drive.	---	---	11-18-92 0.36 3-30-93 1.6 5-11-93 2.8 7-13-93 0.19 9-23-93 0.78	
Sprague River	Williamson River	Lat 42°36'06", long 121°46'37", in NW 1/4 NW 1/4 sec.28, T.34 S., R.8 E., Klamath County, Hydrologic Unit 18010202, 1.8 mi downstream from Whitehorse Spring Creek, and 4.8 mi east of Chiloquin, on road 858.	---	1992	11-18-92 228 3-30-93 3,740 5-11-93 2,200 7-13-93 207 9-23-93 238	
Sprague River	.....do.....	Lat 42°35'05", long 121°50'30", in SW 1/4 NE 1/4 sec.35, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010202, 7.1 mi upstream from Williamson River, and 1.4 mi east of Chiloquin, on USFS road 5810.	---	1992	10-20-92 246 11-18-92 256 12-16-92 550 1-28-93 240 2-25-93 337 3-10-93 1,140 3-15-93 2,790 3-18-93 3,690 3-22-93 6,140 3-25-93 4,900 3-30-93 3,670 4- 7-93 2,740 4-14-93 1,940 4-22-93 2,030 4-29-93 1,620 5-11-93 2,210 6-17-93 800 7-13-93 216 8-19-93 340 9-23-93 254	
KLAMATH RIVER BASIN						
Wood River	Agency Lake	Lat 42°44'16", long 121°58'37", in NE 1/4 SE 1/4 sec.3, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 3.5 mi upstream from Annie Creek, and 2.6 mi north of Fort Klamath, on USFS road 54.	---	1992	7-14-93 9.6	
Wood River	.....do.....	Lat 42°44'02", long 121°59'14", in SE 1/4 NW 1/4 sec.3, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 2.1 mi upstream from Annie Creek, and 2.0 mi north of Fort Klamath, on Dixon Road.	---	1992	11-17-92 143 3-30-93 167 5-12-93 169 7-14-93 199 9-22-93 220	

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
KLAMATH RIVER BASIN--Continued						
Annie Creek	Wood River	Lat 42°45'50", long 122°03'27", in SE 1/4 SE 1/4 sec. 25, T.32 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 4.8 mi upstream from Sun Creek, and 5.4 mi northwest of Fort Klamath, on road 62.	---	1992	11-17-92 3-30-93 5-11-93 7-14-93 9-22-93	33 42 82 112 59
Sun Creek	Annie Creek	Lat 42°45'43", long 122°00'54", in NE 1/4 NE 1/4 sec. 32, T.32 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 2.7 mi upstream from Annie Creek, and 4.2 mi north of Fort Klamath, off road 62.	---	1992	7-14-93 9-22-93	32 11
Wood River	Agency Lake	Lat 42°42'05", long 121°59'19", in NE 1/4 NW 1/4 sec. 22, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 3.8 mi downstream from Annie Creek, and 0.2 mi east of Fort Klamath, on road 62.	---	1992	11-17-92 3-30-93 5-12-93 7-14-93 9-22-93	152 224 237 149 198
Wood River	.....do.....	Lat 42°40'09", long 121°58'40", in SE 1/4 NE 1/4 sec. 34, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 0.6 mi downstream from Fort Creek, and 2.6 mi south of Fort Klamath, on Loosley Road.	---	1992	11-19-92 3-30-93 5-12-93 7-15-93 9-22-93	247 328 306 216 256
Lower Sevenmile Ditch	North and West Canals	Lat 42°40'04", long 122°03'25", in SE 1/4 NE 1/4 sec. 36, T.33 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 1.3 mi downstream from Sevenmile Creek, and 4.3 mi southwest of Fort Klamath, on road 1349.	---	---	11-19-92 5-13-93	0.67 17
Middle Sevenmile Ditch	.....do.....	Lat 42°40'08", long 122°03'14", in SE 1/4 NE 1/4 sec. 36, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 0.7 mi upstream from North Canal, and 3.9 mi southwest of Fort Klamath, on road 1349.	---	1992	11-19-92 4- 1-93 5-13-93 7-15-93 9-21-93	5.7 46 1.1 8.5 0.94
Upper Sevenmile Ditch	.....do.....	Lat 42°42'43", long 122°04'26", in SE 1/4 NE 1/4 sec. 14, T.33 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.9 mi downstream from Sevenmile Creek, and 4.1 mi west of Fort Klamath, on USFS road 3200.	---	1992	11-18-92 7-13-93 9-21-93	2.4 19 8.6
Upper Sevenmile Ditch	.....do.....	Lat 42°40'04", long 122°01'51", in SW 1/4 NW 1/4 sec. 32, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 0.7 mi upstream from North Canal, and 3.2 mi southwest of Fort Klamath, on road 1349.	---	1992	11-19-92 5-13-93 7-15-93 9-23-93	8.0 6.9 27 15
North Canal	Wood River	Lat 42°39'18", long 121°59'45", in NW 1/4 NE 1/4 sec. 4, T.34 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 0.5 mi upstream from Wood River, and 3.6 mi south of Fort Klamath, on Weed Road.	---	1992	11-19-92 4- 1-93 5-13-93 7-15-93 9-23-93	0.08 5.5 2.1 5.0 15
11504100 Wood River	Agency Lake	Lat 42°38'48", long 121°59'40", in NE 1/4 SE 1/4 sec. 4, T.34 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 1.1 mi downstream from North Canal, and 4.0 mi south of Fort Klamath, on Weed Road.	---	1992	11-19-92 12-29-92 1-28-93 2-25-93 3-10-93 3-15-93 3-19-93 3-22-93 3-26-93 3-31-93 4- 7-93 4-13-93 4-23-93 4-30-93 7-15-93 8-19-93 9-22-93	293 302 260 281 266 318 382 350 389 345 402 380 360 311 130 158 232
Fort Creek	Wood River	Lat 42°40'51", long 121°58'19", in NW 1/4 SW 1/4 sec. 26, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 1.5 mi upstream from Wood River, and 2 mi southeast of Fort Klamath, on road 62.	---	---	7-14-93	47
Crooked Creek	.....do.....	Lat 42°38'38", long 121°56'38", in NW 1/4 NE 1/4 sec. 12, T.34 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 0.3 mi upstream from Tecumseh Spring, and 4.9 mi southeast of Fort Klamath, on road 62.	---	1992	5-12-92 7-15-93 9-23-93	39 45 42

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

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Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
KLAMATH RIVER BASIN--Continued						
Agency Spring	Crooked Creek	Lat 42°37'12", long 121°55'56", in SW 1/4 SW 1/4 sec.8, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010203, 0.5 mi upstream from Crooked Creek, and at Klamath Agency, on road 62.	---	---	11-19-92 7-15-93 9-23-93	43 6.0 12
Sevenmile Creek	Agency Lake	Lat 42°43'33", long 122°05'31", in NW 1/4 SW 1/4 sec.11, T.33 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.1 mi upstream from Dry Creek, and 5.1 mi west of Fort Klamath, on USFS road 3334.	---	1992	11-18-92 5-11-93 7-13-93 9-21-93	18 53 19 20
Blue Springs	Sevenmile Creek	Lat 42°41'42", long 122°04'30", in NE 1/4 SE 1/4 sec.23, T.33 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.3 mi upstream from Sevenmile Creek, and 4.0 mi west of Fort Klamath, on road 531.	---	1992	11-18-92 7-13-93	3.1 3.1
Blue Springs Ditch	.....do.....	Lat 42°41'09", long 122°02'38", in SW 1/4 NE 1/4 sec.30, T.33 S., R.7 1/2 E., Klamath County, Hydrologic Unit 18010203, 1.6 mi downstream from Blue Springs, and 3 mi west of Fort Klamath.	---	---	3-31-93	7.4
Sevenmile Creek	Agency Lake	Lat 42°40'04", long 122°04'19", in SW 1/4 NW 1/4 sec.36, T.33 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.5 mi downstream from Short Creek, and 4.8 mi southwest of Fort Klamath, on road 1349.	---	1992	11-19-92 3-31-93 5-13-93 7-15-93 9-21-93	67 93 111 25 49
Threemile Creek	Crane Creek	Lat 42°38'38", long 122°04'40", in NW 1/4 SE 1/4 sec.2, T.34 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.6 mi upstream from Crane Creek, and 5.8 mi southwest of Fort Klamath, on road 531.	---	1992	11-18-92 3-31-93 5-11-93 7-13-93 9-21-93	0.79 7.6 32 1.8 0.87
Fourmile Spring	Agency Lake	Lat 42°38'02", long 122°04'33", in NW 1/4 NW 1/4 sec.11, T.34 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 0.5 mi upstream from Crane Creek, and 6.5 mi southwest of Fort Klamath, on road 531.	---	---	7-13-93	1.1
Cherry Creek	Fourmile Creek	Lat 42°36'21", long 122°05'20", in SW 1/4 SW 1/4, sec.14, T.34 S., R.6 E., Klamath County, Hydrologic Unit 18010203, 2 mi upstream from Fourmile Creek, and 9 mi southwest of Fort Klamath, on road 531.	---	---	5-11-93 7-13-93 9-21-93	86 2.5 5.2
Barkley Springs	Upper Klamath Lake	Lat 42°22'57", long 121°48'37", in NW 1/4 SW 1/4 sec. 6, T.37 S., R.9 E., Klamath County, Hydrologic Unit 18010203, on east shore of Upper Klamath Lake, and 10 mi north of Klamath Falls, on road 97.	---	---	11-18-92 3-31-93 7-15-93	0.20 2.0 0.75
DESCHUTES RIVER BASIN						
Paulina Creek	Little Deschutes River	Lat 43°42' 43", long 121°17'45", Deschutes County, Hydrologic Unit 17070302, at mile 12.2.	---	---	9- 1-93	21
Paulina Creek	.....do.....	Lat 43°42'54", long 121°19'05", Deschutes County, Hydrologic Unit 17070302, at mile 11.0.	---	---	9- 1-93	18
Paulina Creek	.....do.....	Lat 43°42'52", long 121°19'55", Deschutes County, Hydrologic Unit 17070302, at footbridge, and at mile 10.2.	---	---	9- 1-93	19
Paulina Creek	.....do.....	Lat 43°42'47", long 121°20'32", Deschutes County, Hydrologic Unit 17070302, at mile 9.7.	---	---	9- 1-93	19
Paulina Creek	.....do.....	Lat 43°42'57", long 121°21'19", Deschutes County, Hydrologic Unit 17070302, at mile 9.0.	---	---	9- 1-93	19
Paulina Creek	.....do.....	Lat 43°42'55", long 121°22'32", Deschutes County, Hydrologic Unit 17070302, at McKay Crossing, and at mile 7.9.	---	---	9- 1-93	18
Paulina Creek	.....do.....	Lat 43°43'33", long 121°24'19", Deschutes County, Hydrologic Unit 17070302, at mile 6.1.	---	---	9- 1-93	17

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
DESCHUTES RIVER BASIN--Continued						
Paulina Creek	Little Deschutes River	Lat 43°43'39", long 121°24'56", in SW 1/4 NW 1/4 sec.28, T.21 S., R.11 E., Deschutes County, Hydrologic Unit 17070302, 100 ft upstream from bridge on Forest Service road 21, and 2.4 mi southeast of Highway 97.	---	1992	6-24-93 14 9-1-93 16 9-15-93 14	
SANDY RIVER BASIN						
14138600 Bull Run at Lake Outlet, near Brightwood	Bull Run River	Lat 45°28'11", long 121°50'44", in SE 1/4 SE 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, 300 ft downstream from outlet structure, at Bull Run Lake, and 18.8 mi northeast of Bull Run.	---	1992	10-29-92 no flow 7-16-93 no flow 9-21-93 no flow	
14138700 Bull Run River at Upper Flume, near Brightwood	.....do.....	Lat 45°27'58", long 121°51'12", in NE 1/4 SW 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, at flume, 0.6 mi downstream from outlet structure, at Bull Run Lake, and 18.4 mi northeast of Bull Run.	---	1992	12-4-92 1.3 2-11-93 1.4 4-12-93 8.6	
14138720 Bull Run River at Lower Flume, near Brightwood	.....do.....	Lat 45°28'08", long 121°51'38", in SW 1/4 NW 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, at flume, 1.0 mi downstream from outlet structure, at Bull Run Lake, and 18.2 mi northeast of Bull Run.	---	---	7-6-92 15 9-23-92 49	
WILLAMETTE RIVER BASIN						
Wallace Creek	Willamette River	Lat 44°00'01", long 122°54'27", Lane County, Hydrologic Unit 17090001, near Jasper, and at mile 0.0.	---	1992	6-23-93 2.1	
Mill Race Diversion	.....do.....	Lat 44°01'31", long 122°57'46", Lane County, Hydrologic Unit 17090001, 30 yards downstream from culverts.	---	1992	6-23-93 32	
Mill Race Return Flow	.....do.....	Lat 44°01'47", long 123°59'47", Lane County, Hydrologic Unit 17090001, 1 mile south of Highway 126, near Springfield.	---	1992	6-23-93 20	
Willamette River	Columbia River	Lat 44°01'25", long 123°01'22", Lane County, Hydrologic Unit 17090003, near Southern Boulevard, near Springfield, and at mile 187.0.	---	1992	6-23-93 2,790	
Mill Race Return Flow	Willamette River	Lat 44°02'40", long 123°01'34", Lane County, Hydrologic Unit 17090003, at Island Park.	---	1992	6-23-93 33	
Alton Baker Park Diversion	.....do.....	Lat 44°02'52", long 123°02'35", Lane County, Hydrologic Unit 17090003, at Baker Park.	---	1992	6-23-93 39	
Alton Baker Park Diversion Return	.....do.....	Lat 44°03'26", long 123°04'56", Lane County, Hydrologic Unit 17090003, at Baker Park, near Ferry Street Bridge.	---	1992	6-23-93 47	
Willamette River	Columbia River	Lat 44°06'10", long 123°06'08", Lane County, Hydrologic Unit 17090003, 0.5 above confluence with Dodson Slough, and at mile 177.5.	---	---	6-24-93 2,890	
14163000 Gate Creek	McKenzie River	Lat 44°08'45", long 122°34'15", Lane County, Hydrologic Unit 17090004, at Vida, and at mile 0.2.	47.6	1951-81, 1992	6-24-93 118	
14165500 McKenzie River	Willamette River	Lat 44°06'43", long 123°02'39", Lane County, Hydrologic Unit 17090004, at Armitage Park, and at mile 7.2.	---	1944-72, 1992	4-21-93 8,090 6-24-93 3,910	
Old McKenzie River	.....do.....	Lat 44°09'40", long 123°07'25", Lane County, Hydrologic Unit 17090004, 2.4 mi northwest of Coburg, and at mile 0.1.	---	---	6-24-93 5.9	
Spring Creek	.....do.....	Lat 44°10'08", long 123°08'06", Lane County, Hydrologic Unit 17090003, 1.3 mi east of River Road, and at mile 0.1.	---	1992	6-24-93 41	

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Willamette River	Columbia River	Lat 44°11'05", long 123°08'35", Lane County, Hydrologic Unit 17090003, at Haynes Lane, and at mile 169.0.	---	1992	6-24-93	7,170
Willamette River	.....do.....	Lat 44°12'33", long 123°09'32", Lane County, Hydrologic Unit 17090003, near El Reo Lane, and at mile 166.5.	---	---	6-24-93	6,170
Curtis Slough	Willamette River	Lat 44°15'06", long 123°10'28", Lane County, Hydrologic Unit 17090003, 1.5 miles south of Harrisburg, and at mile 0.0.	---	1992	6-25-93	29
Ingram Slough	.....do.....	Lat 44°22'00", long 123°14'45", Linn-Benton County, Hydrologic Unit 17090003, 2.7 mi northeast of Monroe, and at mile 0.15.	---	1992	6-25-93	35
Willamette River	Columbia River	Lat 44°19'51", long 123°13'45", Linn County, Hydrologic Unit 17090003, at McCartney Park, 3.0 mi northwest of Cartney, and at mile 155.0.	---	---	6-25-93	6,390
Willamette River	.....do.....	Lat 44°21'48", long 123°13'08", Benton County, Hydrologic Unit 17090003, 7.0 mi northwest of Harrisburg, and at mile 150.9.	---	---	6- 9-92	3,600
Willamette River	.....do.....	Lat 44°22'17", long 123°13'41", Linn-Benton County, Hydrologic Unit 17090003, near Bundy Road, 8.5 mi northwest of Harrisburg, and at mile 149.8.	---	1992	6-25-93	7,020
14169300 Amazon Creek	Long Tom River	Lat 44°00'46", long 123°04'34", Lane County, Hydrologic Unit 17090003, in Kincaid Park, in Eugene, and at mile 21.7.	---	1962-75, 1992	5-20-92 4-27-93 4-28-93 4-29-93	0.51 4.1 2.7 4.8
Amazon Creek	.....do.....	Lat 44°02'01", long 123°05'14", Lane County, Hydrologic Unit 17090003, at 24th Street, in Eugene, and at mile 20.1.	---	1992	4-27-93 4-29-93	6.9 11
Amazon Creek	.....do.....	Lat 44°02'40", long 123°06'02", Lane County, Hydrologic Unit 17090003, at Fairgrounds in Eugene, and at mile 19.0.	---	1992	4-29-93	11
Amazon Creek	.....do.....	Lat 44°02'51", long 123°08'14", Lane County, Hydrologic Unit 17090003, at Acorn Park Road, in Eugene, and at mile 16.9.	---	1992	4-28-93	7.5
Amazon Creek	.....do.....	Lat 44°03'00", long 123°09'40", Lane County, Hydrologic Unit 17090003, at Bertelson Road, and at mile 15.6.	---	---	4-28-93	8.4
Amazon Creek	.....do.....	Lat 44°03'07", long 123°11'08", Lane County, Hydrologic Unit 17090003, at Terry Street Bridge, and at mile 14.3.	---	---	4-27-93 4-28-93 4-29-93	18 13 22
14169500 Amazon Creek	.....do.....	Lat 44°03'42", long 123°11'43", Lane County, Hydrologic Unit 17090003, in Eugene, and at mile 13.4.	---	1954-68, 1979-82, 1992	4-28-93	15
Amazon Creek	.....do.....	Lat 44°04'13", long 123°12'00", Lane County, Hydrologic Unit 17090003, at Royal Avenue, westside of Eugene, and at mile 12.8.	---	---	4-29-93	8.5
Long Tom Main Channel Diversion	Willamette River	Lat 44°22'49", long 123°14'52", Benton County, Hydrologic Unit 17090003, near Lakeside Drive and at mile 0.1.	---	1992	6-25-93	112
Long Tom River Auxillary Channel	.....do.....	Lat 44°24'44", long 123°14'02", Benton County, Hydrologic Unit 17090003, on concrete dam, and at mile 0.1.	---	1992	6-25-93	276
Willamette River	Columbia River	Lat 44°25'04", long 123°13'06", Linn-Benton County, Hydrologic Unit 17090003, 0.5 mi downstream from Sam Daws Bend, near Oakville Drive, at mile 145.0.	---	---	6-25-93	7,220
Lake Creek	Willamette River	Lat 44°25'46", long 123°12'19", Linn County, Hydrologic Unit 17090003, 1.4 mi south of Peoria, at mile 1.4.	---	---	6-25-93	8.2
Willamette River	Columbia River	Lat 44°27'29", long 123°12'40", Linn County, Hydrologic Unit 17090003, at Peoria, and at mile 141.7.	---	1992	6-28-93	6,920

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Willamette River	Columbia River	Lat 44°27'32", long 123°12'42", Linn-Benton County, Hydrologic Unit 17090003, 0.8 mi northwest of Peoria, and at mile 141.0.	---	---	6- 9-92	3,390
Middle Channel Diversion	Willamette River	Lat 44°28'13", long 123°13'01", Benton County, Hydrologic Unit 17090003, 1.6 mi north of Peoria.	---	1992	6-28-93	40
Bonneville Channel Inflow	.....do.....	Lat 44°31'30", long 123°15'24", Benton County, Hydrologic Unit 17090003, at bridge to Kiger Island.	---	1992	6-28-93	74
Willamette River	Columbia River	Lat 44°31'56", long 123°14'57", Benton County, Hydrologic Unit 17090003, upstream from Willamette Park, near Corvallis, and at mile 134.4.	---	1992	6-28-93	6,970
Muddy Creek	Willamette River	Lat 44°33'16", long 123°15'02", Linn County, Hydrologic Unit 17090003, 0.8 mi south of Highway 34, near Corvallis, and at mile 0.1.	---	---	6-28-93	82
Mary's River	.....do.....	Lat 44°33'19", long 123°15'58", Benton County, Hydrologic Unit 17090003, east of railroad bridge, near Corvallis, and at mile 0.1.	---	1992	6-28-93	196
Dixon Creek	.....do.....	Lat 44°34'28", long 123°15'07", Benton County, Hydrologic Unit 17090003, at Corvallis, and at mile 0.0.	---	1992	6-28-93	0.62
Willamette River	Columbia River	Lat 44°35'06", long 123°11'29", Linn-Benton County, Hydrologic Unit 17090003, 0.4 mi upstream from Half Moon Bend, and at mile 127.5.	---	1992	6-28-93	7,250
Kiger Cutoff	Willamette River	Lat 44°37'41", long 123°10'17", Linn-Benton County, Hydrologic Unit 17090003, north of Lower Kiger Island.	---	---	6-28-93	6.1
Little Willamette River	.....do.....	Lat 44°38'13", long 123°08'59", Linn County, Hydrologic Unit 17090003, near Cherry Lane Drive, and at mile 0.1.	---	---	6-28-93	0.0
Calapooia River	.....do.....	Lat 44°21'31", long 122°49'15", Linn County, Hydrologic Unit 17090003, near Crawfordsville Drive, and at mile 43.2.	---	---	5-26-93	377
Calapooia River	.....do.....	Lat 44°23'28", long 122°59'00", Linn County, Hydrologic Unit 17090003, near Brownsville Bridge, at Brownsville, and at mile 32.8.	---	1992	5-26-93	481
Calapooia River	.....do.....	Lat 44°24'13", long 123°00'46", Linn County, Hydrologic Unit 17090003, 1 mi north of Highway 228, near Fisher Road, and at mile 30.3.	---	1992	5-25-93	468
Calapooia River	.....do.....	Lat 44°24'27", long 123°02'13", Linn County, Hydrologic Unit 17090003, near Powell Hills, at gravel pit, and at mile 28.5.	---	---	5-25-93	453
Calapooia River	.....do.....	Lat 44°25'31", long 123°03'48", Linn County, Hydrologic Unit 17090003, at Linn West Road, 0.1 mi west of Interstate 5, and at mile 25.8.	---	---	5-25-93	132
Sodom Ditch	Butte Creek	Lat 44°25'31", long 123°02'52", Linn County, Hydrologic Unit 17090003, at Linn West Road, 0.6 mi east of Interstate 5, and at mile 4.4.	---	---	5-25-93	329
Calapooia River	Willamette River	Lat 44°29'10", long 123°04'45", Linn County, Hydrologic Unit 17090003, at Wirth Road, and at mile 19.5.	---	---	5-24-93	383
Calapooia River	.....do.....	Lat 44°32'01", long 123°08'35", Linn County, Hydrologic Unit 17090003, at Tangent Road Bridge, and at mile 12.8.	---	---	5-24-93	309
14173500 Calapooia River	.....do.....	Lat 44°37'15", long 123°07'40", Linn County, Hydrologic Unit 17090003, at Bryant Park, in Albany, and at mile 3.0.	372	1940-61, 1964-90, 1992	5-24-93, 6-25-93	402, 302
Periwinkle Creek	Willamette River	Lat 44°38'28", long 123°05'10", Linn County, Hydrologic Unit 17090003, at Bowman Park, in Albany, and at mile 0.0.	---	---	6-29-93	3.2

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Cox Creek	Willamette River	Lat 44°38'46", long 123°04'35", Linn County, Hydrologic Unit 17090003, near sewage disposal in Albany, and at mile 0.1.	---	---	6-29-93	2.1
Fourth Lake Outlet	.....do.....	Lat 44°40'33", long 123°04'58", Linn County, Hydrologic Unit 17090006, near Interstate 5, in Albany, and at mile 0.2.	---	1992	6-29-93	9.1
Willamette River	Columbia River	Lat 44°40'42", long 123°06'58", Linn-Benton County, Hydrologic Unit 17090003, at Spring Hill, and at mile 114.0.	---	---	6-29-93	7,790
Willamette River	.....do.....	Lat 44°44'59", long 123°08'32", Marion County, Hydrologic Unit 17090003, above confluence with Santiam River, and at mile 108.0	---	1992	6-29-93	7,520
Santiam River	Columbia River	Lat 44°44'24", long 123°03'26", Marion County, Hydrologic Unit 17090005, below Interstate 5 bridge, and at mile 6.1.	---	---	6-29-93	3,240
Morgan Creek	Santiam River	Lat 44°45'06", long 123°03'07", Marion County, Hydrologic Unit 17090005, near Interstate 5, and at mile 0.6.	---	1992	6-29-93	3.6
Santiam River	Willamette River	Lat 44°45'08", long 123°07'54", Marion County, Hydrologic Unit 17090005, near Talbot Road, 2.0 mi southeast of Buena Vista, and at mile 0.0.	---	1992	6-29-93	2,860
Schafer Creek	South Santiam	Lat 44°37'11", long 122°27'53", Linn County, Hydrologic Unit 17090006, near confluence of Crabtree Creek, and at mile 0.0.	1.03	---	8-24-93 9-15-93	0.40 0.15
Luckiamute River	.....do.....	Lat 44°30'50", long 123°30'11", Polk County, Hydrologic Unit 17090003, near Buena Vista Road, and at mile 2.0.	---	---	6-29-93	234
Rock Creek	.....do.....	Lat 44°47'40", long 123°06'52", Marion County, Hydrologic Unit 17090007, 0.72 mi north of Sidney, and at mile 0.0.	---	1992	6-29-93	19
Sydney Ditch	.....do.....	Lat 44°49'00", long 123°05'43", Marion County, Hydrologic Unit 17090007, at mile 0.10.	---	---	6-29-93	6.4
Willamette River	Columbia River	Lat 44°31'46", long 123°09'48", Polk-Marion County, Hydrologic Unit 17090007, 0.4 mi south of Walker Road, and at mile 94.2.	---	1992	6-30-93	11,600
Willamette River	.....do.....	Lat 44°55'00", long 123°06'33", Polk-Marion County, Hydrologic Unit 17090007, at Hayden Island, and at mile 89.0.	---	---	6-30-93	11,700
Rickreall Creek	Willamette River	Lat 44°55'46", long 123°07'19", Polk County, Hydrologic Unit 17090007, 0.1 mi south of Highway 20, 0.2 mi southeast of Eola, and at mile 0.5.	---	1992	6-30-93	42
Pringle Creek/ Mill Ditch	Willamette Slough	Lat 44°56'20", long 123°02'36", Marion County, Hydrologic Unit 17090007, northeast of Front Street in Salem, and at mile 0.0.	---	1992	6-30-93	134
Mill Creek	.....do.....	Lat 44°54'15", long 122°59'07", Marion County, Hydrologic Unit 17090007, 0.5 miles south of Wirth Lane, in in Salem, and at mile 5.0.	---	1992	8-12-93 8-13-93	145 133
Shelton Ditch	Mission Ditch	Lat 44°55'30", long 123°00'08", Marion County, Hydrologic Unit 17090007, near Oregon Department of Transportation, at Highway 22, and at mile 0.80.	---	---	8-12-93 8-13-93	51 61
Mill Creek	Willamette River	Lat 44°56'22", long 123°01'16", Marion County, Hydrologic Unit 17090007, on North East Center Street, in Salem, and at mile 1.6.	---	---	8-13-93	54
Mill Creek	.....do.....	Lat 44°57'06", long 123°02'15", Marion County, Hydrologic Unit 17090007, northeast of Nebraska Street in Salem, and at mile 0.0.	---	1992	6-30-93 8-12-93 8-13-93 9-21-93	92 50 59 46

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Glen Creek	.....do.....	Lat 44°59'22", long 123°03'54", Polk County, Hydrologic Unit 17090007, at Glen Creek Road, and at mile 1.0.	---	---	6-30-93	0.4
Willamette River	Columbia River	Lat 45°00'15", long 123°07'52", Polk-Marion County, Hydrologic Unit 17090007, about 2 mi west of Kiezer, and at mile 78.5.	---	---	9-21-93	10,300
Willamette River	.....do.....	Lat 45°05'26", long 123°02'39", Polk-Marion County, Hydrologic Unit 17090007, on Wheatland Road, 0.2 mi east of Wheatland, and at mile 71.7.	---	1992	9-21-93	10,400
Lambert Slough	Willamette River	Lat 46°06'10", long 123°02'20", Polk County, Hydrologic Unit 17090007, at Lambert Slough Road.	---	---	6-30-93 9-21-93	42 24
Willamette River	Columbia River	Lat 45°09'34", long 123°04'08", Yamhill-Marion County, Hydrologic Unit 17090007, 5 mi southeast of Dayton, upper Lambert Bar, and at mile 65.0.	---	---	9-21-93	10,200
Willamette River	.....do.....	Lat 45°11'14", long 123°01'02", Yamhill-Marion County, Hydrologic Unit 17090007, 1.5 mi east of St. Paul-Fair Road, and at mile 61.3.	---	1992	9-21-93	10,500
Willamette River	.....do.....	Lat 45°13'42", long 122°59'44", Marion-Yamhill County, Hydrologic Unit 17090007, 1.6 mi northwest of St. Paul, near Mission Road, and at mile 55.0.	---	1992	11-10-92 9-21-93	15,400 10,700
South Yamhill River	.....do.....	Lat 44°10'06", long 123°11'24", Yamhill County, Hydrologic Unit 17090008, 1.0 mi north of Whiteson, and at mile 14.8.	---	---	6-29-93	275
South Yamhill River	.....do.....	Lat 45°12'26", long 123°10'48", Yamhill County, Hydrologic Unit 17090008, near Threemile Lane, 0.5 mi southeast of McMinnville, and at mile 5.5.	---	1992	7- 2-93	250
South Yamhill	.....do.....	Lat 45°12'49", long 123°08'45", Yamhill County, Hydrologic Unit 17090008, 1.5 mi east of McMinnville, and at mile 1.2.	---	---	7-21-93	257
14197500 Yamhill River	Willamette River	Lat 45°14'20", long 123°06'43", Yamhill County, Hydrologic Unit 17090008, 0.45 mi south of Pacific Highway, 0.4 mi south of Lafayette, and at mile 8.2.	---	1929-32, 1992	5-10-93 9-21-93	2,220 54
Palmer Creek	Yamhill River	Lat 45°13'26", long 123°04'15", Yamhill County, Hydrologic Unit 17090008, at Highline Road Bridge, in Dayton, and at mile 0.0.	---	1992	9-21-93	25
Yamhill River	.....do.....	Lat 45°13'23", long 123°04'14", Yamhill County, Hydrologic Unit 17090008, near Dayton, and at mile 2.0.	---	---	7- 1-93	358
Yamhill River	.....do.....	Lat 45°14'02", long 123°01'17", Yamhill County, Hydrologic Unit 17090008, and at mile 1.3.	---	---	5-10-93 5-12-93	2,230 1,880
Willamette River	Columbia River	Lat 45°16'15", long 122°58'17", Yamhill-Marion County, Hydrologic Unit 17090007, at Ash Island, and at mile 51.5.	---	---	11-10-92 9-22-93	15,900 11,200
Spring Brook	Willamette River	Lat 45°16'10", long 122°55'11", Yamhill County, Hydrologic Unit 17090007, 1.1 mi east of Highway 219, and at mile 0.25.	---	---	9-22-93	0.78
Willamette River	Columbia River	Lat 45°15'42", long 122°54'21", Yamhill-Marion County, Hydrologic Unit 17090007, at Champoege State Park, and at mile 46.5.	---	---	11-10-92 9-22-93	15,900 11,000

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

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Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Champoeg Creek	Columbia River	Lat 45°15'02", long 122°52'46", Marion County, Hydrologic Unit 17090007, at Champoeg State Park, and at mile 0.0.	---	---	9-21-93	3.0
Coral Creek	.....do.....	Lat 45°17'36", long 122°38'10", Clackamas County, Hydrologic Unit 17090007, at Wilsonville Road, and at mile 0.6.	---	---	9-22-93	0.0
14198000 Willamette River	.....do.....	Lat 45°17'36", long 122°46'40", Clackamas County, Hydrologic Unit 17090007, at Wilsonville, and at mile 39.0.	---	1948-73	11-12-92 15,800 9-22-93 11,500	
Newland Creek	Willamette River	Lat 45°18'07", long 122°43'06", Clackamas County, Hydrologic Unit 17090007, 0.35 mi west of Riverside Road, and at mile 0.0.	---	---	9-22-93	0.02
14198400 Bull Creek	Molalla River	Lat 44°57'42", long 122°22'59", Clackamas County, Hydrologic Unit 17090009, 1.4 mi east of Bee Ranch, and at mile 0.4.	0.43	---	3-23-93 16 4-26-93 4.4 6-28-93 0.70 6-28-93 0.99 8-26-93 0.22 9-15-93 0.11	
Molalla River	Willamette River	Lat 45°09'42", long 122°32'01", Clackamas County, Hydrologic Unit 17090009, at Highway 211 crossing, 2.2 mi northeast of Molalla, and at mile 18.6.	---	1992	4-14-93	1,450
Molalla River	.....do.....	Lat 45°12'01", long 122°34'42", Clackamas County, Hydrologic Unit 17090009, at Wagon Wheel Park, near Highway 213, and at mile 14.6.	---	---	3-26-93 1,830 3-29-93 998	
Molalla River	.....do.....	Lat 45°13'42", long 122°38'01", Clackamas County, Hydrologic Unit 17090009, at Southern Pacific RR, near Canby-Mulino Road, and at mile 10.0.	---	---	4-14-93	1,710
Milk Creek	Molalla River	Lat 45°14'20", long 122°39'24", Clackamas County, Hydrologic Unit 17090009, 0.4 mi south of Canby-Mulino Road, 1.4 mi northeast of Lone Elder, and at mile 0.1.	---	1992	4-14-93	461
14200000 Molalla River	Willamette River	Lat 45°14'40", long 122°41'10", Clackamas County, Hydrologic Unit 17090009, at Cwods Bridge 1.5 mi south of Canby, and at mile 6.0.	323	1928-59, 1962-78, 1992	4-13-93 2,420 4-14-93 2,320	
Molalla River	.....do.....	Lat 45°15'20", long 122°42'15", Clackamas County, Hydrologic Unit 17090009, at Highway E99, near Canby, and at mile 3.6.	---	---	3- 5-93	2,419
Molalla River	.....do.....	Lat 45°16'03", long 122°42'33", Clackamas County, Hydrologic Unit 17090009, Knights Bridge in Canby, and at mile 2.6.	---	---	4-13-93 2,570 4-29-93 2,530 7- 1-93 473	
14200300 Silver Creek	Pudding River	Lat 45°00'34", long 122°47'15", Marion County, Hydrologic Unit 17090009, at James Street Bridge in Silverton, and at mile 3.4.	47.9	1963-68, 1970-79	3- 2-93 124 3- 4-93 289 4-26-93 614	
Brush Creek	Silver Creek	Lat 45°00'02", long 122°49'29", Marion County, Hydrologic Unit 17090009, near Silverton on Brush Creek Drive, and at mile 0.3.	---	---	3- 2-93	3.2
Pudding River	Molalla River	Lat 45°00'33", long 122°50'35", Marion County, Hydrologic Unit 17090009, at Pine Street, and at mile 48.7.	---	---	7- 9-93	59
Abiqua Creek	Pudding River	Lat 45°02'15", long 122°48'45", Marion County, Hydrologic Unit 17090009, near Silverton on Mt. Angel Highway, and at mile 1.0.	---	---	3- 2-93 194 4-26-93 947 7- 9-93 71	
Pudding River	Molalla River	Lat 45°02'15", long 122°50'03", Marion County, Hydrologic Unit 17090009, on Nusom Road, and at mile 45.5.	---	---	3- 2-93	429
Little Pudding River	Pudding River	Lat 44°57'24", long 122°55'11", Marion County, Hydrologic Unit 17090009, at Sunnyview Road, and at mile 13.4.	---	---	4-27-93	37.9
Little Pudding River	.....do.....	Lat 45°02'46", long 122°53'39", Marion County, Hydrologic Unit 17090009, at Rambler Road above Labish Ditch, and at mile 3.0.	---	---	3- 3-93 92 4-27-93 96	

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Date	Measurements Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Labish Ditch	Little Pudding River	Lat 45°02'14", long 122°54'22", Marion County, Hydrologic Unit 17090009, at 75th Street, and at mile 0.6.	---	---	4-27-93	15
Pudding River	Molalla River	Lat 45°04'38", long 122°51'01", Marion County, Hydrologic Unit 17090009, on Waypark Drive, and at mile 35.8.	---	---	7- 8-93	135
Pudding River	Molalla River	Lat 45°07'33", long 122°49'13", Marion County, Hydrologic Unit 17090009, at Highway 214, and at mile 26.8.	---	---	7- 7-93	187
Butte Creek	Pudding River	Lat 45°07'56", long 122°47'08", Clackamas-Marion County, Hydrologic Unit 17090009, at Elliot Prairie Road, and at mile 2.4.	---	---	3- 3-93 4-28-93	186 443
Butte Creek	.....do.....	Lat 44°08'52", long 122°46'44", Clackamas-Marion County, Hydrologic Unit 17090009, at Highway 211, and at mile 1.0.	---	---	7- 7-93 7- 9-93	53 36
Rock Creek	Pudding River	Lat 45°09'56", long 122°44'09", Clackamas County, Hydrologic Unit 17090009, on Miller Road, and at mile 3.2.	---	---	4-28-93	132
Bear Creek	Rock Creek	Lat 45°11'38", long 122°43'17", Clackamas County, Hydrologic Unit 17090009, at Barlow- Monitor Road, and at mile 2.0.	---	---	4-28-93	48
Rock Creek	Pudding River	Lat 45°11'19", long 122°4'39", Clackamas County, Hydrologic Unit 17090009, on Meridan Road, and at mile 0.5.	---	---	3- 3-93	188
Mill Creek	Pudding River	Lat 45°14'00", long 122°45'26", Marion County, Hydrologic Unit 17090009, in Aurora on Fargo Road, and at mile 0.80.	---	---	3- 3-93 7- 8-93	84 6.2
Willamette River	Columbia River	Lat 45°18'00", long 122°41'30", Clackamas County, Hydrologic Unit 17090007, at mile 34.5.	---	---	11-12-92	16,400
Willamette River	.....do.....	Lat 45°18'00", long 122°39'40", Clackamas County, Hydrologic Unit 17090007, at New Era, and at mile 31.1.	---	---	11-12-92 9-22-93	16,400 11,100
14206450 Rock Creek	Tualatin River	Lat 45°30'09", long 122°56'48", in NW 1/4 NW 1/4 sec.9, T.1 N., R.2 W., Washington County, Hydrologic Unit 17090010, on Highway 8, nea Hillsboro.	74.0	1973-77, 1987, 1990-92	10-22-92 12- 4-92 1-25-93 1-28-93 2-24-93 3-18-93 4-14-93 5-13-93 6-14-93 7-13-93 8- 3-93 9- 2-93 9-29-93	d28 d63 d320 d230 d49 d259 d185 d74 d26 d13 d8.7 d6.7 d5.7
14206600 Christensen Creek	.....do.....	Lat 45°26'19", long 122°58'27", in NE 1/4 SE 1/4 sec.31, T.1 S., R.2 W., Washington County, Hydrologic Unit 17090010, on Robinson Road near Farmington.	---	1990-92	5-10-93 6-14-93 7-12-93 8- 9-93 9-13-93	8.6 4.1 0.28 0.51 0.35
14206650 Burris Creek	.....do.....	Lat 45°25'32", long 122°57'35", in NE 1/4 SW 1/4 sec.5, T.2 S., R.2 W., Washington County, Hydrologic Unit 17090010, on Highway 219 near Farmington.	3.30	1966-67, 1990-92	5-10-93 6-14-93 7-12-93 8- 9-93 9-13-93	8.0 3.4 1.5 1.0 1.2
14206670 McFee Creek	.....do.....	Lat 45°24'05", long 122°56'14", in NW 1/4 NE 1/4 sec.16, T.2 S., R.2 W., Washington County, Hydrologic Unit 17090010, at Highway 219	6.56	1966-67, 1990-92	5-10-93 6-14-93 7-12-93 8- 9-93 9-13-93	31 10 4.9 1.6 1.5

d Measurements made by Oregon Water Resources Department.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
14206680 Baker Creek	McFee Creek	Lat 45°24'08", long 122°55'36", in NW 1/4 NW 1/4 sec.15, T.2 S., R.2 W., Washington County, Hydrologic Unit 17090010, at Highway 210	9.31	1966-67, 1990-92	5-10-93 6-14-93 7-12-93 8- 9-93 9-13-93	23 6.3 3.0 1.5 1.1
Willamette River	.....do.....	Lat 45°22'27", long 122°38'25", Clackamas County, Hydrologic Unit 17090007, at mile 28.0.	---	---	11-12-92 9-22-93	16,300 11,500
14211000 Clackamas River	Willamette River	Lat 45°22'50", long 122°34'47", Clackamas County, Hydrologic Unit 17090011, at Clackamas, at Interstate 205 Bridge, and at mile 1.5.	---	---	1-21-92 2-19-92 4-19-93 3-31-93	3,220 9,170 7,750 5,880
Johnson Creek	.....do.....	Lat 45°28'33", long 122°33'13", Multnomah County, Hydrologic Unit 17090012, at 106th Avenue, and Johnson Creek in Portland, and at mile 7.3.	---	---	3-25-93	124
Johnson Creek	.....do.....	Lat 45°28'05", long 122°34'04", Multnomah County, Hydrologic Unit 17090012, at 92nd Ave. in Portland, and at mile 6.1.	---	1992	3-24-93 3-24-93 3-25-93	237 169 122
Johnson Creek	.....do.....	Lat 45°27'54", long 122°37'41", Multnomah County, Hydrologic Unit 17090012, at Berkeley Place, and at mile 2.3.	---	---	3-24-93 3-24-93	188 188
NESTUCCA RIVER BASIN						
14302850 Walker Creek	Nestucca River	Lat 45°18'12", long 123°24'53", in SE 1/4 SW 1/4 sec.15, T.3 S., R.6 W., Tillamook County, Hydrologic Unit 17100203, 0.4 mi upstream from Nestucca River, near Fairdale gaging station.	2.72	1991	12-19-91 1-17-92 1-31-92 4- 2-92 4-17-92 5- 5-92 6 -9-92 7-13-92 8-24-92 9-18-92 10- 3-92 12- 3-92 2- 3-93 4- 1-93 5-26-93 8- 6-93	10 17 40 2.5 57 7.5 1.3 0.45 0.13 0.39 0.40 22 16 11 5.4 1.0

SILETZ RIVER BASIN

Siletz River seepage investigations

Three series of discharge measurements were made on Aug. 31-Sept. 1, Sept. 15-16 and Sept. 28-29, 1993 on the Siletz River and tributaries to study channel gains and losses. The reach studied is 8.4 miles in length and extends from the gaging station Siletz River at Siletz (14305500) to river mile 34.2. The measurements were made during periods of stable flow, with no precipitation for 10 days prior to the Aug. 31-Sept. 1 and the Sept. 28-29 studies. During the Sept. 15-16 study 0.06 inches of rain fell at Corvallis. Streamflow records at the gaging station at Siletz indicated a steady decrease in discharge from Aug. 31 to Sept. 29. Tributary flow was considered a contribution and not a gain; diversion was considered a deduction and not a loss. Indicated gains or losses may be substantially in error due to inaccuracies in open-channel streamflow measurements.

Siletz River mile	Stream	Location	Meas. disch. (ft ³ /s)	Gain or loss	Meas. disch. (ft ³ /s)	Gain or loss	Meas. disch. (ft ³ /s)	Gain or loss
			Aug. 31-Sept. 1 1993		Sept. 15-16 1993		Sept. 28-29 1993	
42.6	Siletz River	Gaging station at Siletz (14305500)....	103.0	--	88.2	--	73.4	--
40.85	Diversion	City of Siletz intake, SW1/4NE1/4 sec.9, T.10 S., R.10 W.....	a0.2	--	a0.2	--	a0.2	--
40.8	Siletz River	SW1/4NE1/4 sec.9, T.10 S., R.10 W., at Hwy. 229 bridge.....	97.5	-5.3	84.9	-3.1	71.0	-2.2
40.1	Diversion	Georgia Pacific mill intake, NW1/4SW1/4 sec.9, T.10 S., R.10 W.....	b0.0	--	b0.0	--	b0.0	--
40.0	.....do.....	City of Toledo intake, SW1/4SW1/4 sec.9, T.10 S., R.10 W.....	c1.6	--	c1.7	--	c1.4	--
39.8	Mill Creek	NW1/4SE1/4 sec.8, T.10 S., R.10 W., 0.1 mile upstream from mouth.....	1.06	--	1.11	--	0.75	--
39.7	Siletz River	NE1/4SE1/4 sec.8, T.10 S., R.10 W.....	96.9	-0.1	--	--	--	--
39.6	.....do.....	SE1/4NE1/4 sec.8, T.10 S., R.10 W.....	--	--	86.2	1.9	72.3	2.0
39.2	Dewey Creek	SE1/4NW1/4 sec.8, T.10 S., R.10 W., 0.1 mi upstream from mouth.....	1.36	--	1.03	--	1.06	--
38.8	Siletz River	SE1/4SW1/4 sec.5, T.10 S., R.10 W.....	106.7	8.4	88.3	1.1	71.2	-2.2
38.2	Outfall	City of Siletz sewage treatment plant, SE1/4SE1/4 sec.5, T.10 S., R.10 W....	a0.0	--	a0.2	--	a0.0	--
37.7	Siletz River	SE1/4SW1/4 sec.4, T.10 S., R.10 W.....	109.0	2.3	--	--	--	--
37.4	.....do.....	NW1/4SW1/4 sec.4, T.10 S., R.10 W.....	--	--	90.3	1.8	80.0	8.8
37.1	.....do.....	NE1/4SE1/4 sec.5, T.10 S., R.10 W.....	103.9	-5.1	--	--	--	--
36.5	.....do.....	SE1/4NW1/4 sec.4, T.10 S., R.10 W.....	--	--	88.8	-1.5	73.9	-6.1
34.2	.....do.....	SE1/4SE1/4 se.33, T.9 S., R.10 W.....	106.3	2.4	86.8	-2.0	76.6	2.7
		Net gain or loss from river mile 42.6 to river mile 34.2		2.7		-1.8		3.0

a Furnished by City of Siletz

b Furnished by Georgia Pacific Co., Toledo, Or

c Furnished by City of Toledo

The Klamath Water Quality Study collected water samples from selected sites synoptically and monthly in 1993 to determine spatial variability and dynamics of nutrient loading to Upper Klamath Lake.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
421557120511000 FISHHOLE CREEK AT OUTFLOW HOLBROOK RESERVOIR (LAT 42 15 57N LONG 120 51 10W)							
NOV 1992							
19...	1000	1.0	291	5.5	--	2.5	0.90
MAY 1993							
13...	1315	13.5	98	3.7	--	0.80	0.30
JUL							
15...	1300	16.5	130	8.5	--	3.8	0.70
SEP							
23...	0900	12.0	143	20	--	0.70	1.3
421720120584900 ROBINSON CREEK ABOVE FISHHOLE CREEK (LAT 42 17 20N LONG 120 58 49W)							
NOV 1992							
18...	1620	6.5	17	1.4	--	0.80	<0.20
APR 1993							
01...	1445	9.5	76	12	--	0.90	0.20
MAY							
13...	1600	17.5	115	4.5	--	0.80	<0.20
JUL							
15...	0945	11.5	122	2.6	--	0.90	0.30
SEP							
21...	1330	14.0	176	3.3	--	0.90	0.30
421724120564200 FISHHOLE CREEK ABOVE DEVIL LAKE (LAT 42 17 24N LONG 120 56 42W)							
NOV 1992							
18...	1515	1.0	230	8.7	--	2.2	0.30
APR 1993							
01...	1100	4.5	85	19	--	1.1	0.60
MAY							
13...	1445	17.0	134	4.8	--	1.0	0.70
JUL							
15...	1115	15.0	130	2.0	--	0.50	0.60
SEP							
23...	1340	11.0	216	4.2	9.4	1.0	0.40
421930120545400 PARADISE CREEK ABOVE BADGER CREEK (LAT 42 19 30N LONG 120 54 54W)							
NOV 1992							
18...	1400	4.5	178	0.83	--	0.70	<0.20
MAR 1993							
31...	1615	7.0	89	11	--	1.3	0.40
MAY							
12...	0915	9.0	124	1.0	--	1.1	<0.20
JUL							
14...	1315	13.5	156	1.2	--	0.70	<0.20
SEP							
23...	1215	6.5	167	1.3	10.2	0.70	<0.20
422052120440900 WHITWORTH CREEK ABOVE DUTCH OVEN FLAT CREEK (LAT 42 20 52N LONG 120 44 09W)							
NOV 1992							
19...	0900	0.0	65	3.8	--	2.3	<0.20
APR 1993							
01...	1000	2.0	105	10	--	0.70	0.40
MAY							
13...	0915	5.5	94	6.5	--	0.60	0.30
JUL							
15...	1145	10.0	149	15	--	0.50	0.30
SEP							
23...	1300	7.5	155	3.6	--	0.30	<0.20
422109121020300 POLE CREEK ABOVE FISHHOLE CREEK (LAT 42 21 09N LONG 121 02 03W)							
APR 1993							
01...	1315	7.5	71	7.0	--	1.0	0.20
MAY							
13...	1730	19.5	108	1.3	--	0.80	<0.20
JUL							
14...	1645	22.0	115	0.82	--	0.70	<0.20
SEP							
21...	1430	17.0	147	1.9	--	1.2	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
421557120511000 FISHHOLE CREEK AT OUTFLOW HOLBROOK RESERVOIR (LAT 42 15 57N LONG 120 51 10W)							
NOV 1992							
19...	0.08	0.08	0.479	0.08	0.01	--	--
MAY 1993							
13...	0.02	<0.01	<0.005	0.06	0.04	--	--
JUL							
15...	0.10	<0.01	0.005	0.12	0.08	--	--
SEP							
23...	0.07	<0.01	0.006	0.25	0.19	9	--
421720120584900 ROBINSON CREEK ABOVE FISHHOLE CREEK (LAT 42 17 20N LONG 120 58 49W)							
NOV 1992							
18...	0.01	<0.01	0.008	0.02	0.02	--	--
APR 1993							
01...	0.01	<0.01	0.016	0.01	<0.01	--	--
MAY							
13...	0.01	<0.01	<0.005	0.02	0.01	--	--
JUL							
15...	0.04	<0.01	<0.005	0.03	<0.01	--	--
SEP							
21...	0.01	<0.01	<0.005	0.03	<0.01	3	--
421724120564200 FISHHOLE CREEK ABOVE DEVIL LAKE (LAT 42 17 24N LONG 120 56 42W)							
NOV 1992							
18...	0.02	<0.01	0.007	0.06	0.06	--	--
APR 1993							
01...	0.01	<0.01	0.045	0.06	0.04	--	--
MAY							
13...	0.01	<0.01	<0.005	0.10	0.04	--	--
JUL							
15...	0.02	<0.01	<0.005	0.05	0.02	--	--
SEP							
23...	0.02	<0.01	<0.005	0.06	0.02	2	--
421930120545400 PARADISE CREEK ABOVE BADGER CREEK (LAT 42 19 30N LONG 120 54 54W)							
NOV 1992							
18...	0.01	<0.01	0.036	0.04	0.04	--	--
MAR 1993							
31...	0.01	<0.01	0.302	0.04	0.04	--	--
MAY							
12...	0.02	<0.01	0.012	0.02	0.02	--	--
JUL							
14...	0.04	<0.01	0.029	0.04	0.02	--	--
SEP							
23...	0.02	<0.01	0.015	0.08	0.03	--	--
422052120440900 WHITWORTH CREEK ABOVE DUTCH OVEN FLAT CREEK (LAT 42 20 52N LONG 120 44 09W)							
NOV 1992							
19...	0.02	0.02	0.047	0.08	0.07	--	--
APR 1993							
01...	0.01	<0.01	0.053	0.02	<0.01	--	--
MAY							
13...	0.01	<0.01	<0.005	0.02	0.01	--	--
JUL							
15...	<0.01	<0.01	<0.005	0.06	<0.01	--	--
SEP							
23...	<0.01	<0.01	<0.005	0.02	<0.01	2	--
422109121020300 POLE CREEK ABOVE FISHHOLE CREEK (LAT 42 21 09N LONG 121 02 03W)							
APR 1993							
01...	0.01	<0.01	<0.005	<0.01	0.02	--	--
MAY							
13...	0.01	<0.01	<0.005	<0.01	0.02	--	--
JUL							
14...	0.02	<0.01	<0.005	0.02	<0.01	--	--
SEP							
21...	0.02	<0.01	<0.005	0.02	<0.01	10	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY
WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
422223120575500 SOUTH FORK SPRAGUE RIVER BELOW ISH TISH CREEK (LAT 42 22 23N LONG 120 57 55W)							
NOV 1992							
18...	1300	2.0	103	1.3	--	0.60	<0.20
APR 1993							
01...	1400	7.0	54	14	--	0.90	0.90
MAY							
12...	1030	7.0	52	7.5	--	0.60	<0.20
JUL							
14...	1730	17.5	86	1.7	--	0.30	<0.20
SEP							
23...	1030	5.5	97	2.5	10.9	0.50	<0.20
422253120443300 POTHOLE CREEK ABOVE LANTERN FLAT CREEK (LAT 42 22 53N LONG 120 44 33W)							
NOV 1992							
19...	1145	0.0	81	1.1	--	0.60	<0.20
APR 1993							
01...	1040	2.5	77	3.7	--	0.60	<0.20
MAY							
13...	1350	8.0	62	6.8	--	0.50	0.20
JUL							
15...	1100	8.5	90	1.0	--	0.20	<0.20
SEP							
23...	1230	6.5	109	1.2	--	0.40	<0.20
422257121483700 BARKLEY SPRING ABOVE UPPER KLAMATH LAKE (LAT 42 22 57N LONG 121 48 37W)							
NOV 1992							
18...	1445	12.0	117	0.34	--	2.1	<0.20
MAR 1993							
31...	1815	11.0	136	0.30	--	1.3	1.0
MAY							
11...	1645	12.0	135	1.3	--	1.7	<0.20
JUL							
15...	1430	12.0	133	0.20	--	1.5	<0.20
SEP							
23...	0745	12.0	133	0.59	--	1.7	<0.20
422327120450000 UNNAMED CREEK FROM LANTERN FLAT ABOVE POTHOLE CREEK (LAT 42 23 27N LONG 120 45 00W)							
MAY 1993							
13...	1305	12.0	74	2.8	--	0.70	0.20
JUL							
15...	1000	8.0	114	2.6	--	0.40	<0.20
SEP							
23...	1200	6.5	126	3.3	--	0.50	<0.20
422331121220800 UNNAMED TRIBUTARY ABOVE WHISKEY CREEK (LAT 42 23 31N LONG 121 22 08W)							
MAY 1993							
12...	0900	9.0	66	3.4	--	0.80	0.30
422339120594900 PARADISE CREEK ABOVE SOUTH FORK SPRAGUE RIVER (LAT 42 23 39N LONG 120 59 49W)							
MAY 1993							
12...	1015	16.0	173	5.2	--	1.4	0.50
422345121133000 BROWN CREEK BELOW MINERAL CREEK (LAT 42 23 45N LONG 121 13 30W)							
APR 1993							
01...	1600	7.0	62	16	--	1.3	0.20
MAY							
12...	1515	15.5	85	5.2	--	1.2	<0.20
JUL							
13...	1430	19.5	115	4.2	--	1.1	<0.20
422348121213800 WHISKEY CREEK 7.2 MILES ABOVE SPRAGUE RIVER (LAT 42 23 48N LONG 121 21 38W)							
NOV 1992							
19...	1630	2.0	334	6.8	--	2.2	1.1
MAR 1993							
31...	0930	4.0	64	4.5	--	0.80	0.20
MAY							
12...	1800	18.0	96	2.7	--	0.60	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
422223120575500 SOUTH FORK SPRAGUE RIVER BELOW ISH TISH CREEK (LAT 42 22 23N LONG 120 57 55W)							
NOV 1992							
18...	0.01	<0.01	0.006	0.01	0.02	--	--
APR 1993							
01...	0.01	<0.01	0.038	0.04	0.02	--	--
MAY							
12...	0.01	<0.01	0.02	0.02	0.02	--	--
JUL							
14...	0.04	<0.01	<0.005	0.03	0.02	--	--
SEP							
23...	<0.01	<0.01	<0.005	0.06	0.02	2	--
422253120443300 POTHOLE CREEK ABOVE LANTERN FLAT CREEK (LAT 42 22 53N LONG 120 44 33W)							
NOV 1992							
19...	0.02	<0.01	0.006	<0.01	<0.01	--	--
APR 1993							
01...	0.01	<0.01	0.062	<0.01	<0.01	--	--
MAY							
13...	<0.01	<0.01	0.019	0.02	<0.01	--	--
JUL							
15...	<0.01	<0.01	<0.005	<0.01	<0.01	--	--
SEP							
23...	<0.01	<0.01	<0.005	0.01	<0.01	1	--
422257121483700 BARKLEY SPRING ABOVE UPPER KLAMATH LAKE (LAT 42 22 57N LONG 121 48 37W)							
NOV 1992							
18...	0.02	0.02	0.156	0.07	0.05	--	--
MAR 1993							
31...	0.07	<0.01	0.082	0.07	0.02	--	--
MAY							
11...	0.01	<0.01	0.149	0.05	0.06	--	--
JUL							
15...	<0.01	<0.01	0.157	0.06	0.06	--	--
SEP							
23...	<0.01	<0.01	0.142	0.08	0.06	--	--
422327120450000 UNNAMED CREEK FROM LANTERN FLAT ABOVE POTHOLE CREEK (LAT 42 23 27N LONG 120 45 00W)							
MAY 1993							
13...	0.01	<0.01	<0.005	0.05	0.04	--	--
JUL							
15...	<0.01	<0.01	<0.005	0.07	0.04	--	--
SEP							
23...	0.01	<0.01	<0.005	0.09	0.09	111	--
422331121220800 UNNAMED TRIBUTARY ABOVE WHISKEY CREEK (LAT 42 23 31N LONG 121 22 08W)							
MAY 1993							
12...	0.01	<0.01	0.024	0.03	0.02	--	--
422339120594900 PARADISE CREEK ABOVE SOUTH FORK SPRAGUE RIVER (LAT 42 23 39N LONG 120 59 49W)							
MAY 1993							
12...	0.02	<0.01	<0.005	0.08	0.04	--	--
422345121133000 BROWN CREEK BELOW MINERAL CREEK (LAT 42 23 45N LONG 121 13 30W)							
APR 1993							
01...	<0.01	<0.01	0.034	0.04	0.03	--	--
MAY							
12...	0.02	<0.01	<0.005	0.04	0.03	--	--
JUL							
13...	0.05	<0.01	0.005	0.04	0.02	--	--
422348121213800 WHISKEY CREEK 7.2 MILES ABOVE SPRAGUE RIVER (LAT 42 23 48N LONG 121 21 38W)							
NOV 1992							
19...	0.02	0.01	0.019	0.22	<0.01	--	--
MAR 1993							
31...	0.01	<0.01	0.045	0.03	0.02	--	--
MAY							
12...	0.01	<0.01	<0.005	0.03	0.02	--	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE- WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
422350121162200 WEST FORK BROWN CREEK ABOVE BROWN CREEK (LAT 42 23 50N LONG 121 16 22W)							
MAR 1993							
31...	1800	7.5	64	5.7	--	0.80	0.20
MAY							
12...	1430	18.0	73	2.4	--	0.80	<0.20
JUL							
13...	1330	19.0	102	2.3	--	0.70	<0.20
SEP							
23...	0830	6.5	124	13	7.6	0.70	0.30
422355120592700 SOUTH FORK SPRAGUE RIVER ABOVE PARADISE CREEK (LAT 42 23 55N LONG 120 59 27W)							
NOV 1992							
19...	0830	2.0	89	6.0	--	0.60	<0.20
MAR 1993							
31...	1345	10.0	56	12	--	0.90	0.20
MAY							
12...	1200	8.5	52	16	--	0.60	0.30
JUL							
14...	1500	18.5	72	2.1	--	0.40	<0.20
SEP							
22...	1010	7.0	101	2.8	10.4	0.50	<0.20
422428121210300 WHISKEY CREEK 6.0 MILES ABOVE SPRAGUE RIVER (LAT 42 24 28N LONG 121 21 03W)							
NOV 1992							
18...	1600	4.5	144	2.9	--	0.70	0.30
MAR 1993							
31...	1000	6.0	67	5.0	--	0.80	0.30
MAY							
12...	1700	22.0	102	5.5	--	0.60	0.30
422449120445300 ROUND SPRING ON BUCKBOARD CR AB S FK SPRAGUE RIVER (LAT 42 24 49N LONG 120 44 53W)							
MAY 1993							
13...	1055	8.0	60	5.6	--	0.70	<0.20
422450120570000 LONG CREEK ABOVE CAMPBELL RESERVOIR (LAT 42 24 50N LONG 120 57 00W)							
MAR 1993							
31...	1245	10.5	56	4.8	--	0.80	<0.20
MAY							
13...	1415	19.0	52	28	--	0.60	0.20
422456121005900 SOUTH FORK SPRAGUE RIVER ABOVE DEMING CREEK (LAT 42 24 56N LONG 121 00 59W)							
NOV 1992							
18...	1645	6.0	98	9.8	--	0.70	0.20
APR 1993							
01...	1100	5.0	81	25	--	0.90	0.30
422500120445400 BLONDE SPRING ABOVE BUCKBOARD CREEK (LAT 42 25 00N LONG 120 44 54W)							
MAY 1993							
13...	1030	7.5	56	11	--	0.80	<0.20
SEP							
23...	1100	6.0	97	5.5	--	0.40	<0.20
422537120582600 LONG CREEK BELOW CAMPBELL RESERVOIR (LAT 42 25 37N LONG 120 58 26W)							
MAR 1993							
31...	1145	11.0	82	17	--	1.0	0.40
MAY							
13...	1300	18.0	50	14	--	0.60	0.40
JUL							
14...	1630	17.0	59	6.1	--	0.50	0.30
SEP							
21...	1130	15.0	59	15	--	0.50	0.80

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
422350121162200 WEST FORK BROWN CREEK ABOVE BROWN CREEK (LAT 42 23 50N LONG 121 16 22W)							
MAR 1993							
31...	<0.01	<0.01	0.011	0.01	0.02	--	--
MAY							
12...	0.02	<0.01	<0.005	0.03	0.03	--	--
JUL							
13...	0.03	<0.01	0.024	0.04	0.03	--	--
SEP							
23...	0.02	<0.01	<0.005	0.08	0.02	11	--
422355120592700 SOUTH FORK SPRAGUE RIVER ABOVE PARADISE CREEK (LAT 42 23 55N LONG 120 59 27W)							
NOV 1992							
19...	0.02	0.01	<0.005	0.03	0.02	--	--
MAR 1993							
31...	0.02	<0.01	0.045	0.02	0.02	--	--
MAY							
12...	0.02	<0.01	0.012	0.03	0.02	--	--
JUL							
14...	0.01	<0.01	<0.005	0.03	0.02	--	--
SEP							
22...	<0.01	<0.01	<0.005	0.06	0.02	2	--
422428121210300 WHISKEY CREEK 6.0 MILES ABOVE SPRAGUE RIVER (LAT 42 24 28N LONG 121 21 03W)							
NOV 1992							
18...	0.02	0.02	0.011	0.02	<0.01	--	--
MAR 1993							
31...	0.01	<0.01	0.008	0.03	0.03	--	--
MAY							
12...	0.02	<0.01	<0.005	0.07	0.04	--	--
422449120445300 ROUND SPRING ON BUCKBOARD CR AB S FK SPRAGUE RIVER (LAT 42 24 49N LONG 120 44 53W)							
MAY 1993							
13...	0.01	<0.01	0.211	<0.01	0.01	--	--
422450120570000 LONG CREEK ABOVE CAMPBELL RESERVOIR (LAT 42 24 50N LONG 120 57 00W)							
MAR 1993							
31...	0.01	<0.01	<0.005	0.05	0.02	--	--
MAY							
13...	0.03	<0.01	0.005	0.05	0.02	--	--
422456121005900 SOUTH FORK SPRAGUE RIVER ABOVE DEMING CREEK (LAT 42 24 56N LONG 121 00 59W)							
NOV 1992							
18...	0.03	0.01	<0.005	0.04	0.02	--	--
APR 1993							
01...	<0.01	<0.01	0.048	0.05	0.02	--	--
422500120445400 BLONDE SPRING ABOVE BUCKBOARD CREEK (LAT 42 25 00N LONG 120 44 54W)							
MAY 1993							
13...	0.01	<0.01	0.288	0.02	<0.01	--	--
SEP							
23...	<0.01	<0.01	0.028	0.01	<0.01	5	--
422537120582600 LONG CREEK BELOW CAMPBELL RESERVOIR (LAT 42 25 37N LONG 120 58 26W)							
MAR 1993							
31...	0.01	<0.01	0.008	0.04	0.02	--	--
MAY							
13...	0.02	<0.01	<0.005	0.07	0.02	--	--
JUL							
14...	0.04	<0.01	0.008	0.08	0.03	--	--
SEP							
21...	0.05	0.02	0.081	0.09	0.04	7	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
422543120524900 LONG CREEK ABOVE SWEDE CABIN FLAT (LAT 42 25 43N LONG 120 52 49W)							
NOV 1992							
19...	0945	2.0	53	13	--	0.90	0.40
MAR 1993							
31...	1645	6.0	47	7.1	--	0.80	<0.20
MAY							
13...	1115	7.0	72	16	--	0.60	<0.20
JUL							
14...	1600	14.0	72	1.8	--	0.40	<0.20
SEP							
21...	1045	9.0	65	1.3	--	0.40	<0.20
422558121264500 ROCK CREEK ABOVE SPRAGUE RIVER (LAT 42 25 58N LONG 121 26 45W)							
MAR 1993							
31...	1100	6.0	90	6.3	--	0.80	0.30
MAY							
12...	1600	19.0	143	2.1	--	0.60	<0.20
JUL							
13...	1545	24.5	195	0.50	--	0.40	0.20
422602121005700 DEMING CREEK BELOW LONG CREEK (LAT 42 26 02N LONG 121 00 57W)							
NOV 1992							
18...	1100	2.0	107	4.5	--	0.60	<0.20
MAR 1993							
31...	1530	12.0	73	6.8	--	1.4	0.30
MAY							
12...	1630	23.0	69	10	--	0.70	0.80
JUL							
14...	1130	16.5	72	4.2	--	0.30	0.30
SEP							
22...	1405	11.5	115	5.3	9.4	0.60	0.40
422623121053900 SOUTH FORK SPRAGUE RIVER BELOW LEONARD SLOUGH (LAT 42 26 23N LONG 121 05 39W)							
NOV 1992							
18...	1100	0.0	112	5.6	--	0.80	<0.20
MAR 1993							
31...	1400	7.0	81	16	--	1.2	0.50
MAY							
12...	1300	11.5	59	12	--	0.70	<0.20
JUL							
14...	1130	19.5	137	3.6	--	1.2	0.40
SEP							
22...	1600	14.5	182	7.8	11.1	2.3	0.50
422650121141500 SPRAGUE RIVER 4.5 MILES AB SYCAN RIVER (LAT 42 26 51N LONG 121 14 14W)							
NOV 1992							
17...	0930	7.0	100	4.6	--	0.90	<0.20
DEC							
28...	1310	5.0	96	1.7	--	1.0	0.40
JAN 1993							
29...	1040	3.0	99	16	--	1.2	<0.20
FEB							
26...	1115	3.5	109	19	--	1.3	0.70
MAR							
11...	1110	3.0	77	35	--	1.4	0.70
16...	1600	5.0	72	26	--	1.4	0.60
17...	1100	6.0	62	--	--	1.2	0.70
23...	1420	8.0	73	32	--	1.0	0.40
25...	1120	6.0	73	35	--	1.2	0.60
31...	0930	7.0	77	110	--	1.1	0.40
APR							
08...	1025	9.0	75	9.6	--	1.0	0.20
13...	1515	8.5	82	--	--	1.0	1.3
22...	0950	9.0	76	--	--	1.0	<0.20
29...	1500	13.5	67	--	--	0.70	<0.20
MAY							
11...	1145	13.5	56	15	--	0.70	0.30
JUN							
16...	1530	16.0	93	4.3	--	0.70	<0.20
JUL							
14...	0900	16.0	108	4.3	--	1.0	<0.20
AUG							
19...	1450	18.5	--	3.1	--	1.9	0.30
SEP							
21...	0900	11.5	125	5.0	7.8	1.5	0.30
21...	1608	14.5	124	--	10.1	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
422543120524900 LONG CREEK ABOVE SWEDE CABIN FLAT (LAT 42 25 43N LONG 120 52 49W)							
NOV 1992							
19...	0.01	0.01	0.034	0.04	0.02	--	--
MAR 1993							
31...	<0.01	<0.01	0.055	0.02	0.03	--	--
MAY							
13...	0.01	<0.01	0.063	0.03	0.02	--	--
JUL							
14...	0.03	<0.01	0.006	0.03	0.02	--	--
SEP							
21...	0.01	<0.01	<0.005	0.04	0.03	--	--
422558121264500 ROCK CREEK ABOVE SPRAGUE RIVER (LAT 42 25 58N LONG 121 26 45W)							
MAR 1993							
31...	<0.01	<0.01	0.26	0.03	0.05	--	--
MAY							
12...	0.03	<0.01	<0.005	0.04	0.04	--	--
JUL							
13...	0.05	<0.01	0.016	0.04	0.03	--	--
422602121005700 DEMING CREEK BELOW LONG CREEK (LAT 42 26 02N LONG 121 00 57W)							
NOV 1992							
18...	0.02	0.01	0.011	0.03	0.02	--	--
MAR 1993							
31...	0.01	<0.01	0.077	0.03	0.04	--	--
MAY							
12...	0.02	<0.01	<0.005	0.12	0.03	--	--
JUL							
14...	0.03	<0.01	<0.005	0.06	0.03	--	--
SEP							
22...	0.02	<0.01	0.011	0.08	0.03	8	--
422623121053900 SOUTH FORK SPRAGUE RIVER BELOW LEONARD SLOUGH (LAT 42 26 23N LONG 121 05 39W)							
NOV 1992							
18...	0.02	0.01	<0.005	0.02	0.01	--	--
MAR 1993							
31...	<0.01	<0.01	0.032	0.03	0.03	--	--
MAY							
12...	0.02	<0.01	0.017	0.04	0.03	--	--
JUL							
14...	0.04	<0.01	0.005	0.05	0.02	--	--
SEP							
22...	0.06	<0.01	<0.005	0.06	0.03	5	--
422650121141500 SPRAGUE RIVER 4.5 MILES AB SYCAN RIVER (LAT 42 26 51N LONG 121 14 14W)							
NOV 1992							
17...	0.02	<0.01	0.04	0.05	0.03	--	--
DEC							
28...	0.04	0.02	0.053	0.12	0.11	--	--
JAN 1993							
29...	0.02	0.02	0.077	0.06	0.04	--	--
FEB							
26...	0.03	0.01	0.074	0.14	0.04	--	--
MAR							
11...	0.06	<0.01	0.196	0.17	0.08	--	--
16...	0.05	<0.01	0.199	0.15	0.08	--	--
17...	0.06	<0.01	0.204	0.22	0.06	--	--
23...	0.02	<0.01	0.142	0.06	0.05	--	--
25...	0.05	0.01	0.119	0.07	0.07	--	--
31...	<0.01	<0.01	0.062	0.05	0.05	--	--
APR							
08...	0.02	0.01	0.023	0.05	0.03	--	--
13...	0.03	0.01	0.022	0.25	0.04	--	--
22...	0.01	<0.01	0.011	0.04	0.03	--	--
29...	<0.01	<0.01	0.009	<0.01	0.03	--	--
MAY							
11...	0.01	<0.01	<0.005	0.05	0.03	--	--
JUN							
16...	0.02	<0.01	0.016	0.06	0.03	--	--
JUL							
14...	0.04	<0.01	0.026	0.06	0.04	--	--
AUG							
19...	0.04	<0.01	0.025	0.06	0.05	--	--
SEP							
21...	0.03	<0.01	0.023	0.05	0.04	7	--
21...	--	--	--	--	--	--	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
422709120465700 SOUTH FORK SPRAGUE RIVER BELOW CORRAL CREEK (LAT 42 27 09N LONG 120 46 57W)							
NOV 1992							
19...	1100	0.0	56	2.5	--	0.30	<0.20
MAY 1993							
13...	1030	4.5	25	4.3	--	0.60	<0.20
JUL							
14...	1530	12.0	47	1.5	--	0.20	<0.20
SEP							
21...	0915	3.0	45	1.0	--	0.30	<0.20
422710120565200 DEMING CREEK ABOVE SWING FIELD (LAT 42 27 10N LONG 120 56 52W)							
NOV 1992							
18...	0915	1.0	55	1.5	--	0.40	<0.20
MAR 1993							
31...	1045	6.0	32	1.9	--	0.40	<0.20
MAY							
12...	1445	8.5	35	3.3	--	0.30	<0.20
JUL							
14...	1330	10.0	30	0.45	--	0.10	2.0
SEP							
22...	1210	7.0	56	2.0	10.3	0.40	<0.20
422721121064300 NORTH FORK SPRAGUE RIVER ABOVE SPRAGUE RIVER (LAT 42 27 21N LONG 121 06 43W)							
NOV 1992							
19...	1130	0.5	38	1.9	--	0.40	<0.20
APR 1993							
01...	0915	5.0	57	31	--	0.80	0.60
MAY							
13...	1630	11.0	40	20	--	0.50	0.20
JUL							
15...	1530	14.5	70	3.7	--	0.50	<0.20
SEP							
23...	1530	13.0	86	8.9	--	0.60	0.20
422737121161200 SPRAGUE RIVER 1.2 MILES ABOVE SYCAN RIVER (LAT 42 27 37N LONG 121 16 12W)							
NOV 1992							
17...	1300	8.5	101	6.7	--	0.90	<0.20
MAR 1993							
30...	0900	7.0	81	13	--	1.1	0.30
MAY							
11...	0930	12.5	60	12	--	0.70	<0.20
JUL							
13...	1045	17.5	111	4.2	--	0.80	<0.20
SEP							
21...	1115	12.5	115	4.1	10.3	1.4	0.30
422748121301700 SPRAGUE RIVER ABOVE TROUT CREEK (LAT 42 27 48N LONG 121 30 17W)							
NOV 1992							
19...	1330	6.0	137	9.2	--	1.0	0.20
MAR 1993							
31...	1245	8.5	80	100	--	1.2	0.60
MAY							
13...	1000	14.0	62	15	--	0.80	0.40
13...	1600	16.5	60	15	--	0.70	0.20
JUL							
14...	1445	19.0	315	8.0	--	0.90	0.30
SEP							
22...	1300	12.5	144	5.9	--	1.5	0.30
422851121071500 FIVEMILE CREEK ABOVE NORTH FORK SPRAGUE RIVER (LAT 42 28 51N LONG 121 07 15W)							
NOV 1992							
19...	0900	3.0	40	2.1	--	0.60	<0.20
MAR 1993							
31...	1200	7.0	54	18	--	1.1	0.30
MAY							
13...	1845	16.0	81	5.8	--	0.70	<0.20
JUL							
15...	1135	13.0	15	3.5	--	0.60	<0.20
SEP							
23...	1230	9.0	75	3.4	--	0.60	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
422709120465700 SOUTH FORK SPRAGUE RIVER BELOW CORRAL CREEK (LAT 42 27 09N LONG 120 46 57W)							
NOV 1992							
19...	0.02	0.01	0.006	0.09	0.07	--	--
MAY 1993							
13...	0.03	<0.01	<0.005	0.02	0.02	--	--
JUL							
14...	0.04	<0.01	<0.005	0.08	0.06	--	--
SEP							
21...	0.01	<0.01	<0.005	0.08	0.07	0	--
422710120565200 DEMING CREEK ABOVE SWING FIELD (LAT 42 27 10N LONG 120 56 52W)							
NOV 1992							
18...	0.02	0.02	0.019	0.04	0.02	--	--
MAR 1993							
31...	<0.01	<0.01	0.007	0.02	0.02	--	--
MAY							
12...	0.03	<0.01	0.005	0.03	0.03	--	--
JUL							
14...	0.03	<0.01	<0.005	0.04	0.02	--	--
SEP							
22...	0.02	<0.01	<0.005	0.03	0.03	4	--
422721121064300 NORTH FORK SPRAGUE RIVER ABOVE SPRAGUE RIVER (LAT 42 27 21N LONG 121 06 43W)							
NOV 1992							
19...	<0.01	0.02	0.006	0.07	0.03	--	--
APR 1993							
01...	0.01	<0.01	0.07	0.08	0.03	--	--
MAY							
13...	0.02	<0.01	0.012	0.08	0.03	--	--
JUL							
15...	0.02	<0.01	0.008	0.06	0.04	--	--
SEP							
23...	0.02	<0.01	<0.005	0.05	0.03	9	--
422737121161200 SPRAGUE RIVER 1.2 MILES ABOVE SYCAN RIVER (LAT 42 27 37N LONG 121 16 12W)							
NOV 1992							
17...	0.02	0.01	0.018	0.06	0.03	--	--
MAR 1993							
30...	0.02	<0.01	0.074	0.07	0.04	--	--
MAY							
11...	0.02	<0.01	0.016	0.04	0.04	--	--
JUL							
13...	0.04	<0.01	0.008	0.06	0.04	--	--
SEP							
21...	0.03	<0.01	0.006	0.05	0.04	8	--
422748121301700 SPRAGUE RIVER ABOVE TROUT CREEK (LAT 42 27 48N LONG 121 30 17W)							
NOV 1992							
19...	<0.01	0.02	0.008	0.09	0.02	--	--
MAR 1993							
31...	0.02	<0.01	0.053	0.04	0.04	--	--
MAY							
13...	0.01	<0.01	<0.005	0.05	0.03	--	--
13...	0.02	<0.01	0.006	0.04	0.02	--	--
JUL							
14...	<0.01	<0.01	0.006	0.07	0.04	--	--
SEP							
22...	0.02	<0.01	<0.005	0.06	0.03	5	--
422851121071500 FIVEMILE CREEK ABOVE NORTH FORK SPRAGUE RIVER (LAT 42 28 51N LONG 121 07 15W)							
NOV 1992							
19...	<0.01	0.02	0.011	0.07	0.03	--	--
MAR 1993							
31...	0.01	<0.01	0.029	0.05	0.04	--	--
MAY							
13...	0.02	<0.01	<0.005	0.06	0.05	--	--
JUL							
15...	0.03	<0.01	<0.005	0.07	0.04	--	--
SEP							
23...	0.01	<0.01	<0.005	0.05	0.04	3	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
422907121054100 NORTH FORK SPRAGUE RIVER ABOVE MERYL CREEK (LAT 42 29 07N LONG 121 05 41W)							
NOV 1992							
19...	1020	0.5	40	1.5	--	0.30	<0.20
MAR 1993							
31...	1615	7.0	46	6.3	--	0.60	0.90
MAY							
13...	0930	5.0	32	18	--	0.50	0.20
JUL							
15...	1300	14.5	44	1.8	--	0.40	<0.20
SEP							
23...	1400	13.0	91	3.9	--	0.50	0.40
422908121163900 SYCAN RIVER ABOVE SPRAGUE RIVER (LAT 42 29 08N LONG 121 16 39W)							
NOV 1992							
17...	1530	7.0	188	6.2	--	1.2	0.30
MAR 1993							
30...	1400	8.0	52	14	--	1.0	0.60
MAY							
11...	1330	17.0	59	5.2	--	0.80	0.40
JUL							
13...	0945	17.0	114	2.5	--	0.70	0.50
SEP							
21...	1400	13.0	143	1.7	11.1	1.2	0.30
422945121361000 TROUT CREEK ABOVE SPRAGUE RIVER (LAT 42 29 45N LONG 121 36 10W)							
MAY 1993							
12...	1300	13.0	83	8.2	--	0.70	<0.20
JUL							
14...	1300	14.5	10	4.2	--	0.50	<0.20
SEP							
22...	1045	6.5	109	4.3	--	0.50	0.40
422949121002500 NORTH FORK SPRAGUE RIVER BELOW YADEN CREEK (LAT 42 29 49N LONG 121 00 25W)							
NOV 1992							
18...	1500	6.0	57	1.8	--	0.30	<0.20
MAR 1993							
31...	0930	4.0	25	5.5	--	0.60	<0.20
JUL							
14...	0930	8.5	40	1.0	--	0.40	<0.20
SEP							
23...	0920	6.0	52	1.4	--	0.40	<0.20
423009121155000 SNAKE CREEK ABOVE SYCAN RIVER (LAT 42 30 09N LONG 121 15 50W)							
NOV 1992							
18...	0900	0.0	47	2.2	--	1.2	0.50
MAR 1993							
30...	1600	12.0	302	1.0	--	3.7	0.70
MAY							
11...	1530	25.0	170	2.7	--	1.9	0.70
JUL							
13...	0845	12.0	588	3.4	--	1.8	0.50
SEP							
21...	1515	15.0	466	1.7	9.9	1.8	0.80
423021121054500 MERYL CREEK ABOVE NORTH FORK SPRAGUE RIVER (LAT 42 30 21N LONG 121 05 45W)							
NOV 1992							
18...	1610	5.0	99	2.4	--	0.50	<0.20
MAR 1993							
30...	1415	7.0	54	22	--	1.0	0.40
MAY							
13...	0920	8.0	48	9.8	--	0.80	<0.20
JUL							
15...	1030	9.0	47	4.4	--	0.50	<0.20
SEP							
23...	1110	7.0	85	8.8	--	0.70	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
422907121054100 NORTH FORK SPRAGUE RIVER ABOVE MERYL CREEK (LAT 42 29 07N LONG 121 05 41W)							
NOV 1992							
19...	<0.01	0.02	0.015	0.06	0.03	--	--
MAR 1993							
31...	<0.01	<0.01	0.034	0.06	0.02	--	--
MAY							
13...	0.02	<0.01	0.012	0.04	0.02	--	--
JUL							
15...	0.04	<0.01	<0.005	0.07	0.05	--	--
SEP							
23...	0.02	<0.01	<0.005	0.06	0.03	2	--
422908121163900 SYCAN RIVER ABOVE SPRAGUE RIVER (LAT 42 29 08N LONG 121 16 39W)							
NOV 1992							
17...	0.02	0.01	0.021	0.06	0.06	--	--
MAR 1993							
30...	0.03	<0.01	0.055	0.05	0.02	--	--
MAY							
11...	0.02	<0.01	0.011	0.03	0.02	--	--
JUL							
13...	0.05	<0.01	0.041	0.05	0.02	--	--
SEP							
21...	0.03	<0.01	0.037	0.04	0.03	2	--
422945121361000 TROUT CREEK ABOVE SPRAGUE RIVER (LAT 42 29 45N LONG 121 36 10W)							
MAY 1993							
12...	0.02	<0.01	<0.005	0.04	0.03	--	--
JUL							
14...	0.02	<0.01	<0.005	0.03	0.02	--	--
SEP							
22...	0.01	<0.01	<0.005	0.04	0.02	3	--
422949121002500 NORTH FORK SPRAGUE RIVER BELOW YADEN CREEK (LAT 42 29 49N LONG 121 00 25W)							
NOV 1992							
18...	0.02	0.01	0.02	0.05	0.04	--	--
MAR 1993							
31...	0.01	<0.01	0.051	0.03	0.02	--	--
JUL							
14...	0.04	<0.01	0.025	0.04	0.03	--	--
SEP							
23...	<0.01	<0.01	0.023	0.04	0.04	1	--
423009121155000 SNAKE CREEK ABOVE SYCAN RIVER (LAT 42 30 09N LONG 121 15 50W)							
NOV 1992							
18...	0.03	<0.01	0.005	0.22	0.19	--	--
MAR 1993							
30...	0.01	<0.01	<0.005	0.28	0.27	--	--
MAY							
11...	0.02	<0.01	<0.005	0.38	0.34	--	--
JUL							
13...	0.06	<0.01	<0.005	0.24	0.19	--	--
SEP							
21...	0.03	<0.01	<0.005	0.15	0.09	52	--
423021121054500 MERYL CREEK ABOVE NORTH FORK SPRAGUE RIVER (LAT 42 30 21N LONG 121 05 45W)							
NOV 1992							
18...	<0.01	0.02	0.014	0.05	0.02	--	--
MAR 1993							
30...	<0.01	<0.01	0.194	0.03	0.02	--	--
MAY							
13...	0.02	<0.01	0.021	0.02	0.02	--	--
JUL							
15...	0.03	<0.01	0.085	0.04	0.02	--	--
SEP							
23...	0.04	<0.01	0.062	0.03	0.04	7	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
423036121421400 UNNAMED CR FROM DOCKNEY FLAT 4 MILES AB SPRAGUE RIVER(LAT 42 30 36N LONG 121 42 14W)							
MAY 1993							
11...	1700	7.0	97	2.4	--	1.0	<0.20
423050121545700 WILLIAMSON RIVER ABOVE AGENCY LAKE (LAT 42 30 50N LONG 121 54 57W)							
SEP 1993							
20...	1637	12.0	97	--	9.6	--	--
24...	1015	9.5	104	0.90	9.4	1.8	<0.20
423104121404400 CEDAR CREEK BELOW CEDAR SPRING (LAT 42 31 04N LONG 121 40 44W)							
MAR 1993							
30...	1515	3.5	79	15	--	1.4	0.20
MAY							
11...	1630	12.0	80	2.3	--	0.90	<0.20
423144120490400 NORTH FORK SPRAGUE RIVER ABOVE DEAD COW CREEK (LAT 42 31 44N LONG 120 49 04W)							
NOV 1992							
17...	0945	5.0	46	1.6	--	0.20	<0.20
JUL 1993							
13...	1000	7.5	19	1.1	--	0.20	<0.20
SEP							
21...	1030	7.5	16	0.30	--	0.30	<0.20
423238121393200 CEDAR CREEK ABOVE SPRAGUE RIVER (LAT 42 32 38N LONG 121 39 32W)							
JUL 1993							
14...	1100	11.0	133	1.5	--	0.80	<0.20
423305121370700 SPRAGUE RIVER ABOVE CEDAR SPRING CREEK (LAT 42 33 05N LONG 121 37 07W)							
NOV 1992							
19...	0900	2.0	124	4.6	--	1.1	<0.20
MAR 1993							
30...	1630	10.0	84	21	--	1.3	0.60
MAY							
12...	1430	17.5	70	10	--	0.70	0.30
JUL							
14...	0845	17.0	140	6.7	--	1.1	0.30
SEP							
22...	0830	11.5	151	5.6	--	1.6	0.30
423355121405500 SPRAGUE RIVER BELOW DOCKNEY FLAT CREEK (LAT 42 33 55N LONG 121 40 55W)							
NOV 1992							
17...	1300	5.0	122	5.2	--	1.1	<0.20
MAR 1993							
30...	1240	9.0	86	17	--	1.3	0.50
MAY							
11...	1430	18.0	71	12	--	0.80	0.30
JUL							
13...	1130	20.0	140	5.8	--	1.1	0.20
SEP							
23...	0830	10.0	159	7.1	--	1.6	0.40
423400121065900 FIVEMILE CREEK ABOVE SWAMP CREEK (LAT 42 34 00N LONG 121 06 59W)							
NOV 1992							
18...	1500	12.0	82	0.54	--	0.50	<0.20
MAR 1993							
30...	1200	7.5	55	17	--	1.0	0.30
MAY							
13...	1530	18.5	79	2.8	--	0.60	<0.20
JUL							
15...	0915	11.0	47	1.3	--	0.50	<0.20
SEP							
22...	1730	15.0	88	1.6	--	0.50	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
423036121421400 UNNAMED CR FROM DOCKNEY FLAT 4 MILES AB SPRAGUE RIVER (LAT 42 30 36N LONG 121 42 14W)							
MAY 1993							
11...	0.01	<0.01	<0.005	<0.01	0.01	--	--
423050121545700 WILLIAMSON RIVER ABOVE AGENCY LAKE (LAT 42 30 50N LONG 121 54 57W)							
SEP 1993							
20...	--	--	--	--	--	--	--
24...	0.02	<0.01	<0.005	0.08	0.07	3	69
423104121404400 CEDAR CREEK BELOW CEDAR SPRING (LAT 42 31 04N LONG 121 40 44W)							
MAR 1993							
30...	<0.01	<0.01	<0.005	0.02	0.03	--	--
MAY 11...	0.02	<0.01	<0.005	0.02	0.03	--	--
423144120490400 NORTH FORK SPRAGUE RIVER ABOVE DEAD COW CREEK (LAT 42 31 44N LONG 120 49 04W)							
NOV 1992							
17...	0.02	0.01	0.027	0.09	0.07	--	--
JUL 1993							
13...	0.02	<0.01	<0.005	0.03	0.02	--	--
SEP 21...	<0.01	<0.01	<0.005	0.04	0.02	0	--
423238121393200 CEDAR CREEK ABOVE SPRAGUE RIVER (LAT 42 32 38N LONG 121 39 32W)							
JUL 1993							
14...	0.04	<0.01	<0.005	0.01	0.02	--	--
423305121370700 SPRAGUE RIVER ABOVE CEDAR SPRING CREEK (LAT 42 33 05N LONG 121 37 07W)							
NOV 1992							
19...	<0.01	0.02	0.009	0.08	0.03	--	--
MAR 1993							
30...	<0.01	<0.01	0.076	0.05	0.04	--	--
MAY 12...	0.03	<0.01	0.005	0.04	0.03	--	--
JUL 14...	0.02	<0.01	<0.005	0.08	0.05	--	--
SEP 22...	0.01	<0.01	<0.005	0.05	0.03	5	--
423355121405500 SPRAGUE RIVER BELOW DOCKNEY FLAT CREEK (LAT 42 33 55N LONG 121 40 55W)							
NOV 1992							
17...	<0.01	0.02	0.011	0.08	0.02	--	--
MAR 1993							
30...	0.01	<0.01	0.069	0.04	0.05	--	--
MAY 11...	0.02	<0.01	<0.005	0.05	0.03	--	--
JUL 13...	0.03	<0.01	<0.005	0.05	0.04	--	--
SEP 23...	0.01	<0.01	<0.005	0.05	0.03	3	--
423400121065900 FIVEMILE CREEK ABOVE SWAMP CREEK (LAT 42 34 00N LONG 121 06 59W)							
NOV 1992							
18...	<0.01	0.03	0.008	0.08	0.03	--	--
MAR 1993							
30...	0.01	<0.01	0.039	0.03	0.04	--	--
MAY 13...	0.02	<0.01	<0.005	0.06	0.05	--	--
JUL 15...	0.03	<0.01	0.017	0.05	0.04	--	--
SEP 22...	0.01	<0.01	<0.005	0.05	0.04	2	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY
WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
423418121523200 WILLIAMSON RIVER BELOW SPRAGUE RIVER (LAT 42 34 18N LONG 121 52 32W)							
OCT 1992							
20...	1400	7.5	97	--	--	1.9	<0.20
NOV							
18...	1415	4.0	87	1.7	--	1.7	<0.20
DEC							
16...	1620	1.0	68	1.3	--	1.7	<0.20
JAN 1993							
28...	1515	2.5	81	18	--	1.7	<0.20
FEB							
25...	1550	3.5	114	6.6	--	1.8	<0.20
MAR							
10...	1600	5.5	112	36	--	1.8	0.80
15...	1540	5.5	120	26	--	1.9	0.50
18...	1615	5.0	94	42	--	1.3	0.80
22...	1415	9.0	76	40	--	1.1	0.80
25...	1610	6.5	83	24	--	1.1	0.60
31...	1700	9.0	82	13	--	1.4	0.90
APR							
08...	1310	8.0	83	7.5	--	1.5	0.50
14...	1230	9.5	85	--	--	1.4	0.50
23...	0920	8.0	84	--	--	1.7	0.40
30...	0915	11.0	86	--	--	--	0.40
MAY							
12...	1630	17.0	75	8.0	--	1.0	0.50
JUN							
17...	1200	16.0	106	2.0	--	1.0	0.30
JUL							
14...	1530	13.0	112	1.6	--	1.8	<0.20
AUG							
20...	0900	12.5	--	1.0	--	1.7	<0.20
SEP							
22...	1500	11.0	104	1.4	--	1.7	<0.20
423454121562500 WOOD RIVER BELOW CROOKED CREEK (LAT 42 34 54N LONG 121 56 25W)							
OCT 1992							
20...	1300	8.5	95	--	--	5.8	<0.20
AUG 1993							
20...	1240	11.5	--	0.90	--	5.4	<0.20
423505121503000 SPRAGUE RIVER ABOVE WILLIAMSON RIVER (LAT 42 35 05N LONG 121 50 30W)							
OCT 1992							
20...	1500	10.5	129	--	--	1.5	0.20
NOV							
18...	0900	3.0	123	4.5	--	1.1	<0.20
DEC							
16...	1425	0.0	91	3.5	--	1.2	<0.20
JAN 1993							
28...	1400	0.0	130	8.1	--	1.3	<0.20
FEB							
25...	1325	1.0	131	10	--	1.4	0.40
MAR							
10...	1410	5.0	123	37	--	1.7	0.70
15...	1300	5.0	112	23	--	1.8	0.80
18...	1300	4.5	93	46	--	1.2	0.70
22...	1300	9.0	74	42	--	1.2	0.70
25...	1320	7.0	85	26	--	0.90	0.60
30...	1830	10.0	87	18	--	1.4	0.60
APR							
07...	1600	10.5	94	16	--	1.4	0.50
14...	0930	7.5	90	--	--	1.3	0.50
22...	1440	10.0	92	--	--	--	0.30
29...	1245	13.0	89	--	--	1.0	0.30
MAY							
11...	0930	15.0	71	14	--	0.80	<0.20
JUN							
17...	0945	18.0	97	2.6	--	0.70	0.30
JUL							
13...	1500	21.5	131	4.4	--	0.30	0.20
AUG							
19...	1230	18.0	--	1.2	--	1.4	0.20
SEP							
20...	1450	15.5	133	--	10.6	--	--
22...	0813	11.0	140	--	9.1	--	--
23...	1245	12.0	150	3.0	--	1.3	0.30

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
423418121523200 WILLIAMSON RIVER BELOW SPRAGUE RIVER (LAT 42 34 18N LONG 121 52 32W)							
OCT 1992							
20...	0.02	<0.01	0.013	0.07	0.06	--	--
NOV							
18...	0.02	0.03	0.018	0.06	0.06	--	--
DEC							
16...	0.02	0.04	0.029	0.08	0.08	--	--
JAN 1993							
28...	0.01	0.02	0.039	0.07	0.07	--	--
FEB							
25...	0.03	0.01	0.066	0.08	0.06	--	--
MAR							
10...	0.11	0.03	0.132	0.13	0.11	--	--
15...	0.09	0.02	0.236	0.08	0.10	--	--
18...	0.07	0.01	0.245	1.00	0.10	--	--
22...	0.06	0.02	0.207	0.10	0.08	--	--
25...	0.04	0.01	0.168	0.10	0.08	--	--
31...	0.03	<0.01	0.073	0.06	0.05	--	--
APR							
08...	0.07	0.01	0.014	0.07	0.05	--	--
14...	0.04	0.02	0.009	0.07	0.04	--	--
23...	0.06	<0.01	0.009	0.07	0.05	--	--
30...	0.03	<0.01	0.007	0.06	0.04	--	--
MAY							
12...	0.02	<0.01	0.007	0.07	0.04	--	--
JUN							
17...	0.02	<0.01	0.017	0.07	0.05	--	--
JUL							
14...	<0.01	<0.01	0.006	0.08	0.06	--	--
AUG							
20...	0.02	<0.01	0.006	0.06	0.05	--	--
SEP							
22...	0.01	<0.01	<0.005	0.06	0.06	2	--
423454121562500 WOOD RIVER BELOW CROOKED CREEK (LAT 42 34 54N LONG 121 56 25W)							
OCT 1992							
20...	0.01	<0.01	0.038	0.09	0.11	--	--
AUG 1993							
20...	0.02	<0.01	<0.005	0.09	0.09	--	--
423505121503000 SPRAGUE RIVER ABOVE WILLIAMSON RIVER (LAT 42 35 05N LONG 121 50 30W)							
OCT 1992							
20...	0.03	<0.01	0.008	0.04	0.03	--	--
NOV							
18...	0.03	0.02	0.005	0.04	0.04	--	--
DEC							
16...	0.02	0.04	0.016	0.05	0.06	--	--
JAN 1993							
28...	0.01	0.02	0.058	0.06	0.04	--	--
FEB							
25...	0.04	0.01	0.364	0.07	0.05	--	--
MAR							
10...	0.09	<0.01	0.166	0.14	0.05	--	--
15...	0.09	<0.01	0.244	0.17	0.08	--	--
18...	0.08	0.02	0.24	0.21	0.10	--	--
22...	0.06	0.01	0.193	0.14	0.07	--	--
25...	0.04	0.01	0.193	0.08	0.07	--	--
30...	<0.01	<0.01	0.065	0.05	0.05	--	--
APR							
07...	0.03	0.01	0.006	0.09	0.05	--	--
14...	0.02	0.01	0.005	0.07	0.04	--	--
22...	0.02	<0.01	<0.005	0.06	0.04	--	--
29...	<0.01	<0.01	<0.005	0.05	0.04	--	--
MAY							
11...	0.03	<0.01	0.011	0.06	0.03	--	--
JUN							
17...	0.03	<0.01	0.009	0.07	0.04	--	--
JUL							
13...	0.02	<0.01	<0.005	0.06	0.05	--	--
AUG							
19...	0.02	<0.01	<0.005	0.03	0.03	--	--
SEP							
20...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
23...	0.01	<0.01	<0.005	0.04	0.02	3	75

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
423531120501300 NORTH FORK SPRAGUE RIVER BELOW DEAD COW CREEK (LAT 42 35 31N LONG 120 50 13W)							
NOV 1992							
17...	1300	0.5	29	1.2	--	0.30	<0.20
JUL 1993							
13...	1115	11.0	35	1.9	--	0.20	<0.20
SEP							
21...	1140	10.0	--	1.2	--	0.30	<0.20
423539121513600 WILLIAMSON RIVER 1.9 MILES ABOVE SPRAGUE RIVER (LAT 42 35 39N LONG 121 51 36W)							
NOV 1992							
18...	1130	5.0	62	0.53	--	2.0	<0.20
MAR 1993							
31...	1500	5.5	63	2.1	--	1.6	0.80
MAY							
14...	1020	10.5	89	2.5	--	2.4	0.50
JUL							
14...	1330	17.5	81	1.1	--	1.9	<0.20
SEP							
22...	1300	8.5	79	1.8	--	1.9	<0.20
423541120524700 NORTH FORK SPRAGUE RIVER ABOVE COLD CREEK (LAT 42 35 41N LONG 120 52 47W)							
NOV 1992							
17...	1140	0.0	26	2.0	--	0.30	<0.20
JUL 1993							
13...	1300	16.0	36	1.6	--	0.30	<0.20
SEP							
21...	1330	10.0	49	1.3	--	0.30	<0.20
423606121463700 SPRAGUE RIVER BELOW WHITEHORSE SPRING CREEK (LAT 42 36 06N LONG 121 46 37W)							
NOV 1992							
18...	1130	4.0	121	3.8	--	1.1	<0.20
MAR 1993							
30...	0900	8.0	87	17	--	1.3	0.50
MAY							
11...	1100	16.0	74	12	--	0.80	0.30
JUL							
13...	0830	18.0	130	5.1	--	1.0	0.20
SEP							
23...	1030	10.5	145	3.9	--	1.5	0.30
423621122052000 CHERRY CREEK ABOVE FOURMILE CREEK (LAT 42 36 21N LONG 122 05 20W)							
MAY 1993							
11...	1040	3.5	32	1.8	--	0.40	<0.20
JUL							
13...	1530	12.0	51	0.20	--	0.20	<0.20
SEP							
21...	1000	6.0	55	2.3	--	0.60	<0.20
423646121453900 WHITEHORSE SPRINGS ABOVE SPRAGUE RIVER (LAT 42 36 46N LONG 121 45 39W)							
NOV 1992							
18...	1400	1.0	237	2.5	--	5.7	0.40
MAR 1993							
30...	1130	7.5	190	0.80	--	5.2	0.50
MAY							
11...	1300	19.5	117	2.5	--	4.0	0.50
JUL							
13...	1000	13.5	125	3.5	--	3.0	0.40
SEP							
23...	1130	6.0	237	1.9	--	6.1	1.1
423650121404800 PRAIRIE CREEK ABOVE SPRAGUE RIVER (LAT 42 36 50N LONG 121 40 48W)							
MAY 1993							
12...	0900	11.0	138	10	--	3.5	1.1

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
423531120501300 NORTH FORK SPRAGUE RIVER BELOW DEAD COW CREEK (LAT 42 35 31N LONG 120 50 13W)							
NOV 1992							
17...	<0.01	0.02	0.006	0.11	0.06	--	--
JUL 1993							
13...	0.03	<0.01	<0.005	0.06	0.04	--	--
SEP							
21...	<0.01	<0.01	<0.005	0.06	0.05	1	--
423539121513600 WILLIAMSON RIVER 1.9 MILES ABOVE SPRAGUE RIVER (LAT 42 35 39N LONG 121 51 36W)							
NOV 1992							
18...	0.02	0.02	0.026	0.09	0.08	--	--
MAR 1993							
31...	0.07	<0.01	0.107	0.05	0.04	--	--
MAY							
14...	0.05	<0.01	0.03	0.09	0.08	--	--
JUL							
14...	<0.01	<0.01	0.013	0.09	0.08	--	--
SEP							
22...	0.01	<0.01	0.011	0.08	0.09	1	--
423541120524700 NORTH FORK SPRAGUE RIVER ABOVE COLD CREEK (LAT 42 35 41N LONG 120 52 47W)							
NOV 1992							
17...	<0.01	0.02	0.01	0.08	0.04	--	--
JUL 1993							
13...	0.02	<0.01	<0.005	0.05	0.04	--	--
SEP							
21...	0.01	<0.01	<0.005	0.05	0.04	1	--
423606121463700 SPRAGUE RIVER BELOW WHITEHORSE SPRING CREEK (LAT 42 36 06N LONG 121 46 37W)							
NOV 1992							
18...	<0.01	0.02	0.015	0.07	0.03	--	--
MAR 1993							
30...	0.02	<0.01	0.076	0.05	0.05	--	--
MAY							
11...	0.02	<0.01	<0.005	0.06	0.04	--	--
JUL							
13...	0.02	<0.01	<0.005	0.08	0.05	--	--
SEP							
23...	0.02	<0.01	<0.005	0.04	0.02	3	--
423621122052000 CHERRY CREEK ABOVE FOURMILE CREEK (LAT 42 36 21N LONG 122 05 20W)							
MAY 1993							
11...	0.02	<0.01	<0.005	<0.01	<0.01	--	--
JUL							
13...	0.05	<0.01	<0.005	0.01	<0.01	--	--
SEP							
21...	0.03	<0.01	<0.005	0.03	0.02	2	--
423646121453900 WHITEHORSE SPRINGS ABOVE SPRAGUE RIVER (LAT 42 36 46N LONG 121 45 39W)							
NOV 1992							
18...	0.02	0.01	0.008	0.08	0.06	--	--
MAR 1993							
30...	<0.01	<0.01	0.008	0.07	0.07	--	--
MAY							
11...	0.01	<0.01	<0.005	0.08	0.05	--	--
JUL							
13...	0.02	<0.01	<0.005	0.06	0.03	--	--
SEP							
23...	0.03	<0.01	<0.005	0.11	0.05	2	--
423650121404800 PRAIRIE CREEK ABOVE SPRAGUE RIVER (LAT 42 36 50N LONG 121 40 48W)							
MAY 1993							
12...	0.03	<0.01	0.013	0.410	0.330	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
423712121555600 AGENCY SPRING ABOVE CROOKED CREEK (LAT 42 37 12N LONG 121 55 56W)							
NOV 1992							
19...	0900	6.5	85	1.3	--	8.7	<0.20
MAY 1993							
12...	1500	10.5	100	0.80	--	4.7	<0.20
JUL							
15...	1310	11.0	99	0.22	--	3.9	<0.20
SEP							
23...	1530	10.5	99	1.8	--	3.8	<0.20
423759120523700 WATSON CREEK ABOVE PARADISE CREEK (LAT 42 37 59N LONG 120 52 37W)							
NOV 1992							
17...	1415	0.5	38	2.6	--	0.50	<0.20
JUL 1993							
13...	1430	16.5	56	1.2	--	0.30	<0.20
SEP							
21...	1515	10.0	71	0.75	--	0.50	<0.20
423802122043300 FOURMILE SPRING ABOVE CRANE CREEK (LAT 42 38 02N LONG 122 04 33W)							
NOV 1992							
18...	1530	5.0	63	0.16	--	0.70	<0.20
MAR 1993							
31...	1445	5.0	317	0.30	--	0.80	<0.20
MAY							
11...	1155	7.0	97	1.9	--	0.40	<0.20
JUL							
13...	1430	5.0	78	0.30	--	0.70	<0.20
SEP							
21...	1145	5.0	77	0.45	--	0.80	<0.20
423837121524300 SPRING CREEK ABOVE WILLIAMSON RIVER (LAT 42 38 37N LONG 121 52 43W)							
NOV 1992							
18...	1000	4.0	54	0.41	--	2.0	<0.20
MAR 1993							
31...	1315	7.0	78	0.40	--	1.9	<0.20
MAY							
12...	1500	8.5	75	0.50	--	2.1	<0.20
JUL							
14...	1130	7.0	78	0.60	--	1.9	<0.20
SEP							
22...	0830	5.0	79	7.0	--	1.9	<0.20
423838121563800 CROOKED CREEK ABOVE TECUMSEH SPRING (LAT 42 38 38N LONG 121 56 38W)							
MAY 1993							
12...	1520	12.5	113	1.5	--	7.6	<0.20
JUL							
15...	1200	9.5	108	0.70	--	6.4	<0.20
SEP							
23...	1430	10.5	110	2.7	--	7.3	<0.20
423838122044000 THREEMILE CREEK 0.6 MILES ABOVE CRANE CREEK (LAT 42 38 38N LONG 122 04 40W)							
NOV 1992							
18...	1400	2.5	43	0.42	--	0.70	<0.20
MAR 1993							
31...	1330	3.0	579	0.20	--	1.7	<0.20
MAY							
11...	1250	6.0	31	1.1	--	0.90	<0.20
JUL							
13...	1330	13.5	50	0.31	--	0.50	<0.20
SEP							
21...	1100	6.5	57	1.4	--	0.60	<0.20

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
423712121555600 AGENCY SPRING ABOVE CROOKED CREEK (LAT 42 37 12N LONG 121 55 56W)							
NOV 1992							
19...	0.02	0.02	0.029	0.09	0.08	--	--
MAY 1993							
12...	0.02	<0.01	0.037	0.06	0.07	--	--
JUL							
15...	0.04	<0.01	0.04	0.08	0.07	--	--
SEP							
23...	0.03	<0.01	0.037	0.08	0.08	1	--
423759120523700 WATSON CREEK ABOVE PARADISE CREEK (LAT 42 37 59N LONG 120 52 37W)							
NOV 1992							
17...	0.02	0.02	<0.005	<0.01	0.01	--	--
JUL 1993							
13...	0.02	<0.01	0.005	0.01	<0.01	--	--
SEP							
21...	0.01	<0.01	<0.005	0.01	<0.01	1	--
423802122043300 FOURMILE SPRING ABOVE CRANE CREEK (LAT 42 38 02N LONG 122 04 33W)							
NOV 1992							
18...	0.01	<0.01	0.026	0.06	0.07	--	--
MAR 1993							
31...	<0.01	<0.01	0.031	0.05	0.07	--	--
MAY							
11...	0.02	<0.01	0.027	0.05	0.05	--	--
JUL							
13...	<0.01	<0.01	0.024	0.07	0.06	--	--
SEP							
21...	0.03	<0.01	0.015	0.07	0.07	--	--
423837121524300 SPRING CREEK ABOVE WILLIAMSON RIVER (LAT 42 38 37N LONG 121 52 43W)							
NOV 1992							
18...	0.02	0.01	0.044	0.08	0.08	--	--
MAR 1993							
31...	0.02	<0.01	0.031	0.07	0.09	--	--
MAY							
12...	0.01	<0.01	0.022	0.08	0.09	--	--
JUL							
14...	<0.01	<0.01	0.021	0.09	0.08	--	--
SEP							
22...	<0.01	<0.01	0.02	0.09	0.08	1	--
423838121563800 CROOKED CREEK ABOVE TECUMSEH SPRING (LAT 42 38 38N LONG 121 56 38W)							
MAY 1993							
12...	0.05	<0.01	0.029	0.10	0.09	--	--
JUL							
15...	<0.01	<0.01	0.025	0.09	0.09	--	--
SEP							
23...	0.03	<0.01	0.02	0.10	0.08	3	--
423838122044000 THREEMILE CREEK 0.6 MILES ABOVE CRANE CREEK (LAT 42 38 38N LONG 122 04 40W)							
NOV 1992							
18...	0.01	0.02	0.005	<0.01	<0.01	--	--
MAR 1993							
31...	<0.01	<0.01	<0.005	<0.01	0.01	--	--
MAY							
11...	0.02	<0.01	0.005	<0.01	<0.01	--	--
JUL							
13...	0.04	<0.01	<0.005	0.01	<0.01	--	--
SEP							
21...	0.03	<0.01	<0.005	0.02	0.02	1	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
423848121594000 WOOD RIVER BELOW NORTH CANAL (LAT 42 38 48N LONG 121 59 40W)							
OCT 1992							
20...	1130	6.5	92	--	--	5.6	<0.20
NOV							
19...	1000	4.5	75	1.7	--	5.4	<0.20
DEC							
16...	1220	3.5	--	--	--	5.4	<0.20
29...	1350	4.0	94	--	--	5.1	<0.20
JAN 1993							
28...	1050	3.0	58	0.60	--	5.4	<0.20
FEB							
25...	0940	2.0	60	1.7	--	5.5	<0.20
MAR							
10...	1015	5.0	104	3.2	--	5.3	<0.20
15...	1015	5.5	95	3.1	--	5.3	<0.20
19...	1415	5.5	91	7.1	--	4.2	<0.20
22...	1045	4.0	104	4.5	--	4.4	0.30
26...	1010	4.5	103	5.1	--	4.4	0.20
31...	1000	5.0	98	1.5	--	4.5	0.20
APR							
07...	1110	5.0	98	1.7	--	4.9	<0.20
13...	1100	7.5	99	--	--	5.2	<0.20
23...	1205	5.5	98	--	--	--	<0.20
30...	1300	9.5	94	--	--	4.6	<0.20
MAY							
12...	1330	9.5	82	9.7	--	4.4	<0.20
JUN							
16...	1200	10.5	90	3.1	--	3.8	<0.20
JUL							
15...	1045	8.0	92	2.4	--	4.6	<0.20
AUG							
19...	1000	12.0	--	1.0	--	5.2	<0.20
SEP							
20...	1617	9.5	92	--	10.7	--	--
22...	0738	6.0	94	--	9.9	--	--
22...	1615	10.0	95	2.4	--	5.0	<0.20
423918121594500 NORTH CANAL ABOVE WOOD RIVER (LAT 42 39 18N LONG 121 59 45W)							
NOV 1992							
19...	1345	4.0	71	2.2	--	5.3	<0.20
APR 1993							
01...	0930	4.5	108	5.2	--	0.70	<0.20
MAY							
13...	1400	12.5	88	6.9	--	4.7	<0.20
JUL							
15...	0815	9.5	113	2.3	--	4.6	<0.20
SEP							
23...	1600	9.5	96	1.9	--	5.0	<0.20
423923121510000 WILLIAMSON RIVER ABOVE LARKIN CREEK (LAT 42 39 23N LONG 121 51 00W)							
NOV 1992							
18...	0900	4.0	76	0.75	--	0.50	<0.20
JUL 1993							
14...	1045	13.5	102	1.5	--	2.1	0.30
SEP							
22...	1030	9.0	55	2.2	--	2.1	<0.20
423939122050600 MARES EGG SPRING ABOVE CRANE CREEK (LAT 42 39 39N LONG 122 05 06W)							
NOV 1992							
18...	1315	5.0	56	3.0	--	0.40	<0.20
MAR 1993							
31...	1300	5.0	99	0.30	--	0.40	<0.20
MAY							
11...	1340	5.5	75	1.5	--	0.50	<0.20
JUL							
13...	1230	8.0	67	0.50	--	0.30	<0.20
SEP							
21...	1200	4.5	75	1.1	--	0.50	<0.20
424004122015100 UPPER SEVENMILE DITCH ABOVE NORTH CANAL (LAT 42 40 04N LONG 122 01 51W)							
NOV 1992							
19...	0905	1.0	118	5.3	--	1.6	0.20
APR 1993							
01...	1200	4.5	106	7.0	--	1.7	0.50
MAY							
13...	1300	11.5	65	6.3	--	0.80	<0.20
JUL							
15...	1230	15.0	174	4.1	--	4.3	0.50
SEP							
23...	1610	11.5	83	5.3	9.8	2.4	<0.20
424004122032500 LOWER SEVENMILE DITCH BELOW SEVENMILE CREEK (LAT 42 40 04N LONG 122 03 25W)							
NOV 1992							
19...	1115	2.5	88	3.5	--	0.60	<0.20
APR 1993							
01...	1000	2.5	69	3.0	--	0.60	<0.20
MAY							
13...	1100	7.0	57	2.8	--	0.50	<0.20
JUL							
15...	1045	11.0	105	2.1	--	0.30	<0.20

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
423848121594000 WOOD RIVER BELOW NORTH CANAL (LAT 42 38 48N LONG 121 59 40W)							
OCT 1992							
20...	0.01	<0.01	0.012	0.07	0.07	--	--
NOV							
19...	0.02	0.02	0.025	0.07	0.06	--	--
DEC							
16...	0.03	0.05	0.036	0.07	0.09	--	--
29...	0.02	0.01	0.029	0.09	0.08	--	--
JAN 1993							
28...	0.01	0.02	0.035	0.09	0.07	--	--
FEB							
25...	0.03	<0.01	0.041	0.08	0.07	--	--
MAR							
10...	0.02	<0.01	0.029	0.09	0.07	--	--
15...	0.03	<0.01	0.045	0.09	0.08	--	--
19...	0.05	<0.01	0.105	0.14	0.09	--	--
22...	0.03	<0.01	0.065	0.08	0.08	--	--
26...	0.03	<0.01	0.043	0.07	0.07	--	--
31...	0.01	<0.01	0.04	0.09	0.06	--	--
APR							
07...	0.02	<0.01	0.023	0.08	0.06	--	--
13...	0.02	0.01	0.023	0.08	0.07	--	--
23...	0.01	<0.01	0.018	0.07	0.06	--	--
30...	0.02	<0.01	0.014	0.06	0.06	--	--
MAY							
12...	0.01	<0.01	0.015	0.07	0.05	--	--
JUN							
16...	0.01	<0.01	0.015	0.08	0.05	--	--
JUL							
15...	<0.01	<0.01	<0.005	0.08	0.06	--	--
AUG							
19...	0.02	<0.01	0.008	0.07	0.07	--	--
SEP							
20...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
22...	<0.01	<0.01	0.007	0.07	0.07	5	56
423918121594500 NORTH CANAL ABOVE WOOD RIVER (LAT 42 39 18N LONG 121 59 45W)							
NOV 1992							
19...	0.02	0.02	0.006	0.06	0.05	--	--
APR 1993							
01...	<0.01	<0.01	0.052	0.02	0.02	--	--
MAY							
13...	0.02	<0.01	0.014	0.08	0.07	--	--
JUL							
15...	0.02	<0.01	<0.005	0.07	0.06	--	--
SEP							
23...	0.01	<0.01	<0.005	0.07	0.06	2	--
423923121510000 WILLIAMSON RIVER ABOVE LARKIN CREEK (LAT 42 39 23N LONG 121 51 00W)							
NOV 1992							
18...	0.01	0.02	0.008	0.02	<0.01	--	--
JUL 1993							
14...	0.02	<0.01	0.046	0.09	0.07	--	--
SEP							
22...	0.01	<0.01	0.036	0.08	0.08	2	--
423939122050600 MARES EGG SPRING ABOVE CRANE CREEK (LAT 42 39 39N LONG 122 05 06W)							
NOV 1992							
18...	0.02	0.02	0.016	0.06	0.06	--	--
MAR 1993							
31...	<0.01	<0.01	0.011	0.06	0.07	--	--
MAY							
11...	0.03	<0.01	0.017	0.06	0.06	--	--
JUL							
13...	0.04	<0.01	0.012	0.07	0.05	--	--
SEP							
21...	0.04	<0.01	0.013	0.07	0.06	2	--
424004122015100 UPPER SEVENMILE DITCH ABOVE NORTH CANAL (LAT 42 40 04N LONG 122 01 51W)							
NOV 1992							
19...	0.04	<0.01	0.03	0.11	0.07	--	--
APR 1993							
01...	0.03	<0.01	0.047	0.07	0.05	--	--
MAY							
13...	0.03	<0.01	0.01	0.06	0.06	--	--
JUL							
15...	<0.01	<0.01	0.005	0.13	0.07	--	--
SEP							
23...	0.02	<0.01	<0.005	0.10	0.07	6	--
424004122032500 LOWER SEVENMILE DITCH BELOW SEVENMILE CREEK (LAT 42 40 04N LONG 122 03 25W)							
NOV 1992							
19...	0.02	<0.01	<0.005	0.05	0.04	--	--
APR 1993							
01...	0.01	<0.01	0.017	0.06	0.05	--	--
MAY							
13...	0.01	<0.01	<0.005	0.04	0.03	--	--
JUL							
15...	<0.01	<0.01	<0.005	0.08	0.05	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
424004122041900 SEVENMILE CREEK BELOW SHORT CREEK (LAT 42 40 04N LONG 122 04 19W)							
NOV 1992							
19...	1300	3.5	72	0.68	--	0.40	<0.20
MAR 1993							
31...	1600	5.5	70	0.70	--	0.60	<0.20
MAY							
13...	0930	7.0	59	2.4	--	0.50	<0.20
JUL							
15...	0935	6.0	90	1.0	--	0.40	<0.20
SEP							
21...	1630	7.5	72	5.3	--	0.50	<0.20
424008122031400 MIDDLE SEVENMILE DITCH ABOVE NORTH CANAL (LAT 42 40 08N LONG 122 03 14W)							
NOV 1992							
19...	1030	1.5	115	1.8	--	0.70	<0.20
APR 1993							
01...	1030	2.0	96	7.0	--	0.90	0.40
MAY							
13...	1200	11.5	120	1.6	--	1.5	0.30
JUL							
15...	1115	12.0	138	1.5	--	0.90	0.30
SEP							
21...	1600	14.5	120	2.7	--	1.3	0.40
424008122041900 FLOWING WELL NR SEVENMILE CREEK BELOW SHORT CREEK (LAT 42 40 08N LONG 122 04 19W)							
MAR 1993							
31...	1700	6.0	81	0.20	--	0.50	<0.20
424009121584000 WOOD RIVER BELOW FORT CREEK (LAT 42 40 09N LONG 121 58 40W)							
NOV 1992							
19...	1130	5.0	72	1.4	--	5.4	<0.20
MAR 1993							
30...	1515	1.5	41	1.0	--	4.6	0.20
MAY							
12...	1110	8.0	82	12	--	4.3	<0.20
JUL							
15...	0815	7.0	90	3.7	--	4.6	<0.20
SEP							
22...	1530	9.5	96	3.2	--	5.1	<0.20
424051121581900 FORT CREEK ABOVE WOOD RIVER (LAT 42 40 51N LONG 121 58 19W)							
NOV 1992							
17...	1530	8.0	92	1.0	--	0.80	<0.20
MAR 1993							
30...	1430	9.0	101	0.30	--	6.3	<0.20
MAY							
12...	1040	8.5	101	2.1	--	6.4	<0.20
JUL							
14...	1430	11.5	97	0.65	--	5.9	<0.20
SEP							
22...	1400	10.0	100	1.8	--	5.9	<0.20
424109122023800 BLUE SPRING DITCH BEL MIDDLE SEVENMILE DITCH (LAT 42 41 09N LONG 122 02 38W)							
MAR 1993							
31...	1200	3.5	111	1.5	--	1.2	0.30
424142122043000 BLUE SPRINGS ABOVE SEVENMILE CREEK (LAT 42 41 42N LONG 122 04 30W)							
NOV 1992							
18...	1215	5.0	66	0.58	--	0.50	<0.20
MAY 1993							
11...	1425	4.0	65	0.40	--	0.40	<0.20
JUL							
13...	1100	5.5	83	0.50	--	0.40	<0.20
424152120555100 SYCAN RIVER BELOW PARADISE CREEK (LAT 42 41 52N LONG 120 55 51W)							
NOV 1992							
17...	1510	0.0	23	1.9	--	0.50	<0.20
MAY 1993							
11...	1500	13.0	36	9.8	--	0.50	0.20
JUL							
13...	1540	16.5	45	1.5	--	0.30	<0.20
SEP							
21...	1630	9.0	51	1.1	--	0.50	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
424004122041900 SEVENMILE CREEK BELOW SHORT CREEK (LAT 42 40 04N LONG 122 04 19W)							
NOV 1992							
19...	0.01	0.01	0.007	0.04	0.05	--	--
MAR 1993							
31...	<0.01	<0.01	<0.005	0.03	0.04	--	--
MAY							
13...	0.02	<0.01	<0.005	0.04	0.03	--	--
JUL							
15...	<0.01	<0.01	0.007	0.06	0.05	--	--
SEP							
21...	0.02	<0.01	<0.005	0.08	0.05	26	--
424008122031400 MIDDLE SEVENMILE DITCH ABOVE NORTH CANAL (LAT 42 40 08N LONG 122 03 14W)							
NOV 1992							
19...	0.08	0.01	0.015	0.11	0.08	--	--
APR 1993							
01...	0.02	<0.01	0.053	0.06	0.05	--	--
MAY							
13...	0.02	<0.01	0.036	0.14	0.10	--	--
JUL							
15...	0.03	<0.01	0.006	0.10	0.07	--	--
SEP							
21...	0.04	<0.01	<0.005	0.16	0.13	8	--
424008122041900 FLOWING WELL NR SEVENMILE CREEK BELOW SHORT CREEK (LAT 42 40 08N LONG 122 04 19W)							
MAR 1993							
31...	0.02	<0.01	0.016	0.06	0.08	--	--
424009121584000 WOOD RIVER BELOW FORT CREEK (LAT 42 40 09N LONG 121 58 40W)							
NOV 1992							
19...	0.02	0.01	0.021	0.07	0.07	--	--
MAR 1993							
30...	0.01	<0.01	0.039	0.07	0.07	--	--
MAY							
12...	<0.01	<0.01	0.017	0.08	0.05	--	--
JUL							
15...	<0.01	<0.01	0.006	0.08	0.06	--	--
SEP							
22...	0.02	<0.01	0.012	0.10	0.07	6	--
424051121581900 FORT CREEK ABOVE WOOD RIVER (LAT 42 40 51N LONG 121 58 19W)							
NOV 1992							
17...	0.01	0.02	0.041	0.06	0.07	--	--
MAR 1993							
30...	<0.01	<0.01	0.018	--	--	--	--
MAY							
12...	<0.01	<0.01	0.013	0.08	0.07	--	--
JUL							
14...	<0.01	<0.01	0.012	0.09	0.07	--	--
SEP							
22...	<0.01	<0.01	0.011	0.10	0.08	--	--
424109122023800 BLUE SPRING DITCH BEL MIDDLE SEVENMILE DITCH (LAT 42 41 09N LONG 122 02 38W)							
MAR 1993							
31...	0.02	<0.01	0.075	0.04	0.04	--	--
424142122043000 BLUE SPRINGS ABOVE SEVENMILE CREEK (LAT 42 41 42N LONG 122 04 30W)							
NOV 1992							
18...	0.02	0.02	0.027	0.05	0.04	--	--
MAY 1993							
11...	0.02	<0.01	0.012	0.07	0.07	--	--
JUL							
13...	0.05	<0.01	0.017	0.05	0.04	--	--
424152120555100 SYCAN RIVER BELOW PARADISE CREEK (LAT 42 41 52N LONG 120 55 51W)							
NOV 1992							
17...	0.02	0.02	0.007	<0.01	<0.01	--	--
MAY 1993							
11...	0.02	<0.01	<0.005	0.03	0.02	--	--
JUL							
13...	0.02	<0.01	<0.005	<0.01	<0.01	--	--
SEP							
21...	0.01	<0.01	<0.005	0.01	<0.01	1	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
424205121591900 WOOD RIVER BELOW ANNIE CREEK (LAT 42 42 05N LONG 121 59 19W)							
NOV 1992							
17...	1400	6.5	77	0.81	--	5.0	<0.20
MAR 1993							
30...	1330	6.5	89	1.1	--	3.8	<0.20
MAY							
12...	1010	6.5	76	11	--	3.7	<0.20
JUL							
14...	1330	9.5	84	4.1	--	3.8	<0.20
SEP							
22...	1300	8.0	93	1.4	--	4.6	<0.20
424243122042600 UPPER SEVENMILE DITCH BELOW SEVENMILE CREEK (LAT 42 42 43N LONG 122 04 26W)							
NOV 1992							
18...	0915	3.0	50	0.52	--	0.40	<0.20
JUL 1993							
13...	0950	6.0	60	0.55	--	0.30	<0.20
SEP							
21...	1500	5.5	64	0.80	--	0.60	<0.20
424246121110900 SYCAN RIVER BELOW SYCAN MARSH (LAT 42 42 46N LONG 121 11 09W)							
MAY 1993							
13...	1300	14.0	50	4.0	--	0.80	0.50
JUL							
14...	1100	17.5	35	3.5	--	0.50	0.80
SEP							
22...	1500	13.0	65	1.6	--	0.60	0.30
424333122053100 SEVENMILE CREEK ABOVE DRY CREEK (LAT 42 43 33N LONG 122 05 31W)							
NOV 1992							
18...	1030	4.0	50	0.28	--	0.30	<0.20
MAY 1993							
11...	0905	3.5	37	1.0	--	0.40	<0.20
JUL							
13...	0845	5.5	59	0.70	--	0.30	<0.20
SEP							
21...	1400	5.5	63	2.2	--	0.40	0.80
424355121250500 WILLIAMSON RIVER ABOVE COYOTE SPRING (LAT 42 43 55N LONG 121 25 05W)							
NOV 1992							
18...	0900	5.0	40	0.68	--	0.50	<0.20
MAR 1993							
31...	0930	9.0	87	1.6	--	0.60	<0.20
MAY							
12...	0930	9.0	86	4.8	--	0.70	<0.20
JUL							
14...	0910	9.5	46	3.0	--	2.4	<0.20
SEP							
22...	0930	9.0	87	2.1	--	0.60	<0.20
424402121591400 WOOD RIVER 2.1 MILES ABOVE ANNIE CREEK (LAT 42 44 02N LONG 121 59 14W)							
NOV 1992							
17...	1130	7.0	81	0.50	--	5.7	<0.20
MAR 1993							
30...	1030	6.5	94	0.70	--	4.9	<0.20
MAY							
12...	0810	7.0	96	0.30	--	6.0	<0.20
JUL							
14...	1230	8.0	95	0.60	--	5.0	<0.20
SEP							
22...	1030	7.5	97	2.5	--	5.2	<0.20
424416121583700 WOOD RIVER 3.5 MILES ABOVE ANNIE CREEK (LAT 42 44 16N LONG 121 58 37W)							
NOV 1992							
17...	0945	8.5	100	0.37	--	9.8	<0.20
MAR 1993							
30...	1230	9.5	135	0.20	--	12	<0.20
MAY							
12...	0800	9.5	133	0.80	--	11	<0.20
JUL							
14...	1130	9.5	131	1.0	--	10	<0.20
SEP							
22...	1000	8.0	111	1.4	--	7.9	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
424205121591900 WOOD RIVER BELOW ANNIE CREEK (LAT 42 42 05N LONG 121 59 19W)							
NOV 1992							
17...	0.02	0.02	0.02	0.05	0.06	--	--
MAR 1993							
30...	<0.01	<0.01	0.041	0.05	0.05	--	--
MAY							
12...	0.01	<0.01	0.022	0.06	0.05	--	--
JUL							
14...	<0.01	<0.01	0.013	0.07	0.05	--	--
SEP							
22...	0.01	<0.01	0.012	0.09	0.06	12	--
424243122042600 UPPER SEVENMILE DITCH BELOW SEVENMILE CREEK (LAT 42 42 43N LONG 122 04 26W)							
NOV 1992							
18...	0.02	0.02	0.005	0.07	0.06	--	--
JUL 1993							
13...	0.05	<0.01	<0.005	0.06	0.05	--	--
SEP							
21...	0.05	<0.01	<0.005	0.06	0.06	8	--
424246121110900 SYCAN RIVER BELOW SYCAN MARSH (LAT 42 42 46N LONG 121 11 09W)							
MAY 1993							
13...	0.02	<0.01	<0.005	0.04	0.01	--	--
JUL							
14...	0.03	<0.01	<0.005	0.05	<0.01	--	--
SEP							
22...	0.01	<0.01	<0.005	0.02	<0.01	1	--
424333122053100 SEVENMILE CREEK ABOVE DRY CREEK (LAT 42 43 33N LONG 122 05 31W)							
NOV 1992							
18...	0.01	0.01	<0.005	0.06	0.06	--	--
MAY 1993							
11...	0.01	<0.01	<0.005	0.03	0.03	--	--
JUL							
13...	<0.01	<0.01	<0.005	0.06	0.05	--	--
SEP							
21...	0.02	<0.01	<0.005	0.07	0.06	3	--
424355121250500 WILLIAMSON RIVER ABOVE COYOTE SPRING (LAT 42 43 55N LONG 121 25 05W)							
NOV 1992							
18...	0.01	0.02	0.19	0.07	0.04	--	--
MAR 1993							
31...	<0.01	<0.01	0.213	0.02	0.04	--	--
MAY							
12...	<0.01	<0.01	0.197	0.06	0.05	--	--
JUL							
14...	0.03	<0.01	0.179	0.05	0.04	--	--
SEP							
22...	<0.01	<0.01	0.162	0.05	0.05	0	--
424402121591400 WOOD RIVER 2.1 MILES ABOVE ANNIE CREEK (LAT 42 44 02N LONG 121 59 14W)							
NOV 1992							
17...	0.02	0.02	0.031	0.04	0.06	--	--
MAR 1993							
30...	<0.01	<0.01	0.04	0.08	0.06	--	--
MAY							
12...	0.02	<0.01	0.029	0.09	0.07	--	--
JUL							
14...	<0.01	<0.01	0.025	0.07	0.06	--	--
SEP							
22...	0.01	<0.01	0.019	0.06	0.07	2	--
424416121583700 WOOD RIVER 3.5 MILES ABOVE ANNIE CREEK (LAT 42 44 16N LONG 121 58 37W)							
NOV 1992							
17...	0.01	0.02	0.024	0.07	0.06	--	--
MAR 1993							
30...	<0.01	<0.01	0.029	0.04	0.06	--	--
MAY							
12...	0.01	<0.01	0.019	0.06	0.07	--	--
JUL							
14...	0.04	<0.01	0.026	0.07	0.06	--	--
SEP							
22...	0.01	<0.01	0.016	0.09	0.07	--	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
424424121495800 WILLIAMSON RIVER ABOVE BUCKEROO SPRING (LAT 42 44 24N LONG 121 49 58W)							
MAR 1993							
25...	1415	1.0	97	3.8	--	1.0	1.4
31...	0945	5.0	54	1.2	--	1.3	1.1
APR							
07...	1300	8.0	77	1.0	--	1.7	1.1
13...	1240	8.0	72	--	--	1.8	0.90
22...	1215	9.5	77	--	--	2.2	0.90
29...	1025	13.5	99	--	--	2.0	1.1
MAY							
12...	1300	18.0	--	4.6	--	2.7	1.5
JUN							
16...	1320	20.0	143	0.50	--	2.2	1.7
JUL							
14...	0830	14.0	157	10	--	2.2	3.1
424543122005400 SUN CREEK ABOVE ANNIE CREEK (LAT 42 45 43N LONG 122 00 54W)							
JUL 1993							
14...	1000	5.0	37	2.8	--	0.20	<0.20
SEP							
22...	0930	3.5	57	8.0	--	0.50	<0.20
424550122032700 ANNIE CREEK ABOVE SUN CREEK (LAT 42 45 50N LONG 122 03 27W)							
NOV 1992							
17...	0845	2.5	47	2.6	--	0.30	<0.20
MAR 1993							
30...	0930	3.0	51	1.7	--	0.30	<0.20
MAY							
11...	1500	8.0	42	19	--	0.40	<0.20
JUL							
14...	0850	4.5	43	7.0	--	0.30	<0.20
SEP							
22...	0800	3.0	55	6.2	--	0.30	<0.20
424944121105500 LONG CREEK WEST OF SYCAN MARSH (LAT 42 49 44N LONG 121 10 55W)							
NOV 1992							
18...	1050	0.5	38	2.2	--	0.30	<0.20
MAY 1993							
12...	1145	8.0	41	3.9	--	0.40	0.30
JUL							
14...	1230	11.0	24	2.0	--	1.4	<0.20
SEP							
22...	1200	5.5	58	1.4	--	0.30	<0.20
425028121095700 COLD SPRING WEST OF SYCAN MARSH (LAT 42 50 28N LONG 121 09 57W)							
NOV 1992							
18...	1230	8.0	62	2.6	--	0.60	<0.20
MAY 1993							
12...	1300	9.0	55	11	--	1.0	<0.20
JUL							
14...	1340	11.0	33	7.2	--	0.80	<0.20
425103121090700 COYOTE CREEK WEST OF SYCAN MARSH (LAT 42 51 03N LONG 121 09 07W)							
NOV 1992							
18...	1305	3.0	64	15	--	0.90	0.20
MAY 1993							
12...	1400	18.0	58	4.0	--	0.50	<0.20
JUL							
14...	1430	16.0	46	4.2	--	1.6	0.20
SEP							
22...	1340	10.5	83	5.9	--	0.30	<0.20
425116121260300 DEEP CREEK ABOVE WILLIAMSON RIVER (LAT 42 51 16N LONG 121 26 03W)							
NOV 1992							
17...	1530	4.0	34	6.5	--	0.30	<0.20
MAY 1993							
11...	1730	9.0	40	17	--	0.60	<0.20
JUL							
13...	1335	12.5	106	1.2	--	0.20	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY
WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
424424121495800 WILLIAMSON RIVER ABOVE BUCKEROO SPRING (LAT 42 44 24N LONG 121 49 58W)							
MAR 1993							
25...	0.22	0.02	0.923	0.08	0.08	--	--
31...	0.07	<0.01	0.088	0.06	0.03	--	--
APR							
07...	0.08	0.02	0.006	0.07	0.03	--	--
13...	0.02	0.02	<0.005	0.05	<0.01	--	--
22...	0.05	<0.01	0.123	0.06	0.03	--	--
29...	0.04	<0.01	0.052	0.06	0.03	--	--
MAY							
12...	0.06	<0.01	0.007	0.09	0.04	--	--
JUN							
16...	0.05	<0.01	0.016	0.08	0.04	--	--
JUL							
14...	0.11	0.02	0.05	0.13	0.01	--	--
424543122005400 SUN CREEK ABOVE ANNIE CREEK (LAT 42 45 43N LONG 122 00 54W)							
JUL 1993							
14...	<0.01	<0.01	<0.005	0.02	0.02	--	--
SEP							
22...	0.04	<0.01	<0.005	0.02	0.02	23	--
424550122032700 ANNIE CREEK ABOVE SUN CREEK (LAT 42 45 50N LONG 122 03 27W)							
NOV 1992							
17...	0.01	0.02	0.016	0.02	0.03	--	--
MAR 1993							
30...	0.02	<0.01	0.02	0.01	0.02	--	--
MAY							
11...	0.01	<0.01	0.016	0.08	0.03	--	--
JUL							
14...	<0.01	<0.01	0.019	0.08	0.02	--	--
SEP							
22...	0.01	<0.01	0.009	0.06	0.03	31	--
424944121105500 LONG CREEK WEST OF SYCAN MARSH (LAT 42 49 44N LONG 121 10 55W)							
NOV 1992							
18...	0.02	<0.01	0.005	0.04	0.02	--	--
MAY 1993							
12...	0.02	<0.01	<0.005	0.03	0.02	--	--
JUL							
14...	0.03	<0.01	<0.005	0.03	0.01	--	--
SEP							
22...	0.01	<0.01	<0.005	0.03	0.02	1	--
425028121095700 COLD SPRING WEST OF SYCAN MARSH (LAT 42 50 28N LONG 121 09 57W)							
NOV 1992							
18...	0.02	<0.01	0.166	0.02	0.01	--	--
MAY 1993							
12...	0.01	<0.01	0.182	0.04	0.02	--	--
JUL							
14...	0.03	<0.01	0.216	0.03	0.01	--	--
425103121090700 COYOTE CREEK WEST OF SYCAN MARSH (LAT 42 51 03N LONG 121 09 07W)							
NOV 1992							
18...	0.02	0.01	0.006	0.02	0.01	--	--
MAY 1993							
12...	0.01	<0.01	<0.005	0.02	0.02	--	--
JUL							
14...	0.03	<0.01	<0.005	0.03	<0.01	--	--
SEP							
22...	0.01	<0.01	<0.005	0.02	0.01	1	--
425116121260300 DEEP CREEK ABOVE WILLIAMSON RIVER (LAT 42 51 16N LONG 121 26 03W)							
NOV 1992							
17...	0.01	<0.01	0.006	0.02	<0.01	--	--
MAY 1993							
11...	0.01	<0.01	0.009	0.02	0.02	--	--
JUL							
13...	0.03	<0.01	<0.005	0.02	0.01	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
425215121504900 SAND CREEK BELOW SAND CREEK CANAL (LAT 42 52 15N LONG 121 50 49W)							
NOV 1992							
17...	1215	2.5	194	2.0	--	0.30	<0.20
MAR 1993							
30...	1700	0.0	67	0.40	--	0.20	<0.20
MAY							
12...	1110	6.0	--	4.4	--	0.30	<0.20
JUL							
13...	1630	11.0	53	12	--	0.20	<0.20
SEP							
21...	1400	5.5	64	8.2	--	0.40	<0.20
425306121531600 SCOTT CREEK ABOVE SAND CREEK CANAL (LAT 42 53 06N LONG 121 53 16W)							
NOV 1992							
17...	1145	3.0	61	1.9	--	0.30	<0.20
MAR 1993							
30...	1530	5.5	48	0.30	--	0.30	<0.20
MAY							
11...	1830	11.5	37	2.5	--	0.20	<0.20
JUL							
13...	1500	9.5	49	2.5	--	0.10	<0.20
SEP							
21...	1500	7.0	43	1.4	--	0.30	<0.20
425441121282900 WILLIAMSON RIVER EAST OF GORDON LAKE (LAT 42 54 41N LONG 121 28 29W)							
NOV 1992							
17...	1400	6.0	79	7.0	--	0.60	<0.20
MAY 1993							
11...	1630	15.0	71	9.1	--	0.70	<0.20
JUL							
13...	1500	18.5	451	6.2	--	0.50	<0.20
SEP							
23...	1130	9.0	92	5.6	--	0.60	0.30
425556121442100 BIG SPRINGS CREEK ABOVE KLAMATH MARSH (LAT 42 55 56N LONG 121 44 21W)							
NOV 1992							
17...	1415	5.0	52	1.5	--	1.1	<0.20
MAY 1993							
11...	1600	20.0	81	1.8	--	1.3	0.30
JUL							
13...	1230	18.5	70	5.6	--	1.1	0.40
SEP							
21...	1645	15.5	69	5.0	--	1.1	0.20
425712121402000 WILLIAMSON R. AT MILITARY CROSSING, KLAMATH MARSH (LAT 42 57 12N LONG 121 40 20W)							
NOV 1992							
17...	1600	6.0	87	4.9	--	0.80	0.20
MAR 1993							
30...	1300	12.0	96	2.4	--	2.0	1.3
MAY							
12...	0930	15.0	143	2.2	--	2.1	1.4
425756121343800 WILLIAMSON RIVER BELOW JACK CREEK (LAT 42 57 56N LONG 121 34 38W)							
NOV 1992							
17...	0900	4.0	101	4.5	--	0.70	0.30
MAR 1993							
30...	0945	12.0	66	32	--	1.3	0.90
MAY							
11...	0935	14.0	76	15	--	0.80	0.30
JUL							
13...	0930	16.5	316	5.6	--	0.50	<0.20
SEP							
23...	0900	8.5	92	10	--	0.60	<0.20
425843121273000 JACKSON CREEK NORTH BRAID ABOVE WILLIAMSON RIVER (LAT 42 58 43N LONG 121 27 30W)							
NOV 1992							
17...	1300	4.0	50	2.0	--	0.40	<0.20
MAR 1993							
30...	1215	4.0	59	3.4	--	0.90	<0.20
MAY							
11...	1330	8.0	42	10	--	0.40	<0.20
JUL							
13...	1200	9.0	228	2.5	--	0.20	<0.20
SEP							
23...	1030	2.5	64	1.1	--	0.30	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
425215121504900 SAND CREEK BELOW SAND CREEK CANAL (LAT 42 52 15N LONG 121 50 49W)							
NOV 1992							
17...	0.02	0.02	0.008	0.04	0.04	--	--
MAR 1993							
30...	0.01	<0.01	0.006	0.03	0.04	--	--
MAY							
12...	<0.01	<0.01	<0.005	0.06	0.02	--	--
JUL							
13...	<0.01	<0.01	<0.005	0.05	0.02	--	--
SEP							
21...	0.02	<0.01	<0.005	0.06	0.03	380	--
425306121531600 SCOTT CREEK ABOVE SAND CREEK CANAL (LAT 42 53 06N LONG 121 53 16W)							
NOV 1992							
17...	<0.01	0.02	0.008	0.06	0.01	--	--
MAR 1993							
30...	<0.01	<0.01	<0.005	0.01	0.02	--	--
MAY							
11...	0.02	<0.01	<0.005	0.02	0.01	--	--
JUL							
13...	<0.01	<0.01	<0.005	0.03	0.01	--	--
SEP							
21...	<0.01	<0.01	<0.005	0.02	0.02	2	--
425441121282900 WILLIAMSON RIVER EAST OF GORDON LAKE (LAT 42 54 41N LONG 121 28 29W)							
NOV 1992							
17...	0.02	0.01	0.041	0.04	0.02	--	--
MAY 1993							
11...	0.02	<0.01	<0.005	0.05	0.03	--	--
JUL							
13...	0.04	<0.01	0.009	0.05	0.03	--	--
SEP							
23...	<0.01	<0.01	0.007	0.07	0.02	16	--
425556121442100 BIG SPRINGS CREEK ABOVE KLAMATH MARSH (LAT 42 55 56N LONG 121 44 21W)							
NOV 1992							
17...	0.02	0.01	0.016	0.08	0.05	--	--
MAY 1993							
11...	0.01	<0.01	<0.005	0.07	0.05	--	--
JUL							
13...	<0.01	<0.01	<0.005	0.07	0.02	--	--
SEP							
21...	0.01	<0.01	<0.005	0.04	0.03	6	--
425712121402000 WILLIAMSON R. AT MILITARY CROSSING, KLAMATH MARSH (LAT 42 57 12N LONG 121 40 20W)							
NOV 1992							
17...	0.02	0.02	0.006	0.04	0.02	--	--
MAR 1993							
30...	0.03	<0.01	0.02	0.05	0.01	--	--
MAY							
12...	0.06	<0.01	<0.005	0.05	0.01	--	--
425756121343800 WILLIAMSON RIVER BELOW JACK CREEK (LAT 42 57 56N LONG 121 34 38W)							
NOV 1992							
17...	0.04	0.01	0.014	0.05	0.02	--	--
MAR 1993							
30...	0.04	<0.01	0.086	0.08	0.02	--	--
MAY							
11...	0.02	<0.01	0.014	0.06	0.03	--	--
JUL							
13...	0.04	<0.01	0.006	0.06	0.03	--	--
SEP							
23...	<0.01	<0.01	<0.005	0.05	0.02	194	--
425843121273000 JACKSON CREEK NORTH BRAID ABOVE WILLIAMSON RIVER (LAT 42 58 43N LONG 121 27 30W)							
NOV 1992							
17...	0.01	0.01	<0.005	0.02	0.02	--	--
MAR 1993							
30...	<0.01	<0.01	0.017	0.03	0.02	--	--
MAY							
11...	0.02	<0.01	0.005	0.02	0.02	--	--
JUL							
13...	0.03	<0.01	<0.005	0.03	0.01	--	--
SEP							
23...	0.01	<0.01	<0.005	0.03	0.03	5	--

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

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WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
425845121273100 JACKSON CREEK SOUTH BRAID ABOVE WILLIAMSON RIVER (LAT 42 58 45N LONG 121 27 31W)							
NOV 1992							
17...	1200	4.0	50	8.0	--	0.40	0.50
MAR 1993							
30...	1300	4.0	50	5.4	--	0.70	<0.20
MAY							
11...	1300	8.0	41	7.8	--	0.40	0.20
JUL							
13...	1110	9.0	170	1.6	--	0.20	<0.20
SEP							
23...	1045	2.5	65	2.0	--	0.40	<0.20
430003121323800 JACK CREEK ABOVE WILLIAMSON RIVER (LAT 43 00 03N LONG 121 32 38W)							
MAY 1993							
11...	1200	12.0	38	5.6	--	1.3	0.50
430914121494000 MILLER CREEK 8.5 BELOW MILLER LAKE (LAT 43 09 14N LONG 121 49 40W)							
MAY 1993							
11...	1330	16.0	215	0.50	--	0.40	<0.20
431101121522100 MILLER CREEK 5 MILES BELOW MILLER LAKE (LAT 43 11 01N LONG 121 52 21W)							
NOV 1992							
17...	0930	2.0	18	0.40	--	0.30	<0.20
JUL 1993							
13...	0930	7.5	27	1.0	--	0.30	<0.20
SEP							
21...	1115	3.0	29	1.1	--	0.40	<0.20

CHEMICAL ANALYSES OF SURFACE WATER SAMPLES IN UPPER KLAMATH BASIN - NUTRIENT ASSESSMENT STUDY

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
425845121273100 JACKSON CREEK SOUTH BRAID ABOVE WILLIAMSON RIVER (LAT 42 58 45N LONG 121 27 31W)							
NOV 1992							
17...	0.05	<0.01	0.011	0.04	0.02	--	--
MAR 1993							
30...	0.01	<0.01	0.017	0.01	0.02	--	--
MAY							
11...	0.02	<0.01	<0.005	0.02	0.02	--	--
JUL							
13...	0.04	<0.01	<0.005	0.03	0.01	--	--
SEP							
23...	<0.01	<0.01	<0.005	0.05	0.02	7	--
430003121323800 JACK CREEK ABOVE WILLIAMSON RIVER (LAT 43 00 03N LONG 121 32 38W)							
MAY 1993							
11...	0.03	<0.01	<0.005	0.05	0.03	--	--
430914121494000 MILLER CREEK 8.5 BELOW MILLER LAKE (LAT 43 09 14N LONG 121 49 40W)							
MAY 1993							
11...	0.01	<0.01	<0.005	0.01	0.01	--	--
431101121522100 MILLER CREEK 5 MILES BELOW MILLER LAKE (LAT 43 11 01N LONG 121 52 21W)							
NOV 1992							
17...	0.02	0.01	0.005	0.02	0.02	--	--
JUL 1993							
13...	<0.01	<0.01	<0.005	0.04	<0.01	--	--
SEP							
21...	0.03	<0.01	<0.005	0.05	0.02		

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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