



Figure 10. Location of surface-water stations in the Chehalis River Basin.

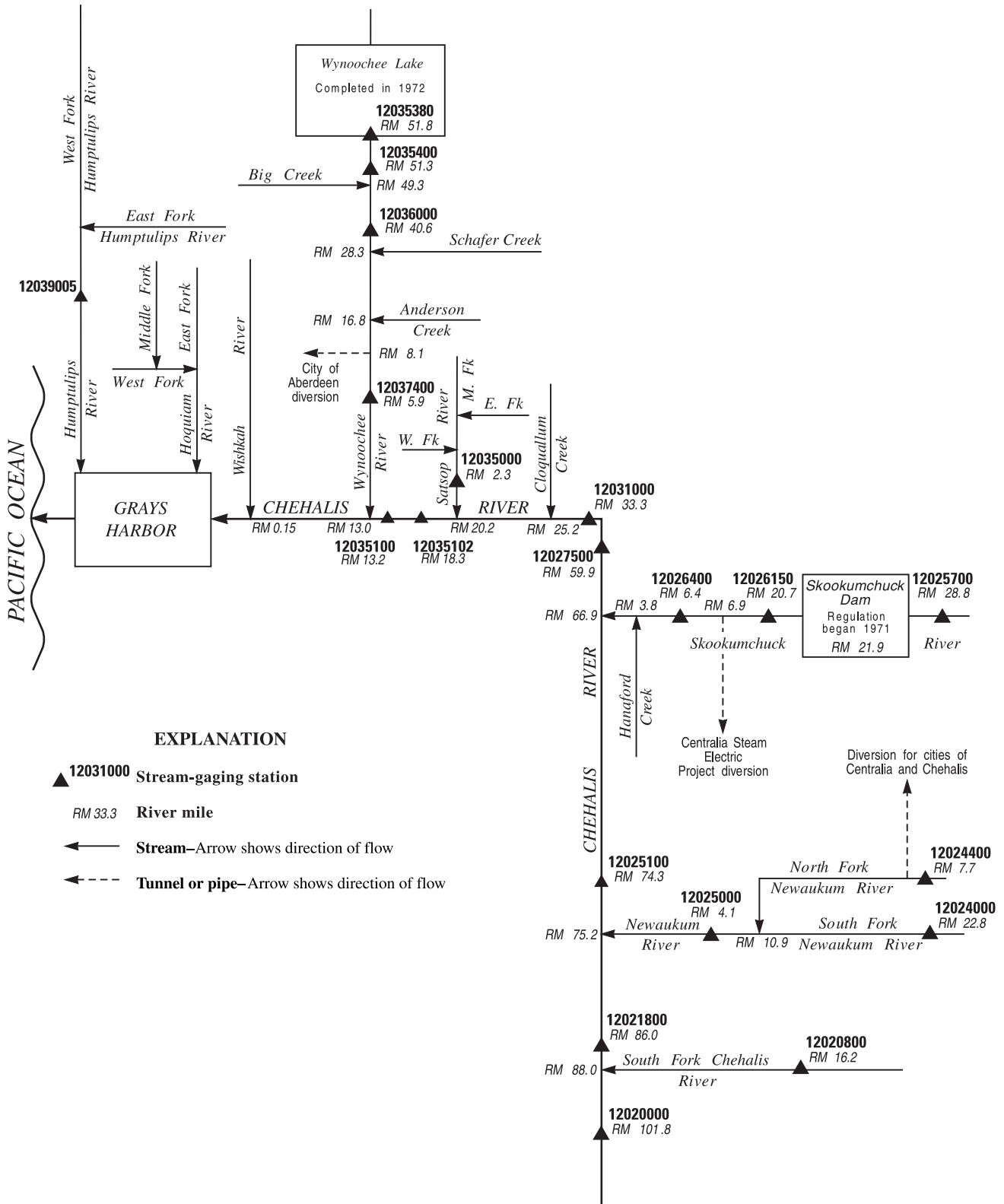


Figure 11. Schematic diagram showing surface-water stations in the Chehalis River Basin.

CHEHALIS RIVER BASIN
12020000 CHEHALIS RIVER NEAR DOTY, WA

LOCATION.--Lat 46°37'03", long 123°16'35", in NE ¼ NW ¼ sec.14, T.13 N., R.5 W., Lewis County, Hydrologic Unit 17100103, on right bank 1.3 mi south of Doty, 1.6 mi upstream from Elk Creek, 3.4 mi north of Pe Ell, and at mile 101.8.

DRAINAGE AREA.--113 mi².

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1316: 1943(M). WSP 1446: 1946(M). WDR-WA-72-1: 1945(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 301.1 ft above NGVD of 1929 (river-profile survey). Prior to Oct. 1, 1961, nonrecording gage and crest-stage gage at site 50 ft upstream at datum 1 ft higher. Oct 1, 1961 to Sept. 15, 1995, water-stage recorder at site 150 ft upstream at datum 1 ft higher. Prior to Feb. 24, 1999, at same site at datum 1 ft higher.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Chemical analyses July 1959 to September 1970, sediment records October 1961 to December 1964 (partial-record station).

AVERAGE DISCHARGE.--64 years (water years 1940-2003), 574 ft³/s, 69.03 in/yr, 415,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 ft³/s Feb. 8, 1996, gage height, 20.37 ft, from rating curve extended above 8,000 ft³/s on basis of slope-area measurement at gage height 18.36 ft; minimum discharge, 16 ft³/s Aug. 31, Sept. 3, 4, 7, 8, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 31	1445	*8,150	*10.55	Mar 22	0900	8,100	10.51

Minimum discharge, 18 ft³/s, Sept. 28, 29, gage height, 0.90 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	21	67	1,550	3,730	393	598	317	102	51	23	25
2	30	22	64	2,950	2,110	367	576	289	98	47	24	24
3	29	22	61	3,410	1,480	358	622	271	94	44	23	24
4	34	22	59	3,040	1,120	322	632	305	88	43	23	23
5	31	22	60	2,580	901	363	610	344	84	42	23	23
6	29	24	57	1,640	755	671	712	304	80	42	25	22
7	27	36	53	1,150	648	905	753	283	78	41	24	25
8	26	79	51	880	568	923	869	269	75	41	25	37
9	26	144	50	714	503	1,840	780	248	75	41	26	46
10	25	102	166	604	453	1,950	651	232	77	38	25	55
11	24	190	878	552	409	1,710	571	232	78	36	23	41
12	23	204	1,680	819	373	3,270	709	219	75	37	21	46
13	23	249	1,370	724	347	4,690	1,130	204	82	42	21	38
14	23	311	2,130	684	320	3,860	1,160	199	79	42	21	31
15	23	186	2,520	613	326	2,970	957	201	72	39	21	29
16	23	220	2,360	547	395	2,060	785	230	67	37	22	30
17	22	488	1,700	493	747	1,470	673	219	63	35	22	33
18	22	336	1,390	447	885	1,170	596	196	62	31	21	31
19	22	1,430	1,270	406	755	1,070	516	183	63	30	20	28
20	22	791	991	372	832	1,270	464	173	63	31	20	31
21	22	437	763	356	1,130	2,370	433	171	63	31	20	28
22	22	285	610	527	1,160	6,080	385	157	67	30	21	26
23	22	207	527	936	929	3,140	392	149	62	28	21	24
24	22	164	462	1,030	750	1,920	480	142	59	29	24	22
25	22	128	450	1,070	631	1,430	444	142	55	29	25	22
26	22	108	942	3,570	547	1,190	447	133	53	28	26	21
27	22	96	1,180	2,340	481	1,060	419	127	50	26	27	20
28	22	86	1,170	1,470	434	945	380	119	48	25	26	19
29	22	78	921	1,320	---	820	368	114	46	25	26	19
30	22	71	1,310	1,810	---	711	337	109	47	24	27	20
31	21	---	1,390	6,590	---	641	---	106	---	23	27	---
TOTAL	764	6,559	26,702	45,194	23,719	51,939	18,449	6,387	2,105	1,088	723	863
MEAN	24.6	219	861	1,458	847	1,675	615	206	70.2	35.1	23.3	28.8
MAX	39	1,430	2,520	6,590	3,730	6,080	1,160	344	102	51	27	55
MIN	21	21	50	356	320	322	337	106	46	23	20	19
AC-FT	1,520	13,010	52,960	89,640	47,050	103,000	36,590	12,670	4,180	2,160	1,430	1,710
CFSM	0.22	1.93	7.62	12.9	7.50	14.8	5.44	1.82	0.62	0.31	0.21	0.25
IN.	0.25	2.16	8.79	14.88	7.81	17.10	6.07	2.10	0.69	0.36	0.24	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	271	909	1,264	1,229	1,165	898	576	273	145	70.5	45.8	76.0
MAX	1,121	2,131	2,486	2,888	2,940	1,870	1,285	700	390	183	124	357
(WY)	(1998)	(1956)	(1995)	(1953)	(1999)	(1956)	(1996)	(1948)	(1968)	(1983)	(1968)	(1959)
MIN	20.5	57.6	217	176	278	216	207	125	62.8	33.9	23.3	22.0
(WY)	(1988)	(1994)	(1977)	(1977)	(1993)	(1992)	(1941)	(1994)	(1992)	(1951)	(2003)	(1998)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	191,267		184,492			
ANNUAL MEAN	524		505		574	
HIGHEST ANNUAL MEAN					911	
LOWEST ANNUAL MEAN					253	
HIGHEST DAILY MEAN	10,700	Jan 7	6,590	Jan 31	19,200	Feb 8, 1996
LOWEST DAILY MEAN	21	Oct 31	19	Sep 28	16	Sep 3, 1992
ANNUAL SEVEN-DAY MINIMUM	22	Oct 26	20	Sep 24	17	Aug 29, 1992
ANNUAL RUNOFF (AC-FT)	379,400		365,900		415,900	
ANNUAL RUNOFF (CFSM)	4.64		4.47		5.08	
ANNUAL RUNOFF (INCHES)	62.97		60.74		69.03	
10 PERCENT EXCEEDS	1,370		1,380		1,460	
50 PERCENT EXCEEDS	137		133		259	
90 PERCENT EXCEEDS	26		22		36	

12020800 SOUTH FORK CHEHALIS RIVER NEAR WILDWOOD, WA

LOCATION.--Lat 46°26'42", long 123°04'57", in NW 1/4 NE 1/4 sec.17, T.11 N., R.3 W., Lewis County, Hydrologic Unit 17100103, on left bank at Wildwood Road bridge, 0.4 mi downstream from Black Creek, 1.2 mi southeast of Wildwood, and at mile 16.2.

DRAINAGE AREA.--27.0 mi².

PERIOD OF RECORD.--October 1998 to current year (seasonal records).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Lewis County).

REMARKS.--Records good except for estimated daily discharges, which are fair, and flows below 10 ft³/s, which are poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,370 ft³/s Nov. 25, 1998, elevation, 361.44 ft, from floodmarks; minimum discharge, 4.5 ft³/s, Oct. 17, 18, 19, 2002.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996, reached a stage of 363.57 ft from floodmarks, discharge, 5,620 ft³/s, from rating curve extended above 2,600 ft³/s.

EXTREMES FOR PERIOD OCTOBER TO APRIL.--Maximum discharge, 2,500 ft³/s Jan. 31, elevation 358.34 ft; minimum discharge, 4.5 ft³/s Oct. 17, 18, 19.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	e9.0	6.7	25	374	981	106	150
2	e7.8	7.0	24	557	528	101	145
3	e7.4	6.9	23	624	360	96	168
4	e8.5	7.0	22	589	281	91	162
5	e7.7	7.1	23	542	227	96	158
6	e7.0	8.7	22	366	192	122	198
7	e6.6	15	21	265	165	191	193
8	e6.2	33	20	204	145	173	191
9	e5.9	35	20	163	131	295	175
10	5.3	29	52	134	119	303	153
11	4.9	40	248	117	110	346	143
12	5.0	53	383	131	103	715	204
13	5.4	49	295	115	97	744	352
14	5.3	65	515	119	92	547	293
15	5.1	36	608	103	97	445	239
16	5.1	41	630	95	124	343	200
17	4.8	84	412	87	299	276	171
18	4.7	56	e340	81	291	232	150
19	5.2	281	e300	76	229	219	133
20	5.7	130	e230	71	241	229	120
21	5.9	82	186	69	275	533	112
22	5.9	64	e150	111	255	1,260	101
23	5.6	52	e120	175	217	678	115
24	5.5	41	e105	256	187	427	132
25	5.5	37	e100	258	160	342	111
26	5.8	33	e220	790	143	e300	111
27	6.1	30	e250	514	127	e270	101
28	6.4	29	e245	325	116	e240	96
29	6.4	27	e220	341	---	215	97
30	6.2	26	e200	463	---	188	89
31	6.4	---	e250	1,950	---	166	---
TOTAL	188.3	1,411.4	6,259	10,065	6,292	10,289	4,763
MEAN	6.07	47.0	202	325	225	332	159
MAX	9.0	281	630	1,950	981	1,260	352
MIN	4.7	6.7	20	69	92	91	89
AC-FT	373	2,800	12,410	19,960	12,480	20,410	9,450
CFSM	0.22	1.74	7.48	12.0	8.32	12.3	5.88
IN.	0.26	1.94	8.62	13.87	8.67	14.18	6.56

e Estimated

CHEHALIS RIVER BASIN

12021800 CHEHALIS RIVER NEAR ADNA, WA

LOCATION.--Lat 46°37'33", long 123°06'02", in NE ¼ SE ¼ sec.7, T.13 W., R.3 W., Lewis County, Hydrologic Unit 17100103, on right bank at railroad bridge, 2.0 mi downstream from South Fork Chehalis River, 2.0 mi west of Adna, and at mile 86.0.

DRAINAGE AREA.--340 mi².

PERIOD OF RECORD.--October 1998, to current year (seasonal records).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Lewis County).

REMARKS.--Elevation record only. Probably some diversion upstream for irrigation and domestic use. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 206.66 ft Dec. 17, 2001.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996, reached an elevation of 213.14 ft from floodmark at site.

EXTREMES FOR PERIOD OCTOBER TO APRIL.--Maximum elevation, 202.07 ft Jan. 31; minimum elevation, 189.69 ft Oct. 17-20.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	189.92	---	190.17	193.47	198.93	191.23	191.90
2	189.84	---	190.15	195.68	195.43	191.15	191.82
3	189.79	---	190.13	196.86	194.00	191.16	191.97
4	189.83	---	190.12	196.13	193.17	191.06	191.96
5	189.86	---	190.13	195.89	192.65	---	191.82
6	189.82	189.75	190.12	194.20	192.27	191.91	192.09
7	189.79	189.84	190.09	193.18	191.98	192.64	192.08
8	189.77	190.11	190.07	192.55	191.76	192.77	192.22
9	189.76	190.44	190.05	---	191.59	193.73	192.10
10	189.76	190.38	190.21	---	191.45	194.43	191.85
11	189.75	190.45	191.53	---	191.34	193.66	191.68
12	189.73	190.49	193.54	---	191.25	195.35	192.06
13	189.72	190.81	193.18	---	191.17	198.76	193.24
14	189.72	190.79	193.91	191.85	191.10	197.79	193.33
15	189.72	190.67	195.29	191.68	191.08	196.49	192.77
16	189.70	190.45	195.17	191.53	191.23	194.95	192.32
17	189.70	191.19	194.16	191.40	192.13	193.86	192.04
18	189.69	190.99	193.52	191.30	192.73	193.18	191.82
19	189.70	192.33	193.16	191.21	192.31	192.87	191.61
20	189.71	192.04	192.65	191.13	192.23	193.10	191.47
21	189.73	191.23	192.20	191.09	192.79	194.30	191.39
22	189.73	190.88	191.82	191.24	192.88	199.83	191.29
23	189.72	190.67	191.62	192.22	192.50	197.47	191.25
24	189.72	190.53	191.44	192.40	192.12	194.97	191.45
25	189.71	190.42	191.34	192.62	191.81	193.86	191.38
26	189.71	190.35	192.33	195.58	191.62	193.33	191.36
27	---	190.30	192.89	195.27	191.45	193.09	191.32
28	---	190.26	192.98	193.67	191.32	192.88	191.23
29	---	190.22	192.52	193.10	---	192.55	191.19
30	---	190.19	193.05	193.88	---	---	191.14
31	---	---	193.63	199.37	---	192.05	---
MEAN	189.75	190.63	192.04	193.40	192.37	193.95	191.84
MAX	189.92	192.33	195.29	199.37	198.93	199.83	193.33
MIN	189.69	189.75	190.05	191.09	191.08	191.06	191.14

12024000 SOUTH FORK NEWAUKUM RIVER NEAR ONALASKA, WA

LOCATION.--Lat 46°34'33", long 122°41'02", on south line of SE 1/4 sec.28, T.13 N., R.1 E., Lewis County, Hydrologic Unit 17100103, on right bank at Jorgenson Road bridge, 1 mi upstream from Lost Creek, 1.7 mi east of Onalaska, and at mile 22.8.

DRAINAGE AREA.--42.4 mi².

PERIOD OF RECORD.--July to October 1942, July to October 1943, July 1944 to November 1948, June 1957 to September 1971, October 1943 to September 1958, published as Newaukum River near Onalaska, and October 1998, to current year (seasonal records).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Lewis County). Prior to October 1998 at same site at different datum. Prior to September 28, 1944, nonrecording gage at same site at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Probably some small diversions for irrigation and domestic use upstream from station. No regulation. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1944-48, 1957-71) 200 ft³/s, 64.06 in/yr, 144,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,810 ft³/s Dec. 11, 1946, gage height, 8.40 ft, datum then in use; minimum discharge, 17.5 ft³/s Sept. 6-8, 1958.

EXTREMES FOR PERIOD OCTOBER TO APRIL.--Maximum discharge 2,640 ft³/s Jan. 31, elevation 535.39 ft, from crest-stage gage; minimum discharge 19 ft³/s Oct. 18, 22-25.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	28	21	26	298	e1,100	160	248
2	23	21	25	337	e800	150	228
3	58	21	25	362	e600	160	256
4	46	21	24	537	e470	140	242
5	e32	20	23	548	380	230	235
6	e28	23	22	368	310	357	317
7	e26	26	22	275	262	390	353
8	25	36	21	225	228	380	384
9	25	36	21	191	200	670	412
10	23	41	71	166	184	690	342
11	22	37	275	153	165	564	311
12	22	54	313	190	151	696	313
13	22	51	382	171	140	683	440
14	20	60	271	211	128	505	371
15	20	40	285	e170	132	399	308
16	20	44	588	e160	168	356	e260
17	20	88	489	145	274	297	e220
18	19	58	384	134	281	264	e195
19	20	217	281	123	246	249	e176
20	20	126	214	115	319	255	e170
21	20	78	176	114	588	376	e210
22	19	57	145	141	517	692	e200
23	19	48	126	147	376	605	214
24	19	41	117	203	294	462	304
25	19	36	109	208	244	377	263
26	20	33	129	631	212	400	260
27	20	32	155	488	186	417	219
28	22	30	144	340	171	385	196
29	22	29	133	321	---	328	181
30	22	27	197	454	---	284	162
31	21	---	346	e2,250	---	257	---
TOTAL	742	1,452	5,539	10,176	9,126	12,178	7,990
MEAN	23.9	48.4	179	328	326	393	266
MAX	58	217	588	2,250	1,100	696	440
MIN	19	20	21	114	128	140	162
AC-FT	1,470	2,880	10,990	20,180	18,100	24,160	15,850
CFSM	0.56	1.14	4.21	7.74	7.69	9.27	6.28
IN.	0.65	1.27	4.86	8.93	8.01	10.68	7.01

e Estimated

CHEHALIS RIVER BASIN

12024400 NORTH FORK NEWAUKUM RIVER NEAR FOREST, WA

LOCATION.--Lat 46°40'03", long 122°46'08", in NW ¼ SE ¼ sec.26, T.14 N., R.1 W., Lewis County, Hydrologic Unit 17100103, on right bank 0.5 mi upstream from Bear Creek, at North Fork Road bridge, 6.3 mi northeast of Forest, and at mile 7.7.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--October 1998 to current year (seasonal records).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Lewis County).

REMARKS.--Records fair except estimated daily discharges which are poor. Probably some small diversions for irrigation and domestic use upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft³/s Dec. 15, 1999, elevation 406.44 ft; minimum daily discharge 9.9 ft³/s, Oct. 25, 2002.

EXTREMES FOR PERIOD OCTOBER TO APRIL.--Maximum discharge 2,660 ft³/s Jan. 31, elevation 405.36 ft; minimum daily discharge 9.9 ft³/s, Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	13	12	15	231	810	49	168
2	12	12	15	258	424	51	161
3	35	12	15	292	293	58	194
4	25	12	15	357	224	47	186
5	17	12	15	332	179	104	173
6	14	15	14	e210	131	182	263
7	12	19	14	140	107	316	264
8	12	25	14	106	90	310	277
9	12	25	14	89	74	496	262
10	12	26	39	79	66	491	226
11	11	30	130	74	56	305	221
12	11	46	131	99	48	567	207
13	12	49	152	85	46	618	328
14	12	40	210	114	40	415	257
15	11	24	279	93	42	324	215
16	e11	31	495	81	60	272	171
17	e10	61	326	74	128	233	158
18	e11	37	e235	68	150	212	139
19	e12	119	158	62	93	205	129
20	e11	57	110	58	123	207	125
21	e11	35	92	58	291	306	156
22	e11	28	78	71	208	620	146
23	e10	24	69	97	145	487	161
24	e10	21	64	131	110	332	231
25	9.9	20	61	120	87	269	177
26	11	19	77	516	74	252	170
27	11	18	107	393	59	268	138
28	12	17	91	190	55	241	122
29	12	17	77	172	---	210	103
30	12	16	132	256	---	e181	90
31	12	---	299	1,930	---	166	---
TOTAL	397.9	879	3,543	6,836	4,213	8,794	5,618
MEAN	12.8	29.3	114	221	150	284	187
MAX	35	119	495	1,930	810	620	328
MIN	9.9	12	14	58	40	47	90
AC-FT	789	1,740	7,030	13,560	8,360	17,440	11,140

e Estimated

CHEHALIS RIVER BASIN

12025000 NEWAUKUM RIVER NEAR CHEHALIS, WA

LOCATION.--Lat 46°37'13", long 122°56'38", in SW ¼ SW ¼ sec.9, T.13 N., R.2 W., Lewis County, Hydrologic Unit 17100103, on left bank at highway bridge 3.0 mi southeast of Chehalis, and at mile 4.1.

DRAINAGE AREA.--155 mi².

PERIOD OF RECORD.--March 1929 to September 1931, July 1942 to September 1981, October 1982 to current year.

REVISED RECORDS.--WSP 1012: 1943. WSP 1316: 1929-30(M), 1960(M). WSP 1716: Drainage area. WSP 1932: 1931(M), 1945-49, 1954(M), 1956(P), 1958(M), 1959-60.

GAGE.--Water-stage recorder. Elevation of gage is 190 ft above NGVD of 1929, from topographic map. Prior to Oct. 1, 1929, nonrecording gage at same site at datum 1.0 ft higher. Oct. 1, 1929, to July 5, 1962, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Cities of Chehalis and Centralia divert about 3 ft³/s from North Fork Newaukum River for municipal use. No regulation. Some diversion for irrigation upstream from station during summer months.

AVERAGE DISCHARGE.--62 years (water years, 1930-31, 1943-81, 1983-2003), 501 ft³/s, 43.96 in/yr, 363,300 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s Feb. 8, 1996, gage height, 13.54 ft from outside high-water mark; maximum gage height, 13.62 ft Dec. 9, 1953; minimum discharge, 12 ft³/s Sept. 13, 14, 1949, Aug. 29, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 31	2000	*8,940	*12.06	No other peak greater than base discharge.			

Minimum discharge, 22 ft³/s, Sept. 4, 5, 6, gage height, 0.79 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	39	60	1,130	5,280	384	643	412	144	72	33	24
2	45	39	58	1,220	2,450	346	651	373	141	69	33	24
3	50	39	58	1,390	1,660	383	770	345	133	65	34	24
4	133	39	58	1,550	1,220	340	814	420	127	63	35	23
5	72	40	58	1,820	957	397	704	552	121	63	35	22
6	61	42	56	1,110	786	848	1,010	479	115	65	38	22
7	51	51	54	803	669	1,220	977	416	110	64	38	26
8	47	63	53	629	584	1,230	1,030	398	106	64	36	50
9	46	73	52	524	512	1,770	1,010	356	109	66	37	60
10	46	77	74	449	469	1,890	861	323	110	60	42	53
11	42	79	473	398	418	1,350	761	302	111	56	41	56
12	41	85	811	514	378	1,820	861	296	106	54	39	82
13	40	137	952	488	348	2,720	1,570	269	110	54	37	53
14	39	118	967	581	319	1,620	1,250	252	122	56	34	42
15	38	103	1,480	519	318	1,200	929	257	105	53	32	e38
16	38	82	2,310	445	421	1,030	770	299	97	51	34	e43
17	37	176	1,800	392	731	913	689	322	92	49	37	e80
18	37	151	1,370	352	1,020	821	622	298	88	47	34	e60
19	39	283	935	319	776	758	536	264	91	45	31	e56
20	40	298	676	293	817	836	484	243	91	43	30	e55
21	40	179	550	280	1,280	1,020	534	238	90	42	29	e46
22	40	133	458	356	1,210	2,570	544	224	95	41	28	e42
23	39	108	390	554	907	2,010	524	214	92	40	28	e39
24	39	93	342	655	718	1,350	864	201	88	40	28	e37
25	37	82	325	682	599	1,050	753	203	82	40	28	e36
26	37	75	406	1,930	523	1,050	717	190	78	40	27	e36
27	39	70	605	1,700	456	1,170	623	181	73	39	29	e35
28	40	67	550	1,030	405	1,110	538	169	70	38	30	e34
29	41	64	468	854	---	905	506	160	67	36	28	e34
30	40	62	676	1,080	---	766	451	153	66	34	27	e34
31	39	---	1,570	6,490	---	678	---	150	---	33	26	---
TOTAL	1,422	2,947	18,695	30,537	26,231	35,555	22,996	8,959	3,030	1,582	1,018	1,266
MEAN	45.9	98.2	603	985	937	1,147	767	289	101	51.0	32.8	42.2
MAX	133	298	2,310	6,490	5,280	2,720	1,570	552	144	72	42	82
MIN	37	39	52	280	318	340	451	150	66	33	26	22
AC-FT	2,820	5,850	37,080	60,570	52,030	70,520	45,610	17,770	6,010	3,140	2,020	2,510
CFSM	0.30	0.63	3.89	6.36	6.04	7.40	4.95	1.86	0.65	0.33	0.21	0.27
IN.	0.34	0.71	4.49	7.33	6.30	8.53	5.52	2.15	0.73	0.38	0.24	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

	179	730	1,059	1,080	987	774	545	296	183	90.1	54.6	68.1
MEAN	179	730	1,059	1,080	987	774	545	296	183	90.1	54.6	68.1
MAX	646	1,717	2,244	2,169	1,940	1,609	1,052	680	464	307	159	243
(WY)	(1998)	(1956)	(1997)	(1953)	(1999)	(1972)	(1991)	(1960)	(1981)	(1983)	(1968)	(1968)
MIN	25.5	47.6	194	192	262	280	278	130	66.3	36.1	21.6	27.9
(WY)	(1988)	(1930)	(1977)	(1977)	(1977)	(1992)	(1998)	(1947)	(1992)	(1951)	(1951)	(1987)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1930 - 2003

ANNUAL TOTAL	161,883	154,238	501
ANNUAL MEAN	444	423	795
HIGHEST ANNUAL MEAN			244
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	5,350	Jan 25	6,490
LOWEST DAILY MEAN	36	Sep 27	22
ANNUAL SEVEN-DAY MINIMUM	37	Sep 23	24
ANNUAL RUNOFF (AC-FT)	321,100	305,900	363,300
ANNUAL RUNOFF (CFSM)	2.86	2.73	3.24
ANNUAL RUNOFF (INCHES)	38.85	37.02	43.96
10 PERCENT EXCEEDS	1,200	1,090	1,220
50 PERCENT EXCEEDS	160	133	260
90 PERCENT EXCEEDS	40	36	45

e Estimated

CHEHALIS RIVER BASIN

12025100 CHEHALIS RIVER AT WASTEWATER TREATMENT PLANT AT CHEHALIS, WA

LOCATION.--Lat 46°39'40", long 122°58'58", in NE ¼ NW ¼ sec.31, T.14 N., R.2 W., Lewis County, Hydrologic Unit 17100103, on right bank at City of Chehalis wastewater treatment plant, 0.25 mi downstream from State Highway 6 bridge, and at mile 74.3.

DRAINAGE AREA.--618 mi².

PERIOD OF RECORD.--Water years 1999, 2000 (annual maximum). October 2000 to current year (seasonal records).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Lewis County).

REMARKS.--Elevation record only. Probably some diversion upstream for irrigation and domestic use. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Peak of Nov. 26, 1998, reached an elevation of 177.61 ft from floodmarks at site.

EXTREMES FOR PERIOD OCTOBER TO APRIL.--Maximum elevation, 172.93 ft Feb. 2; minimum elevation, 147.95 ft Oct. 31.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	---	---	148.67	158.74	171.00	152.28	153.80
2	---	---	148.62	161.96	170.59	151.95	153.65
3	---	---	148.58	164.96	164.43	151.53	153.94
4	---	---	148.57	163.94	---	151.35	154.30
5	---	148.00	148.58	164.94	---	151.16	153.42
6	---	148.03	148.57	161.53	---	151.98	153.96
7	---	148.11	148.54	156.31	---	153.04	154.23
8	---	148.32	148.50	153.95	154.12	153.72	154.90
9	---	148.86	148.46	152.76	153.50	154.85	154.86
10	148.21	149.08	148.55	151.88	153.03	156.31	154.26
11	148.15	149.03	150.86	152.25	---	156.34	---
12	148.11	149.30	155.91	153.82	---	157.51	---
13	148.09	149.79	157.16	154.23	---	160.38	---
14	148.08	---	156.45	153.91	151.71	160.86	---
15	148.07	---	161.11	153.55	151.56	160.59	156.14
16	148.04	---	162.36	153.02	152.03	159.67	155.77
17	148.03	---	161.87	152.57	154.34	158.82	154.61
18	148.03	150.70	159.70	152.21	---	157.95	153.86
19	148.03	151.50	158.05	151.84	---	156.62	153.18
20	148.04	153.68	156.19	151.61	---	156.62	152.63
21	148.04	151.51	154.89	151.42	---	157.59	152.37
22	148.05	150.43	153.83	151.66	157.72	160.89	152.46
23	148.04	149.85	153.08	154.16	---	161.68	152.24
24	148.04	149.50	152.46	154.94	---	160.30	152.83
25	148.03	149.25	152.13	155.86	---	159.46	153.14
26	148.04	149.07	153.44	158.69	---	158.41	153.11
27	148.04	148.95	155.63	163.22	152.64	157.64	152.79
28	148.05	148.86	156.73	160.14	152.57	157.25	152.21
29	148.07	148.80	155.60	157.75	---	156.15	151.93
30	---	148.73	156.13	159.02	---	155.06	151.87
31	---	---	159.30	164.83	---	154.17	---
MEAN	148.06	149.52	153.82	156.51	156.86	156.52	153.56
MAX	148.21	153.68	162.36	164.96	171.00	161.68	156.14
MIN	148.03	148.00	148.46	151.42	151.56	151.16	151.87

12025700 SKOOKUMCHUCK RIVER NEAR VAIL, WA

LOCATION.--Lat 46°46'22", long 122°35'34", in SW 1/4 NW 1/4 sec.20, T.15 N., R.2 E., Thurston County, Hydrologic Unit 17100103, on right bank about 150 ft downstream from logging bridge, 0.4 mi downstream from Hospital Creek, 5.8 mi southeast of Vail, and at mile 28.8.

DRAINAGE AREA.--40.0 mi².

PERIOD OF RECORD.--October 1967 to current year.

REVISED RECORDS.--WDR WA-75-1: 1974.

GAGE.--Water-stage recorder. Elevation of gage is 710 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--36 years (water years 1968-2003), 200 ft³/s, 68.10 in/yr, 145,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,350 ft³/s Feb. 8, 1996, gage height, 11.24 ft; minimum discharge, 13 ft³/s Oct. 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 31	1415	*3,350	*7.95	Mar 22	1015	1,590	6.48
Mar 12	2145	1,330	6.22				

Minimum discharge, 15 ft³/s, Sept. 1-7, gage height, 2.96 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	19	36	456	1,450	143	219	152	66	36	22	16
2	24	19	35	728	823	136	204	141	64	34	22	16
3	38	19	33	744	564	134	213	135	62	33	22	16
4	29	19	33	898	419	122	209	161	60	33	22	16
5	24	19	32	797	331	183	208	170	58	33	22	16
6	22	23	31	477	269	283	232	153	56	33	23	16
7	21	28	30	329	227	288	292	142	54	32	22	19
8	21	49	30	249	198	272	381	134	53	33	21	25
9	21	52	29	202	177	721	506	124	53	31	23	23
10	20	55	126	173	162	849	396	117	53	30	24	21
11	20	46	338	159	149	689	331	111	52	29	23	37
12	20	76	534	230	139	1,020	306	105	50	29	22	29
13	19	74	645	214	130	1,080	370	100	57	31	21	21
14	19	81	521	248	121	722	341	98	52	30	20	19
15	19	56	859	208	132	530	290	104	48	29	20	19
16	19	82	984	180	182	434	246	119	46	28	21	30
17	19	126	623	160	292	356	221	120	45	27	20	38
18	19	94	401	145	293	307	200	112	44	27	19	24
19	19	272	287	132	249	283	180	107	44	26	19	23
20	19	157	218	122	327	336	166	102	44	26	18	22
21	19	106	178	118	546	628	210	99	44	26	18	20
22	19	82	151	134	484	1,350	208	95	45	25	18	19
23	19	69	133	183	353	944	218	90	42	25	18	19
24	19	59	123	248	272	596	293	87	41	25	18	18
25	19	52	117	250	222	445	267	86	39	24	18	18
26	19	48	184	886	192	414	262	81	38	24	18	17
27	19	44	226	632	170	386	226	77	37	24	18	17
28	19	42	234	409	156	342	202	74	36	23	18	17
29	19	40	196	373	---	295	182	72	35	22	17	17
30	19	38	243	513	---	256	165	70	37	22	17	17
31	19	---	380	2,770	---	234	---	68	---	22	17	---
TOTAL	647	1,946	7,990	13,367	9,029	14,778	7,744	3,406	1,455	872	621	625
MEAN	20.9	64.9	258	431	322	477	258	110	48.5	28.1	20.0	20.8
MAX	38	272	984	2,770	1,450	1,350	506	170	66	36	24	38
MIN	19	19	29	118	121	122	165	68	35	22	17	16
AC-FT	1,280	3,860	15,850	26,510	17,910	29,310	15,360	6,760	2,890	1,730	1,230	1,240
CFSM	0.52	1.62	6.44	10.8	8.06	11.9	6.45	2.75	1.21	0.70	0.50	0.52
IN.	0.60	1.81	7.43	12.43	8.40	13.74	7.20	3.17	1.35	0.81	0.58	0.58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

MEAN	85.4	286	403	391	363	309	234	136	90.1	47.7	31.7	37.8
MAX	298	622	756	756	797	621	454	261	187	122	71.2	95.7
(WY)	(1998)	(1984)	(1997)	(1971)	(1999)	(1972)	(1991)	(1984)	(1981)	(1983)	(1968)	(1968)
MIN	14.6	37.4	78.4	68.6	92.5	90.9	112	65.1	33.3	27.1	19.3	18.6
(WY)	(1988)	(1994)	(1977)	(1977)	(1977)	(1992)	(1973)	(1994)	(1992)	(1992)	(1992)	(1987)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1968 - 2003

ANNUAL TOTAL	69,428	62,480	
ANNUAL MEAN	190	171	200
HIGHEST ANNUAL MEAN			302
LOWEST ANNUAL MEAN			103
HIGHEST DAILY MEAN	2,070	2,770	5,550
LOWEST DAILY MEAN	19	16	14
ANNUAL SEVEN-DAY MINIMUM	19	16	14
ANNUAL RUNOFF (AC-FT)	137,700	123,900	145,200
ANNUAL RUNOFF (CFSM)	4.76	4.28	5.01
ANNUAL RUNOFF (INCHES)	64.57	58.11	68.08
10 PERCENT EXCEEDS	471	416	461
50 PERCENT EXCEEDS	85	69	114
90 PERCENT EXCEEDS	23	19	26

12026150 SKOOKUMCHUCK RIVER BELOW BLOODY RUN CREEK, NEAR CENTRALIA, WA

LOCATION.--Lat 46°47'25", long 122°44'03", in NW 1/4 NW 1/4 sec.18, T.15 N., R.1 E., Thurston County, Hydrologic Unit 17100103, on right bank 0.7 mi downstream from Bloody Run Creek, 1.2 mi downstream from Skookumchuck Dam, 12 mi northeast of Centralia, and at mile 20.7.

DRAINAGE AREA.--65.9 mi². Prior to August 1969, 61.7 mi².

PERIOD OF RECORD.--April 1929 to November 1933, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1316 and 1736. Published as "near Centralia" (12026000) prior to August 1969.

GAGE.--Water-stage recorder. Datum of gage is 317.34 ft above NGVD of 1929. Apr. 1, 1929, to Sept. 30, 1931, and Feb. 1, 1932, to Dec. 6, 1933, nonrecording gage at site 1.1 mi upstream at different datum. Oct. 9, 1939, to July 31, 1969, at site 1.3 mi upstream at datum 301.04 ft above NGVD of 1929.

REMARKS.--Records good, except estimated daily discharge which is fair. Flow regulated by Skookumchuck Dam since January 1971. No diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--68 years (water years 1930-33, 1940-2003), 255 ft³/s, 184,700 acre-ft/yr, unadjusted. 32 years (water years 1972-2003), 262 ft³/s, 189,500 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,020 ft³/s Feb. 8, 1996, gage height, 13.41 ft, result of flow over dam computation, provided by Pacific Power & Light; minimum discharge, 12 ft³/s May 28, 1970, caused by pumping during dam construction.

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)
Jan 31	1730	*4,030	*11.67	No other peak greater than base discharge.			

Minimum discharge, 70 ft³/s, Nov. 3, 5, gage height, 5.88 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	75	77	137	2,260	200	305	210	112	91	82	119
2	107	74	77	141	1,190	185	293	195	109	89	80	117
3	107	73	77	143	809	178	298	181	108	88	81	116
4	106	72	77	145	611	170	303	182	105	86	85	113
5	105	72	76	145	475	176	292	206	101	84	87	112
6	106	72	79	135	392	307	314	203	100	85	86	112
7	106	73	81	125	328	471	325	191	100	86	86	112
8	106	74	81	122	287	495	413	182	101	86	86	112
9	104	75	80	122	254	682	533	171	99	88	86	112
10	98	73	83	122	228	1,010	522	166	98	89	85	110
11	92	74	89	122	208	829	442	165	98	86	85	110
12	90	75	92	124	194	971	404	163	99	81	85	109
13	90	74	92	126	181	1,300	479	161	100	81	85	108
14	90	75	112	122	171	993	499	142	100	82	85	108
15	88	75	115	109	168	744	425	133	99	83	83	108
16	85	77	130	114	181	596	361	135	98	83	81	114
17	86	78	120	113	274	503	313	136	98	81	81	117
18	85	77	113	112	395	436	281	134	94	82	81	115
19	83	79	108	112	375	392	250	123	92	81	87	115
20	83	79	109	113	373	411	226	110	92	83	90	114
21	83	79	108	106	541	566	249	109	93	81	90	114
22	83	79	107	110	617	1,280	284	108	93	82	91	114
23	83	79	106	115	505	1,300	291	107	92	82	90	114
24	83	79	106	116	397	858	352	108	92	81	90	114
25	83	78	106	114	323	628	365	108	94	81	94	114
26	83	77	112	147	277	550	385	106	93	81	104	119
27	83	77	122	472	244	527	356	108	92	80	115	121
28	83	77	118	583	217	474	341	112	90	79	123	121
29	80	77	113	488	---	413	277	112	92	82	124	116
30	80	77	117	540	---	e355	225	112	92	82	122	114
31	78	---	145	2,900	---	324	---	112	---	82	121	---
TOTAL	2,844	2,275	3,128	8,195	12,475	18,324	10,403	4,491	2,926	2,588	2,851	3,414
MEAN	91.7	75.8	101	264	446	591	347	145	97.5	83.5	92.0	114
MAX	125	79	145	2,900	2,260	1,300	533	210	112	91	124	121
MIN	78	72	76	106	168	170	225	106	90	79	80	108
AC-FT	5,640	4,510	6,200	16,250	24,740	36,350	20,630	8,910	5,800	5,130	5,650	6,770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

MEAN	140	232	493	486	466	383	295	182	135	104	97.4	136
MAX	230	552	1,100	910	1,131	829	590	365	254	140	134	167
(WY)	(1998)	(1984)	(1978)	(1974)	(1999)	(1972)	(1991)	(1984)	(1990)	(1997)	(1997)	(1983)
MIN	91.7	75.8	95.8	92.6	62.5	88.0	145	109	85.4	81.7	78.9	114
(WY)	(2003)	(2003)	(1977)	(1977)	(1977)	(1977)	(1973)	(1989)	(1989)	(1992)	(1985)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1972 - 2003

ANNUAL TOTAL	87,288	73,914		
ANNUAL MEAN	239	203	262	
HIGHEST ANNUAL MEAN			413	1999
LOWEST ANNUAL MEAN			119	1977
HIGHEST DAILY MEAN	2,440	Jan 25	2,900	Jan 31
LOWEST DAILY MEAN	72	Nov 4	72	Nov 4
ANNUAL SEVEN-DAY MINIMUM	73	Nov 2	73	Nov 2
ANNUAL RUNOFF (AC-FT)	173,100		189,500	
10 PERCENT EXCEEDS	504		454	506
50 PERCENT EXCEEDS	130		110	145
90 PERCENT EXCEEDS	79		79	95

12026400 SKOOKUMCHUCK RIVER NEAR BUCODA, WA

LOCATION.--Lat 46°46'20", long 122°55'23", in SW ¼ NW ¼ sec.22, T.15 N., R.2 W., Thurston County, Hydrologic Unit 17100103, on left bank 100 ft downstream from bridge on State Highway 507, 3.3 mi southwest of Bucoda, and at mile 6.4.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--December 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 198.19 ft above NGVD of 1929. Prior to Oct. 1, 1992, at datum 0.41 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair, and flows above 700 ft³/s, which are poor. Flow regulated by Skookumchuck Dam since January 1971. An average of 30 ft³/s is diverted at point 0.5 mi upstream for consumptive use at Centralia Steam Electric Project. During peak demand months, up to 54 ft³/s may be diverted for periods of one day or less. Other minor diversions for domestic use and irrigation upstream from station. Water

AVERAGE DISCHARGE.--32 years (water years 1972-2003), 353 ft³/s, 255,600 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s Feb. 8, 1996, gage height, 17.87 ft, present datum, estimated based on comparison with upstream gaging stations; minimum discharge, 21 ft³/s Aug. 15, 16, 18, 19, 20, 1970, gage height, 3.85 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 1	0300	*5,990	*15.93	No other peak greater than base discharge.			

Minimum discharge, 39 ft³/s, Dec. 5, 6, gage height, 5.34 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	46	42	312	4,520	234	405	267	100	61	44	81
2	91	42	41	419	1,770	212	401	249	99	58	43	81
3	94	41	41	481	1,140	199	421	227	96	57	42	81
4	93	41	41	424	866	187	445	222	95	56	43	81
5	90	41	41	430	675	189	417	249	88	55	49	81
6	87	43	40	310	565	333	446	244	85	54	50	81
7	86	44	44	243	469	641	442	226	84	55	46	86
8	83	45	44	205	375	761	510	216	82	57	46	86
9	84	44	44	184	340	919	618	199	82	57	46	86
10	84	42	52	171	300	1,350	650	184	82	55	46	84
11	74	42	84	163	269	1,100	563	178	82	55	46	87
12	72	46	118	174	247	1,150	515	175	81	51	46	89
13	72	48	136	184	227	1,580	683	170	82	53	45	89
14	69	47	134	213	213	1,340	770	160	83	53	44	88
15	67	44	387	192	202	1,010	647	141	81	51	44	87
16	60	43	375	180	212	821	532	156	80	51	44	86
17	59	49	316	170	298	700	441	157	78	49	44	91
18	61	48	263	157	497	594	382	152	77	49	44	90
19	60	52	196	149	496	526	337	142	72	47	48	e91
20	59	58	164	144	476	549	306	121	72	46	55	88
21	60	51	145	137	631	718	319	112	72	46	56	86
22	59	49	133	152	785	1,550	367	109	72	46	54	86
23	58	47	123	192	669	1,830	370	107	72	45	54	86
24	58	46	118	223	517	1,220	473	107	74	44	54	85
25	58	45	115	231	416	903	503	114	73	44	55	84
26	58	44	145	428	351	765	546	104	72	43	64	85
27	e58	44	208	737	303	744	524	103	68	42	73	90
28	e58	44	209	899	261	680	470	106	63	41	83	88
29	e57	43	180	745	---	587	405	104	62	44	86	85
30	e55	42	179	792	---	502	325	102	64	44	84	80
31	e50	---	342	2,960	---	442	---	102	---	44	82	---
TOTAL	2,185	1,361	4,500	12,401	18,090	24,336	14,233	5,005	2,373	1,553	1,660	2,569
MEAN	70.5	45.4	145	400	646	785	474	161	79.1	50.1	53.5	85.6
MAX	111	58	387	2,960	4,520	1,830	770	267	100	61	86	91
MIN	50	41	40	137	202	187	306	102	62	41	42	80
AC-FT	4,330	2,700	8,930	24,600	35,880	48,270	28,230	9,930	4,710	3,080	3,290	5,100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

MEAN	140	344	723	716	685	555	402	226	155	100	81.6	123
MAX	294	846	1,669	1,367	1,559	1,446	970	461	331	156	123	180
(WY)	(1998)	(1984)	(1997)	(1997)	(1996)	(1972)	(1991)	(1984)	(1990)	(1983)	(1997)	(1978)
MIN	70.5	45.4	105	95.0	85.7	130	180	118	78.5	50.1	53.5	85.6
(WY)	(2003)	(2003)	(1977)	(1977)	(1977)	(2001)	(1973)	(1994)	(1979)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1972 - 2003	
ANNUAL TOTAL	109,341		90,266			
ANNUAL MEAN	300		247		353	
HIGHEST ANNUAL MEAN					571	
LOWEST ANNUAL MEAN					143	
HIGHEST DAILY MEAN	3,110	Jan 25	4,520	Feb 1	8,560	Feb 8, 1996
LOWEST DAILY MEAN	40	Dec 6	40	Dec 6	40	Dec 6, 2002
ANNUAL SEVEN-DAY MINIMUM	41	Nov 30	41	Nov 30	41	Nov 30, 2002
ANNUAL RUNOFF (AC-FT)	216,900		179,000		255,600	
10 PERCENT EXCEEDS	744		623		764	
50 PERCENT EXCEEDS	125		90		166	
90 PERCENT EXCEEDS	50		44		84	

e Estimated

CHEHALIS RIVER BASIN

12027500 CHEHALIS RIVER NEAR GRAND MOUND, WA

LOCATION.--Lat 46°46'34", long 123°02'04", in NE ¼ NE ¼ sec.22, T.15 N., R.3 W., Thurston County, Hydrologic Unit 17100103, on left bank at downstream side of highway bridge at Meadows, 1.5 mi southwest of Grand Mound, 7.0 mi downstream from Skookumchuck River, and at mile 59.9.

DRAINAGE AREA.--895 mi².

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1286: 1929-30(M), 1931, 1932-34(M).

GAGE.--Water-stage recorder. Datum of gage is 123.65 ft above NGVD of 1929. Prior to Oct. 3, 1934, nonrecording gage at present site at datum 3.0 ft higher.

REMARKS.--Records good except for estimated daily discharges which are fair. Minor effect from regulation on Skookumchuck River by Skookumchuck Dam since January 1971. Up to 54 ft³/s of Skookumchuck River is consumptively used at Centralia steam generating plant. Many small diversions for irrigation and domestic use upstream from station, including about 3 ft³/s for municipal water supply for Centralia and Chehalis. Water temperatures March 1952 to September 1974. Miscellaneous suspended sediment data published for water years 1962-64. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--75 years (water years 1929-2003), 2,813 ft³/s, 42.71 in/yr, 2,038,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,800 ft³/s Feb. 9, 1996, gage height, 19.98 ft; minimum discharge, 82 ft³/s Aug. 30, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 1	1700	*23,100	*14.56	Mar 23	0700	18,300	13.01

Minimum discharge, 148 ft³/s, Aug. 23-27, gage height, 1.79 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	183	391	6,540	22,300	2,190	3,580	2,030	686	292	159	170
2	260	181	370	8,540	19,800	2,010	3,440	1,880	671	295	161	166
3	242	181	357	10,900	13,000	1,980	3,620	1,730	655	287	161	161
4	280	179	352	10,600	8,960	1,880	3,850	1,750	647	281	159	e159
5	302	177	354	11,600	6,570	1,790	3,520	2,110	640	271	159	e158
6	273	180	356	9,140	5,000	2,910	3,830	2,040	639	269	163	157
7	254	194	350	6,500	3,960	4,610	4,140	1,820	640	272	173	166
8	237	233	339	4,780	3,360	6,110	4,360	1,720	654	275	181	183
9	229	362	327	3,690	2,950	6,780	4,330	1,610	677	271	187	238
10	225	491	349	3,060	2,640	10,200	4,000	1,480	682	269	193	275
11	218	473	1,060	2,630	2,390	8,600	3,490	1,390	685	258	198	306
12	202	569	4,080	2,840	2,180	8,850	3,550	1,340	671	246	207	315
13	195	691	4,820	3,210	2,010	14,000	5,830	1,260	656	241	195	311
14	193	783	4,440	3,030	1,860	15,400	7,660	1,190	678	253	184	284
15	193	831	8,600	2,900	1,760	13,600	6,280	1,150	650	272	175	253
16	190	629	8,950	2,580	1,940	11,100	4,990	1,210	590	255	166	232
17	184	819	9,080	2,320	3,000	8,530	4,080	1,320	548	234	165	233
18	182	1,200	7,390	2,110	5,000	6,620	3,490	1,250	513	224	167	264
19	181	1,470	6,040	1,940	4,680	5,530	3,040	1,160	480	215	162	263
20	181	2,750	4,750	1,790	4,260	5,520	2,690	1,070	459	207	156	251
21	184	1,650	3,670	1,690	5,190	6,440	2,500	1,020	439	207	155	247
22	186	1,120	3,030	1,750	5,840	13,100	2,540	1,000	437	199	153	248
23	186	854	2,560	2,910	5,140	17,700	2,370	955	449	187	149	232
24	185	701	2,230	3,520	4,190	13,500	2,950	891	422	185	148	218
25	184	601	2,050	4,210	3,480	9,620	3,150	859	393	181	148	211
26	184	532	2,620	6,650	3,040	7,500	3,010	848	363	179	148	207
27	184	487	3,920	11,100	2,680	6,850	2,950	804	343	177	152	213
28	186	448	4,860	8,550	2,370	6,530	2,650	767	327	175	161	208
29	187	428	4,200	6,410	---	5,620	2,440	728	309	171	174	197
30	188	407	4,200	6,920	---	e4,670	2,250	706	297	167	177	195
31	185	---	6,600	12,800	---	4,030	---	691	---	162	174	---
TOTAL	6,494	19,804	102,695	167,210	149,550	233,770	110,580	39,779	16,300	7,177	5,210	6,721
MEAN	209	660	3,313	5,394	5,341	7,541	3,686	1,283	543	232	168	224
MAX	302	2,750	9,080	12,800	22,300	17,700	7,660	2,110	686	295	207	315
MIN	181	177	327	1,690	1,760	1,790	2,250	691	297	162	148	157
AC-FT	12,880	39,280	203,700	331,700	296,600	463,700	219,300	78,900	32,330	14,240	10,330	13,330
CFSM	0.23	0.74	3.70	6.03	5.97	8.43	4.12	1.43	0.61	0.26	0.19	0.25
IN.	0.27	0.82	4.27	6.95	6.22	9.72	4.60	1.65	0.68	0.30	0.22	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	907	3,796	6,322	6,375	5,861	4,552	2,956	1,388	811	380	240	335
MAX	3,643	9,697	19,280	13,900	13,680	9,477	6,787	3,496	2,482	934	570	1,289
(WY)	(1998)	(1956)	(1934)	(1971)	(1999)	(1972)	(1937)	(1948)	(1936)	(1983)	(1968)	(1978)
MIN	125	221	884	860	1,201	1,354	1,086	549	352	174	118	117
(WY)	(1953)	(1937)	(1977)	(1977)	(1977)	(1992)	(1939)	(1939)	(1992)	(1970)	(1967)	(1967)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1929 - 2003

ANNUAL TOTAL	904,577	865,290	
ANNUAL MEAN	2,478	2,371	2,813
HIGHEST ANNUAL MEAN			4,480
LOWEST ANNUAL MEAN			1,122
HIGHEST DAILY MEAN	22,600	Jan 26	22,300
LOWEST DAILY MEAN	169	Sep 2	148
ANNUAL SEVEN-DAY MINIMUM	176	Aug 27	150
ANNUAL RUNOFF (AC-FT)	1,794,000		1,716,000
ANNUAL RUNOFF (CFSM)	2.77		2.65
ANNUAL RUNOFF (INCHES)	37.60		35.97
10 PERCENT EXCEEDS	7,050		6,580
50 PERCENT EXCEEDS	795		691
90 PERCENT EXCEEDS	187		177
			2,038,000
			3.14
			42.71
			7,460
			1,240
			222

e Estimated

12031000 CHEHALIS RIVER AT PORTER, WA

LOCATION.--Lat 46°56'17", long 123°18'45", on north line of NE ¼ sec.28, T.17 N., R.5 W., Grays Harbor County, Hydrologic Unit 17100103, at downstream end of left bank bridge pier, 30 ft downstream from Porter Creek, 0.1 mi west of Porter, and at mile 33.3.

DRAINAGE AREA.--1,294 mi².

PERIOD OF RECORD.--January 1952 to September 1972, water years 1973-75 (annual maximum), May 1975 to September 1985, October 1985 to September 1986 (monthly means only), October 1986 to current year. Daily routed values for October 1985 to September 1986 are available in the files of the U.S. Geological Survey.

REVISED RECORDS.--WSP 1716: Drainage area. WSP 1932: 1954, 1956, 1960(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 23.64 ft above NGVD of 1929.

REMARKS.--Records fair. Minor effect from regulation on Skookumchuck River by Skookumchuck Dam since January 1971. Up to 54 ft³/s of Skookumchuck River is consumptively used at Centralia steam generating plant. Many small diversions for irrigation and domestic use upstream from station, including about 3 ft³/s for municipal water supply for Centralia and Chehalis. U.S. Geological Survey satellite telemeter at station. Suspended sediment October 1961 to September 1971. Water temperatures July 1959 to September 1960, October 1961 to July 1972. Chemical analyses July 1959 to September 1973, October 1974 to September 1994.

AVERAGE DISCHARGE.--48 years (water years 1953-72, 1976-2003), 4,084 ft³/s, 42.88 in/yr, 2,958,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,700 ft³/s Feb. 9, 1996, gage height, 25.22 ft; minimum, 164 ft³/s Oct. 17, 1952, gage height, 2.25 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 28, 1937, reached a stage of 24.7 ft, from levels by Grays Harbor County. Flood of December 1933 reached a stage of 23.13 ft, from river profile by Corps of Engineers.

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)
Feb 2	1900	*26,000	*20.80	Mar 24	0100	21,000	20.05

Minimum discharge, 255 ft³/s, Sept. 6, gage height, 3.15 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	363	298	620	8,350	19,900	3,670	5,540	3,260	1,010	508	329	291
2	393	297	603	10,100	24,500	3,390	5,170	3,000	981	502	334	281
3	415	295	578	12,200	22,000	3,190	5,180	2,770	943	497	339	275
4	426	293	575	13,200	15,100	3,110	5,420	2,710	902	484	345	e270
5	460	293	580	13,200	10,800	2,970	5,220	2,960	858	477	333	e265
6	441	299	579	12,500	8,490	3,780	5,210	3,060	816	475	344	260
7	416	318	569	9,460	7,170	6,040	5,650	2,770	786	470	339	278
8	399	353	555	7,480	6,240	7,800	5,670	2,560	757	472	366	311
9	385	408	538	6,160	5,420	8,450	5,690	2,420	750	471	381	332
10	372	533	589	5,060	4,790	11,200	5,500	2,250	762	464	374	394
11	361	578	1,240	4,330	4,300	11,800	5,020	2,100	769	447	379	442
12	347	624	4,230	4,260	3,900	11,400	4,870	2,000	779	437	434	454
13	335	696	6,040	4,780	3,560	14,700	6,310	1,910	785	436	397	435
14	329	901	6,100	4,570	3,290	17,800	8,910	1,810	786	443	369	409
15	323	872	8,500	4,460	3,080	18,200	8,220	1,750	799	458	354	376
16	320	862	9,780	4,040	3,270	16,400	6,900	1,780	756	452	349	358
17	315	804	10,700	3,680	4,260	13,400	5,890	1,890	708	430	339	346
18	309	1,210	9,530	3,360	6,300	10,600	5,190	1,880	678	411	332	345
19	313	1,900	8,380	3,100	6,860	9,020	4,650	1,730	664	396	327	392
20	318	3,140	7,130	2,870	6,570	8,540	4,220	1,620	653	386	318	373
21	316	2,580	5,760	2,720	7,110	9,230	3,910	1,550	654	383	312	354
22	313	1,730	4,690	2,950	8,030	14,900	3,840	1,500	665	376	304	343
23	310	1,310	3,910	3,880	7,720	19,400	3,740	1,440	677	359	299	337
24	309	1,080	3,380	5,220	6,830	19,800	4,000	1,370	675	353	297	319
25	307	922	3,060	5,960	5,840	15,300	4,420	1,310	645	353	293	307
26	306	820	3,520	8,010	5,050	11,500	4,280	1,270	617	346	291	299
27	307	753	5,210	12,900	4,460	9,570	4,310	1,230	587	342	296	290
28	309	705	6,750	12,500	3,980	8,880	4,040	1,170	563	340	294	296
29	309	667	6,450	9,950	---	7,960	3,780	1,120	541	335	299	287
30	306	642	5,930	9,840	---	6,910	3,560	1,070	523	329	302	285
31	302	---	7,260	13,300	---	6,140	---	1,040	---	327	298	---
TOTAL	10,734	26,183	133,336	224,390	218,820	315,050	154,310	60,300	22,089	12,959	10,367	10,004
MEAN	346	873	4,301	7,238	7,815	10,160	5,144	1,945	736	418	334	333
MAX	460	3,140	10,700	13,300	24,500	19,800	8,910	3,260	1,010	508	434	454
MIN	302	293	538	2,720	3,080	2,970	3,560	1,040	523	327	291	260
AC-FT	21,290	51,930	264,500	445,100	434,000	624,900	306,100	119,600	43,810	25,700	20,560	19,840
CFSM	0.27	0.67	3.32	5.59	6.04	7.85	3.98	1.50	0.57	0.32	0.26	0.26
IN.	0.31	0.75	3.83	6.45	6.29	9.06	4.44	1.73	0.64	0.37	0.30	0.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	1,227	5,162	8,945	9,393	8,473	6,689	4,439	2,132	1,203	613	410	533
MAX (WY)	4,627 (1998)	12,770 (1956)	17,710 (1978)	19,050 (1971)	20,550 (1999)	12,920 (1972)	9,130 (1991)	4,202 (1984)	2,456 (1968)	1,295 (1983)	838 (1968)	1,879 (1978)
MIN (WY)	196 (1953)	376 (1953)	1,273 (1977)	1,360 (1977)	1,711 (1977)	2,287 (2001)	2,025 (1977)	1,024 (1994)	528 (1992)	350 (1992)	223 (1967)	228 (1967)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1953 - 2003

ANNUAL TOTAL	1,366,506	1,198,542	
ANNUAL MEAN	3,744	3,284	4,084
HIGHEST ANNUAL MEAN			6,492
LOWEST ANNUAL MEAN			1,578
HIGHEST DAILY MEAN	30,000	Jan 27	24,500
LOWEST DAILY MEAN	293	Nov 4	260
ANNUAL SEVEN-DAY MINIMUM	297	Oct 31	274
ANNUAL RUNOFF (AC-FT)	2,710,000		2,377,000
ANNUAL RUNOFF (CFSM)	2.89		2.54
ANNUAL RUNOFF (INCHES)	39.28		34.46
10 PERCENT EXCEEDS	10,600		8,950
50 PERCENT EXCEEDS	1,130		922
90 PERCENT EXCEEDS	361		309
			2,958,000
			3.16
			42.88
			10,700
			1,990
			375

e Estimated

CHEHALIS RIVER BASIN
12035000 SATSOP RIVER NEAR SATSOP, WA

LOCATION.--Lat 47°00'03", long 123°29'37", in NE ¼ SE ¼ sec.36, T.18 N., R.7 W., Grays Harbor County, Hydrologic Unit 17100104, in west pier of bridge on old U.S. Highway 410, 0.6 mi west of Satsop, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--299 mi².

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

REVISED RECORDS.--WSP 1286: 1930-35(M), 1937(M). WSP 1716: Drainage area. WSP 1932: 1945, 1949(M), 1951(M), 1956-57(M), 1959(M).

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Mar. 19, 1938, nonrecording gage at site 60 ft upstream at datum 20.9 ft higher.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Chemical analyses July 1960 to September 1971, October 1974 to September 1975, October 1976 to June 1980; sediment records November 1961 to June 1965 (partial-record station). U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--74 years (water years 1930-2003), 2,044 ft³/s, 92.87 in/yr, 1,481,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,600 ft³/s Mar. 19, 1997, elevation, 38.87 ft; maximum elevation, 38.9 ft Jan. 22, 1935, from floodmarks, present datum; minimum discharge, 147 ft³/s Aug. 31, Sept. 1, 2, 1994; minimum elevation, 21.66 ft, present datum, Sept. 3-6, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1909 reached a stage of 37.1 ft, from high-water mark, at railroad bridge 300 ft downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 2	1500	*18,600	*33.12	Mar 13	1200	16,500	32.61
Jan 26	1500	16,600	32.63	Mar 22	1300	18,400	33.06

Minimum discharge, 189 ft³/s, Nov. 3, 4, 5, 6, gage height, 23.68 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237	193	747	3,650	7,690	1,560	2,270	1,240	546	370	250	203
2	235	193	709	14,200	5,420	1,430	2,240	1,190	534	349	248	200
3	245	192	673	11,400	4,190	1,340	2,330	1,150	521	340	246	199
4	255	189	677	9,530	3,420	1,270	2,300	1,210	509	333	247	198
5	246	189	711	8,450	2,930	1,250	2,230	1,240	497	329	244	196
6	239	203	651	5,650	2,560	1,400	2,480	1,130	484	325	244	197
7	235	296	613	4,230	2,290	1,550	2,830	1,070	472	324	242	215
8	233	389	586	3,410	2,080	1,470	5,520	1,030	463	321	242	233
9	232	841	573	2,870	1,900	2,350	4,290	988	458	318	244	226
10	227	947	774	2,490	1,760	3,730	3,450	952	461	310	243	226
11	225	1,570	2,500	2,260	1,640	3,760	2,930	924	457	306	240	265
12	222	1,640	6,660	3,080	1,540	6,520	2,780	896	451	303	242	274
13	221	2,140	4,800	2,840	1,460	14,900	2,980	865	456	318	239	238
14	221	2,060	5,700	2,890	1,380	11,600	3,280	842	456	324	234	221
15	218	1,330	7,430	2,610	1,360	8,280	2,990	831	446	321	229	213
16	218	1,140	6,620	2,330	1,580	5,840	2,710	860	428	308	229	220
17	217	1,740	5,020	2,110	2,100	4,700	2,550	844	416	300	228	223
18	214	1,440	4,260	1,930	1,990	3,970	2,370	801	406	293	224	217
19	220	10,000	3,780	1,770	1,980	3,690	2,130	765	402	287	222	256
20	221	5,700	3,160	1,640	2,490	4,640	1,960	748	396	284	221	270
21	216	3,050	2,580	1,600	3,620	6,210	1,820	741	391	282	218	238
22	212	2,120	2,190	2,780	3,510	14,200	1,690	713	389	276	214	222
23	210	1,680	1,930	5,930	2,810	8,870	1,680	693	382	273	214	213
24	207	1,420	1,770	5,200	2,360	5,840	1,950	674	376	270	213	209
25	207	1,230	2,550	4,930	2,060	4,560	1,820	666	370	269	210	204
26	205	1,110	5,410	13,000	1,860	3,940	1,680	639	362	267	212	199
27	203	1,010	4,390	9,470	1,690	3,550	1,570	618	357	264	214	196
28	204	925	4,460	6,460	1,600	3,140	1,470	600	352	259	213	194
29	203	853	3,320	5,350	---	2,780	1,390	586	346	257	210	193
30	198	796	3,390	6,090	---	2,500	1,310	570	356	255	206	193
31	196	---	3,030	11,100	---	2,430	---	561	---	251	205	---
TOTAL	6,842	46,586	91,664	161,250	71,270	143,270	73,000	26,637	12,940	9,286	7,087	6,551
MEAN	221	1,553	2,957	5,202	2,545	4,622	2,433	859	431	300	229	218
MAX	255	10,000	7,430	14,200	7,690	14,900	5,520	1,240	546	370	250	274
MIN	196	189	573	1,600	1,360	1,250	1,310	561	346	251	205	193
AC-FT	13,570	92,400	181,800	319,800	141,400	284,200	144,800	52,830	25,670	18,420	14,060	12,990
CFSM	0.74	5.19	9.89	17.4	8.51	15.5	8.14	2.87	1.44	1.00	0.76	0.73
IN.	0.85	5.80	11.40	20.06	8.87	17.82	9.08	3.31	1.61	1.16	0.88	0.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

	1,135	3,003	4,305	4,194	3,831	3,017	2,076	1,143	702	453	331	432
MEAN	1,135	3,003	4,305	4,194	3,831	3,017	2,076	1,143	702	453	331	432
MAX	3,814	6,887	9,553	9,598	8,123	7,785	4,038	2,696	1,686	1,133	674	1,791
(WY)	(1976)	(1991)	(1995)	(1953)	(1999)	(1997)	(1937)	(1948)	(2000)	(1983)	(2001)	(1978)
MIN	201	268	1,361	1,127	1,148	1,155	898	610	407	287	198	208
(WY)	(1988)	(1937)	(1986)	(1949)	(1993)	(1992)	(1942)	(1998)	(1992)	(1951)	(1994)	(1938)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1930 - 2003

ANNUAL TOTAL	695,249	656,383	
ANNUAL MEAN	1,905	1,798	2,044
HIGHEST ANNUAL MEAN			3,235
LOWEST ANNUAL MEAN			1,199
HIGHEST DAILY MEAN	19,000	Jan 7	14,900
LOWEST DAILY MEAN	189	Nov 4	189
ANNUAL SEVEN-DAY MINIMUM	193	Oct 30	193
ANNUAL RUNOFF (AC-FT)	1,379,000		1,481,000
ANNUAL RUNOFF (CFSM)	6.37		6.01
ANNUAL RUNOFF (INCHES)	86.50		81.66
10 PERCENT EXCEEDS	4,790		4,780
50 PERCENT EXCEEDS	841		1,150
90 PERCENT EXCEEDS	239		282

12035002 CHEHALIS RIVER NEAR SATSOP, WA

LOCATION.--Lat 46°58'20", long 123°29'25", in NW 1/4 NE 1/4 sec.14, T.17 N., R.7 W., Grays Harbor County, Hydrologic Unit 17100104, 2.2 mi downstream from Satsop River, 3.2 mi southwest of Satsop, and at mile 18.0.

DRAINAGE AREA.--1760 mi²

PERIOD OF RECORD.--June 1977 to September 1979 (gage heights and discharge records less than 2,000 ft³/s, unpublished, available in files of Washington Office), October 1979 to September 1980 (gage heights and discharge records less than 5,000 ft³/s), October 1980 to September 1981 (gage heights and discharge records less than 10,000 ft³/s), October 1981 to September 1983, October 2002 to September 2003.

GAGE.--Acoustic velocity meter with water-stage and velocity-index recorder. Datum of gage is NGVD of 1929. Prior to October 2002, datum 2.66 feet higher.

REMARKS.--Records good, except for discharges between 1,000 ft³/s and 2,500 ft³/s, which are fair, and estimated daily discharges and discharges below 1,000 ft³/s, which are poor. Large diurnal fluctuations at times because of tides. Minor effects from regulation on Skookumchuck River by Skookumchuck Dam since January 1971. Up to 54 ft³/s of Skookumchuck River is consumptively used at Centralia steam generating plant. Many small diversions for irrigation and domestic use upstream from station, including about 3 ft³/s for Centralia and Chehalis. U.S. Geological Survey telemeter at station.

AVERAGE DISCHARGE.--3 years (water years 1982-83, 2003), 7,081 ft³/s, 54.63 in/yr, 5,130,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft³/s Dec. 18, 1979, gage height, 17.93; minimum discharge 626 ft³/s Aug. 26, 27, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38,300 ft³/s Mar. 22; maximum gage height, 19.25 ft Mar. 22, result of tide effect; minimum recorded discharge, -819 ft³/s Sept. 28, but may have been lower during period of missing record; minimum gage height, 3.57 ft Sept. 5, but may have been lower during period of missing record.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e609	e512	e1,430	11,400	26,400	5,430	8,450	4,620	1,700	978	604	510
2	e636	e512	e1,370	23,400	28,800	5,020	7,970	4,380	1,650	936	595	507
3	e669	e507	e1,300	24,500	29,400	4,670	8,060	4,090	1,600	921	581	499
4	e689	e501	e1,300	23,100	22,500	4,490	8,330	4,100	1,540	905	594	482
5	e714	e501	e1,350	21,700	15,400	4,540	8,020	4,290	1,480	877	570	458
6	e688	e531	e1,300	18,600	12,000	5,280	8,270	4,250	1,440	864	579	440
7	e660	e657	e1,240	14,500	9,920	7,510	8,860	3,970	1,400	860	570	529
8	e640	e803	e1,230	11,500	8,550	9,150	11,300	3,690	1,340	858	573	590
9	e625	e1,320	e1,200	9,400	7,520	11,100	10,400	3,510	1,300	857	638	577
10	e608	e1,550	e1,540	7,870	6,710	15,200	9,440	3,340	1,320	857	635	629
11	e595	e2,190	e4,080	6,800	6,090	16,400	8,450	3,150	1,330	842	611	722
12	e577	e2,310	e11,400	7,660	5,580	18,300	8,050	3,040	1,350	851	643	771
13	e563	e2,910	e11,400	7,820	5,140	28,900	9,490	2,880	1,390	860	618	687
14	e555	e3,090	e12,300	7,760	4,750	30,200	12,200	2,840	1,370	850	600	662
15	e547	e2,350	e16,400	7,270	4,550	28,700	11,700	2,760	1,360	855	573	620
16	e542	e2,140	e16,800	6,580	5,010	24,000	10,100	2,810	1,300	838	578	619
17	e536	e2,670	e16,100	5,980	6,550	19,100	9,020	2,890	1,240	805	569	616
18	e527	e2,810	e14,200	5,450	7,950	15,200	8,100	2,820	1,170	769	554	593
19	e537	e12,300	e12,500	4,980	8,760	12,800	7,170	2,590	1,140	743	537	e690
20	e542	e9,300	e10,500	4,560	9,100	13,000	6,550	2,490	1,120	723	536	e680
21	e535	e6,160	8,480	4,370	10,900	14,700	6,060	2,400	1,120	721	521	641
22	e529	e4,200	7,030	5,890	12,000	29,500	5,780	2,330	1,120	704	500	605
23	e523	e3,240	5,980	10,200	10,900	29,700	5,530	2,230	1,110	691	496	599
24	e518	e2,680	5,210	10,500	9,380	26,300	6,170	2,180	1,120	661	507	582
25	e517	e2,300	5,640	10,800	8,110	22,000	6,490	2,120	1,090	653	510	550
26	e514	e2,060	9,050	20,800	7,150	16,900	6,230	2,050	1,050	669	500	537
27	e512	e1,860	9,630	22,500	6,340	14,200	6,130	1,950	1,010	662	505	525
28	e515	e1,740	10,900	20,000	5,720	12,800	5,740	1,930	993	654	508	517
29	e515	e1,600	9,800	16,300	---	11,600	5,350	1,840	965	633	497	513
30	e507	e1,510	9,340	16,600	---	10,200	5,020	1,800	978	622	532	527
31	e500	---	9,920	24,900	---	9,350	---	1,740	---	614	494	---
TOTAL	17,744	76,814	229,920	393,690	301,180	476,240	238,430	91,080	38,096	24,333	17,328	17,477
MEAN	572	2,560	7,417	12,700	10,760	15,360	7,948	2,938	1,270	785	559	583
MAX	714	12,300	16,800	24,900	29,400	30,200	12,200	4,620	1,700	978	643	771
MIN	500	501	1,200	4,370	4,550	4,490	5,020	1,740	965	614	494	440
AC-FT	35,200	152,400	456,000	780,900	597,400	944,600	472,900	180,700	75,560	48,260	34,370	34,670
CFSM	0.33	1.45	4.21	7.21	6.11	8.72	4.51	1.67	0.72	0.45	0.32	0.33
IN.	0.37	1.62	4.86	8.32	6.36	10.06	5.04	1.92	0.80	0.51	0.37	0.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
MEAN	2,717	6,256	15,390	15,810	16,770	13,300	8,251	2,627	1,393	1,405	750	870											
MAX	5,262	9,640	19,380	17,440	24,100	15,360	9,882	2,938	1,641	2,489	975	1,275											
(WY)	(1982)	(1982)	(1983)	(1983)	(1982)	(2003)	(1982)	(2003)	(1983)	(1983)	(1983)	(1983)											
MIN	572	2,560	7,417	12,700	10,760	12,010	6,923	2,335	1,266	785	559	583											
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(1982)	(1983)	(1983)	(1982)	(2003)	(2003)	(2003)											

SUMMARY STATISTICS

	FOR 2003 WATER YEAR	WATER YEARS 1982 - 2003
ANNUAL TOTAL	32	
ANNUAL MEAN	67	7,081
HIGHEST ANNUAL MEAN		8,562
LOWEST ANNUAL MEAN		5,267
HIGHEST DAILY MEAN	30,200 Mar 14	47,000 Feb 19, 1982
LOWEST DAILY MEAN	440 Sep 6	440 Sep 6, 2003
ANNUAL SEVEN-DAY MINIMUM	484 Aug 31	484 Aug 31, 2003
ANNUAL RUNOFF (AC-FT)	00	5,130,000
ANNUAL RUNOFF (CFSM)	2.99	4.02
ANNUAL RUNOFF (INCHES)	40.61	54.63
10 PERCENT EXCEEDS	00	19,100
50 PERCENT EXCEEDS	50	3,250
90 PERCENT EXCEEDS	29	666

e Estimated

12035380 WYNOOCHEE LAKE NEAR GRISDALE, WA

LOCATION.--Lat 47°23'08", long 123°36'16", in NE ¼ NW ¼ sec.20, T.22 N., R.7 W., Grays Harbor County, Hydrologic Unit 17100104, Olympic National Forest, in monolith No. 6, near center line axis of Wynoochee Dam on Wynoochee River, 2.0 mi north of Grisdale, at river mile 51.8.

DRAINAGE AREA.--41.0 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Corps of Engineers). Prior to May 22, 1973, staff gage on upstream face of dam.

REMARKS.--Reservoir is formed by concrete gravity-type dam with gate-type spillway; construction began in 1969; completed in 1972. Usable capacity, 67,288 acre-ft below elevation 690 ft, sluice invert level, and 800 ft, full pool elevation. Dead storage, 2,117 acre-ft below elevation 690 ft. Figures given herein represent total contents. Water is used for flood control, water supply, and recreation. Tacoma Public Utilities satellite telemetry at station.

COOPERATION.--Daily elevations at 2400 hours, and capacity table furnished by Corps of Engineers, and by Tacoma Public Utilities.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 70,087 acre-ft July 13, 1983, elevation, 800.60 ft; minimum contents observed, 4,227 acre-ft Oct. 19, 1992, elevation, 701.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 68,330 acre-ft May 6, elevation, 799.04 ft; minimum contents, 29,788 acre-ft Nov. 6, elevation, 756.35 ft.

MONTH-END ELEVATION AND CONTENTS AT 2400
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	771.35	41,381	--
October 31	759.00	31,713	-9,668
November 30	765.75	36,853	+5,140
December 31	764.76	36,079	-774
Calender Year 2002	--	--	+218
January 31	776.29	45,610	+9,531
February 28	773.61	43,287	-2,323
March 31	783.63	52,357	+9,070
April 30	798.74	67,995	+15,638
May 31	797.95	67,120	-875
June 30	791.11	59,804	-7,316
July 31	781.14	50,005	-9,799
August 31	770.58	40,743	-9,262
September 30	759.61	32,164	-8,579
Water Year 2003	--	--	-9,217

CHEHALIS RIVER BASIN

12035400 WYNOOCHEE RIVER NEAR GRISDALE, WA

LOCATION.--Lat 47°22'50", long 123°36'31", in NW ¼ SW ¼ sec.20, T.22 N., R.7 W., Grays Harbor County, Hydrologic Unit 17100104, Olympic National Forest, on right bank 0.5 mi downstream from Wynoochee Dam, 1.7 mi north of Grisdale, 1.7 mi downstream from Scatter Creek, and at mile 51.3.

DRAINAGE AREA.--41.3 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 630 ft above NGVD of 1929, from topographic map. Prior to Nov. 3, 1967, at site 1,500 ft upstream at different datum.

REMARKS.--Records good except estimated daily discharges, which are fair. Since August 1972, flow regulated by Wynoochee Lake (station 12035380) for flood control, during summer months to augment the natural river flow, and for the water supply for the City of Aberdeen. Some regulation from 1969 to August 1972 due to dam construction. No diversion upstream from station. Tacoma Public Utilities satellite telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1966-2003), 524 ft³/s, 172.30 in/yr, 379,600 acre-ft/yr, adjusted for storage in Wynoochee Lake since October 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft³/s Dec. 12, 1966, gage height, about 18.0 ft, from graph based on gage readings, site and datum then in use; minimum discharge, 0.9 ft³/s Sept. 10, 12, 1974, gage height, 0.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,080 ft³/s, gage height, 6.35 ft Mar. 13; minimum discharge, 186 ft³/s Oct. 3; minimum daily discharge, 193 ft³/s Oct. 15.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	209	223	223	1,270	1,250	272	280	275	220	319	227	209
2	209	223	223	1,270	1,250	272	280	258	220	263	227	208
3	206	223	223	1,260	1,250	272	316	227	220	255	227	202
4	199	223	223	2,090	1,250	272	280	227	227	240	229	209
5	197	223	222	1,650	1,250	272	280	227	250	238	230	209
6	196	223	220	1,240	646	272	280	227	270	238	230	209
7	196	223	223	1,240	480	272	280	227	249	237	230	209
8	197	224	225	1,240	480	272	280	227	249	234	221	205
9	196	223	224	1,240	480	275	280	227	249	234	213	196
10	196	223	551	1,230	480	790	359	223	249	234	213	196
11	196	223	1,280	807	379	1,250	488	223	249	234	213	196
12	196	794	1,270	757	272	1,140	530	223	249	231	213	196
13	196	1,290	1,260	757	272	2,660	303	223	249	230	216	196
14	196	1,290	1,200	757	272	5,270	292	223	249	230	207	196
15	193	1,290	1,530	757	272	2,570	304	224	249	230	203	197
16	196	1,290	1,830	757	272	2,590	229	220	249	228	203	203
17	199	1,290	1,390	757	272	1,670	227	220	249	227	203	209
18	199	1,290	1,250	757	270	1,270	227	220	249	227	203	209
19	199	1,290	1,240	757	270	998	227	220	249	227	203	209
20	199	1,290	1,240	757	272	1,170	227	220	249	225	203	209
21	199	1,290	1,240	757	272	1,290	227	220	249	223	204	209
22	199	1,290	1,030	953	272	2,380	227	220	249	223	206	209
23	199	1,280	884	1,250	272	1,680	227	220	249	223	206	209
24	202	1,280	666	1,250	272	1,240	227	220	249	223	206	209
25	232	1,050	1,030	1,250	272	919	227	220	262	223	206	209
26	196	229	1,280	1,260	272	637	286	220	284	224	206	212
27	196	223	972	1,250	272	506	321	220	284	227	206	216
28	214	223	784	1,250	272	284	324	220	294	227	206	e220
29	223	223	784	1,250	---	284	326	220	304	227	206	e230
30	223	223	784	1,260	---	282	326	220	304	227	209	e240
31	223	---	968	1,300	---	280	---	220	---	227	209	---
TOTAL	6,276	20,879	26,469	34,380	13,815	33,611	8,687	6,981	7,621	7,255	6,584	6,235
MEAN	202	696	854	1,109	493	1,084	290	225	254	234	212	208
MAX	232	1,290	1,830	2,090	1,250	5,270	530	275	304	319	230	240
MIN	193	223	220	757	270	272	227	220	220	223	203	196
AC-FT	12,450	41,410	52,500	68,190	27,400	66,670	17,230	13,850	15,120	14,390	13,060	12,370
MEAN†	45.2	783	841	1,264	452	1,232	553	211	131	74.6	61.8	63.7
CFSM†	1.09	18.96	20.36	30.61	10.94	29.83	13.39	5.11	3.17	1.81	1.50	1.54
IN.†	1.26	21.13	23.49	35.28	11.39	34.39	14.92	5.89	3.54	2.08	1.73	1.72
AC-FT†	2,780	46,550	51,730	77,720	25,080	75,740	32,870	12,980	7,800	4,590	3,800	3,790
CAL YR	2002	TOTAL 185,143	MEAN 507	MAX 4,300	MIN 187	AC-FT 367,200	MEAN† 507	CFSM† 12.28	IN.† 166.80	AC-FT† 367,400		
WTR YR	2003	TOTAL 178,793	MEAN 490	MAX 5,270	MIN 193	AC-FT 354,600	MEAN† 477	CFSM† 11.55	IN.† 156.81	AC-FT† 345,400		

† Adjusted for change in contents in Wynoochee Lake.

e Estimated

12036000 WYNOOCHEE RIVER ABOVE SAVE CREEK, NEAR ABERDEEN, WA

LOCATION.--Lat 47°17'57", long 123°39'07", in NE ¼ NE ¼ sec.23, T.21 N., R.8 W., Grays Harbor County, Hydrologic Unit 17100104, on right bank 0.8 mi upstream from Save Creek, 2.5 mi downstream from Oxbow Dam Site, 11.0 mi downstream from Wynoochee Dam, 23.5 mi northeast of city hall in Aberdeen, and at mile 40.6.

DRAINAGE AREA.--74.1 mi².

PERIOD OF RECORD.--May 1925 to current year. Published as "at Oxbow, near Aberdeen" 1925-52, where drainage area was 70.7 mi². Records published for both sites October 1951 to October 1952.

REVISED RECORDS.--WSP 1346: 1952. WSP 1736: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 401 ft above NGVD of 1929 (stadia traverse). Prior to Nov. 7, 1925, nonrecording gage at site 2.3 mi upstream at different datum. Nov. 7, 1925, to Sept. 3, 1947, water-stage recorder at site 1.5 mi upstream at datum 444.0 ft above NGVD of 1929 (levels by City of Aberdeen). Sept. 4, 1947, to Oct. 13, 1952, water-stage recorder at site 2.5 mi upstream at datum about 91 ft higher. Oct. 5, 1951, to Sept. 30, 1976, water-stage recorder on left bank at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Since August 1972, flow regulated by Wynoochee Lake (station 12035380) for flood control, during summer months to augment the natural river flow, and for the water supply for the City of Aberdeen. Some regulation from August 1969 to September 1972 due to dam construction. No diversions upstream from station. Tacoma Public Utilities satellite telemeter at station.

AVERAGE DISCHARGE.--78 years (water years 1926-2003), 835 ft³/s, 153.03 in/yr, 605,000 acre-ft/yr, adjusted for storage in Wynoochee Lake since October 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,600 ft³/s Dec. 9, 1956, gage height, 16.95 ft, from rating curve extended above 9,000 ft³/s; minimum discharge, 57 ft³/s Sept. 3-5, 1972, gage height, 4.43 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,360 ft³/s Mar. 14, gage height, 10.77 ft; minimum discharge, 210 ft³/s Aug. 14, Sept. 2.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	272	373	2,100	2,100	482	650	487	321	397	273	226
2	250	272	367	3,670	1,900	470	667	455	319	331	272	220
3	256	272	360	2,720	1,800	460	699	419	315	324	272	229
4	250	272	371	3,700	1,730	451	643	442	320	310	272	244
5	245	278	360	2,820	1,680	467	644	423	343	304	272	246
6	245	326	351	1,980	1,110	507	634	412	357	302	272	245
7	245	350	343	1,830	822	512	989	403	337	299	271	254
8	246	560	340	1,740	791	493	1,210	396	332	299	267	241
9	244	600	346	1,680	766	874	1,040	391	332	299	254	223
10	242	625	740	1,640	745	1,290	918	377	332	299	252	229
11	240	697	2,140	1,280	651	1,950	994	371	331	297	251	239
12	239	1,340	2,570	1,330	494	2,620	1,020	368	331	298	252	228
13	239	1,870	2,120	1,220	480	4,740	862	363	334	306	250	225
14	239	1,930	2,440	1,220	468	7,620	811	362	332	308	241	227
15	239	1,700	2,870	1,150	481	3,920	800	368	328	299	235	227
16	244	1,830	3,010	1,110	580	3,510	705	365	325	296	234	240
17	255	1,800	2,340	1,080	634	2,480	678	358	324	293	234	250
18	255	2,300	2,010	1,060	589	1,940	635	352	323	293	234	270
19	257	3,530	1,950	1,040	598	1,740	594	347	321	292	232	283
20	250	2,230	1,840	1,020	810	2,040	562	347	321	291	229	259
21	250	1,880	1,760	1,040	919	2,480	536	344	321	290	229	253
22	250	1,760	1,510	1,620	836	4,460	512	341	319	290	229	250
23	250	1,690	1,270	2,130	682	2,770	529	338	318	288	229	250
24	251	1,650	1,070	2,070	608	2,040	552	338	315	280	229	246
25	279	1,470	2,190	2,070	565	1,580	517	336	324	278	229	245
26	245	487	2,480	3,460	537	1,270	542	332	357	277	229	248
27	244	422	1,900	2,320	511	1,080	576	330	356	277	228	261
28	255	406	1,500	1,990	499	791	563	326	362	277	228	264
29	272	392	1,350	2,000	---	720	552	326	382	277	232	266
30	272	382	1,380	2,210	---	681	541	325	391	276	228	285
31	272	---	1,430	2,780	---	671	---	321	---	276	227	---
TOTAL	7,770	33,593	45,081	59,080	24,386	57,109	21,175	11,463	10,023	9,223	7,586	7,373
MEAN	251	1,120	1,454	1,906	871	1,842	706	370	334	298	245	246
MAX	279	3,530	3,010	3,700	2,100	7,620	1,210	487	391	397	273	285
MIN	239	272	340	1,020	468	451	512	321	315	276	227	220
AC-FT	15,410	66,630	89,420	117,200	48,370	113,300	42,000	22,740	19,880	18,290	15,050	14,620
MEAN†	93.3	1,206	1,441	2,060	829	1,990	969	355	311	138	94.1	102
CFSM†	1.26	16.28	19.45	27.80	11.19	26.86	13.08	4.79	2.85	1.86	1.27	1.38
IN.†	1.45	18.16	22.43	32.06	11.65	30.97	14.59	5.53	3.18	2.15	1.47	1.53
AC-FT†	5,740	71,770	88,650	126,700	46,050	122,400	57,640	21,860	12,560	8,490	5,790	6,040

CAL YR 2002 TOTAL 314,489 MEAN 862 MAX 5,930 MIN 239 AC-FT 623,800 MEAN† 862 CFSM† 11.63 IN.† 157.89 AC-FT† 624,000
WTR YR 2003 TOTAL 293,862 MEAN 805 MAX 7,620 MIN 220 AC-FT 582,900 MEAN† 792 CFSM† 10.69 IN.† 145.17 AC-FT† 573,700

† Adjusted for change in contents in Wynoochee Lake.

12037400 WYNOOCHEE RIVER ABOVE BLACK CREEK, NEAR MONTESANO, WA

LOCATION.--Lat 47°00'42", long 123°39'15", in SE ¼ SE ¼ sec.27. T.18 N., R.8 W., Grays Harbor County, Hydrologic Unit 17100104, on left bank 2,000 ft upstream from Black Creek, 3.5 mi northwest of Montesano, and at mile 5.9.

DRAINAGE AREA.--155 mi².

PERIOD OF RECORD.--October 1956 to current year.

REVISIED RECORDS.--WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 40 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. City of Aberdeen diverted about 97 ft³/s for municipal supply at intake 2.2 mi upstream. Other small diversions for irrigation and domestic use. Since August 1972, flow regulated by Wynoochee Dam, 45.7 mi upstream, for flood control, during summer months to augment the natural river flow, and for the water supply for the City of Aberdeen. Some regulation from 1969 to August 1972 due to dam construction. Sediment records October 1961 to June 1965. Water temperatures October 1969 to September 1986. Tacoma Public Utilities satellite telemeter at station.

AVERAGE DISCHARGE.--16 years (water years 1957-72), 1,316 ft³/s, 953,600 acre-ft/yr, unregulated. 31 years (water years 1973-2003), 1,262 ft³/s, 914,200 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s Mar. 19, 1997, gage height, 20.21 ft; maximum gage height, 20.54 ft Dec. 10, 1956; minimum discharge, 3.0 ft³/s part or all of each day Aug. 26-30, 1967, gage height, 2.86 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft³/s Mar. 14, gage height 12.95 ft; minimum discharge, 124 ft³/s Sept. 3,4.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	166	386	2,810	4,120	781	1,100	634	296	321	177	132
2	166	166	364	7,570	3,160	723	1,110	580	291	311	175	130
3	181	168	349	5,850	2,710	694	1,170	548	285	273	175	126
4	181	168	355	5,220	2,420	673	1,160	556	281	258	175	133
5	170	170	363	5,590	2,230	675	1,120	557	285	246	174	140
6	166	201	336	3,300	1,890	782	1,260	511	300	237	175	143
7	173	262	321	2,680	1,300	868	1,390	490	302	231	173	173
8	171	306	311	2,350	1,170	827	2,320	472	287	228	173	169
9	173	500	305	2,130	1,090	1,270	2,000	457	286	224	170	162
10	171	491	406	1,970	1,020	1,770	1,650	440	289	216	162	155
11	164	581	1,930	1,720	973	2,600	1,560	421	290	210	163	191
12	156	753	3,710	1,790	791	3,970	1,610	408	287	208	165	178
13	155	1,680	3,000	1,610	707	7,630	1,670	396	295	226	159	153
14	154	1,920	3,590	1,610	677	10,200	1,580	390	293	227	157	143
15	150	1,650	4,230	1,490	683	6,880	1,450	388	291	221	150	140
16	149	1,700	4,430	1,400	775	5,060	1,300	408	281	210	146	158
17	155	1,890	3,600	1,320	999	3,960	1,180	394	276	207	141	165
18	159	1,940	2,980	1,260	938	2,900	1,090	378	275	204	139	171
19	166	6,120	2,770	1,210	933	2,660	983	367	276	203	138	226
20	167	3,750	2,460	1,170	1,270	2,830	905	360	275	201	135	203
21	162	2,470	2,170	1,180	1,850	3,940	841	362	272	200	133	180
22	161	2,040	1,960	1,770	1,730	8,030	777	350	272	197	132	171
23	158	1,830	1,560	3,130	1,370	5,580	773	343	270	196	131	166
24	155	1,700	1,400	3,010	1,150	3,670	817	337	267	191	133	164
25	157	1,610	1,940	2,970	1,010	2,760	756	338	263	186	133	159
26	174	970	3,910	6,860	909	2,290	707	327	274	185	135	158
27	153	559	3,170	4,920	830	1,940	739	319	290	183	136	160
28	151	485	2,530	3,520	794	1,600	711	313	288	181	135	166
29	162	444	2,060	3,180	---	1,340	689	309	298	179	133	187
30	168	416	2,220	3,530	---	1,200	668	302	320	178	135	190
31	166	---	1,980	6,000	---	1,180	---	300	---	176	132	---
TOTAL	5,062	37,106	61,096	94,120	39,499	91,283	35,086	12,755	8,555	6,714	4,690	4,892
MEAN	163	1,237	1,971	3,036	1,411	2,945	1,170	411	285	217	151	163
MAX	181	6,120	4,430	7,570	4,120	10,200	2,320	634	320	321	177	226
MIN	149	166	305	1,170	677	673	668	300	263	176	131	126
AC-FT	10,040	73,600	121,200	186,700	78,350	181,100	69,590	25,300	16,970	13,320	9,300	9,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

MEAN	790	2,229	2,779	2,416	2,233	1,628	981	685	522	343	235	357
MAX	2,967	4,951	5,122	4,444	4,623	4,180	1,791	1,322	1,208	766	456	1,287
(WY)	(1976)	(1991)	(1995)	(1997)	(1999)	(1997)	(1974)	(1984)	(2000)	(1974)	(2001)	(1978)
MIN	143	294	788	602	579	539	497	328	245	183	151	148
(WY)	(1988)	(1994)	(1986)	(1985)	(1993)	(1992)	(1973)	(1998)	(1979)	(1995)	(2003)	(1993)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1973 - 2003
ANNUAL TOTAL	420,502	400,858	
ANNUAL MEAN	1,152	1,098	1,262
HIGHEST ANNUAL MEAN			1,907
LOWEST ANNUAL MEAN			749
HIGHEST DAILY MEAN	8,810	10,200	23,700
LOWEST DAILY MEAN	149	126	108
ANNUAL SEVEN-DAY MINIMUM	154	132	119
ANNUAL RUNOFF (AC-FT)	834,100	795,100	914,200
10 PERCENT EXCEEDS	2,730	2,970	2,980
50 PERCENT EXCEEDS	553	378	638
90 PERCENT EXCEEDS	168	157	197

HUMPTULIPS RIVER BASIN

12039005 HUMPTULIPS RIVER BELOW HIGHWAY 101 NEAR HUMPTULIPS, WA

LOCATION.--Lat 47°13'54", long 123°58'22", in SE 1/4 SW 1/4 sec. 7, T. 22N., R. 10 W., Grays Harbor County, Hydrologic Unit 17100105, on right bank at site of former bridge 0.6 mi downstream of Highway 101, 0.5 mi west of Humptulips, and at mile 22.9.

DRAINAGE AREA.--132 mi².

PERIOD OF RECORD.--May 1933 to January 1935, July 1942 to September 1979, July 2002 to current year. Published as "12039000 Humptulips River near Humptulips" May 1933 to Jan. 1935 and July 1942 to September 1979.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 90.00 feet above NGVD of 1929. May 1933 Jan. 1935 and July 1942 to Sept. 1979, at site 1.0 mi upstream at different datum.

REMARKS.--Records good except for flow above 9,000 ft³/s, which are poor. No regulation or diversion upstream of station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--39 years (water years 1934, 1943-79, 2003), 1337 ft³/s, 137.14 in/yr, 968,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s Jan. 22, 1935, gage height 12.7 feet, datum then in use, from flood marks, from rating curve extended above 16,500 ft³/s; maximum gage height, 20.11 feet Mar. 13, 2003; minimum discharge observed, 82 ft³/s Sept. 11, 1944.

EXTREMES FOR CURRENT WATER YEAR.--Maximum discharge, 18,300 ft³/s Mar. 13, gage height 20.11; minimum discharge, 94 ft³/s Sept. 4-6.

DISCHARGE, CUBIC FEET PER SECOND
YEAR JULY 2002 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	JUL	AUG	SEP
1	---	202	143
2	---	198	146
3	---	195	154
4	---	205	146
5	---	209	142
6	---	203	141
7	---	192	139
8	---	188	152
9	---	184	217
10	---	181	162
11	---	180	148
12	---	176	144
13	---	173	140
14	---	171	138
15	---	169	137
16	---	167	272
17	---	165	313
18	---	163	199
19	---	162	174
20	266	160	173
21	257	159	157
22	250	158	149
23	243	156	144
24	238	155	141
25	234	153	138
26	230	152	136
27	226	150	135
28	222	148	133
29	220	146	134
30	213	144	132
31	205	143	---
TOTAL	---	5,307	4,779
MEAN	---	171	159
MAX	---	209	313
MIN	---	143	132
AC-FT	---	10,530	9,480
CFSM	---	1.29	1.20
IN.	---	1.49	1.34

HUMPTULIPS RIVER BASIN

12039005 HUMPTULIPS RIVER BELOW HIGHWAY 101 NEAR HUMPTULIPS, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	110	573	2,810	4,220	944	1,610	623	264	186	122	100
2	127	110	530	11,400	2,960	846	1,710	588	255	169	121	100
3	148	110	489	7,170	2,360	791	1,800	564	247	165	121	99
4	150	e110	497	7,220	1,950	722	1,650	638	239	161	121	98
5	137	e115	483	5,210	1,690	753	1,610	654	233	158	119	97
6	132	176	428	3,290	1,500	1,150	1,690	558	227	156	120	98
7	130	463	394	2,490	1,350	1,240	2,380	521	223	154	118	129
8	128	1,490	367	2,040	1,220	1,090	4,350	489	221	153	117	129
9	129	2,350	355	1,750	1,100	2,070	3,640	464	219	153	118	121
10	126	2,210	872	1,540	992	2,720	2,670	447	219	148	118	137
11	123	2,510	2,570	1,440	905	3,290	2,320	432	216	145	117	253
12	122	2,890	5,600	2,210	830	6,590	2,100	422	212	148	128	212
13	121	2,570	3,740	1,720	767	15,400	2,230	408	226	182	119	163
14	121	2,560	5,230	1,810	706	11,600	2,200	408	231	198	116	143
15	120	1,630	6,720	1,540	740	6,760	2,140	420	234	202	113	132
16	119	1,810	5,560	1,370	1,150	4,640	1,950	465	213	179	115	137
17	118	2,160	3,890	1,220	1,530	3,580	1,860	444	204	168	113	133
18	118	3,180	3,170	1,110	1,320	2,980	1,730	412	197	159	112	135
19	123	13,800	2,810	1,020	1,310	3,030	1,540	390	193	152	110	310
20	128	5,580	2,320	926	2,270	4,390	1,380	381	190	150	109	223
21	122	2,970	1,930	906	3,130	5,450	1,240	389	187	148	108	177
22	120	2,100	1,680	2,420	2,840	11,100	1,110	369	189	143	106	154
23	118	1,660	1,460	4,210	2,030	5,740	1,090	365	183	139	102	141
24	117	1,370	1,360	3,480	1,650	3,700	1,150	359	180	136	103	132
25	116	1,160	4,210	3,200	1,420	2,950	1,030	382	176	133	103	125
26	115	998	5,930	11,300	1,250	2,580	917	352	173	133	106	120
27	115	878	3,870	5,820	1,090	2,350	849	330	170	131	108	116
28	117	780	3,220	3,580	1,020	2,060	778	309	167	128	104	113
29	113	697	2,430	3,050	---	1,830	720	296	165	126	102	110
30	111	629	2,480	3,590	---	1,660	666	283	183	124	102	110
31	110	---	2,070	8,010	---	1,690	---	274	---	123	101	---
TOTAL	3,824	59,176	77,238	108,852	45,300	115,696	52,110	13,436	6,236	4,750	3,492	4,247
MEAN	123	1,973	2,492	3,511	1,618	3,732	1,737	433	208	153	113	142
MAX	150	13,800	6,720	11,400	4,220	15,400	4,350	654	264	202	128	310
MIN	110	110	355	906	706	722	666	274	165	123	101	97
AC-FT	7,580	117,400	153,200	215,900	89,850	229,500	103,400	26,650	12,370	9,420	6,930	8,420
CFSM	0.93	14.9	18.8	26.5	12.2	28.2	13.1	3.27	1.57	1.16	0.85	1.07
IN.	1.07	16.62	21.69	30.56	12.72	32.48	14.63	3.77	1.75	1.33	0.98	1.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

MEAN	1,044	2,082	2,744	2,585	2,286	1,864	1,313	822	469	323	241	402
MAX	3,017	3,462	5,646	5,750	4,799	3,814	2,257	1,731	895	751	552	1,250
(WY)	(1976)	(1955)	(1934)	(1953)	(1961)	(1972)	(1959)	(1948)	(1956)	(1974)	(1964)	(1978)
MIN	123	599	1,230	614	950	830	617	419	208	151	108	134
(WY)	(2003)	(1953)	(1945)	(1949)	(1956)	(1947)	(1973)	(1954)	(2003)	(1958)	(1951)	(1965)

SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 1933 - 2003

ANNUAL TOTAL	57	
ANNUAL MEAN	54	1,337
HIGHEST ANNUAL MEAN		1,878
LOWEST ANNUAL MEAN		868
HIGHEST DAILY MEAN	15,400	23,200
LOWEST DAILY MEAN	97	82
ANNUAL SEVEN-DAY MINIMUM	99	86
ANNUAL RUNOFF (AC-FT)	00	968,800
ANNUAL RUNOFF (CFSM)	10.2	10.1
ANNUAL RUNOFF (INCHES)	38.80	137.14
10 PERCENT EXCEEDS	70	3,080
50 PERCENT EXCEEDS	44	788
90 PERCENT EXCEEDS	16	183

e Estimated

THIS PAGE IS INTENTIONALLY BLANK