



Figure 32. Location of surface-water stations in the Entiat, Wenatchee, and Sand Hollow River Basins.

12452800 ENTIAT RIVER NEAR ARDENVOIR, WA

LOCATION.--Lat 47°49'07", long 120°25'19", in NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, sec.27, T.27 N., R.19 E., Chelan County, Hydrologic Unit 17020010, on left bank 0.5 mi downstream from Stormy Creek, 6.0 mi northwest of Ardenvoir, and at mile 18.0.

DRAINAGE AREA.--203 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,560.97 ft above NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station. Water temperature July 1968 to September 1970.

AVERAGE DISCHARGE.--47 years (water years 1958-2004), 375 ft<sup>3</sup>/s, 25.08 in/yr, 271,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,430 ft<sup>3</sup>/s, June 10, 1972, gage height, 8.98 ft; minimum discharge, 20 ft<sup>3</sup>/s, Nov. 24, 25, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,750 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 21	0245	*2,030	*5.38	No other peak greater than base discharge.			

Minimum daily discharge, 45 ft<sup>3</sup>/s, Jan. 5.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	210	174	e65	98	87	243	904	813	523	159	100
2	58	200	169	e75	97	87	240	1,110	788	467	153	104
3	56	183	164	e70	96	86	247	1,280	810	426	148	96
4	54	162	152	e50	94	87	260	1,350	933	403	147	89
5	53	144	164	e45	89	88	291	1,270	1,180	375	148	86
6	53	132	158	e50	93	86	327	1,150	1,140	365	150	84
7	56	141	147	e60	89	92	391	1,060	1,000	356	164	81
8	59	179	142	e80	87	115	456	1,040	881	325	142	80
9	65	158	135	101	84	139	495	1,000	846	298	134	79
10	60	145	144	104	87	164	530	979	930	278	129	79
11	58	151	135	103	86	164	581	924	917	262	128	113
12	65	137	134	99	80	174	656	877	831	251	128	115
13	81	131	131	96	74	184	755	833	770	247	128	94
14	67	127	129	96	93	188	779	802	712	245	127	91
15	66	125	125	111	89	193	738	792	652	243	127	100
16	86	126	123	107	86	198	689	781	610	248	127	119
17	216	131	120	99	86	207	639	808	603	245	191	116
18	237	207	111	96	85	217	600	865	632	246	162	115
19	162	392	106	92	84	215	563	991	656	261	142	110
20	507	279	125	88	83	207	541	1,180	634	248	146	105
21	1,430	232	113	85	81	205	516	1,270	645	223	130	99
22	750	191	108	84	80	207	490	1,290	688	204	129	97
23	536	205	109	84	83	230	495	1,220	725	195	126	102
24	413	199	110	83	86	247	481	1,100	752	193	121	98
25	345	193	106	78	85	254	483	1,000	779	191	179	94
26	304	182	89	80	86	260	531	994	764	188	159	91
27	274	171	e65	77	86	256	660	1,090	705	180	134	89
28	265	175	e70	84	86	246	725	1,120	615	175	118	87
29	296	219	e65	86	86	244	747	1,020	546	171	112	85
30	252	184	e50	122	---	249	790	928	517	168	110	83
31	220	---	e60	106	---	247	---	862	---	164	103	---
TOTAL	7,203	5,411	3,733	2,656	2,519	5,623	15,939	31,890	23,074	8,364	4,301	2,881
MEAN	232	180	120	85.7	86.9	181	531	1,029	769	270	139	96.0
MAX	1,430	392	174	122	98	260	790	1,350	1,180	523	191	119
MIN	53	125	50	45	74	86	240	781	517	164	103	79
AC-FT	14,290	10,730	7,400	5,270	5,000	11,150	31,620	63,250	45,770	16,590	8,530	5,710
CFSM	1.14	0.89	0.59	0.42	0.43	0.89	2.62	5.07	3.79	1.33	0.68	0.47
IN.	1.32	0.99	0.68	0.49	0.46	1.03	2.92	5.84	4.23	1.53	0.79	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

	101	128	124	105	113	149	331	1,059	1,424	630	215	112
MEAN	101	128	124	105	113	149	331	1,059	1,424	630	215	112
MAX	292	468	506	308	321	437	753	1,862	2,793	1,589	577	210
(WY)	(1960)	(1996)	(1976)	(1981)	(1996)	(1972)	(1996)	(1958)	(1974)	(1999)	(1999)	(1978)
MIN	51.9	45.3	49.3	47.7	51.3	67.9	93.2	380	450	179	99.3	58.5
(WY)	(1988)	(1994)	(1994)	(1988)	(1993)	(1993)	(1967)	(1977)	(2001)	(1977)	(1994)	(1994)

12452800 ENTIAT RIVER NEAR ARDENVOIR, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	119,439		113,594			
ANNUAL MEAN	327		310		375	
HIGHEST ANNUAL MEAN					621	
LOWEST ANNUAL MEAN					161	
HIGHEST DAILY MEAN	2,490	Jun 8	1,430	Oct 21	5,100	Jun 16, 1974
LOWEST DAILY MEAN	40	Jan 10	45	Jan 5	22	Nov 24, 1993
ANNUAL SEVEN-DAY MINIMUM	48	Jan 7	56	Oct 1	32	Nov 22, 1993
ANNUAL RUNOFF (AC-FT)	236,900		225,300		271,500	
ANNUAL RUNOFF (CFSM)	1.61		1.53		1.85	
ANNUAL RUNOFF (INCHES)	21.89		20.82		25.08	
10 PERCENT EXCEEDS	753		832		1,090	
50 PERCENT EXCEEDS	152		162		144	
90 PERCENT EXCEEDS	60		81		65	

e Estimated

## 12452890 MAD RIVER AT ARDENVOIR, WA

LOCATION.--Lat 47°44'13", long 120°22'03", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ , sec.19, T.26 N., R.20 E., Chelan County, Hydrologic Unit 17020010, at Moe Ridge bridge, 0.35 mi above mouth and about 100 ft above concrete diversion at Ardenvoir.

DRAINAGE AREA.--92.4 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,260 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--2 years (2003-04), 88.7 ft<sup>3</sup>/s, 64,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 698 ft<sup>3</sup>/s, May 30, 2002, gage height, 3.89 ft; minimum discharge, 8.9 ft<sup>3</sup>/s, Jan. 7, 2003, result of freeze-up, but may have been less during period of ice effect, Jan. 9-12, 2003.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 754 ft<sup>3</sup>/s, (measured) May 25, 1999.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 457 ft<sup>3</sup>/s, May 4, gage height, 3.07 ft; minimum daily discharge, 12 ft<sup>3</sup>/s, Jan. 5, result of freeze-up.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	26	35	e17	36	36	112	315	270	99	34	23
2	17	28	34	e19	35	37	110	364	264	93	33	26
3	17	25	33	e18	33	37	114	411	259	89	33	25
4	17	e23	e31	e13	32	38	120	431	267	86	33	25
5	17	e22	34	e12	30	38	130	427	287	82	33	24
6	17	e20	32	e13	30	37	144	402	281	81	33	23
7	18	e23	30	e16	29	42	161	382	264	79	38	23
8	18	e32	28	e20	28	71	176	375	246	75	33	22
9	19	29	29	e26	27	98	184	366	232	74	30	22
10	19	27	29	e27	28	113	190	360	248	71	30	22
11	19	38	28	e27	29	101	201	340	226	69	29	27
12	20	29	28	e26	e27	99	216	333	212	67	28	26
13	24	26	e28	e25	e25	99	242	314	202	64	27	24
14	21	25	e27	e25	e31	98	247	310	190	62	26	25
15	21	25	e26	e28	e29	100	235	304	179	59	26	30
16	31	25	26	e27	29	100	220	301	170	57	25	35
17	50	29	27	e26	28	104	211	302	164	56	25	30
18	42	57	e25	24	28	110	205	308	161	55	25	28
19	29	71	e24	24	28	107	198	317	155	59	25	28
20	41	54	e28	23	28	99	196	349	150	56	25	28
21	77	44	25	23	28	94	191	366	145	51	24	26
22	42	e35	24	23	28	97	185	370	141	49	26	25
23	35	e38	25	23	29	108	191	367	136	47	27	26
24	32	e36	26	23	31	114	189	349	130	45	30	25
25	31	e36	25	23	31	115	192	330	125	44	39	24
26	29	37	e21	22	33	114	209	326	118	42	30	23
27	28	32	e16	22	32	109	248	334	112	41	28	23
28	29	33	e17	24	32	105	262	339	109	41	27	22
29	38	43	e15	28	34	106	273	317	105	38	26	22
30	31	37	e13	44	---	112	286	301	102	38	24	21
31	27	---	e15	39	---	114	---	285	---	37	24	---
TOTAL	873	1,005	804	730	868	2,752	5,838	10,695	5,650	1,906	896	753
MEAN	28.2	33.5	25.9	23.5	29.9	88.8	195	345	188	61.5	28.9	25.1
MAX	77	71	35	44	36	115	286	431	287	99	39	35
MIN	17	20	13	12	25	36	110	285	102	37	24	21
AC-FT	1,730	1,990	1,590	1,450	1,720	5,460	11,580	21,210	11,210	3,780	1,780	1,490

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2004, BY WATER YEAR (WY)

MEAN	25.0	27.9	24.0	25.0	36.8	83.5	167	299	296	73.5	32.8	23.3
MAX	28.2	33.5	25.9	26.5	43.8	88.8	195	345	382	96.0	39.9	25.1
(WY)	(2004)	(2004)	(2004)	(2003)	(2003)	(2004)	(2004)	(2004)	(2002)	(2002)	(2002)	(2004)
MIN	21.8	22.2	22.0	23.5	29.9	78.2	139	273	188	61.5	28.9	20.2
(WY)	(2003)	(2003)	(2003)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)	(2004)	(2004)	(2003)

12452890 MAD RIVER AT ARDENVOIR, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2002 - 2004	
ANNUAL TOTAL	32,743		32,770			
ANNUAL MEAN	89.7		89.5		88.7	
HIGHEST ANNUAL MEAN					89.5 2004	
LOWEST ANNUAL MEAN					87.9 2003	
HIGHEST DAILY MEAN	605	Jun 8	431	May 4	659	May 30, 2002
LOWEST DAILY MEAN	12	Jan 10	12	Jan 5	12	Jan 10, 2003
ANNUAL SEVEN-DAY MINIMUM	17	Sep 29	15	Dec 30	15	Dec 30, 2003
ANNUAL RUNOFF (AC-FT)	64,950		65,000		64,280	
10 PERCENT EXCEEDS	206		268		234	
50 PERCENT EXCEEDS	38		34		35	
90 PERCENT EXCEEDS	20		22		20	

e Estimated



12452990 ENTIAT RIVER NEAR ENTIAT, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1996 - 2004	
ANNUAL TOTAL	154,428		146,296			
ANNUAL MEAN	423		400		494	
HIGHEST ANNUAL MEAN					699	
LOWEST ANNUAL MEAN					209	
HIGHEST DAILY MEAN	2,750	Jun 8	1,750	May 4	4,810	Jun 17, 1999
LOWEST DAILY MEAN	80	Jan 10	70	Jan 5	58	Dec 12, 2000
ANNUAL SEVEN-DAY MINIMUM	86	Oct 2	86	Oct 2	76	Oct 3, 2001
ANNUAL RUNOFF (AC-FT)	306,300		290,200		357,600	
ANNUAL RUNOFF (CFSM)	1.01		0.954		1.18	
ANNUAL RUNOFF (INCHES)	13.71		12.99		16.00	
10 PERCENT EXCEEDS	940		1,100		1,370	
50 PERCENT EXCEEDS	214		194		210	
90 PERCENT EXCEEDS	98		112		106	

e Estimated

## 12453700 COLUMBIA RIVER AT ROCKY REACH DAM, WA

LOCATION.--Lat 47°31'28", long 120°18'04", in SW ¼ NW ¼ sec.2, T.23 N., R.20 E., Chelan County, Hydrologic Unit 17020010, on right bank 0.5 mi downstream from Rocky Reach Dam, 1.5 mi downstream from Swakane Creek, 7.4 mi north of Wenatchee, and at mile 473.4.

DRAINAGE AREA.--87,800 mi<sup>2</sup>, approximately.

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

GAGE.--Daily discharge determined from flow through turbines plus spillway flow when present. Datum of gage is NGVD of 1929. Oct. 1, 1960, to July 22, 1988, water-stage recorder with auxiliary water-stage recorder 1.9 mi downstream from base gage at same datum.

REMARKS.--Flow regulated by numerous reservoirs. Feeder Canal diversion (station 12435500) for Columbia Basin project is used to irrigate approximately 600,000 acres in the United States. An additional 66,500 acres in Canada are irrigated by other diversions.

COOPERATION.--Discharge records provided by Public Utility District No. 1 of Chelan County at Rocky Reach Dam through the Corps of Engineers, North Pacific Division, Reservoir Control Center. The U.S. Geological Survey made 6 discharge measurements at this site during the year.

AVERAGE DISCHARGE.--44 years (water years 1961-2004), 114,200 ft<sup>3</sup>/s, 82,740,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 535,000 ft<sup>3</sup>/s June 10, 1961, elevation, about 635.50 ft; minimum daily discharge, 25,100 ft<sup>3</sup>/s Nov. 11, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 167,000 ft<sup>3</sup>/s June 29; minimum daily discharge, 37,700 ft<sup>3</sup>/s Apr. 4.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81,400	94,300	107,000	79,200	62,100	80,800	73,400	97,400	111,000	113,000	76,700	108,000
2	70,200	60,000	99,100	103,000	99,100	78,500	81,800	82,500	127,000	113,000	86,100	88,400
3	67,000	90,200	110,000	99,000	105,000	101,000	54,600	126,000	142,000	96,400	88,000	61,800
4	49,000	114,000	112,000	101,000	75,500	99,800	37,700	114,000	147,000	84,900	93,600	53,700
5	47,900	117,000	108,000	146,000	112,000	80,200	78,900	92,700	110,000	117,000	78,100	55,600
6	80,200	107,000	89,300	140,000	99,400	56,900	73,400	103,000	98,900	119,000	65,800	73,400
7	67,500	104,000	63,100	128,000	74,700	44,400	65,200	114,000	102,000	131,000	53,000	91,800
8	70,000	72,000	104,000	113,000	47,100	70,700	62,300	101,000	114,000	128,000	60,800	87,800
9	83,400	65,300	118,000	114,000	101,000	80,600	73,000	99,100	113,000	112,000	95,000	93,400
10	70,400	87,900	120,000	88,900	101,000	84,800	63,200	143,000	147,000	95,700	107,000	83,600
11	63,700	93,000	113,000	73,500	95,600	69,600	38,700	123,000	146,000	102,000	107,000	68,800
12	53,200	106,000	112,000	115,000	102,000	68,300	80,400	121,000	137,000	129,000	105,000	49,900
13	82,100	101,000	110,000	107,000	109,000	52,000	92,400	125,000	132,000	123,000	104,000	65,300
14	81,200	95,000	98,200	99,000	61,700	38,100	84,700	137,000	159,000	112,000	85,400	57,300
15	74,700	85,700	131,000	91,400	53,100	68,800	91,900	118,000	155,000	93,000	86,700	57,100
16	67,900	79,600	123,000	86,800	93,000	73,600	99,400	112,000	126,000	94,900	98,800	67,900
17	70,200	98,000	114,000	74,100	89,500	83,600	87,400	131,000	138,000	79,900	107,000	67,000
18	52,800	97,300	110,000	66,000	76,800	76,900	79,600	132,000	138,000	85,800	112,000	56,800
19	49,900	106,000	116,000	90,200	74,700	83,700	124,000	133,000	128,000	92,100	106,000	41,100
20	78,400	105,000	102,000	86,700	79,500	57,000	129,000	111,000	131,000	67,100	112,000	68,200
21	92,800	108,000	65,900	97,400	50,000	40,100	121,000	114,000	152,000	84,800	74,000	89,500
22	88,300	90,900	123,000	120,000	43,100	72,300	94,500	107,000	149,000	82,500	44,700	94,700
23	97,100	67,100	127,000	95,300	71,800	73,900	101,000	86,100	105,000	88,500	82,800	99,400
24	96,800	107,000	104,000	76,400	75,900	82,200	97,100	117,000	107,000	80,200	79,300	96,400
25	75,900	101,000	51,800	78,900	97,200	81,100	98,000	124,000	117,000	61,400	101,000	69,900
26	55,500	92,900	97,300	108,000	104,000	72,400	112,000	121,000	119,000	92,600	108,000	58,300
27	109,000	46,200	108,000	97,000	80,200	54,400	112,000	135,000	102,000	95,800	114,000	88,800
28	97,800	63,300	96,200	98,500	68,100	44,700	104,000	116,000	141,000	110,000	97,400	89,300
29	91,500	60,900	132,000	90,600	61,800	75,000	98,200	101,000	167,000	110,000	101,000	79,000
30	105,000	55,800	131,000	78,700	---	72,800	96,200	115,000	147,000	105,000	121,000	93,400
31	118,000	---	104,000	75,600	---	75,700	---	96,100	---	103,000	149,000	---
TOTAL	2,388,800	2,671,400	3,299,900	3,018,200	2,363,900	2,193,900	2,605,000	3,547,900	3,907,900	3,102,600	2,900,200	2,255,600
MEAN	77,060	89,050	106,400	97,360	81,510	70,770	86,830	114,400	130,300	100,100	93,550	75,190
MAX	118,000	117,000	132,000	146,000	112,000	101,000	129,000	143,000	167,000	131,000	149,000	108,000
MIN	47,900	46,200	51,800	66,000	43,100	38,100	37,700	82,500	98,900	61,400	44,700	41,100
AC-FT	4,738,000	5,299,000	6,545,000	5,987,000	4,689,000	4,352,000	5,167,000	7,037,000	7,751,000	6,154,000	5,753,000	4,474,000
CAL YR	2003	TOTAL	34,564,300	MEAN	94700	MAX	167000	MIN	34800	AC-FT	68560000	
WTR YR	2004	TOTAL	34,255,300	MEAN	93590	MAX	167000	MIN	37700	AC-FT	67950000	



## 12456500 CHIWAHA RIVER NEAR PLAIN, WA

LOCATION.--Lat 47°50'15", long 120°39'40", in SE¼, sec.13, T.27 N., R.17 E., Chelan County, Hydrologic Unit 17020011, on right bank 0.75 mi upstream from Goose Creek, 5.3 mi north of Plain, 6.2 mi upstream from mouth, 11 mi northeast of Chiwaukum, and at mile 6.2.

DRAINAGE AREA.--170 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1911 to April 1912, July 1913 to October 1914, August 1936 to November 1949, September 1954 to September 1957, May 1991 to current year. Prior to October 1914 published as Chiwawa Creek near Leavenworth.

REVISED RECORDS.--WSP 1316: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,100 ft above NGVD of 1929 (from river-profile map). May 29, 1911, to Oct. 31, 1914, staff gage at site 3 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. U. S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--32 years (water years 1912-14, 1937-49, 1955-57, 1992-2004), 514 ft<sup>3</sup>/s, 41.06 in/yr, 372,400 acre-ft/yr. Includes discharges for 1912 and 1913, which were estimated for WSP 1316.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,030 ft<sup>3</sup>/s, Nov. 30, 1995, gage height, 9.36 ft; minimum daily discharge, 45 ft<sup>3</sup>/s, Feb. 25, Mar. 2-5, 1993.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peak Nov. 25, 1990, was 6,810 ft<sup>3</sup>/s, gage height, 9.26 ft, from rating curve extended beyond highest measurement of 5,570 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,730 ft<sup>3</sup>/s, Oct. 21, gage height, 7.68 ft; minimum discharge, 81 ft<sup>3</sup>/s, Oct. 5, 6, 7, gage height, 3.81 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	329	299	e140	227	140	522	1,480	1,050	733	192	142
2	85	305	279	e137	213	140	519	1,730	1,010	654	182	156
3	85	278	271	e135	199	140	540	1,900	1,040	607	177	151
4	83	251	258	e126	189	140	584	1,910	1,230	586	177	142
5	81	232	256	e113	181	143	667	1,820	1,560	550	174	136
6	81	225	246	e107	176	141	746	1,620	1,460	528	173	136
7	81	222	237	e109	171	151	875	1,500	1,260	512	203	127
8	87	204	231	e115	166	202	991	1,510	1,100	447	174	123
9	100	198	220	e121	162	256	1,040	1,440	1,130	399	161	122
10	96	194	215	e126	159	311	1,090	1,400	1,460	366	154	121
11	90	241	206	e130	157	309	1,190	1,340	1,290	348	150	208
12	103	216	201	e134	154	319	1,310	1,280	1,090	340	148	187
13	139	193	201	e131	153	337	1,510	1,230	990	339	147	152
14	118	182	200	e130	146	335	1,530	1,200	923	333	145	171
15	106	179	191	e142	147	349	1,410	1,210	814	342	144	219
16	158	178	186	e172	151	354	1,290	1,170	760	356	142	307
17	653	188	186	e171	152	382	1,190	1,240	795	334	170	298
18	561	e360	184	e167	149	415	1,110	1,300	887	335	157	275
19	320	e1,000	179	e159	149	417	1,040	1,490	912	334	146	246
20	911	e1,100	175	e152	146	392	1,010	1,620	873	315	141	222
21	2,970	492	168	e148	146	384	973	1,700	931	283	138	200
22	1,400	403	163	e141	145	400	930	1,710	1,020	260	149	190
23	961	365	162	e146	143	484	959	1,570	1,090	250	151	192
24	688	346	162	e144	145	533	931	1,420	1,140	247	159	178
25	546	326	158	e138	144	540	926	1,310	1,180	242	285	168
26	466	303	155	e136	143	540	1,010	1,370	1,120	240	274	159
27	405	278	155	e135	143	535	1,250	1,680	984	225	204	151
28	479	277	155	143	143	522	1,320	1,590	834	218	175	146
29	609	358	e148	168	143	521	1,290	1,360	758	211	174	140
30	438	332	e138	257	---	544	1,330	1,210	736	208	162	135
31	365	---	e142	245	---	536	---	1,130	---	205	150	---
TOTAL	13,352	9,755	6,127	4,518	4,642	10,912	31,083	45,440	31,427	11,347	5,278	5,300
MEAN	431	325	198	146	160	352	1,036	1,466	1,048	366	170	177
MAX	2,970	1,100	299	257	227	544	1,530	1,910	1,560	733	285	307
MIN	81	178	138	107	143	140	519	1,130	736	205	138	121
AC-FT	26,480	19,350	12,150	8,960	9,210	21,640	61,650	90,130	62,340	22,510	10,470	10,510
CFSM	2.53	1.91	1.16	0.86	0.94	2.07	6.09	8.62	6.16	2.15	1.00	1.04
IN.	2.92	2.13	1.34	0.99	1.02	2.39	6.80	9.94	6.88	2.48	1.15	1.16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2004, BY WATER YEAR (WY)

MEAN	175	234	184	149	144	197	624	1,567	1,599	825	281	160
MAX	431	973	768	356	602	488	1,266	2,683	2,840	2,175	899	359
(WY)	(2004)	(1996)	(1996)	(1996)	(1996)	(1992)	(1914)	(1956)	(1999)	(1999)	(1999)	(1954)
MIN	63.5	77.8	80.4	78.4	66.1	91.4	214	826	660	256	106	80.5
(WY)	(1943)	(1937)	(2001)	(1937)	(2001)	(1993)	(1937)	(1944)	(1941)	(1941)	(1941)	(1942)

## WENATCHEE RIVER BASIN

12456500 CHIWAWA RIVER NEAR PLAIN, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1911 - 2004	
ANNUAL TOTAL	177,033		179,181			
ANNUAL MEAN	485		490		507	
HIGHEST ANNUAL MEAN					783	
LOWEST ANNUAL MEAN					264	
HIGHEST DAILY MEAN	2,970	Oct 21	2,970	Oct 21	6,050	Nov 30, 1995
LOWEST DAILY MEAN	78	Jan 20	81	Oct 5	45	Feb 25, 1993
ANNUAL SEVEN-DAY MINIMUM	81	Jan 16	83	Oct 1	46	Feb 28, 1993
ANNUAL RUNOFF (AC-FT)	351,100		355,400		367,200	
ANNUAL RUNOFF (CFSM)	2.85		2.88		2.98	
ANNUAL RUNOFF (INCHES)	38.74		39.21		40.51	
10 PERCENT EXCEEDS	1,110		1,290		1,410	
50 PERCENT EXCEEDS	251		246		201	
90 PERCENT EXCEEDS	95		138		90	

e Estimated

## 12457000 WENATCHEE RIVER AT PLAIN, WA

LOCATION.--Lat 47°45'47", long 120°39'54", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ , sec.12, T.26 N., R.17 E., Chelan County, Hydrologic Unit 17020011, on left bank 300 ft downstream from county road bridge at Plain, 0.3 mi downstream from Beaver Creek, 2.2 mi downstream from Chiwawa River, 11.3 mi north of Leavenworth, and at mile 46.2.

DRAINAGE AREA.--591 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1904 to November 1910 estimates of monthly mean discharges are published in Washington State Water-Supply Bulletin No. 5, December 1910 to September 1950 (monthly discharges only for some periods, published in WSP 1316), October 1950 to September 1979, October 1989 to current year. Published as "near Leavenworth" 1911-31.

REVISED RECORDS.--WSP 482: 1911-14. WSP 1316: 1914(M), 1916(M), 1919(M), 1921-23(M), 1927(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,805 ft above NGVD of 1929, from river-profile map. Prior to Jan. 8, 1932, nonrecording gages at site 0.2 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Wenatchee Park Land and Irrigation Company diverts water from the Chiwawa River, upstream from the station for irrigation of 1,400 acres near Plain. Natural regulation by Wenatchee Lake 8.0 mi upstream. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--83 years (water years 1912-79, 1990-2004), 2,263 ft<sup>3</sup>/s, 52.03 in/yr, 1,640,000 acre-ft/yr. Includes mean discharges for water years 1930 and 1931, which were estimated for WSP 1316. Period of record was changed this year, for average discharge computation, to no longer include the 1911 water year, a year with partial record.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,100 ft<sup>3</sup>/s, Nov. 30, 1995, gage height, 14.97 ft; minimum discharge, 159 ft<sup>3</sup>/s, Nov. 4, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,000 ft<sup>3</sup>/s, Oct. 21, gage height, 8.86 ft; minimum discharge, 311 ft<sup>3</sup>/s, Oct. 5, 6, 7, gage height, 1.54 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	345	1,690	2,020	684	1,410	725	2,340	4,760	4,010	2,480	e740	626
2	339	1,520	1,850	688	1,290	724	2,270	5,640	3,720	2,310	e700	638
3	332	1,370	1,740	690	1,220	721	2,280	6,310	3,700	2,130	e670	633
4	329	1,230	1,590	658	1,150	734	2,410	6,390	4,210	2,020	e645	585
5	317	1,100	1,530	e590	1,080	756	2,680	6,180	5,170	1,900	e650	547
6	311	1,010	1,460	e560	1,040	758	2,920	5,510	5,100	1,810	e640	521
7	312	946	1,370	e570	1,000	779	3,300	4,970	4,560	1,780	e685	497
8	322	927	1,290	593	962	1,080	3,620	5,150	3,960	1,650	e700	474
9	354	891	1,200	627	927	1,440	3,790	5,030	3,850	1,480	e660	460
10	376	867	1,160	650	900	1,790	3,870	4,790	4,360	1,350	626	455
11	355	1,110	1,120	e670	876	1,870	4,070	4,430	4,260	1,250	610	621
12	362	1,130	1,100	e695	855	1,900	4,460	4,160	3,700	1,200	603	788
13	551	1,040	1,100	e680	836	1,910	5,130	4,040	3,450	1,170	603	698
14	559	973	1,070	670	833	1,890	5,260	3,930	3,480	1,160	603	909
15	501	925	1,020	735	819	1,930	4,850	3,950	3,170	1,190	598	1,170
16	590	914	980	891	817	1,950	4,340	3,920	2,900	1,210	602	1,690
17	2,010	985	959	887	813	2,030	3,930	3,990	2,900	1,190	633	1,770
18	3,070	1,690	913	866	807	2,140	3,640	4,240	3,160	1,180	609	1,760
19	2,040	5,460	879	824	791	2,190	3,380	4,850	3,300	1,190	595	1,550
20	2,560	5,800	859	785	774	2,080	3,240	5,410	3,200	1,190	587	1,350
21	10,100	4,230	839	749	758	1,980	3,100	5,830	3,270	1,110	572	1,180
22	8,480	3,210	814	725	741	1,960	2,950	5,800	3,500	e1,000	574	1,050
23	5,380	2,620	e800	736	731	2,190	3,040	5,470	3,710	e955	616	997
24	3,800	2,310	e805	728	739	2,440	3,060	4,970	3,880	e925	615	932
25	2,820	2,100	e785	706	739	2,530	3,030	4,530	4,010	e910	940	872
26	2,280	1,890	e760	689	744	2,550	3,220	4,640	3,920	e895	1,130	814
27	1,940	1,690	e710	681	738	2,480	3,960	5,600	3,460	e850	1,020	764
28	1,880	1,630	e710	699	734	2,400	4,450	5,680	3,010	e820	872	720
29	2,900	2,180	e680	819	730	2,340	4,310	4,920	2,700	e800	776	688
30	2,360	2,240	e640	1,380	---	2,420	4,320	4,370	2,550	e775	718	644
31	1,960	---	679	1,520	---	2,440	---	4,360	---	e765	664	---
TOTAL	59,835	55,678	33,432	23,445	25,854	55,127	107,220	153,820	110,170	40,645	21,256	26,403
MEAN	1,930	1,856	1,078	756	892	1,778	3,574	4,962	3,672	1,311	686	880
MAX	10,100	5,800	2,020	1,520	1,410	2,550	5,260	6,390	5,170	2,480	1,130	1,770
MIN	311	867	640	560	730	721	2,270	3,920	2,550	765	572	455
AC-FT	118,700	110,400	66,310	46,500	51,280	109,300	212,700	305,100	218,500	80,620	42,160	52,370
CFSM	3.27	3.14	1.82	1.28	1.51	3.01	6.05	8.40	6.21	2.22	1.16	1.49
IN.	3.77	3.50	2.10	1.48	1.63	3.47	6.75	9.68	6.93	2.56	1.34	1.66

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2004, BY WATER YEAR (WY)

MEAN	883	1,379	1,328	1,086	1,086	1,223	2,676	5,781	6,359	3,429	1,204	677
MAX	2,722	6,702	4,395	3,938	3,010	3,719	8,162	9,771	11,760	7,540	3,154	1,573
(WY)	(1960)	(1991)	(1976)	(1918)	(1924)	(1934)	(1934)	(1956)	(1974)	(1954)	(1974)	(1959)
MIN	251	236	296	335	306	487	913	2,613	1,861	886	456	312
(WY)	(1943)	(1937)	(1953)	(1929)	(1929)	(1917)	(1917)	(1915)	(1915)	(1941)	(1941)	(1942)

## WENATCHEE RIVER BASIN

12457000 WENATCHEE RIVER AT PLAIN, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1912 - 2004	
ANNUAL TOTAL	726,939		712,885		2,263	
ANNUAL MEAN	1,992		1,948		3,344	
HIGHEST ANNUAL MEAN					1,133	
LOWEST ANNUAL MEAN					1934	
HIGHEST DAILY MEAN	10,100	Oct 21	10,100	Oct 21	32,900	Nov 30, 1995
LOWEST DAILY MEAN	311	Oct 6	311	Oct 6	160	Nov 25, 1993
ANNUAL SEVEN-DAY MINIMUM	323	Oct 2	323	Oct 2	205	Nov 26, 1952
ANNUAL RUNOFF (AC-FT)	1,442,000		1,414,000		1,640,000	
ANNUAL RUNOFF (CFSM)	3.37		3.30		3.83	
ANNUAL RUNOFF (INCHES)	45.76		44.87		52.03	
10 PERCENT EXCEEDS	4,050		4,360		5,830	
50 PERCENT EXCEEDS	1,310		1,180		1,190	
90 PERCENT EXCEEDS	406		607		480	

e Estimated

12458000 ICICLE CREEK ABOVE SNOW CREEK, NEAR LEAVENWORTH, WA

LOCATION.--Lat 47°32'28", long 120°43'08", in SE¼SE¼, sec.28, T.24 N., R.17 E., Chelan County, Hydrologic Unit 17020011, on right bank 1,000 ft upstream from Icicle Canal diversion dam, 0.4 mi upstream from Snow Creek, 4.8 mi southwest of Leavenworth, and at mile 5.8.

DRAINAGE AREA.--193 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1936 to September 1971, October 1993 to current year.

REVISED RECORDS.--WSP 1246: 1936-41. WSP 1286: 1948. WSP 1446: 1943(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,450 ft above NGVD of 1929, from river-profile map.

REMARKS.--Records fair. No diversion. Some regulation in headwater lakes. Suspended sediment data are available from district office.

AVERAGE DISCHARGE.--46 years (water years 1937-71, 1994-2004), 617 ft<sup>3</sup>/s, 43.42 in/yr, 446,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft<sup>3</sup>/s, Nov. 29, 1995, gage height, 16.04 ft, from rating curve extended above 7,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily discharge, 44 ft<sup>3</sup>/s, Nov. 30, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 21	0445	*2,450	*8.67				

Minimum discharge, 65 ft<sup>3</sup>/s, Oct. 6-7, gage height, 2.35 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	342	650	200	368	188	578	1,500	1,290	836	207	232
2	68	314	575	200	332	187	553	1,850	1,190	769	197	300
3	67	282	532	196	310	185	557	2,090	1,260	716	190	326
4	65	255	486	177	293	183	620	2,020	1,530	684	185	285
5	65	205	469	e165	277	185	713	1,850	1,830	637	194	252
6	65	201	447	e159	270	186	791	1,590	1,710	606	188	230
7	65	207	410	e161	262	192	911	1,490	1,490	595	225	216
8	68	234	388	e167	254	287	987	1,590	1,280	564	206	204
9	74	211	361	e177	244	403	1,010	1,500	1,270	504	186	197
10	91	208	356	e182	240	489	1,050	1,410	1,370	462	175	191
11	89	300	338	e188	235	477	1,160	1,270	1,330	435	169	268
12	89	275	329	e195	222	472	1,340	1,210	1,150	414	165	284
13	151	232	320	e190	215	475	1,580	1,170	1,090	400	160	227
14	155	214	316	181	233	469	1,510	1,150	1,180	395	156	643
15	117	207	302	206	229	477	1,340	1,210	1,100	391	154	616
16	136	203	289	268	224	488	1,150	1,210	990	386	153	747
17	584	225	283	242	220	523	1,040	1,220	989	372	180	680
18	547	927	266	219	217	563	961	1,300	1,090	362	161	613
19	338	1,940	259	206	215	562	886	1,530	1,150	366	153	540
20	603	1,110	255	197	212	527	851	1,770	1,110	362	149	477
21	1,850	788	248	190	207	502	814	1,870	1,100	333	144	423
22	791	645	238	187	202	502	773	1,780	1,160	312	153	385
23	625	567	234	187	198	595	809	1,650	1,220	297	166	369
24	520	527	235	188	197	660	818	1,540	1,280	285	232	337
25	416	494	229	187	197	662	809	1,400	1,290	277	439	311
26	377	458	220	185	197	652	903	1,550	1,270	266	458	289
27	339	413	201	183	196	617	1,240	1,940	1,150	249	334	270
28	358	433	207	183	192	592	1,350	1,800	1,000	241	273	257
29	707	987	204	221	190	581	1,250	1,490	908	234	280	243
30	475	775	173	476	---	606	1,280	1,350	868	226	269	229
31	383	---	202	425	---	606	---	1,430	---	219	247	---
TOTAL	10,349	14,179	10,022	6,488	6,848	14,093	29,634	47,730	36,645	13,195	6,548	10,641
MEAN	334	473	323	209	236	455	988	1,540	1,222	426	211	355
MAX	1,850	1,940	650	476	368	662	1,580	2,090	1,830	836	458	747
MIN	65	201	173	159	190	183	553	1,150	868	219	144	191
AC-FT	20,530	28,120	19,880	12,870	13,580	27,950	58,780	94,670	72,690	26,170	12,990	21,110
CFSM	1.73	2.45	1.68	1.08	1.22	2.36	5.12	7.98	6.33	2.21	1.09	1.84
IN.	1.99	2.73	1.93	1.25	1.32	2.72	5.71	9.20	7.06	2.54	1.26	2.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2004, BY WATER YEAR (WY)

MEAN	240	376	338	276	293	289	669	1,693	1,910	881	268	162
MAX	703	1,992	1,062	813	994	669	1,099	2,798	3,429	2,292	764	380
(WY)	(1960)	(1996)	(1996)	(1968)	(1996)	(1997)	(1943)	(1956)	(1948)	(1954)	(1954)	(1959)
MIN	74.5	66.2	72.9	72.4	72.5	112	275	984	736	269	121	86.3
(WY)	(1994)	(1953)	(1953)	(1937)	(1937)	(1937)	(1967)	(1941)	(2001)	(1941)	(1941)	(2001)

## 12458000 ICICLE CREEK ABOVE SNOW CREEK, NEAR LEAVENWORTH, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1937 - 2004	
ANNUAL TOTAL	184,503		206,372			
ANNUAL MEAN	505		564		617	
HIGHEST ANNUAL MEAN					905	
LOWEST ANNUAL MEAN					299	
HIGHEST DAILY MEAN	2,690	Jun 8	2,090	May 3	14,100	Nov 29, 1995
LOWEST DAILY MEAN	65	Oct 4	65	Oct 4	44	Nov 30, 1936
ANNUAL SEVEN-DAY MINIMUM	66	Oct 2	66	Oct 2	50	Nov 25, 1952
ANNUAL RUNOFF (AC-FT)	366,000		409,300		446,900	
ANNUAL RUNOFF (CFSM)	2.62		2.92		3.20	
ANNUAL RUNOFF (INCHES)	35.56		39.78		43.42	
10 PERCENT EXCEEDS	970		1,310		1,610	
50 PERCENT EXCEEDS	338		360		299	
90 PERCENT EXCEEDS	97		179		116	

e Estimated

12459000 WENATCHEE RIVER AT PESHASTIN, WA

LOCATION.--Lat 47°35'00", long 120°37'06", in SE¼SW¼, sec.8, T.24 N., R.18 E., Chelan County, Hydrologic Unit 17020011, on right bank 1.0 mi northwest of Peshastin, 3.5 mi upstream from Peshastin Creek, 4.1 mi downstream from Icicle Creek, and at mile 21.5.

DRAINAGE AREA.--1,000 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1928 to February 1929 (monthly discharge only), March 1929 to current year.

REVISED RECORDS.--WSP 1316: 1929-32(M).

GAGE.--Water-stage recorder. Datum of gage is 1,028.04 ft above NGVD of 1929. Prior to Mar. 24, 1932, nonrecording gage at site 1.2 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Numerous diversions for irrigation of an estimated 3,200 acres upstream from station. Diversion from Icicle Creek 5.7 mi upstream from mouth is used for irrigation of a substantial part of the 22,000 acres downstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--76 years (water years 1929-2004), 3,066 ft<sup>3</sup>/s, 2,221,000 acre-ft/yr. Includes discharge for water year 1929, which was estimated for WSP 1316.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,300 ft<sup>3</sup>/s, Nov. 30, 1995, gage height, 17.89 ft; minimum discharge, 183 ft<sup>3</sup>/s, Oct. 14, 1939; minimum gage height, 1.22 ft, Nov. 26, 1993; minimum daily discharge, 210 ft<sup>3</sup>/s, Nov. 26, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 21	1800	*13,000	*9.29	No other peak greater than base discharge.			

Minimum discharge, 435 ft<sup>3</sup>/s, Oct. 1, gage height, 1.66 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465	2,300	3,080	1,040	1,990	1,100	3,390	6,700	5,690	3,570	960	877
2	468	2,070	2,790	1,030	1,840	1,100	3,260	8,000	5,320	3,290	907	942
3	460	1,870	2,590	991	1,730	1,100	3,270	8,990	5,370	3,050	873	976
4	454	1,690	2,370	e935	1,630	1,110	3,450	9,030	6,170	2,880	842	884
5	447	1,500	2,270	e850	1,550	1,130	3,820	8,620	7,470	2,670	843	814
6	442	1,380	2,180	e800	1,480	1,150	4,180	7,700	7,330	2,530	838	760
7	445	1,300	2,030	e810	1,430	1,160	4,690	7,030	6,520	2,490	894	725
8	458	1,310	1,910	e830	1,380	1,550	5,160	7,240	5,680	2,290	923	685
9	485	1,250	1,790	e900	1,330	2,150	5,370	7,040	5,500	2,030	848	669
10	522	1,210	1,740	e925	1,290	2,670	5,500	6,700	6,110	1,840	811	657
11	495	1,460	1,660	e950	1,260	2,760	5,790	6,210	6,010	1,680	784	780
12	492	1,580	1,620	979	1,230	2,800	6,320	5,840	5,260	1,610	766	1,120
13	652	1,430	1,610	949	1,200	2,840	7,240	5,660	4,920	1,560	758	978
14	773	1,330	1,580	935	1,220	2,790	7,380	5,530	5,020	1,560	748	1,510
15	684	1,270	1,510	1,020	1,190	2,860	6,810	5,580	4,570	1,570	742	1,810
16	752	1,240	1,450	1,250	1,180	2,890	6,110	5,550	4,160	1,610	739	2,520
17	1,960	1,340	1,420	1,250	1,180	3,030	5,560	5,650	4,170	1,560	760	2,570
18	3,850	2,560	1,350	1,210	1,170	3,190	5,140	5,980	4,560	1,540	775	2,560
19	2,650	7,310	1,300	1,160	1,150	3,250	4,780	6,890	4,780	1,560	740	2,280
20	2,640	7,630	1,270	1,110	1,130	3,070	4,560	7,740	4,610	1,540	725	2,000
21	10,800	5,730	1,240	1,070	1,110	2,920	4,370	8,250	4,700	1,430	708	1,750
22	10,000	4,440	1,200	1,040	1,090	2,880	4,140	8,160	5,000	1,320	704	1,570
23	6,660	3,660	1,180	1,040	1,080	3,220	4,240	7,720	5,310	1,250	762	1,480
24	4,920	3,250	1,190	1,040	1,100	3,570	4,270	7,070	5,530	1,210	835	1,370
25	3,710	2,950	1,160	1,020	1,110	3,710	4,210	6,430	5,680	1,190	1,320	1,280
26	3,020	2,690	1,120	993	1,130	3,740	4,510	6,720	5,610	1,170	1,580	1,190
27	2,580	2,390	1,070	983	1,110	3,590	5,560	8,020	5,000	1,120	1,430	1,110
28	2,350	2,300	1,070	991	1,110	3,480	6,260	8,010	4,360	1,070	1,220	1,050
29	3,860	3,490	1,040	1,110	1,110	3,400	6,030	6,930	3,920	1,040	1,100	969
30	3,240	3,510	1,010	1,910	---	3,480	6,060	6,200	3,700	1,010	1,020	912
31	2,670	---	1,040	2,150	---	3,510	---	6,210	---	1,000	938	---
TOTAL	73,404	77,440	49,840	33,271	37,510	81,200	151,430	217,400	158,030	55,240	27,893	38,798
MEAN	2,368	2,581	1,608	1,073	1,293	2,619	5,048	7,013	5,268	1,782	900	1,293
MAX (WY)	10,800 (1960)	7,630 (1991)	3,080 (1976)	2,150 (1968)	1,990 (1996)	3,740 (1972)	7,380 (1934)	9,030 (1956)	7,470 (1974)	3,570 (1954)	1,580 (1954)	2,570 (1959)
MIN (WY)	442 (1988)	1,210 (1930)	1,010 (1953)	800 (1930)	1,080 (1937)	1,100 (1929)	3,260 (1929)	5,530 (1977)	3,700 (1941)	1,000 (1941)	704 (1931)	657 (1942)
AC-FT	145,600	153,600	98,860	65,990	74,400	161,100	300,400	431,200	313,500	109,600	55,330	76,960

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)

	1,130	1,908	1,796	1,503	1,584	1,855	3,769	7,893	8,663	4,412	1,475	822
MEAN	1,130	1,908	1,796	1,503	1,584	1,855	3,769	7,893	8,663	4,412	1,475	822
MAX (WY)	3,654 (1960)	8,800 (1991)	6,202 (1976)	3,760 (1968)	4,677 (1996)	5,607 (1972)	11,250 (1934)	13,800 (1956)	16,180 (1974)	10,350 (1954)	4,003 (1954)	1,997 (1959)
MIN (WY)	331 (1988)	329 (1930)	421 (1953)	421 (1930)	476 (1937)	806 (1929)	1,475 (1929)	3,506 (1977)	3,191 (1941)	1,164 (1941)	572 (1931)	426 (1942)

## WENATCHEE RIVER BASIN

12459000 WENATCHEE RIVER AT PESHASTIN, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004	
ANNUAL TOTAL	1,010,787		1,001,456		3,081	
ANNUAL MEAN	2,769		2,736		4,830	
HIGHEST ANNUAL MEAN					1,572	
LOWEST ANNUAL MEAN					1972	
HIGHEST DAILY MEAN	12,600	Jun 8	10,800	Oct 21	38,900	Nov 30, 1995
LOWEST DAILY MEAN	404	Sep 25	442	Oct 6	210	Nov 26, 1993
ANNUAL SEVEN-DAY MINIMUM	410	Sep 22	453	Oct 2	255	Oct 26, 1987
ANNUAL RUNOFF (AC-FT)	2,005,000		1,986,000		2,232,000	
10 PERCENT EXCEEDS	5,600		6,200		7,880	
50 PERCENT EXCEEDS	1,810		1,610		1,650	
90 PERCENT EXCEEDS	514		807		609	

e Estimated



## 12462500 WENATCHEE RIVER AT MONITOR, WA

LOCATION.--Lat 47°29'58", long 120°25'24", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ , sec.11, T.23 N., R.19 E., Chelan County, Hydrologic Unit 17020011, on right bank 1.0 mi north of Monitor, 3.5 mi downstream from Mission Creek, and at mile 7.0.

DRAINAGE AREA.--1,301 mi<sup>2</sup>.

PERIOD OF RECORD.--August to November 1897, October 1962 to current year. Published as "near Wenatchee" 1897.

GAGE.--Water-stage recorder. Elevation of gage is 680 ft above NGVD of 1929, from topographic map. Aug. 7 to Nov. 7, 1897, nonrecording gage 1 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation. Diversions for irrigation of about 25,000 acres upstream from station. Chelan County Public Utility District No. 1 telemeter at station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1963-2004), 3,255 ft<sup>3</sup>/s, 2,358,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft<sup>3</sup>/s, Nov. 30, 1995, gage height, 30.02 ft; minimum discharge, 208 ft<sup>3</sup>/s, Nov. 26, 1993, gage height, 16.45 ft, but may have been less during period of frozen intakes Nov. 27 to Dec. 11, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,700 ft<sup>3</sup>/s, Oct. 21, gage height, 23.16 ft; minimum discharge, 392 ft<sup>3</sup>/s, Oct. 6, gage height, 16.78 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	422	2,480	3,390	1,240	2,260	1,310	3,690	6,900	5,830	3,510	914	850
2	438	2,240	3,100	e1,240	2,100	1,310	3,550	8,320	5,430	3,250	860	892
3	432	2,050	2,900	e1,200	1,970	1,310	3,520	9,520	5,430	3,000	826	964
4	426	1,870	2,680	e1,150	1,860	1,320	3,680	9,580	6,210	2,840	793	879
5	419	1,660	2,560	e1,050	1,760	1,350	4,070	9,130	7,640	2,630	786	802
6	414	1,540	2,460	e970	1,700	1,370	4,430	8,120	7,540	2,490	790	741
7	413	1,450	2,320	e990	1,640	1,370	4,950	7,320	6,690	2,440	823	708
8	425	1,460	2,210	e1,010	1,590	1,790	5,540	7,480	5,780	2,270	877	664
9	451	1,400	2,090	e1,040	1,530	2,610	5,740	7,300	5,530	2,000	809	642
10	553	1,350	2,040	e1,070	1,500	3,250	5,860	6,950	6,130	1,820	761	636
11	580	1,570	1,960	e1,090	1,470	3,270	6,150	6,410	6,130	1,680	730	714
12	569	1,750	1,900	1,110	1,430	3,260	6,650	6,010	5,360	1,570	701	1,100
13	685	1,600	1,890	1,070	1,390	3,320	7,660	5,790	4,970	1,520	692	1,010
14	897	1,490	1,860	1,060	1,420	3,240	7,880	5,650	5,070	1,510	684	1,380
15	789	1,430	1,800	1,110	1,390	3,290	7,240	5,690	4,650	1,510	677	1,800
16	840	1,400	1,730	1,340	1,380	3,310	6,450	5,670	4,190	1,540	675	2,480
17	1,900	1,490	1,700	1,380	1,380	3,470	5,830	5,800	4,130	1,510	683	2,580
18	4,040	2,560	1,630	1,330	1,370	3,640	5,360	6,150	4,510	1,480	723	2,620
19	2,880	7,540	1,580	1,290	1,350	3,690	4,990	7,090	4,760	1,500	688	2,350
20	2,640	8,060	1,550	1,240	1,320	3,500	4,760	8,090	4,580	1,500	670	2,080
21	11,000	6,030	1,520	1,200	1,300	3,290	4,550	8,630	4,640	1,400	657	1,830
22	10,700	4,720	1,470	1,160	1,280	3,230	4,300	8,590	4,930	1,280	657	1,640
23	6,980	3,950	1,450	1,160	1,270	3,540	4,330	8,110	5,230	1,200	712	1,530
24	5,160	3,520	1,470	1,170	1,290	3,950	4,390	7,400	5,470	1,140	771	1,440
25	3,920	3,220	1,430	1,150	1,310	4,090	4,340	6,680	5,620	1,130	1,280	1,320
26	3,210	2,980	1,390	1,120	1,330	4,150	4,570	6,890	5,580	1,120	1,590	1,230
27	2,770	2,700	1,320	1,110	1,310	3,980	5,620	8,320	4,990	1,060	1,500	1,150
28	2,490	2,560	1,320	1,120	1,310	3,840	6,480	8,410	4,310	1,020	1,270	1,080
29	3,840	3,610	1,300	1,220	1,310	3,740	6,260	7,240	3,850	1,000	1,110	999
30	3,420	3,820	1,150	2,040	---	3,780	6,250	6,370	3,630	964	1,030	939
31	2,860	---	1,190	2,430	---	3,820	---	6,360	---	951	929	---
TOTAL	76,563	83,500	58,360	37,860	43,520	92,390	159,090	225,970	158,810	53,835	26,668	39,050
MEAN	2,470	2,783	1,883	1,221	1,501	2,980	5,303	7,289	5,294	1,737	860	1,302
MAX	11,000	8,060	3,390	2,430	2,260	4,150	7,880	9,580	7,640	3,510	1,590	2,620
MIN	413	1,350	1,150	970	1,270	1,310	3,520	5,650	3,630	951	657	636
AC-FT	151,900	165,600	115,800	75,100	86,320	183,300	315,600	448,200	315,000	106,800	52,900	77,460

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2004, BY WATER YEAR (WY)

MEAN	1,091	2,115	1,977	1,763	1,981	2,379	4,002	8,004	8,970	4,440	1,495	820
MAX	3,095	9,636	6,983	4,309	5,447	6,853	7,260	12,970	17,020	9,880	3,985	1,628
(WY)	(1998)	(1991)	(1976)	(1984)	(1996)	(1972)	(1990)	(1972)	(1974)	(1974)	(1999)	(1978)
MIN	346	426	556	527	518	995	1,678	3,565	3,898	1,135	576	362
(WY)	(1988)	(1988)	(2001)	(1988)	(2001)	(2001)	(1967)	(1977)	(2001)	(1977)	(1994)	(2001)

## WENATCHEE RIVER BASIN

12462500 WENATCHEE RIVER AT MONITOR, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1963 - 2004	
ANNUAL TOTAL	1,088,840		1,055,616			
ANNUAL MEAN	2,983		2,884		3,255	
HIGHEST ANNUAL MEAN					5,261	1972
LOWEST ANNUAL MEAN					1,589	2001
HIGHEST DAILY MEAN	13,600	Jun 8	11,000	Oct 21	45,200	Nov 30, 1995
LOWEST DAILY MEAN	403	Sep 25	413	Oct 7	221	Nov 26, 1993
ANNUAL SEVEN-DAY MINIMUM	411	Sep 23	423	Oct 1	271	Oct 4, 2001
ANNUAL RUNOFF (AC-FT)	2,160,000		2,094,000		2,358,000	
10 PERCENT EXCEEDS	5,930		6,380		8,040	
50 PERCENT EXCEEDS	2,040		1,800		1,830	
90 PERCENT EXCEEDS	462		790		645	

e Estimated

## 12462545 ROCK ISLAND CREEK NEAR ROCK ISLAND, WA

## WATER-QUALITY RECORDS

LOCATION.--Lat 47°21'17", long 120°06'15", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ , sec.32, T.21 N., R.22 E., Douglas County, Hydrologic Unit 17020010, upstream of Hwy 28, 2 mi southeast of Rock Island.

DRAINAGE AREA.--86 mi<sup>2</sup>.

PERIOD OF RECORD.--July and September 2003 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 degrees NTU (63675)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
JUL 08...	1050	--	--	746	9.6	94	8.1	244	21.3	13.3	--	--	--
SEP 02...	1300	--	--	--	--	--	--	--	--	--	--	--	--
02...	1320	--	--	--	--	--	--	--	--	--	--	--	--
04...	1040	.31	.5	745	9.1	91	8.0	246	27.2	14.5	111	133	.0

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Biomass periphyton, ashfree drymass g/m2 (49954)	Biomass periphyton, ashfree dry wt, DTH, g/m2 (63766)
JUL 08...	E.05	<.04	.10	<.008	--	.10	.108	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	--	--	--	17.0	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	176
04...	E.10	<.04	E.05	<.008	<.02	.09	.107	.2	<.1	.1	1.0	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Biomass periphyton, ash weight, DTH, g/m2 (63765)	Periphyton biomass ash weight, g/m2 (00572)	Biomass periphyton, dry weight, DTH, g/m2 (63767)	Periphyton biomass dry weight, g/m2 (00573)	Chlorophyll a periphyton, DTH, CF meth mg/m2 (63763)	Pheophytin a periphyton, DTH, CF meth mg/m2 (63764)	Pheophytin a, periphyton, mg/m2 (62359)	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a periphyton, chromo-fluoro, mg/m2 (70957)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JUL 08...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	430	--	443.7	--	--	15	--	29.3	--	--	--
02...	1,290	--	1,470	--	38.7	59.4	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	.6	--	.3	4	.00

## 12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WA

LOCATION.--Lat 47°19'57", long 120°04'48", in NE ¼ NW ¼ sec.9, T.21 N., R.22 E., Douglas County, Hydrologic Unit 17020010, on left bank 1.0 mi downstream from Rock Island Dam, 2.0 mi downstream from Rock Island Creek, 12 mi southeast of Wenatchee, and at mile 452.4.

DRAINAGE AREA.--89,400 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--January to December 1910 (gage heights only), May 1913 to December 1916, October 1930 to current year. Published as "at Wenatchee" January 1910 to December 1916, and as "at Trinidad" October 1930 to May 1961.

GAGE.--Daily discharge determined from flow through turbines plus spillway flow when present. Datum of gage is NGVD of 1929. Prior to Jan. 1, 1916, nonrecording gage 1.2 mi upstream from highway bridge at Wenatchee, at mile 466.3, at datum 583 ft above NGVD of 1929. Jan. 1 to Dec. 31, 1916, nonrecording gage on pier of highway bridge at Wenatchee, at mile 465.1, at datum 579.30 ft above NGVD of 1929. Oct. 1, 1930, to May 31, 1961, water-stage recorder 0.5 mi southwest of Trinidad, at mile 441.7, at datum 499.3 ft above NGVD of 1929 (river-profile survey). June 1, 1961, to July 22, 1988, water-stage recorder at present site and datum; May 21, 1963, to July 22, 1988, auxiliary water-stage recorder 2.0 mi downstream at same datum.

REMARKS.--Flow regulated by numerous reservoirs. Feeder Canal diversion (station 12435500) for Columbia Basin project is used to irrigate approximately 600,000 acres in the United States. An additional 66,500 acres in Canada are irrigated by other diversions.

COOPERATION.--Discharge records provided by Public Utility District No. 1 of Chelan County at Rock Island Dam through the Corps of Engineers, North Pacific Division, Reservoir Control Center. The U.S. Geological Survey made 6 discharge measurements at this site during the year.

AVERAGE DISCHARGE.--77 years (water years 1914-16, 1931-2004), 118,700 ft<sup>3</sup>/s, 86,000,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft<sup>3</sup>/s June 12, 1948, gage height, 59.35 ft, site and datum then in use; minimum discharge, 4,120 ft<sup>3</sup>/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 ft<sup>3</sup>/s, from floodmarks at Wenatchee.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 169,000 ft<sup>3</sup>/s June 29; minimum daily discharge, 40,400 ft<sup>3</sup>/s Mar. 14.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79,200	98,200	112,000	82,300	66,400	82,900	79,500	108,000	116,000	119,000	77,800	110,000
2	69,900	64,400	106,000	104,000	98,900	81,400	87,100	91,500	131,000	116,000	90,400	89,000
3	65,800	90,800	113,000	102,000	110,000	103,000	58,000	137,000	148,000	99,000	87,200	64,300
4	50,300	115,000	115,000	101,000	78,000	99,800	41,000	126,000	151,000	90,100	96,200	53,800
5	47,800	119,000	113,000	148,000	114,000	85,400	82,400	104,000	118,000	119,000	79,800	55,700
6	79,100	109,000	92,900	140,000	102,000	58,400	77,200	113,000	108,000	119,000	69,000	74,500
7	65,800	107,000	69,200	131,000	79,800	45,900	70,600	120,000	111,000	133,000	53,400	90,600
8	70,500	74,800	107,000	115,000	52,500	72,500	68,700	111,000	120,000	130,000	62,400	88,700
9	80,400	65,100	122,000	115,000	101,000	85,200	79,300	106,000	121,000	117,000	95,200	94,700
10	66,900	91,300	124,000	92,200	103,000	89,500	68,500	149,000	151,000	98,100	106,000	84,700
11	63,300	94,200	117,000	76,300	98,700	73,500	45,400	130,000	154,000	104,000	107,000	70,500
12	54,400	109,000	114,000	118,000	106,000	72,500	87,700	128,000	144,000	132,000	109,000	51,800
13	80,300	104,000	113,000	110,000	111,000	56,100	101,000	130,000	140,000	123,000	104,000	67,400
14	81,200	97,800	103,000	103,000	67,000	40,400	92,700	145,000	166,000	116,000	87,200	57,500
15	75,600	87,800	135,000	93,900	54,900	73,300	99,600	126,000	162,000	94,600	86,200	59,900
16	67,800	84,000	127,000	89,800	93,800	76,900	106,000	118,000	133,000	96,700	99,500	69,800
17	72,000	98,800	119,000	77,800	92,400	87,500	95,800	137,000	144,000	83,000	107,000	68,300
18	57,000	99,400	114,000	68,700	80,300	82,500	85,700	138,000	144,000	86,000	111,000	60,600
19	52,200	112,000	118,000	92,100	77,800	87,500	130,000	139,000	134,000	94,500	106,000	44,100
20	80,200	112,000	104,000	88,800	83,500	60,400	136,000	120,000	137,000	69,800	112,000	69,000
21	99,200	112,000	70,200	98,900	50,000	44,100	127,000	123,000	158,000	85,000	74,000	91,300
22	98,400	96,500	125,000	123,000	44,700	76,700	101,000	115,000	155,000	86,300	47,500	96,500
23	101,000	72,000	131,000	97,700	74,000	77,200	108,000	94,000	112,000	91,000	80,900	101,000
24	99,900	112,000	109,000	80,600	77,500	87,600	104,000	126,000	113,000	83,400	82,600	99,100
25	79,400	105,000	53,500	79,600	99,800	86,500	106,000	131,000	123,000	62,500	102,000	72,700
26	59,200	97,000	97,700	109,000	106,000	77,200	118,000	127,000	124,000	93,500	111,000	58,300
27	109,000	53,400	112,000	101,000	85,000	58,100	119,000	142,000	108,000	97,100	114,000	91,800
28	98,900	67,900	96,000	101,000	70,400	49,000	113,000	125,000	144,000	110,000	98,600	91,200
29	93,800	65,900	135,000	93,700	64,300	79,700	106,000	109,000	169,000	113,000	104,000	79,500
30	108,000	58,700	131,000	81,200	---	75,300	104,000	122,000	147,000	107,000	120,000	94,400
31	118,000	---	107,000	80,100	---	80,100	---	94,800	---	107,000	146,000	---
TOTAL	2,424,500	2,774,000	3,405,500	3,094,700	2,442,700	2,306,100	2,798,200	3,785,300	4,086,000	3,175,600	2,926,900	2,300,700
MEAN	78,210	92,470	109,900	99,830	84,230	74,390	93,270	122,100	136,200	102,400	94,420	76,690
MAX	118,000	119,000	135,000	148,000	114,000	103,000	136,000	149,000	169,000	133,000	146,000	110,000
MIN	47,800	53,400	53,500	68,700	44,700	40,400	41,000	91,500	108,000	62,500	47,500	44,100
AC-FT	4,809,000	5,502,000	6,755,000	6,138,000	4,845,000	4,574,000	5,550,000	7,508,000	8,105,000	6,299,000	5,806,000	4,563,000
CAL YR	2003	TOTAL 35,777,100	MEAN 98020	MAX 173000	MIN 35700	AC-FT 70960000						
WTR YR	2004	TOTAL 35,520,200	MEAN 97050	MAX 169000	MIN 40400	AC-FT 70450000						

## 12462640 COLOCKUM CREEK NEAR ROCK ISLAND, WA

## WATER-QUALITY RECORDS

LOCATION.--Lat 47°17'41", long 120°08'56", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>, sec.24, T.21 N., R.22 E., Chelan County, Hydrologic Unit 17020010, downstream of Colockum Rd. bridge at milepost 16, 6 mi south of Rock Island.

DRAINAGE AREA.--36 mi<sup>2</sup>.

PERIOD OF RECORD.--July and September 2003 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 degrees NTU (63675)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incm. titr., field, mg/L (00453)	Carbonate, wat flt incm. titr., field, mg/L (00452)
JUL 07...	1320	--	--	725	8.0	89	8.0	160	31.7	18.3	--	--	--
SEP 02...	1450	.10	5.3	731	7.8	88	7.8	241	33.7	19.1	121	145	.0
04...	1000	--	--	--	--	--	--	--	--	--	--	--	--
04...	1020	--	--	--	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Biomass periphyton, ashfree drymass g/m2 (49954)
JUL 07...	.20	<.04	.22	<.008	--	.07	.105	.42	--	--	--	--	--
SEP 02...	.20	<.04	<.06	<.008	.04	.07	.147	--	.3	<.1	.3	2.4	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	18.4
04...	--	--	--	--	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Biomass periphyton, ashfree dry wt, DTH, g/m2 (63766)	Biomass periphyton, ash weight, DTH, g/m2 (63765)	Periphyton biomass ash weight, DTH, g/m2 (00572)	Biomass periphyton, dry weight, DTH, g/m2 (63767)	Periphyton biomass dry weight, DTH, g/m2 (00573)	Chlorophyll a periphyton, DTH, CF meth mg/m2 (63763)	Pheophytin a periphyton, DTH, CF meth mg/m2 (63764)	Pheophytin a, periphyton, mg/m2 (62359)	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a periphyton, chromo-fluoro, mg/m2 (70957)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JUL 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	.3	--	.3	10	.00
04...	--	--	430	--	448.0	--	--	7.7	--	18.9	--	--	--
04...	221	1,810	--	2,030	--	7.5	15.8	--	--	--	--	--	--

## 12464606 SAND HOLLOW CREEK AT S ROAD SW, NEAR VANTAGE, WA

## WATER-QUALITY RECORDS

LOCATION.--Lat 46°55'50", long 119°53'55", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ , sec.26, T.17 N., R.23 E., Grant County, Hydrologic Unit 17020010, on right bank at county road crossing, 3 mi east of junction of State Routes 243 and 26, 4 mi east of Vantage, and 3 mi upstream from mouth.

DRAINAGE AREA.--47 mi<sup>2</sup>.

PERIOD OF RECORD.--March to July 1992, July 1993 to February 1995, February 1997, July 2002, July and August 2003 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1993 to October 1994.

WATER TEMPERATURE: October 1993 to September 1995.

REMARKS.--Unpublished water-quality data for 1993-97 are available in the Washington Water Science Center office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 955 microsiemens, Mar. 5, 1994; minimum recorded, 224 microsiemens, June 27, 1994.

WATER TEMPERATURE: Maximum recorded, 25°C, July 21, 24, 25, 1994, July 18, 1995; minimum recorded, 1.0°C, Feb. 8, 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 degrees NTU (63675)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
JUL 08...	1420	--	--	740	9.5	107	8.7	324	27.6	19.7	--	--	--
AUG 13...	1030	96	6.3	742	9.6	104	8.3	356	24.4	17.8	127	152	.0
15...	1400	--	--	--	--	--	--	--	--	--	--	--	--
15...	1420	--	--	--	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Biomass periphyton, ashfree drymass g/m2 (49954)
JUL 08...	.43	<.04	4.43	.022	--	<.02	.038	4.9	--	--	--	--	--
AUG 13...	.51	<.04	4.87	.014	.08	<.18	.055	5.4	.5	<.1	.5	2.4	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	32.8
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Biomass periphyton, ashfree dry wt, DTH, g/m2 (63766)	Biomass periphyton, ash weight, DTH, g/m2 (63765)	Periphyton biomass ash weight, DTH, g/m2 (00572)	Biomass periphyton, dry weight, DTH, g/m2 (63767)	Periphyton biomass dry weight, DTH, g/m2 (00573)	Chlorophyll a periphyton, DTH, CF meth mg/m2 (63763)	Pheophytin a periphyton, DTH, CF meth mg/m2 (63764)	Pheophytin a, periphyton, mg/m2 (62359)	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a periphyton, chromofluoro, mg/m2 (70957)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	Suspended sediment concentration, mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JUL 08...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	2.2	--	2.6	33	8.5
15...	--	--	530	--	559.4	--	--	41	--	63.7	--	--	--
15...	96.0	1,680	--	1,780	--	E96.4	E81.5	--	--	--	--	--	--

## 12464607 SAND HOLLOW AT MOUTH, NEAR VANTAGE, WA

## WATER-QUALITY RECORDS

LOCATION.--Lat 46°55'46", long 119°57'01", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ , sec.28, T.16 N., R.26 E., Grant County, Hydrologic Unit 17020010, 0.4 mi east of junction of State Routes 243 and 26, 2 mi east of Vantage at mile 0.4.

PERIOD OF RECORD.--November 1991 to July 1992, July 2002 to current year.

DRAINAGE AREA.--Not determined.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO <sub>3</sub> (00900)	Noncarb hardness, wat flt field, mg/L as CaCO <sub>3</sub> (00904)	Noncarb hardness, wat flt lab, mg/L as CaCO <sub>3</sub> (00905)	Calcium water, fltrd, mg/L (00915)
OCT 06...	1010	113	744	10.6	109	8.4	343	--	15.5	140	29	--	34.7
FEB 03...	0920	26	744	11.6	101	8.6	719	3.5	8.1	340	--	150	76.3
APR 06...	0920	94	749	11.5	104	8.5	330	11.0	10.0	140	29	--	34.5
JUN 08...	0840	115	743	9.9	103	8.2	310	18.0	15.7	150	40	--	36.0
JUL 07...	0930	132	745	11.5	119	8.1	310	19.4	16.0	140	33	--	34.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO <sub>3</sub> (29801)	Alkalinity, wat flt inc tit field, mg/L as CaCO <sub>3</sub> (39086)	Bicarbonate, wat flt incrm. titr., mg/L (00453)	Carbonate, wat flt incrm. titr., mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
OCT 06...	14.2	1.37	.4	10.7	14	--	116	138	2	8.29	.2	18.6	24.2
FEB 03...	35.8	2.35	.7	29.1	16	189	--	--	--	27.9	.5	43.9	62.9
APR 06...	13.1	1.95	.5	14.9	19	--	112	134	.0	9.51	.2	13.3	25.5
JUN 08...	13.5	1.25	.4	9.87	13	--	106	128	.0	7.08	.2	15.2	19.1
JUL 07...	12.9	1.20	.4	9.83	13	--	106	128	.0	7.12	.2	16.1	22.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)
OCT 06...	201	.27	61.0	200	.15	<.010	4.43	.004	.018	4.6	E4	E.7	<.006
FEB 03...	462	.62	32.1	459	.09	.010	15.7	.006	.046	16	<6	.8	<.006
APR 06...	197	.28	52.6	207	.15	<.010	3.92	.003	<.010	4.1	<6	1.2	<.006
JUN 08...	184	.25	57.1	184	.33	.070	4.22	.016	.039	4.5	<6	1.0	<.006
JUL 07...	185	.25	66.0	185	.23	.030	3.86	<.003	.024	4.1	<6	1.7	<.006

## 12464607 SAND HOLLOW AT MOUTH NEAR VANTAGE, WA—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	alpha- HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)	Ben- flur- alin, water, fltrd 0.7u GF ug/L (82673)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)
OCT 06...	E.005	<.006	<.004	<.005	120	.010	<.050	<.010	<.002	<.041	<.020	E.004	<.006
FEB 03...	E.029	<.006	.006	<.005	106	.026	<.050	<.010	<.004	<.041	<.020	<.005	<.006
APR 06...	E.009	<.006	<.005	<.005	96.6	.013	<.050	<.010	<.004	<.041	<.020	.053	<.006
JUN 08...	E.008	<.006	.006	<.005	99.6	.011	E.034	<.010	<.004	E.070	<.020	.006	<.006
JUL 07...	E.008	<.006	.012	<.005	98.7	.010	E.013	<.010	<.004	E.031	<.020	<.005	<.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf- inyl fipron- il, water, fltrd, ug/L (62170)	Diazi- non, water, fltrd, ug/L (39572)	Diazi- non-d10 surrog, wat flt 0.7u GF percent recovry (91063)	Diel- drin, water, fltrd, ug/L (39381)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipron- il amide, wat flt ug/L (62169)	Fipron- il sulfide water, fltrd, ug/L (62167)	Fipron- il sulfone water, fltrd, ug/L (62168)
OCT 06...	<.018	<.003	<.004	<.005	112	<.005	<.02	<.002	<.009	<.005	<.009	<.005	<.005
FEB 03...	<.018	<.003	<.012	<.005	119	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024
APR 06...	<.018	.011	<.012	<.005	118	<.009	<.02	<.004	<.009	.016	<.029	<.013	<.024
JUN 08...	<.018	.006	<.012	<.005	115	<.009	<.02	.018	<.009	<.005	<.029	<.013	<.024
JUL 07...	<.018	.004	<.012	<.005	109	<.009	<.02	E.004	<.009	<.005	<.029	<.013	<.024

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Fipron- il, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)
OCT 06...	<.007	<.003	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004
FEB 03...	<.016	<.003	<.004	<.035	<.027	<.015	<.013	.013	<.003	<.007	<.003	<.010	<.004
APR 06...	<.016	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004
JUN 08...	<.016	<.003	<.004	E.007	E.015	<.015	E.008	.007	<.003	<.007	<.003	<.010	<.004
JUL 07...	<.016	<.003	<.004	<.035	<.027	<.015	E.004	.006	<.003	<.007	<.003	<.010	<.004

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Propy- zamide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water, fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water, fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)
OCT 06...	<.022	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	E.047	<.02	<.005	<.002
FEB 03...	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.006	<.02	E.259	<.02	<.010	<.002
APR 06...	E.018	<.011	<.01	<.004	<.025	<.011	<.02	.213	<.02	E.053	<.02	<.010	<.002
JUN 08...	E.006	<.011	<.01	<.004	<.025	<.011	<.02	.009	<.02	E.088	<.02	<.010	<.002
JUL 07...	.024	<.011	M	<.004	<.025	<.011	<.02	E.004	<.02	E.075	<.02	<.010	<.002



12464607 SAND HOLLOW AT MOUTH NEAR VANTAGE, WA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
OCT 06...	<.009
FEB 03...	<.009
APR 06...	<.009
JUN 08...	<.009
JUL 07...	<.009