

Figure 52. Location of surface-water stations in the Okanogan River Basin and on the Columbia River from Coulee Dam to Wells Dam.

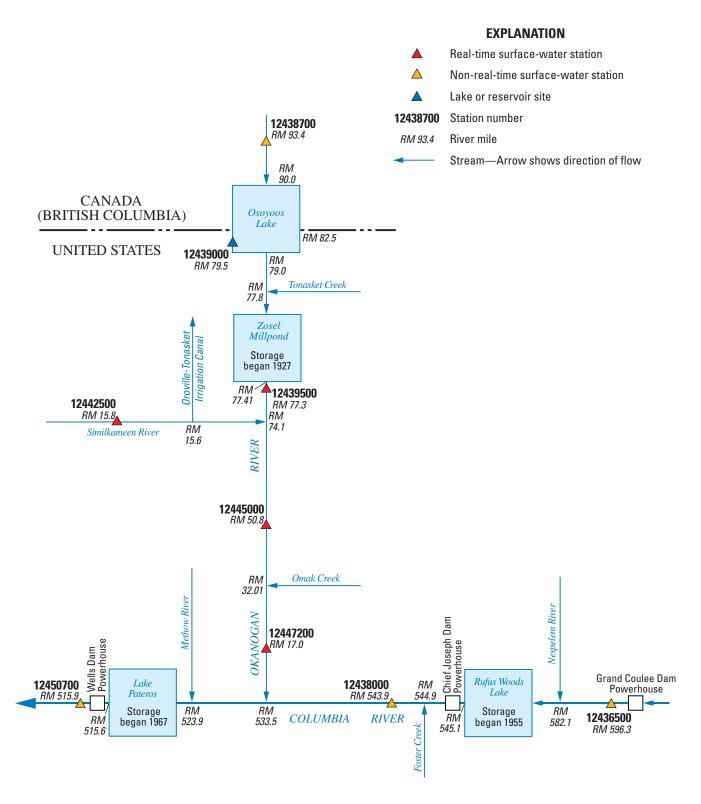


Figure 53. Schematic diagram showing surface-water stations in the Okanogan River Basin and on the Columbia River from Coulee Dam to Wells Dam.

12438700 OKANAGAN RIVER NEAR OLIVER, BRITISH COLUMBIA (International gaging station)

LOCATION.--Lat 49°06'53", long 119°33'50", approximately 75 ft upstream from drop structure No. 3, 0.8 mi downstream from Testalinden Creek, 4.2 mi south of Oliver, and at mile 93.4.

DRAINAGE AREA.--2,930 mi².

PERIOD OF RECORD.--October 1961 to current year in reports of U.S. Geological Survey. March 1944 to December 1948 and April 1952 to current year in reports of Water Survey of Canada.

GAGE .-- Water-stage recorder.

REMARKS.--Regulation by control dams at outlets of Okanagan and Skaha Lakes. Diversion for irrigation.

COOPERATION.--Discharge records furnished by Water Survey of Canada. This station is maintained by Canada under agreement with the United States subsequent to Feb. 14, 1965.

AVERAGE DISCHARGE.--55 years (water years 1945-47, 1953-56, 1958-2005), 658 $\rm ft^3/s$, 476,700 acre-ft/yr. 44 years (water years 1962-2005), 647 $\rm ft^3/s$, 469,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,740 ft³/s, June 11, 1990, gage height, 7.52 ft; minimum discharge, 55.9 ft³/s, Jan. 30, 1963, gage height, 0.63 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,420 ft³/s, June 29; minimum daily discharge, 231 ft³/s, Nov. 29.

					DAIL	I MILAIN V	ALUES					
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	547	329	353	706	915	1,070	562	918	470	2,350	1,340	388
2	477	331	576	696	915	1,000	565	911	445	2,310	1,350	392
2 3	480	310	682	689	911	886	565	915	431	2,240	1,340	396
4	452	297	731	685	915	876	682	911	427	2,240	1,190	396
		297	731		915	8/0	082			2,220	1,190	390
5	413	278	735	689	911	876	872	982	438	2,090	1,030	388
6	399	280	735	689	901	876	879	985	473	1,740	1,010	381
7	392	306	745	692	904	876	908	978	463	1,480	1.000	381
8	388	316	752	692	950	879	953	975	526	1,090	855	378
9	413	309	752	692	1,060	890	946	996	512	1,110	622	381
10	431	300	756	696	1,070	816	943	1,020	448	1,120	540	392
11	424	290	749	689	1.070	597	950	982	417	1,130	360	399
12	417	280	738	706	1,070	600	950	957	484	1,140	352	403
13	410	281	742	777	1,070	597	946	943	441	1,110	351	396
	403	278		-770	1,070			943 950		1,110	353	381
14	403	278	738	e770	1,060	586	964	950	403	1,150	353	381
15	399	278	720	e770	1,060	586	964	1,000	392	1,180	349	360
16	403	267	720	e780	1,060	583	925	1,100	371	1,210	352	357
17	417	243	720	e788	1,060	583	946	904	427	1,210	357	367
18	448	243	717	e802	1,060	579	939	833	586	1,200	357	367
19	445	244	717	812	1,060	576	936	858	523	1,190	357	360
20	441	237	717	819	1,060	583	961	795	466	1,200	357	357
21	424	239	717	844	1,060	590	999	766	445	1,290	360	364
22	388	238	713	862	1,060	579	1,030	749	448	1,330	357	360
23	371	238	713	879	1,060	579	1,070	735	473	1,360	360	364
24	364	242	713	908	1,060	576	1,030	717	558	1,360	388	364
24 25	360	270	713	932	1,060	572	996	703	579	1,360	381	360
26	357	246	713	929	1,060	569	1,020	632	565	1,350	385	357
27	347	239	713	929	1,060	579	1,040	537	858	1,340	385	357
28	346	233	713	929	1,070	579	968	509	1,780	1,340	385	364
29	345	231	713	929		579	943	501	2,420	1,330	381	357
30	328	250	717	929		576	939	473	2,390	1,340	381	360
31	330		713	929		569		456		1,340	385	
TOTAL	12,559	8,123	21,946	24,638	28,572	21,262	27,391	25,691	19,659	44,210	17,970	11,227
MEAN	405	271	708	795	1,020	686	913	829	655	1,426	580	374
					1,020				2 420		1 250	402
MAX	547	331	756	932		1,070	1,070	1,100	2,420	2,350	1,350	403
MIN	328	231	353	685	901	569	562	456	371	1,090	349	357
AC-FT	24,910	16,110	43,530	48,870	56,670	42,170	54,330	50,960	38,990	87,690	35,640	22,270
STATIST	TCS OF MO	ONTHLY M	EAN DATA	FOR WAT	ER YEARS	1962 - 2005	, BY WATE	R YEAR (W	YY)			
MEAN	409	337	313	380	521	655	760	1,146	1,102	868	723	548
MAX	689	1,029	708	932	1,221	1,965	2,248	2,832	3,099	2,715	2,665	2,232
(WY)	(1998)	(1979)	(2005)	(1996)	(1007)	(1983)	(1092)		(1990)	(1997)	(1997)	(1007)
	(1998)	122	112	(1996)	(1997) 85.6	(1983)	(1983) 142	(1997) 267	(1990)	209	(1997)	(1997) 205
MIN					83.0							205
(WY)	(1971)	(1971)	(1968)	(1971)	(1971)	(1968)	(1968)	(1992)	(1963)	(1963)	(1963)	(1988)

12438700 OKANAGAN RIVER NEAR OLIVER, BRITISH COLUMBIA—Continued

SUMMARY STATISTICS	FOR 2004 CALE	ENDAR YEAR	FOR 2005 WA	ATER YEAR	WATER YEARS 1962 - 200		
ANNUAL TOTAL	133,257		263,248				
ANNUAL MEAN	364		721		647		
HIGHEST ANNUAL MEAN					1,714	1997	
LOWEST ANNUAL MEAN					235	1988	
HIGHEST DAILY MEAN	1,220	Sep 24	2,420	Jun 29	3,660	Jun 11, 1990	
LOWEST DAILY MEAN	180	Jan 3	231	Nov 29	79	Jan 29, 1971	
ANNUAL SEVEN-DAY MINIMUM	180	Mar 16	240	Nov 18	80	Jan 28, 1971	
ANNUAL RUNOFF (AC-FT)	264,300		522,200		469,100		
10 PERCENT EXCEEDS	696		1,110		1,560		
50 PERCENT EXCEEDS	338		696		392		
90 PERCENT EXCEEDS	184		350		195		

e Estimated

12439000 OSOYOOS LAKE NEAR OROVILLE, WA

(International gaging station)

LOCATION.--Lat 48°57'24", long 119°26'18", in NW \(^1_4\)NE \(^1_4\) sec.21, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on west shore 1.0 mi north of Oroville, 3.0 mi south of international boundary, and at mile 79.5.

DRAINAGE AREA.--3,132 mi².

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

REVISED RECORDS.--WSP 1346: Drainage area. WDR WA-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Sept. 2, 1928, nonrecording gage, and Sept. 2, 1928, to Nov. 9, 1929, water-stage recorder, 100 ft south of international boundary. Nov. 10, 1929, to Sept. 7, 1930, Mar. 22, 1952, to Sept. 23, 1953, June 25, 1955, to Apr. 11, 1956, nonrecording gage, and Sept. 8, 1930, to Mar. 21, 1952, Sept. 24, 1953, to June 24, 1955, Apr. 12, 1956, to Feb. 7, 1969, water-stage recorder, at site 1.0 mi south of international boundary. All elevations prior to Oct. 1, 1944, at datum 2.39 ft lower. To convert from present datum to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft; to convert from present datum to 1947 joint adjustment of U.S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft.

REMARKS.--Approximately 44,000 acres are irrigated upstream from station in Canada. Elevation may occasionally be affected by dam at Zosel's Mill in Oroville and by backwater from the Similkameen River during extreme high water. U.S. Geological Survey satellite telemeter at station.

COOPERATION .-- This station is maintained by the United States under agreement with Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 917.11 ft, June 2, 3, 1972; minimum elevation, 908.82 ft, present datum, Oct. 14, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 29, 1894, reached an elevation of 918.8 ft, plus or minus 0.5 ft, present datum, 1.0 mi downstream from present lake outlet, from floodmark on old Okanogan Hotel Building, documented in 1930 from the diary of Mr. and Mrs. Stansbury, operators of the hotel in 1894.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 912.52 ft, May 6; minimum elevation, 909.52 ft, Jan. 6.

ELEVATION ABOVE NGVD 1929, FEET WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	911.29	911.16	909.55	909.59	909.73	909.84	911.35	912.35	911.97	912.33	912.20	912.04
2	911.30	911.13	909.56	909.57	909.74	910.04	911.35	912.37	911.98	912.29	912.20	912.03
3	911.32	911.08	909.55	909.53	909.74	910.20	911.35	912.38	911.99	912.21	912.19	912.02
4	911.33	911.02	909.56	909.55	909.74	910.32	911.37	912.41	911.98	912.17	912.24	912.01
5	911.32	910.96	909.59	909.53	909.74	910.44	911.38	912.45	911.98	912.16	912.25	911.99
6	911.30	910.91	909.62	909.53	909.73	910.54	911.34	912.50	912.03	912.19	912.23	911.99
7	911.28	910.86	909.62	909.55	909.73	910.61	911.31	912.47	912.06	912.22	912.22	911.98
8	911.25	910.83	909.63	909.57	909.72	910.54	911.33	912.42	912.12	912.16	912.21	911.97
9	911.31	910.79	909.62	909.57	909.74	910.56	911.32	912.43	912.17	912.16	912.22	911.97
10	911.34	910.75	909.61	909.56	909.77	910.64	911.29	912.45	912.20	912.20	912.25	911.94
11	911.38	910.70	909.60	909.56	909.80	910.70	911.30	912.45	912.21	912.23	912.28	911.94
12	911.41	910.64	909.59	909.56	909.82	910.80	911.45	912.42	912.22	912.27	912.28	911.95
13	911.38	910.59	909.57	909.57	909.82	910.88	911.63	912.33	912.21	912.26	912.26	911.96
14	911.35	910.52	909.58	909.59	909.82	910.93	911.79	912.25	912.22	912.24	912.29	911.97
15	911.32	910.48	909.60	909.62	909.82	911.01	911.93	912.20	912.22	912.26	912.31	911.97
16	911.30	910.43	909.60	909.66	909.82	911.09	912.09	912.22	912.23	912.30	912.33	911.97
17	911.28	910.35	909.60	909.68	909.81	911.16	912.22	912.18	912.25	912.32	912.36	911.94
18	911.30	910.27	909.59	909.70	909.81	911.21	912.28	912.10	912.35	912.34	912.37	911.93
19	911.30	910.20	909.58	909.69	909.81	911.22	912.30	912.03	912.43	912.31	912.36	911.94
20	911.30	910.11	909.58	909.68	909.80	911.24	912.28	911.97	912.39	912.26	912.32	911.93
21	911.29	910.03	909.59	909.67	909.80	911.29	912.33	911.92	912.36	912.23	912.30	911.91
22	911.25	909.96	909.59	909.68	909.80	911.31	912.38	911.88	912.35	912.22	912.28	911.91
23	911.22	909.89	909.58	909.69	909.80	911.31	912.40	911.89	912.35	912.24	912.24	911.89
24	911.18	909.85	909.57	909.69	909.80	911.30	912.41	912.05	912.34	912.26	912.19	911.87
25	911.14	909.79	909.57	909.70	909.80	911.30	912.37	912.17	912.34	912.23	912.15	911.86
26 27 28 29 30 31	911.16 911.17 911.18 911.18 911.18	909.74 909.69 909.62 909.56 909.56	909.59 909.60 909.59 909.58 909.58 909.60	909.71 909.72 909.72 909.73 909.73 909.73	909.80 909.80 909.80 	911.30 911.34 911.35 911.36 911.36 911.35	912.32 912.33 912.30 912.30 912.33	912.15 912.06 911.97 911.90 911.92 911.96	912.33 912.33 912.33 912.33 912.35	912.22 912.22 912.22 912.21 912.19 912.18	912.14 912.12 912.10 912.10 912.07 912.05	911.85 911.86 911.83 911.82 911.82
MEAN	911.27	910.38	909.59	909.63	909.78	910.92	911.87	912.20	912.22	912.24	912.23	911.94
MAX	911.41	911.16	909.63	909.73	909.82	911.36	912.41	912.50	912.43	912.34	912.37	912.04
MIN	911.14	909.56	909.55	909.53	909.72	909.84	911.29	911.88	911.97	912.16	912.05	911.82

CAL YR 2004 MEAN 910.98 MAX 912.73 MIN 909.47 WTR YR 2005 MEAN 911.20 MAX 912.50 MIN 909.53

12439500 OKANOGAN RIVER AT OROVILLE, WA (International gaging station)

LOCATION.—Lat 48°55'51", long 119°25'09", in SE \(^1_4\SW^1\)_4 sec.27, T.40 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on left bank in Oroville, 20 ft downstream from Burlington Northern trestle, 0.5 mi downstream from Tonasket Creek, 1.7 mi downstream from Osoyoos Lake, 3.2 mi upstream from Similkameen River, and at mile 77.3.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--3,195 mi².

PERIOD OF RECORD .-- October 1942 to current year.

REVISED RECORDS .-- WDR WA-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Oct. 26, 1944, nonrecording gage at Zosel Mill dam 200 ft upstream, Oct. 26, 1944, to Mar. 6, 1948, water-stage recorder on railroad trestle 20 ft upstream, both at same datum. Auxiliary water-stage recorder 0.5 mi downstream used during high-water periods; May 15, 1946, to Apr. 9, 1948, nonrecording gage at same site, both at datum 900.00 ft above NGVD of 1929. To convert to 1947 joint adjustment of U.S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft.

REMARKS.--No estimated daily discharges. Records good. Diversions made to irrigate approximately 44,000 acres in Canada and minor diversions in the United States upstream from station. Natural regulation in several large lakes and artificial regulation in Okanagan Lake 46.7 mi upstream for flood control and irrigation; also regulated by Zosel dam at Oroville, 500 ft upstream from gage. Water temperature April 1986 to September 1987. U.S. Geological Survey satellite telemeter at station.

COOPERATION .-- This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--63 years (water years 1943-2005), 684 ft³/s, 495,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s, June 7, 1997; maximum elevation, 916.89 ft, June 2, 1972, at datum then in use, backwater from Similkameen River; minimum daily discharge, -2,270 ft³/s, reverse flow, May 29, 1948; minimum elevation, 903.98 ft, Mar. 1, 1948, at datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s, July 1; maximum elevation, 908.71 ft, July 1, result of regulation at Zosel Dam; minimum discharge, 140 ft³/s, May 23; minimum elevation, 905.94, May 23, result of regulation at Zosel Dam.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	397	479	341	813	994	762	554	775	296	1,970	1,050	298
2	397	532	471	806	993	526	555	778	301	1,970	1,030	296
3	399	527	627	739	988	546	553	781	302	1,920	936	296
4	402	520	651	715	991	567	596	784	296	1,820	865	295
5	406	513	662	711	991	579	864	787	294	1,560	837	295
6	410	509	700	718	989	591	1,010	939	305	1,330	833	296
7	409	504	770	741	987	989	907	1,040	340	1,180	832	295
8	350	497	804	751	984	976	924	992	360	1,020	591	295
9	308	492	823	756	990	719	986	924	363	755	398	296
10	314	487	829	746	1,010	642	980	957	364	718	244	295
11	319	485	838	745	1,070	446	707	979	364	746	143	295
12	453	476	834	749	1,110	362	416	1,090	364	812	144	295
13	544	467	766	762	1,110	367	427	1,160	303	865	144	300
14	553	463	706	774	1,120	369	437	1,140	269	883	149	304
15	560	458	751	774	1,110	372	447	1,120	269	922	151	305
16	568	519	767	787	1,110	375	457	1,130	269	951	151	336
17	568	534	770	798	1,110	380	654	1,120	269	954	151	353
18	568	525	769	868	1,110	480	759	1,090	273	1,030	183	314
19	568	515	769	907	1,110	541	951	1,060	404	1,110	241	299
20	568	501	777	917	1,110	543	840	970	623	1,090	295	295
21	569	488	784	919	1,110	547	768	843	392	1,080	296	295
22	566	480	786	905	1,110	548	886	839	341	1,080	300	300
23	558	466	784	907	1,100	549	1,020	403	387	1,090	300	300
24	556	458	775	954	1,100	544	1,080	147	458	1,100	299	300
25	446	452	775	985	1,100	544	1,160	404	458	1,090	295	300
26 27 28 29 30 31	383 383 377 377 376 376	442 433 424 340 284	792 799 787 796 799 811	984 987 987 993 991 993	1,110 1,110 1,110 	545 550 550 550 550 550	1,060 1,030 949 816 774	728 708 686 423 288 296	454 698 1,520 1,880 1,940	1,080 1,080 1,080 1,080 1,080 1,080	295 295 295 297 300 300	300 300 300 299 377
TOTAL	14,028	14,270	23,113	26,182	29,837	17,161	23,567	25,381	15,156	35,526	12,640	9,124
MEAN	453	476	746	845	1,066	554	786	819	505	1,146	408	304
MAX	569	534	838	993	1,120	989	1,160	1,160	1,940	1,970	1,050	377
MIN	308	284	341	711	984	362	416	147	269	718	143	295
AC-FT	27,820	28,300	45,840	51,930	59,180	34,040	46,750	50,340	30,060	70,470	25,070	18,100
STATIST	ICS OF MO	ONTHLY M	EAN DATA	FOR WAT	ER YEARS	1943 - 2005,	BY WATE	R YEAR (W	YY)			
MEAN	505	475	466	486	574	637	760	1,142	1,132	815	649	564
MAX	1,430	1,551	1,404	1,190	1,214	1,918	2,475	2,870	3,165	2,598	2,570	2,279
(WY)	(1949)	(1949)	(1949)	(1949)	(1997)	(1983)	(1983)	(1983)	(1997)	(1997)	(1997)	(1997)
MIN	179	148	149	162	140	74.1	115	180	111	126	150	81.7
(WY)	(1989)	(1971)	(1971)	(1968)	(1971)	(1977)	(1968)	(1992)	(1992)	(1947)	(1963)	(1944)

12439500 OKANOGAN RIVER AT OROVILLE, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 W	ATER YEAR	WATER YEARS 1943 - 2		
ANNUAL TOTAL	129,145		245,985				
ANNUAL MEAN	353		674		684		
HIGHEST ANNUAL MEAN					1,691	1997	
LOWEST ANNUAL MEAN					213	1988	
HIGHEST DAILY MEAN	1,280	Sep 25	1,970	Jul 1	3,680	Jun 14, 1972	
LOWEST DAILY MEAN	97	May 2	143	Aug 11	-2,270	May 29, 1948	
ANNUAL SEVEN-DAY MINIMUM	108	Apr 26	148	Aug 11	-1,080	May 24, 1948	
ANNUAL RUNOFF (AC-FT)	256,200	-	487,900	-	495,500	•	
10 PERCENT EXCEEDS	766		1,090		1,480		
50 PERCENT EXCEEDS	279		596		495		
90 PERCENT EXCEEDS	120		296		200		

12439500 OKANOGAN RIVER AT OROVILLE, WA

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: Mar. 30 to Sept. 30, 2005.

 $INSTRUMENTATION. \hbox{--Electronic thermistor/logger with 30-minute log interval.} \\$

REMARKS.--Records good due to variability in cross-section comparison of Sept. 8.

EXTREMES FOR CURRENT YEAR.-- WATER TEMPERATURE: Maximum 26.8°C, Aug. 10; minimum, 5.5°C, Mar. 30.

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	(OCTOBER	₹	N	OVEMBE	ER	D	ЕСЕМВЕ	R	J	ANUAR	Y
1												
2												
3												
4												
5												
6												
7												
8												
9												
9 10												
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24 25												
25												
26												
27												
28												
29												
30												
31												
MONTH												

12439500 OKANOGAN RIVER AT OROVILLE, WA-Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	:	FEBRUAR	Y		MARCH			APRIL			MAY	
1 2 3 4 5	 	 	 	 	 	 	8.1 7.3 7.3 8.3 7.8	6.1 5.9 6.3 6.4 6.6	7.0 6.6 6.8 7.2 7.1	14.9 15.1 14.8 15.4 16.8	12.6 12.4 11.8 14.1 14.0	13.7 13.7 13.1 14.8 15.4
6 7 8 9 10	 	 	 	 	 	 	8.4 8.7 8.6 10.1 9.6	6.6 6.9 6.9 7.8 8.1	7.3 7.6 7.6 8.8 8.8	18.1 18.6 17.6 17.3 17.1	15.4 16.5 16.2 16.4 16.0	16.7 17.5 16.9 16.7 16.5
11 12 13 14 15	 	 	 	 	 	 	9.3 9.3 9.6 10.1 9.2	7.8 7.5 7.0 8.3 8.1	8.3 8.5 8.5 9.2 8.6	18.4 19.4 18.1 17.3 17.3	15.4 17.0 15.4 14.9 15.7	16.9 18.1 17.0 16.1 16.9
16 17 18 19 20	 	 	 	 	 	 	8.9 9.6 10.4 11.2 11.1	7.8 7.8 8.3 8.6 9.3	8.2 8.7 9.3 10 10.2	17.6 18.4 15.9 16.7 16.5	15.9 15.0 13.8 13.8 13.1	16.7 17.0 14.8 15.6 14.8
21 22 23 24 25	 	 	 	 	 	 	12.6 12.6 11.8 13.7 15.6	10.0 9.8 9.2 10.9 13.1	11.2 10.9 10.5 12.2 14.3	16.0 15.6 18.6 20.2 19.7	13.8 12.3 13.5 15.1 16.2	14.9 14.2 15.5 17.2 18.0
26 27 28 29 30 31	 	 	 	 7.6 7.2	 5.5 6.1	 6.6 6.7	16.2 15.1 14.6 14.8 14.6	13.1 13.2 12.6 12.9 13.2	14.5 14.0 13.7 13.8 13.9	20.0 20.4 21.2 22.7 22.0 19.7	17.3 17.3 17.6 19.9 19.7 17.8	18.6 18.8 19.3 21.3 21.0 18.7
MONTH							16.2	5.9	9.8	22.7	11.8	16.7
		JUNE			JULY			AUGUST	,	S	EPTEMBI	ΞR
1 2 3 4 5	21.0 20.9 19.6	18.4 18.8 17.3	 19.7 18.4	22.9 22.7 22.7 23.4 23.5	20.2 21.4 20.9 21.0 20.5	21.6 22.0 21.8 22.1 22.2	24.2 24.0 24.6 24.9 25.6	22.9 22.2 22.2 22.7 23.0	23.5 23.2 23.3 23.8 24.2	22.7 22.9 21.8 21.5 21.5	20.7 20.9 19.9 20.0 19.1	21.6 21.7 20.7 20.5 20.2
6 7 8 9 10	19.4 18.9 18.9 20.0 20.7	16.8 17.6 17.3 17.3 18.1	18.1 18.2 18.0 18.8 19.5	21.8 22.2 21.8 21.4 21.2	19.4 19.4 19.9 19.6 19.9	20.7 20.9 21.2 20.4 20.4	26.5 26.5 26.3 26.0 26.8	24.0 24.7 24.6 23.7 23.7	25.2 25.6 25.4 24.8 24.8	22.0 22.2 22.7 21.4 19.8	19.6 19.7 20.2 19.4 18.4	20.6 20.8 21.3 20.5 19.0
11 12 13 14 15	21.2 20.9 20.9 19.2 20.7	19.4 18.4 19.2 17.3 17.6	20.1 19.8 19.9 18.2 19.0	22.0 23.4 23.4 23.7 23.4	19.9 19.9 21.4 21.2 21.5	20.7 21.5 22.4 22.5 22.0	26.7 25.6 26.0 26.3 26.0	23.0 22.4 21.7 21.7 22.0	24.4 23.6 23.4 23.6 23.7	19.0 20.1 20.1 19.9 20.1	18.5 18.5 18.2 18.2 19.1	18.7 19.0 19.1 19.1 19.5
16 17 18 19 20	20.9 19.4 19.6 20.9 22.4	19.2 18.4 17.9 18.4 19.6	19.8 19.1 18.7 19.8 21.0	22.4 23.7 23.9 25.1 25.6	21.0 20.9 21.8 22.7 23.2	21.7 22.3 22.9 23.9 24.4	26.1 24.6 24.6 24.4 24.2	22.2 21.7 20.9 21.2 22.2	23.8 23.0 22.5 22.6 23.1	19.6 19.8 19.7 19.5 19.5	18.6 17.7 18.1 17.6 17.4	19.1 18.8 18.9 18.4 18.3
21 22 23 24 25	23.7 23.7 23.0 23.5 23.0	21.4 21.7 20.9 22.0 21.0	22.4 22.5 22.1 22.6 22.1	25.4 24.3 24.6 24.1 23.7	23.2 22.9 22.2 22.6 21.7	24.3 23.3 23.4 23.3 22.7	24.0 23.5 22.2 22.5 23.2	21.5 21.8 20.5 20.2 20.4	22.8 22.5 21.5 21.2 21.7	19.2 18.7 17.7 17.3 17.6	17.3 17.1 16.0 15.4 15.6	18.1 17.7 16.7 16.2 16.5
26 27 28 29 30 31	23.0 22.0 22.2 22.9 23.4	21.4 20.4 20.4 20.7 20.2	22.2 20.8 21.1 21.6 21.8	24.2 24.7 25.8 26.3 26.1 25.6	21.8 21.8 23.5 24.2 24.1 23.2	22.8 23.2 24.7 25.3 25.2 24.1	23.7 24.0 24.0 22.4 21.7 22.4	21.4 21.7 22.0 20.2 19.6 19.9	22.4 22.8 22.9 21.2 20.4 21.0	17.8 17.5 16.7 17.3 16.9	16.4 15.9 15.1 16.0 16.4	17.0 16.6 15.9 16.6 16.7
MONTH				26.3	19.4	22.6	26.8	19.6	23.2	22.9	15.1	18.8

12442500 SIMILKAMEEN RIVER NEAR NIGHTHAWK, WA (International gaging station)

LOCATION.--Lat 48°59'05", long 119°37'02", in NW \(^1_{4}\) sec.7, T.40 N., R.26 E., Okanogan County, Hydrologic Unit 17020007, on left bank 1,000 ft upstream from Oroville-Tonasket Irrigation District canal intake, 1.6 mi northeast of Nighthawk, 3.8 mi downstream from Palmer Creek, and at mile 15.8.

DRAINAGE AREA.--3,550 mi², approximately.

PERIOD OF RECORD,--May 1911 to current year (prior to September 1928, mean monthly discharge included Oroville-Tonasket Irrigation District canal). Published as "near Oroville" 1911-28.

REVISED RECORDS .-- WSP 1183: Drainage area.

S

GAGE.--Water-stage recorder. Datum of gage is 1,137.70 ft above NGVD of 1929. Prior to Sept. 11, 1928, staff gages at sites 7 mi downstream (below Oroville-Tonasket Irrigation District canal) at various datums.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow at high stages regulated by natural diversion into and release from Palmer Lake of about 6,000 acres from States in 1946 and approximately 10,500 acres in Canada in 1957. National Weather Service satellite telemeter at station. Water temperature April 1986 to September 1987.

COOPERATION .-- This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--94 years (water years 1912-2005), 2,273 ft³/s, 1,647,000 acre-ft/yr. 77 years (water years 1929-2005), 2,296 ft³/s, 1,663,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,800 ft³/s, June 1, 1972; maximum gage height, 18.78 ft, May 31, 1972; minimum discharge, 65 ft³/s, Jan. 3, 1974; minimum gage height, 1.55 ft, Jan. 31, 1988, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,620 ft³/s, Apr. 27, gage height, 7.10 ft; maximum gage height, 8.53, Jan. 24, result of ice jam; minimum discharge, 257 ft³/s, Sept. 9, 10, gage height, 2.13 ft.

DAY OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG 1 805 691 1,330 1,310 2,2930 1,180 1,350 3,920 3,000 2,2840 617 2 781 676 1,320 1,040 2,750 1,170 1,360 3,780 2,810 2,600 590 3 755 810 1,220 e800 2,640 1,160 1,330 4,030 2,480 2,500 573 4 730 1,060 1,220 e420 2,650 1,110 1,300 4,250 2,280 2,350 6 681 908 1,170 e500 2,2520 1,1100 1,270 4,470 2,200 2,200 7 655 956 1,030 e700 2,330 1,110 1,290 4,530 2,400 1,990 8 641 1,390 1,90 e860		
2 781 676 1,320 1,040 2,750 1,170 1,350 3,780 2,810 2,660 590 3 755 810 1,250 e800 2,640 1,160 1,350 3,830 2,480 2,360 555 5 706 920 1,220 e420 2,650 1,110 1,330 4,030 2,480 2,360 555 5 706 920 1,220 e420 2,650 1,110 1,300 4,250 2,350 2,310 555 5 706 920 1,220 e420 2,650 1,110 1,300 4,250 2,350 2,310 530 6 6 81 908 1,170 e500 2,520 1,100 1,270 4,470 2,420 2,080 505 77 6,55 956 1,030 e700 2,330 1,110 1,290 4,630 2,490 1,990 479 8 641 1,390 990 e860 2,280 1,170 1,390 4,550 2,600 1,960 454 9 653 1,960 1,010 e1,000 2,000 1,330 1,480 4,550 3,060 1,880 436 10 685 1,870 1,040 e980 2,020 1,380 1,480 4,740 3,000 1,860 424 11 770 1,720 1,770 e920 1,960 2,100 1,410 4,950 2,780 1,760 401 12 7,700 1,770 1,770 e920 1,880 2,290 1,370 4,880 2,700 1,550 389 14 681 1,430 2,070 e800 1,880 2,290 1,370 4,880 2,700 1,550 389 14 681 1,430 2,070 e800 1,880 2,290 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,510 1,990 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,510 1,990 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,310 1,900 1,300 5,270 2,300 1,310 345 18 881 1,290 1,680 e790 1,380 1,800 1,300 1,300 2,770 1,310 345 18 881 1,290 1,680 e790 1,380 1,800 1,300 4,510 2,910 1,210 347 19 992 5 1,240 1,690 e1,500 1,380 1,300 3,200 2,740 1,110 382 18 881 1,290 1,680 e790 1,380 1,800 1,300 4,510 2,910 1,210 361 20 901 1,230 2,100 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 21 871 1,150 2,190 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 21 871 1,150 2,190 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 21 871 1,150 2,190 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 34 4,820 1,110 1,810 e5,200 1,240 1,550 3,910 3,360 2,240 982 337 313 226 77 1,240 1,690 e1,550 3,910 1,250 1,270 3,670 3,130 2,220 937 313 26 77 752 1,950 1,630 4,270 1,240 1,470 5,080 2,880 2,910 7,68 294 29 700 1,520 1,360 3,910 1,200 1,470 5,080 2,880 2,910 7,68 294 29 700 1,520 1,360 3,910 1,200 1,470 5,080 2,880 2,910 7,68 294 29 700 1,520 1,360 3,310	UL AUG	SEP
7 655 956 1,030 e700 2,330 1,110 1,290 4,630 2,490 1,990 479 8 641 1,390 990 e860 2,280 1,170 1,390 4,550 2,600 1,960 454 9 653 1,960 1,010 e1,000 2,000 1,330 1,480 4,530 3,060 1,880 436 10 685 1,870 1,040 e980 2,020 1,860 1,440 4,740 3,000 1,860 424 11 770 1,720 1,270 e920 1,960 2,100 1,410 4,950 2,780 1,760 440 13 714 1,450 2,420 e990 1,880 2,290 1,370 4,880 2,700 1,550 389 14 681 1,430 2,070 e800 1,830 2,100 1,340 4,950 2,750 1,660 400 15 657 1,370 2,050 e440 1,690 1,990 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,510 1,990 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,510 1,990 1,330 5,180 2,470 1,390 366 18 881 1,290 1,680 e790 1,380 1,840 1,320 4,820 2,510 1,200 347 19 925 1,240 1,690 e1,500 1,380 1,840 1,320 4,820 2,510 1,200 347 19 925 1,240 1,690 e1,500 1,380 1,840 1,320 4,820 2,510 1,200 361 20 901 1,230 2,100 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 21 871 1,150 2,190 e4,200 1,360 1,700 1,300 4,510 2,910 1,200 361 22 8855 1,140 2,202 e3,700 1,280 1,670 1,650 3,680 2,440 982 337 23 842 1,130 1,890 e3,500 1,250 1,250 1,570 2,240 3,450 2,440 983 319 24 820 1,110 1,810 e5,200 1,240 1,580 2,900 3,280 2,310 1,000 312 25 800 1,280 1,730 5,270 1,240 1,470 3,070 3,280 2,910 768 294 29 700 1,520 1,370 3,580 1,440 4,180 2,960 3,100 681 20 2,910 7,22 286 30 709 1,320 1,360 3,310 1,440 4,180 2,960 3,100 681 20 2,80 2,910 768 294 29 700 1,520 1,370 3,580 1,440 4,180 2,960 3,100 681 20 2,910 7,280 2,440 983 31 9,24 820 1,110 1,810 e5,200 1,240 1,470 5,080 2,990 2,140 811 306 28 718 1,690 1,550 3,910 1,200 1,470 5,080 2,990 3,100 681 279 31 697 1,460 3,090 1,380 1,890 2,910 3,410 722 286 30 709 1,320 1,360 3,310 1,440 4,180 2,960 3,100 649 280 TOTAL 23,234 40,071 50,880 65,080 51,040 48,960 62,130 126,760 78,550 45,843 12,298 MEAN 749 1,336 1,632 2,099 1,823 1,579 2,071 4,089 2,618 1,479 397 MAX 925 2,470 3,310 5,270 2,930 2,290 5,200 5,200 3,440 649 279 AC-FT 46,080 79,480 100,300 129,100 101,000 97,110 123,200 251,400 155,800 90,930 24,390	2,660 590 2,500 573 2,360 555	288 290 280 273 274
12 750 1,570 3,310 e960 1,900 2,150 1,390 4,900 2,750 1,660 400 13 714 1,450 2,420 e990 1,880 2,290 1,370 4,880 2,700 1,550 389 15 657 1,370 2,050 e440 1,690 1,990 1,330 5,180 2,470 1,390 366 16 643 1,370 1,900 e550 1,510 1,950 1,310 5,260 2,380 1,330 355 17 685 1,400 1,770 e650 1,370 1,900 1,330 5,270 2,300 1,310 345 18 881 1,290 1,480 e1,500 1,380 1,800 1,300 4,510 2,910 1,200 347 19 925 1,240 1,690 e1,500 1,380 1,800 1,300 4,510 2,910 1,200 341 360 1,200 <td>1,990 479 1,960 454 1,880 436</td> <td>273 272 271 263 269</td>	1,990 479 1,960 454 1,880 436	273 272 271 263 269
17 685 1,400 1,770 e650 1,370 1,900 1,300 5,270 2,300 1,310 345 18 881 1,290 1,680 e790 1,380 1,840 1,320 4,820 2,510 1,290 347 19 925 1,240 1,690 e1,500 1,380 1,800 1,300 4,510 2,910 1,200 361 20 901 1,230 2,100 e4,600 1,400 1,760 1,310 4,230 2,740 1,110 382 21 871 1,150 2,190 e4,200 1,360 1,720 1,400 3,920 2,530 1,040 360 22 855 1,140 2,020 e3,700 1,280 1,670 1,650 3,680 2,400 982 337 23 842 1,130 1,890 e3,500 1,250 1,570 2,240 3,450 2,440 983 319 24 820 1,110 1,810 e5,200 1,240 1,580 2,900 3,280 2,310 1,000 312 25 800 1,280 1,730 5,270 1,240 1,470 3,670 3,130 2,220 937 313 26 771 2,470 1,710 4,690 1,230 1,510 4,280 2,980 2,160 870 314 27 752 1,950 1,630 4,270 1,220 1,470 5,080 2,890 2,140 811 306 28 718 1,690 1,550 3,910 1,200 1,470 5,080 2,890 2,140 811 306 28 718 1,690 1,550 3,910 1,200 1,470 5,200 2,880 2,910 768 294 29 700 1,520 1,370 3,580 1,480 4,590 2,910 3,410 722 286 30 709 1,320 1,360 3,310 1,460 3,090 1,380 3,000 649 280 TOTAL 23,234 40,071 50,580 65,080 51,040 48,960 62,130 126,760 78,550 45,843 12,298 MEAN 749 1,336 1,632 2,099 1,823 1,579 2,071 4,089 2,618 1,479 397 MAX 925 2,470 3,310 5,270 2,930 2,290 5,200 5,270 3,410 2,840 617 MIN 641 676 990 420 1,200 1,100 1,270 2,880 2,140 649 279 MAX 925 2,470 3,310 5,270 2,930 2,290 5,200 5,270 3,410 2,840 617 MIN 641 676 990 420 1,200 1,100 1,270 2,880 2,140 649 279 AC-FT 46,080 79,480 100,300 129,100 101,200 97,110 123,200 251,400 155,800 90,930 24,390	1,660 400 1,550 389 1,460 378	311 394 432 414 387
22 855 1,140 2,020 e3,700 1,280 1,670 1,650 3,680 2,400 982 337 23 842 1,130 1,890 e3,500 1,250 1,570 2,240 3,450 2,440 983 319 24 820 1,110 1,810 e5,200 1,240 1,580 2,900 3,280 2,310 1,000 312 25 800 1,280 1,730 5,270 1,240 1,470 3,670 3,130 2,220 937 313 26 771 2,470 1,710 4,690 1,230 1,510 4,280 2,980 2,160 870 314 27 752 1,950 1,630 4,270 1,220 1,470 5,080 2,890 2,140 811 306 28 718 1,690 1,550 3,910 1,200 1,470 5,200 2,880 2,910 768 294 29 700 1,520 1,370 3,580 1,480 4,590 2,910	1,310 345 1,290 347 1,200 361	364 357 362 376 363
27 752 1,950 1,630 4,270 1,220 1,470 5,080 2,890 2,140 811 306 28 718 1,690 1,550 3,910 1,200 1,470 5,200 2,880 2,910 768 294 29 700 1,520 1,370 3,580 1,480 4,590 2,910 3,410 722 286 30 709 1,320 1,360 3,310 1,440 4,180 2,960 3,100 681 279 31 697 1,460 3,090 1,380 3,000 649 280 TOTAL 23,234 40,071 50,580 65,080 51,040 48,960 62,130 126,760 78,550 45,843 12,298 MEAN 749 1,336 1,632 2,099 1,823 1,579 2,071 4,089 2,618 1,479 397 MAX	982 337 983 319 1,000 312	344 334 325 318 314
MEAN 749 1,336 1,632 2,099 1,823 1,579 2,071 4,089 2,618 1,479 397 MAX 925 2,470 3,310 5,270 2,930 2,290 5,200 5,270 3,410 2,840 617 MIN 641 676 990 420 1,200 1,100 1,270 2,880 2,140 649 279 AC-FT 46,080 79,480 100,300 129,100 101,200 97,110 123,200 251,400 155,800 90,930 24,390	811 306 768 294 722 286 681 279	310 305 297 292 288
	1,479 397 2,840 617 649 279	9,640 321 432 263 19,120
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)		
MEAN 697 938 798 659 682 746 2,086 7,825 8,597 2,965 916 MAX 2,265 4,531 3,480 2,099 2,235 2,206 13,510 15,360 24,910 8,495 2,625 (WY) (1960) (1991) (1996) (2005) (1935) (1934) (1934) (1972) (1972) (1972) (1948) MIN 239 254 231 215 217 341 427 2,788 2,508 665 279 (WY) (1988) (1988) (1930) (1929) (1988) (1929) (1984) (1992) (1940) (2003)	3,495 2,625 972) (1948) 665 279	596 1,614 (1954) 191 (2003)

12442500 SIMILKAMEEN RIVER NEAR NIGHTHAWK, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALI	ENDAR YEAR	FOR 2005 WA	TER YEAR	WATER YEAR	S 1929 - 2005
ANNUAL TOTAL ANNUAL MEAN HIGHEST ANNUAL MEAN	798,576 2,182		614,186 1,683		2,296 4,831	1972
LOWEST ANNUAL MEAN HIGHEST DAILY MEAN	9,570	May 23	5.270	Jan 25	1,038 44,800	2001 Jun 1, 1972
LOWEST DAILY MEAN ANNUAL SEVEN-DAY MINIMUM	200 291	Jan 5 Jan 2	263 271	Sep 9 Sep 4	120 141	Jan 4, 1988 Jan 5, 1974
ANNUAL SEVEN-DAT MINIMUM ANNUAL RUNOFF (AC-FT) 10 PERCENT EXCEEDS 50 PERCENT EXCEEDS 90 PERCENT EXCEEDS	1,584,000 6,250 1,060 504	Jan 2	1,218,000 3,620 1,360 361	3cp 4	1,663,000 6,660 796 367	Jan 3, 1974

e Estimated

12445000 OKANOGAN RIVER NEAR TONASKET, WA

LOCATION.--Lat $48^{\circ}37^{\circ}57^{\circ}$, long $119^{\circ}27^{\circ}38^{\circ}$, in $NW^{1}_{4}SE^{1}_{4}$, sec. 8, T.36 N., R.27 E., Okanogan County, Hydrologic Unit 17020006, on right bank 1,000 ft upstream from Chewiliken Creek, 5.2 mi south of Tonasket, and at mile 50.8.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--7,260 mi², approximately.

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

REVISED RECORDS.--WSP 862: 1937. WSP 1316: 1934(M), 1938(M). WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 860.78 ft above NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation of about 10,700 acres in the United States and 55,000 acres in Canada. Flow affected by regulation of Okanagan and Skaha Lakes and by natural storage in other lakes. U.S. Geological Survey satellite telemeter at station. Water temperature April 1986 to September 1987.

AVERAGE DISCHARGE.--76 years (water years 1930-2005), 2,928 ft³/s, 2,122,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,700 ft³/s June 2, 1972, gage height, 22.54 ft; minimum discharge recorded, 126 ft³/s Sept. 5, 1931, gage height, 3.43 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6,550 ft³/s, Jan. 25, maximum gage height, 13.70 ft, Jan. 26 (backwater from ice); maximum gage height unaffected by backwater, 9.17 ft, May 17; minimum discharge, 467 ft³/s, Aug.18, gage height, 3.95 ft.

					DAIL	LI MEAN V	ALUES					
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,280	1,010	1,560	2,140	3,850	2,270	2,000	4,540	3,100	4,560	1,730	529
2	1,220	1,150	1,670	e1,850	3,700	1,810	1,980	4,330	3,040	4,420	1,670	529
3	1,200	1,150	1,800	e1,550	3,560	1,780	1,990	4,270	2,890	4,260	1,630	538
4	1,190	1,340	1,840	e1,260	3,510	1,780	1,980	4,350	2,740	4,080	1,500	534
5	1,160	1,460	1,850	e1,130	3,500	1,770	2,050	4,560	2,630	3,800	1,430	528
6	1,120	1,350	1,830	e1,220	3,490	1,760	2,320	4,760	2,590	3,450	1,400	521
7	1,100	1,350	1,810	e1,440	3,310	1,850	2,310	5,130	2,730	3,130	1,370	520
8	1,070	1,440	1,790	e1,610	3,210	2,260	2,230	5,170	2,760	3,040	1,310	514
9	1,000	1,970	1,750	e1,760	3,090	2,140	2,430	5,030	3,040	2,720	941	510
10	983	2,300	1,810	e1,730	2,930	2,120	2,460	5,110	3,250	2,560	823	503
11	1,030	2,170	1,810	e1,670	2,990	2,630	2,430	5,410	3,110	2,520	622	522
12	1,100	2,040	2,850	e1,710	2,970	2,440	1,940	5,450	3,010	2,460	543	588
13	1,250	1,910	3,330	e1,750	2,940	2,570	1,850	5,570	2,990	2,420	519	671
14	1,250	1,830	2,720	e1,580	2,940	2,560	1,820	5,570	2,790	2,360	511	720
15	1,240	1,800	2,700	e1,220	2,830	2,440	1,800	5,740	2,680	2,300	501	697
16	1,210	1,760	2,660	e1,340	2,710	2,380	1,840	5,870	2,630	2,300	479	677
17	1,200	1,860	2,530	e1,450	2,540	2,330	1,860	6,020	2,570	2,260	480	702
18	1,270	1,830	2,430	e1,660	2,480	2,310	2,100	5,700	2,590	2,270	477	701
19	1,390	1,730	2,360	e2,650	2,490	2,390	2,170	5,300	2,910	2,330	499	664
20	1,390	1,700	2,450	e3,600	2,490	2,370	2,280	5,050	3,300	2,240	584	654
21	1,350	1,650	2,870	6,020	2,490	2,350	2,150	4,630	2,980	2,180	643	632
22	1,330	1,590	2,750	5,440	2,430	2,290	2,250	4,390	2,710	2,120	617	615
23	1,330	1,560	2,630	4,710	2,370	2,210	2,750	4,040	2,660	2,100	580	605
24	1,300	1,550	2,530	5,110	2,360	2,180	3,350	3,340	2,760	2,120	560	600
25	1,280	1,520	2,450	e6,550	2,360	2,150	4,080	3,170	2,640	2,100	551	595
26 27 28 29 30 31	1,120 1,070 1,050 1,020 1,010 1,020	2,110 2,550 2,180 1,970 1,700	2,420 2,390 2,310 2,220 2,060 2,140	e5,700 e5,100 4,800 4,490 4,230 4,010	2,350 2,340 2,330 	2,110 2,120 2,090 2,100 2,080 2,030	4,640 5,150 5,810 5,340 4,800	3,440 3,360 3,290 3,240 3,020 3,040	2,570 2,560 3,330 4,730 4,790	2,010 1,960 1,910 1,870 1,820 1,780	556 564 557 550 544 534	594 587 574 582 586
TOTAL	36,533	51,530	70,320	90,480	80,560	67,670	82,160	141,890	89,080	81,450	25,275	17,792
MEAN	1,178	1,718	2,268	2,919	2,877	2,183	2,739	4,577	2,969	2,627	815	593
MAX	1,390	2,550	3,330	6,550	3,850	2,630	5,810	6,020	4,790	4,560	1,730	720
MIN	983	1,010	1,560	1,130	2,330	1,760	1,800	3,020	2,560	1,780	477	503
AC-FT	72,460	102,200	139,500	179,500	159,800	134,200	163,000	281,400	176,700	161,600	50,130	35,290
STATIST	ICS OF M	ONTHLY M	EAN DATA	FOR WATI	ER YEARS	1929 - 2005.	BY WATE	R YEAR (W	YY)			
MEAN	1,207	1,459	1,332	1,193	1,299	1,420	2,757	8,473	9,581	3,677	1,450	1,084
MAX	2,849	4,618	4,252	2,919	2,964	3,131	13,220	16,190	27,720	10,210	4,095	3,039
(WY)	(1960)	(1991)	(1996)	(2005)	(1991)	(1991)	(1934)	(1972)	(1972)	(1972)	(1993)	(1948)
MIN	403	413	399	360	532	525	770	3,790	2,650	605	231	231
(WY)	(1932)	(1930)	(1930)	(1930)	(1937)	(1931)	(1931)	(1941)	(1992)	(1940)	(1931)	(1940)

12445000 OKANOGAN RIVER NEAR TONASKET, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALL	ENDAR YEAR	FOR 2005 WA	ATER YEAR	WATER YEARS 1929 - 20		
ANNUAL TOTAL	885,391		834,740		2.020		
ANNUAL MEAN HIGHEST ANNUAL MEAN	2,419		2,287		2,928 6,019	1972	
LOWEST ANNUAL MEAN HIGHEST DAILY MEAN	9,550	May 23	6,550	Jan 25	1,142 44,200	1931 Jun 2, 1972	
LOWEST DAILY MEAN	460	Jan 6	477	Aug 18	132	Sep 5, 1931	
ANNUAL SEVEN-DAY MINIMUM ANNUAL RUNOFF (AC-FT)	556 1.756.000	Jan 3	495 1.656.000	Aug 13	146 2.122.000	Aug 31, 1931	
10 PERCENT EXCEEDS	6,080		4,400		7,500		
50 PERCENT EXCEEDS 90 PERCENT EXCEEDS	1,520 739		2,140 598		1,460 648		

e Estimated

12445000 OKANOGAN RIVER NEAR TONASKET, WA WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: Mar. 30 to Sept. 30, 2005.

 $INSTRUMENTATION. \hbox{--Electronic thermistor/logger with 30-minute log interval.} \\$

REMARKS .-- Records excellent.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.9°C, July 29, but may have been higher during period of missing record in August; minimum, 6.5°C, Mar. 31.

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	(OCTOBE	R	N	OVEMBE	ER	D	ECEMBE	ER	Į	JANUAR'	Y
1												
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31												
J.												
MONTH												

12445000 OKANOGAN RIVER NEAR TONASKET, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUAR	Y		MARCH			APRIL			MAY	
1 2 3 4 5	 	 	 	 	 	 	8.5 8.5 8.2 9.2 8.8	7.2 7.6 7.6 7.6 8.1	7.8 8.0 8.0 8.3 8.3	11.9 12.9 13.8 13.6 14.1	9.8 10.7 11.9 11.5 12.2	10.9 11.8 12.8 12.6 13.1
6 7 8 9 10	 	 	 	 	 	 	9.9 9.9 11.0 10.8 10.7	8.1 9.6 9.3 9.6 9.9	8.9 9.7 10.0 10.3 10.3	14.4 15.0 14.7 14.2 13.2	12.5 13.3 13.3 12.5 12.2	13.7 14.1 14.1 13.3 12.5
11 12 13 14 15	 	 	 	 	 	 	10.5 10.2 10.5 10.8 9.8	9.4 9.0 8.8 9.3 8.4	10.0 9.5 9.7 10.0 9.0	13.3 15.3 16.0 15.8 14.9	11.5 12.9 13.9 14.4 13.6	12.3 14.0 15.0 14.9 14.4
16 17 18 19 20	 	 	 	 	 	 	8.8 9.6 10.8 11.8 12.1	8.1 7.8 9.0 9.9 11.0	8.4 8.7 10 10.8 11.6	14.4 14.1 13.5 13.6 13.3	13.5 12.5 11.9 11.8 12.1	13.9 13.4 12.3 12.6 12.8
21 22 23 24 25	 	 	 	 	 	 	13.5 14.7 14.4 14.9 14.6	11.2 13.2 13.3 13.2 13.0	12.2 13.9 13.9 14.0 14.0	13.6 14.6 14.9 15.3 16.0	12.1 12.5 12.7 13.8 14.1	13.0 13.4 13.7 14.6 15.1
26 27 28 29 30 31	 	 	 	 7.6 7.3	 6.5	 7.0	14.4 13.9 13.3 11.8 11.5	12.7 12.4 11.3 10.1 9.8	13.7 13.2 12.2 11.0 10.7	17.4 18.5 19.5 20.6 20.6 20.0	15.2 16.6 17.7 18.8 19.3 18.0	16.2 17.6 18.6 19.8 19.9 19.0
MONTELL							14.9	7.2	10.5	20.6	9.8	14.4
MONTH							17.7	1.2	10.5	20.0	7.0	17,7
MONTH		JUNE			JULY		14.9	AUGUST			EPTEMBE	
1 2 3 4 5	18.0 17.2 16.8 17.1 16.6		17.4 16.7 16.4 16.5 15.8	20.8 20.9 20.4 20.9 21.6		20.3 20.3 19.9 20.2 20.8	24.3 23.3 23.8 24.1 25.2					
1 2 3 4	18.0 17.2 16.8 17.1	JUNE 16.9 16.0 16.1 16.0	17.4 16.7 16.4 16.5	20.8 20.9 20.4 20.9	JULY 19.8 19.5 19.0 19.5	20.3 20.3 19.9 20.2	24.3 23.3 23.8 24.1	AUGUST 22.4 21.3 21.4 21.4	23.6 22.3 22.5 22.7	 	EPTEMBE 	ER
1 2 3 4 5 6 7 8 9	18.0 17.2 16.8 17.1 16.6 16.4 16.1 15.5 16.4	JUNE 16.9 16.0 16.1 16.0 14.9 14.4 14.7 15.0 14.4	17.4 16.7 16.4 16.5 15.8 15.4 15.3 15.4	20.8 20.9 20.4 20.9 21.6 21.4 21.1 20.8 20.1	JULY 19.8 19.5 19.0 19.5 20.0 20.6 19.8 19.3 18.7	20.3 20.3 19.9 20.2 20.8 21.0 20.5 19.9 19.4	24.3 23.3 23.8 24.1 25.2	AUGUST 22.4 21.3 21.4 21.4 22.3	23.6 22.3 22.5 22.7 	SI 19.7	EPTEMBE 18.2	ER 19.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14	18.0 17.2 16.8 17.1 16.6 16.4 16.1 15.5 16.4 17.1 17.7 17.9 17.5 17.5	JUNE 16.9 16.0 16.1 16.0 14.9 14.4 14.7 15.0 14.4 15.2 16.3 16.4 16.4 15.6	17.4 16.7 16.4 16.5 15.8 15.4 15.3 15.4 16.2 17.1 17.2 17.0 16.3	20.8 20.9 20.4 20.9 21.6 21.4 21.1 20.8 20.1 19.5 20.4 21.6 22.1 22.3	JULY 19.8 19.5 19.0 19.5 20.0 20.6 19.8 19.3 18.7 18.4 19.5 20.6 20.8	20.3 20.3 19.9 20.2 20.8 21.0 20.5 19.9 19.4 18.9 19.3 20.5 21.3 21.6	24.3 23.3 23.8 24.1 25.2	AUGUST 22.4 21.3 21.4 21.4 22.3	23.6 22.3 22.5 22.7 	SI 19.7 18.2 17.6 17.7 18.0 18.4	EPTEMBE 18.2 16.8 16.7 16.1 15.8 16.5	ER 19.0 17.6 17.0 16.8 17.0 17.5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	18.0 17.2 16.8 17.1 16.6 16.4 16.1 15.5 16.4 17.1 17.7 17.9 17.5 17.2 16.8 17.1 16.9 17.4	JUNE 16.9 16.0 16.1 16.0 14.9 14.4 14.7 15.0 14.4 15.2 16.3 16.4 16.4 15.6 14.6 15.8 16.3 15.8	17.4 16.7 16.4 16.5 15.8 15.4 15.3 15.4 16.2 17.1 17.2 17.0 16.3 15.7 16.5 16.7 16.3 16.2	20.8 20.9 20.4 20.9 21.6 21.4 21.1 20.8 20.1 19.5 20.4 21.6 22.1 22.3 22.1 21.1 21.9 22.9 23.8	JULY 19.8 19.5 19.0 19.5 20.0 20.6 19.8 19.3 18.7 18.4 19.5 20.6 20.8 20.4 19.5 19.8 21.1 21.6	20.3 20.3 19.9 20.2 20.8 21.0 20.5 19.9 19.4 18.9 19.3 20.5 21.3 21.6 21.2 20.2 20.9 21.9 22.7	24.3 23.3 23.8 24.1 25.2	AUGUST 22.4 21.3 21.4 21.4 22.3	23.6 22.3 22.5 22.7 	19.7 18.2 17.6 17.7 18.0 18.1 18.0 18.1 18.1 18.6	EPTEMBE 18.2 16.8 16.7 16.1 15.8 16.5 16.9 16.8 16.4 16.6 16.9	ER 19.0 17.6 17.0 16.8 17.0 17.5 17.5 17.4 17.3 17.4 17.7
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	18.0 17.2 16.8 17.1 16.6 16.4 16.1 15.5 16.4 17.1 17.7 17.9 17.5 17.2 16.8 17.1 17.1 16.9 17.4 19.2 20.0 20.4 20.3 20.0	JUNE 16.9 16.0 16.1 16.0 14.9 14.4 14.7 15.0 14.4 15.2 16.3 16.4 15.6 14.6 15.8 16.3 15.8 15.0 16.0 18.0 19.5 18.8 19.0	17.4 16.7 16.4 16.5 15.8 15.4 15.3 15.4 16.2 17.1 17.2 17.0 16.3 15.7 16.5 16.7 16.3 16.2 17.4	20.8 20.9 20.4 20.9 21.6 21.1 20.8 20.1 19.5 20.4 21.6 22.1 22.3 22.1 21.1 21.9 22.9 23.8 24.3 24.5 24.1 23.3 22.9	JULY 19.8 19.5 19.0 19.5 20.0 20.6 19.8 19.3 18.7 18.4 19.5 20.6 20.8 20.4 19.5 19.8 21.1 21.6 22.6 22.9 21.9 20.8 22.1	20.3 20.3 19.9 20.2 20.8 21.0 20.5 19.9 19.4 18.9 19.3 20.5 21.3 21.6 21.2 20.2 20.9 21.9 22.7 23.5 23.8 23.8 23.2 22.5	24.3 23.3 23.8 24.1 25.2	AUGUST 22.4 21.3 21.4 21.4 22.3	23.6 22.3 22.5 22.7	18.0 18.1 18.0 18.1 18.6 18.1 17.2 16.4 15.3 14.9	EPTEMBE 18.2 16.8 16.7 16.1 15.8 16.5 16.9 16.8 16.4 16.6 16.9 16.5 15.6 15.6 15.0 13.8 13.1	ER 19.0 17.6 17.0 16.8 17.0 17.5 17.5 17.4 17.7 17.4 16.5 15.6 14.6 14.1

12447200 OKANOGAN RIVER AT MALOTT, WA

LOCATION.--Lat 48°16'53", long 119°42'12", in SW¹/₄ sec.9, T.32 N., R.25 E., Okanogan County, Hydrologic Unit 17020006, on right bank 75 ft upstream from highway bridge at Malott, 0.1 mi upstream from Loup Loup Creek, and at mile 17.0.

DRAINAGE AREA.--8,080 mi², approximately.

PERIOD OF RECORD.--April 1958 to current year. April 1958 to September 1965, published as "near Malott." Records published for both sites December 1965 to July 1967.

REVISED RECORDS.--WDR WA-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 783.55 ft above NGVD of 1929. April 1958 to November 1965, water-stage recorder at site 3.9 mi downstream at NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation of about 22,000 acres in the United States and 55,000 acres in Canada. Flow regulated by Okanagan and Skaha Lakes and by natural storage in other lakes. U.S. Geological Survey satellite telemeter at station. Daily water temperature records November 1969 to June 1971. Chemical analyses 1959-62, 1963-70 (partial record station), 1972, 1975-94. Published as "near Brewster" prior to 1964 and as "near Malott" 1963-66 (station 12447300).

AVERAGE DISCHARGE.--47 years (water years 1959-2004), 3,039 ft³/s, 2,202,000 acre-ft/yr, includes records for "near Malott" site located 3.9 miles downstream, water years 1959-65. 40 years (water years 1966-2005), 3,042 ft³/s, 2,204,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,600 ft³/s, June 3, 1972, gage height, 22.16 ft; minimum observed, 288 ft³/s, Sept. 4, 1970, gage height, 2.03 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6,570 ft³/s, Jan. 26; maximum gage height, 9.65 ft, Jan. 26 (backwater from ice); maximum gage height unaffected by backwater, 6.97 ft, May 17; minimum discharge, 502 ft³/s, Aug. 18-20, gage height, 2.55 ft.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1 2 3 4 5	1,550 1,290 1,250 1,230 1,210	1,150 1,180 1,280 1,290 1,530	1,750 1,710 1,820 1,940 1,950	2,260 2,100 e1,750 e1,400 e1,240	4,010 3,860 3,690 3,580 3,560	2,350 2,130 1,850 1,840 1,830	2,050 2,010 2,000 2,020 2,020 2,000	4,790 4,530 4,380 4,430 4,670	3,130 3,120 2,990 2,840 2,730	4,870 4,660 4,470 4,270 4,010	1,690 1,620 1,540 1,470 1,380	537 530 536 546 544
6	1,170	1,530	1,950	e1,340	3,570	1,820	2,160	4,900	2,640	3,610	1,330	534
7	1,160	1,460	1,940	e1,600	3,470	1,820	2,300	5,280	2,650	3,270	1,310	523
8	1,130	1,480	1,950	e1,750	3,290	2,070	2,260	5,510	2,790	3,020	1,280	524
9	1,120	1,670	1,880	e1,930	3,230	2,210	2,290	5,440	2,850	2,890	1,180	525
10	1,050	2,220	1,880	e1,900	3,030	2,140	2,430	5,400	3,230	2,580	917	524
11	1,040	2,290	1,930	e1,850	3,010	2,350	2,450	5,640	3,240	2,500	819	538
12	1,100	2,170	1,990	e1,880	3,020	2,550	2,270	5,800	3,060	2,430	675	559
13	1,160	2,070	3,570	e1,930	3,000	2,470	1,920	5,880	2,980	2,380	618	615
14	1,280	1,960	2,990	e1,750	2,980	2,610	1,870	5,910	2,880	2,320	590	692
15	1,270	1,910	2,730	e1,360	2,940	2,510	1,850	6,040	2,700	2,270	571	733
16	1,260	1,870	2,750	e1,480	2,810	2,410	1,860	6,310	2,610	2,260	540	718
17	1,280	1,880	2,660	e1,600	2,680	2,390	1,870	6,390	2,550	2,240	521	705
18	1,320	1,950	2,550	e1,840	2,540	2,330	1,980	6,340	2,510	2,210	510	727
19	1,400	1,890	2,460	e2,500	2,520	2,360	2,120	5,870	2,630	2,230	505	721
20	1,510	1,810	2,440	e3,300	2,520	2,410	2,240	5,520	3,090	2,250	506	684
21	1,500	1,800	2,690	e4,400	2,520	2,380	2,210	5,110	3,180	2,180	562	666
22	1,460	1,740	2,900	e6,040	2,500	2,340	2,180	4,700	2,800	2,140	662	639
23	1,450	1,700	2,750	e5,460	2,440	2,280	2,400	4,440	2,600	2,110	640	620
24	1,440	1,680	2,650	e4,720	2,400	2,210	3,030	3,750	2,630	2,100	601	623
25	1,410	1,670	2,580	e5,120	2,390	2,210	3,750	3,330	2,640	2,130	575	624
26 27 28 29 30 31	1,360 1,230 1,210 1,180 1,160 1,160	1,650 2,570 2,420 2,170 1,980	2,530 2,500 2,430 2,370 2,260 2,180	e6,570 e5,720 e5,120 e4,790 e4,470 4,220	2,390 2,370 2,370 	2,140 2,170 2,140 2,120 2,130 2,080	4,590 5,120 5,880 5,910 5,220	3,390 3,540 3,430 3,390 3,160 3,070	2,520 2,510 2,720 4,140 5,060	2,080 2,010 1,940 1,870 1,820 1,750	566 570 570 575 570 556	622 614 607 592 606
TOTAL	39,340	53,970	72,680	93,390	82,690	68,650	82,240	150,340	88,020	82,870	26,019	18,228
MEAN	1,269	1,799	2,345	3,013	2,953	2,215	2,741	4,850	2,934	2,673	839	608
MAX	1,550	2,570	3,570	6,570	4,010	2,610	5,910	6,390	5,060	4,870	1,690	733
MIN	1,040	1,150	1,710	1,240	2,370	1,820	1,850	3,070	2,510	1,750	505	523
AC-FT	78,030	107,000	144,200	185,200	164,000	136,200	163,100	298,200	174,600	164,400	51,610	36,160
STATIST	ICS OF MO	ONTHLY M	EAN DATA	FOR WATI	ER YEARS	1966 - 2005,	BY WATE	R YEAR (W	YY)			
MEAN	1,157	1,462	1,311	1,265	1,424	1,685	2,869	8,436	9,822	3,994	1,607	1,143
MAX	1,847	4,747	4,402	3,013	2,979	3,946	7,015	16,420	29,290	10,990	4,150	2,963
(WY)	(1998)	(1991)	(1996)	(2005)	(1991)	(1983)	(1996)	(1972)	(1972)	(1972)	(1993)	(1997)
MIN	605	574	565	540	569	601	928	4,319	2,625	938	390	372
(WY)	(1988)	(1988)	(1971)	(1988)	(2001)	(1988)	(2001)	(1977)	(1992)	(1977)	(2003)	(1988)

12447200 OKANOGAN RIVER AT MALOTT, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALI	ENDAR YEAR	FOR 2005 WA	ATER YEAR	WATER YEARS 1966 - 2005		
ANNUAL TOTAL	921,541		858,437				
ANNUAL MEAN HIGHEST ANNUAL MEAN	2,518		2,352		3,042 6,312	1972	
LOWEST ANNUAL MEAN					1,334	2001	
HIGHEST DAILY MEAN LOWEST DAILY MEAN	9,990 480	May 24 Jan 6	6,570 505	Jan 26 Aug 19	45,300 288	Jun 3, 1972 Sep 4, 1970	
ANNUAL SEVEN-DAY MINIMUM	560	Jan 4	530	Sep 5	296	Aug 30, 1970	
ANNUAL RUNOFF (AC-FT) 10 PERCENT EXCEEDS	1,828,000 6,530		1,703,000 4,490		2,204,000 7,820		
50 PERCENT EXCEEDS	1,540		2,170		1,500		
90 PERCENT EXCEEDS	799		623		690		

e Estimated

12447200 OKANOGAN RIVER AT MALOTT, WA

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: Mar. 29 to Sept. 30, 2005.

 $INSTRUMENTATION. \hbox{--Electronic thermistor/logger with 30-minute log interval.} \\$

REMARKS.--Records excellent.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum 26.9°C, Aug. 7, 8; minimum, 7.4°C, Mar. 30, 31, Apr 2.

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER		NOVEMBER			DECEMBER			JANUARY			
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MONTH												
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12447200 OKANOGAN RIVER AT MALOTT, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAN	MINI	MEAN				MAN			MAN	MIN	MEAN
DAY	MAX	MIN	MEAN									
	I	FEBRUARY	Y		MARCH			APRIL			MAY	
1							9.5	7.7	8.5			
2 3							8.9 8.7	7.4 8.4	8.4 8.4			
4							10.2	8.0	9.0			
5							9.4	8.6	8.9			
6							10.9	8.8	9.7			
7							11.1	10.0	10.6			
8 9							11.8 11.8	9.8 10.0	10.8 10.9			
10							11.5	10.3	11.1			
11							12.0	10.8	11.3			
12							11.2	10.3	10.7			
13							11.2	9.2	10.3			
14 15							12.2	9.8 9.8	10.9			
16 17												
18												
19												
20												
21												
22 23												
24												
25												
26												
27												
28 29				8.6								
30				8.8	7.4	8.1						
31				8.3	7.4	7.8						
MONTH												
		JUNE			JULY			AUGUST	,	S	EPTEMBI	₹R
1				21.4		20.6						
1 2	18.4			21.4 21.4	19.8 20.1	20.6 20.9	25.5 24.4	24.1 22.7	24.8 23.5			
3	19.4	17.5	18.3	21.4	19.9	20.7	24.1	21.7	22.8			
4	18.9	17.6	18.2	21.7	20.1	20.9	24.8	21.4	23.0			
5	17.6	16.2	17.0	21.5	20.4	21.1	25.5	22.4	23.9			
6	17.8	15.4	16.5	22.0	20.9	21.4	26.2	23.0	24.5			
7 8	17.2 16.7	16.2 15.9	16.6 16.3	22.0 21.6	20.9 20.1	21.4 20.7	26.9 26.9	23.9 24.1	25.2 25.3			
9	18.1	15.9	16.8	20.7	19.3	20.0	26.5	23.7	25.0	20.1	18.4	19.2
10	18.4	16.7	17.6	20.6	19.6	20.0	26.3	23.2	24.7	18.9	16.8	18.0
11	18.6	16.8	17.8	21.2	19.3	20.1	25.6	22.9	24.3	18.2	17.2	17.7
12	19.4	17.5	18.4	22.2	19.8	20.8	24.7	22.7	23.5	18.3	17.0	17.6
13 14	19.1 18.6	17.8 17.3	18.4 17.8	22.5 23.7	20.7 21.0	21.5 22.3	24.9 25.1	21.5 21.5	23.1 23.3	18.9 19.4	16.2 16.7	17.6 18.1
15	18.8	16.5	17.6	22.9	21.7	22.3	25.1	22.4	23.8	19.1	17.0	18.2
16	18.3	17.0	17.7	22.0	20.7	21.4	25.5	22.4	23.9	18.8	16.8	17.9
17	18.3	17.3	17.9	22.9	20.4	21.5	24.4	22.9	23.5	19.3	17.0	18.1
18	18.4	16.7	17.5	24.1	21.7	22.7		20.9		18.9	16.7	17.9
19 20	19.6 19.9	17.0 17.6	18.2 18.7	24.6 25.1	22.2 22.7	23.3 23.8				19.6 18.8	17.2 16.7	18.2 17.8
21 22	20.7 20.7	18.3 19.9	19.5 20.5	25.6 24.8	23.2 23.0	24.3 24.0				18.1 17.3	15.9 15.3	17.0 16.1
22	20.7	19.9	20.5	24.8 24.9	23.0	23.2				17.3	13.3	15.0
24	21.7	20.6	21.1	23.8	22.2	22.9				15.3	13.2	14.4
25	21.5	19.9	20.8	23.7	21.7	22.6				15.9	13.4	14.6
26	22.4	20.7	21.3	24.2	21.7	22.8				16.1	13.9	15.0
27	21.2	19.6	20.3	25.1	22.2	23.6				16.1	14.2	15.2
28 29	20.7 21.2	19.4 19.3	20.0 20.3	26.0 26.3	23.0 23.9	24.4 25.1				15.6 16.7	13.6 14.9	14.7 15.7
30	21.4	19.8	20.5	26.7	23.9	25.1				16.5	15.7	16.1
31				26.5	24.2	25.3						
MONTH				26.7	19.3	22.3						