

## 15200280 GULKANA RIVER AT SOURDOUGH

LOCATION.--Lat 62°31'15", long 145°31'51", in SE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 35, T. 9 N., R. 2 W. (Gulkana C-4 quad), Hydrologic Unit 19020102, near left bank on downstream side of pier of Alyeska Pipeline Service Company bridge, 0.3 mi downstream from Sourdough Creek and 0.8 mi southwest of Sourdough.

DRAINAGE AREA.--1,770 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1972 to September 1978, May to September 1982, October 1988 to September 1993, May 1997 to current year.

REVISED RECORDS.--WRD AK-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,845.96 ft above sea level (levels of Alyeska Engineering).

REMARKS.--Records fair except for estimated daily discharges, which are poor. GOES satellite telemetry at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	e580	e470	e400	e340	e320	e290	e280	4700	1390	816	2300
2	1050	e580	e460	e400	e340	e320	e290	e280	4090	1860	774	2210
3	1010	e580	e460	e390	e340	e320	e290	e280	3520	2750	757	2090
4	1010	e560	e460	e390	e340	e320	e290	e280	3010	2730	727	1940
5	998	e560	e460	e390	e340	e320	e290	e280	2740	2770	686	1850
6	1010	e560	e460	e390	e340	e310	e280	e280	3030	2470	658	1820
7	1000	e560	e450	e390	e340	e310	e280	e290	3290	2160	683	2350
8	989	e560	e450	e390	e340	e310	e280	e300	2900	1890	815	2980
9	972	e540	e450	e380	e340	e310	e280	e310	2550	1680	913	2840
10	966	e540	e440	e380	e340	e310	e280	e320	2270	1520	1160	2610
11	958	e540	e440	e380	e330	e310	e280	e330	2090	1420	1390	2420
12	925	e540	e440	e380	e330	e310	e280	e340	1970	1350	1750	2300
13	e800	e540	e440	e380	e330	e310	e280	e350	1860	1340	3080	2190
14	e700	e540	e440	e380	e330	e310	e280	e360	1760	1320	4090	2070
15	e700	e540	e440	e380	e330	e310	e280	e370	1670	1250	3290	1960
16	e680	e520	e430	e370	e330	e300	e270	e380	1580	1170	2570	1870
17	e680	e520	e430	e370	e330	e300	e270	e400	1500	1100	2170	1800
18	e660	e520	e430	e370	e330	e300	e270	e440	1430	1050	1920	1750
19	e660	e520	e420	e370	e330	e300	e270	e480	1420	1010	1750	1720
20	e640	e500	e420	e370	e330	e300	e270	e540	1950	967	2140	1750
21	e640	e500	e420	e360	e320	e300	e270	e600	3080	e900	4960	1770
22	e620	e500	e420	e360	e320	e300	e270	e660	3140	e870	7070	1700
23	e620	e490	e420	e360	e320	e300	e270	e740	2710	e830	6750	1650
24	e600	e490	e410	e360	e320	e300	e270	e900	2280	e800	5840	1590
25	e600	e480	e410	e360	e320	e300	e270	e1200	2000	e840	5090	1720
26	e600	e480	e410	e350	e320	e290	e270	e1500	1800	905	4360	2310
27	e600	e480	e410	e350	e320	e290	e270	e1800	1640	991	3760	2560
28	e600	e480	e400	e350	e320	e290	e270	e2100	1500	1000	3250	2480
29	e600	e480	e400	e350	---	e290	e280	e2400	1400	982	2870	2350
30	e600	e470	e400	e350	---	e290	e280	2560	1320	943	2590	2190
31	e580	---	e400	e350	---	e290	---	4570	---	876	2410	---
TOTAL	24128	15750	13390	11550	9260	9440	8320	25920	70200	43134	81089	63140
MEAN	778.3	525.0	431.9	372.6	330.7	304.5	277.3	836.1	2340	1391	2616	2105
MAX	1060	580	470	400	340	320	290	4570	4700	2770	7070	2980
MIN	580	470	400	350	320	290	270	280	1320	800	658	1590
AC-FT	47860	31240	26560	22910	18370	18720	16500	51410	139200	85560	160800	125200
CFSM	0.44	0.30	0.24	0.21	0.19	0.17	0.16	0.47	1.32	0.79	1.48	1.19
IN.	0.51	0.33	0.28	0.24	0.19	0.20	0.17	0.54	1.48	0.91	1.70	1.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)#

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	982.9	550.7	408.6	345.7	306.1	299.8	467.8	3112	2755	1509	1363	1451																		
MAX	1877	1020	777	629	478	420	1344	5630	4969	2696	2821	4253																		
(WY)	1991	1989	1989	1989	1989	1992	1993	1989	1977	1992	1992	1990																		
MIN	437	287	208	200	200	200	227	836	1150	637	714	505																		
(WY)	1975	1976	1974	1974	1974	1974	1974	2000	2002	1998	1976	1974																		

# See Period of Record, partial years used in monthly statistics  
e Estimated

## 15200280 GULKANA RIVER AT SOURDOUGH—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002#	
ANNUAL TOTAL	388726		375321			
ANNUAL MEAN	1065		1028		1132	
HIGHEST ANNUAL MEAN					1564 1992	
LOWEST ANNUAL MEAN					658 1998	
HIGHEST DAILY MEAN	4930	May 25	7070	Aug 22	12100	Sep 12 1990
LOWEST DAILY MEAN	a300	Mar 13	b270	Apr 16	c200	Dec 6 1973
ANNUAL SEVEN-DAY MINIMUM	300	Mar 13	270	Apr 16	200	Dec 6 1973
MAXIMUM PEAK FLOW			7380	Aug 22	d12700	Sep 12 1990
MAXIMUM PEAK STAGE			9.41	Aug 22	11.26	Sep 12 1990
MAXIMUM PEAK STAGE					f16.03	May 07 1976
ANNUAL RUNOFF (AC-FT)	771000		744400		820000	
ANNUAL RUNOFF (CFSM)	0.60		0.58		0.64	
ANNUAL RUNOFF (INCHES)	8.17		7.89		8.69	
10 PERCENT EXCEEDS	2220		2470		2670	
50 PERCENT EXCEEDS	650		520		607	
90 PERCENT EXCEEDS	320		290		250	

# See Period of Record, partial years used in monthly statistics

a Mar. 13-27

b Apr. 16-28

c Dec. 6, 1973 to Apr. 12, 1974

d From rating curve extended above 4,600 ft<sup>3</sup>/s

f Backwater from ice

## 15215990 NICOLET CREEK NEAR CORDOVA

LOCATION.--Lat 60°31'09", long 145°47'23", in SW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 32, T. 15 S., R. 3 W. (Cordova C-5 quad), Hydrologic Unit 19020201, on right bank 275 ft upstream from culvert for Whitshed Road, 475 ft upstream from mouth and 2.1 mi southwest of Cordova.

DRAINAGE AREA.--0.75 mi<sup>2</sup>.

PERIOD OF RECORD.--Annual maximum, water years 1991-99. September 1999 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 40 ft above sea level, from topographic map.

REMARKS.--Records good except for discharges greater than 60 ft<sup>3</sup>/s, which are fair; and estimated daily discharges, which are poor.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	7.5	0.99	14	1.7	e3.0	2.2	9.6	3.8	0.98	0.85	2.4
2	5.5	11	1.0	7.2	1.2	e5.0	2.4	6.0	7.8	0.89	0.72	1.4
3	13	5.3	0.95	19	0.94	e3.0	2.7	6.3	14	0.83	0.62	0.87
4	10	3.8	0.79	12	2.1	e2.5	3.1	5.7	11	1.6	0.55	0.67
5	27	2.3	0.73	56	2.2	e2.0	3.9	4.4	7.2	0.98	0.50	0.58
6	10	2.7	0.81	63	1.3	e2.0	4.6	4.1	3.4	0.82	1.3	1.7
7	5.0	3.5	0.72	78	1.0	e2.0	5.3	5.0	2.5	0.70	31	13
8	2.9	2.2	0.63	12	0.90	e1.5	4.7	6.5	9.2	0.59	32	6.0
9	40	1.3	0.61	70	0.84	e1.5	4.4	23	31	0.53	4.3	1.9
10	35	8.5	0.57	9.2	1.0	e1.5	3.4	13	40	0.60	34	1.1
11	8.4	22	2.8	5.0	e3.0	1.6	3.3	8.0	43	1.2	48	5.3
12	4.0	4.7	e5.5	3.3	e7.0	1.4	2.5	8.0	9.0	1.1	36	51
13	2.2	2.4	4.6	3.1	3.4	1.3	2.3	8.1	3.3	0.81	7.0	51
14	6.5	2.2	2.0	35	7.0	1.2	2.3	7.5	2.3	0.65	1.9	7.2
15	5.5	6.9	1.8	35	2.3	1.4	2.6	20	1.5	0.54	1.1	3.9
16	2.2	3.1	1.7	5.7	1.6	1.6	2.9	8.3	1.1	0.43	0.83	1.8
17	9.3	32	1.8	49	1.3	1.6	2.7	9.9	0.97	0.36	0.60	16
18	6.2	34	2.1	19	1.1	1.5	6.9	11	0.96	3.2	0.48	3.9
19	16	4.6	1.9	4.8	2.4	1.5	144	11	1.2	1.3	0.48	1.6
20	11	11	e5.0	2.7	2.6	1.7	50	11	4.2	0.89	31	5.0
21	16	4.2	e6.5	5.1	1.3	1.9	19	11	3.8	0.70	63	2.6
22	4.4	3.6	e9.0	6.7	0.84	2.2	12	12	1.9	1.2	70	1.4
23	2.7	15	5.0	1.8	0.86	2.7	11	8.3	6.4	17	8.0	2.0
24	2.0	2.8	3.3	1.1	0.83	2.8	9.2	6.4	8.0	34	5.5	11
25	1.6	1.8	78	0.92	1.4	4.9	3.7	7.7	3.8	6.6	2.2	31
26	1.2	1.8	79	0.84	e1.5	9.3	2.3	8.6	31	30	1.4	37
27	1.2	1.3	34	0.80	e2.0	8.4	3.3	8.2	22	38	0.97	18
28	1.2	1.3	14	0.96	e2.5	5.1	5.6	6.8	3.3	3.9	0.78	5.6
29	2.3	2.4	18	e8.0	---	3.8	7.6	7.5	1.7	2.1	0.61	1.9
30	1.5	1.1	19	e6.5	---	2.6	8.3	5.8	1.2	1.4	14	41
31	1.2	---	8.8	3.4	---	2.1	---	4.0	---	1.0	15	---
TOTAL	322.0	206.3	311.60	539.12	56.11	84.6	338.2	272.7	280.53	154.90	414.69	327.82
MEAN	10.39	6.877	10.05	17.39	2.004	2.729	11.27	8.797	9.351	4.997	13.38	10.93
MAX	67	34	79	78	7.0	9.3	144	23	43	38	70	51
MIN	1.2	1.1	0.57	0.80	0.83	1.2	2.2	4.0	0.96	0.36	0.48	0.58
AC-FT	639	409	618	1070	111	168	671	541	556	307	823	650
CFSM	13.8	9.17	13.4	23.2	2.67	3.64	15.0	11.7	12.5	6.66	17.8	14.6
IN.	15.97	10.23	15.46	26.74	2.78	4.20	16.77	13.53	13.91	7.68	20.57	16.26

e Estimated

## 15215990 NICOLET CREEK NEAR CORDOVA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.70	10.33	16.80	18.32	6.377	7.116	10.52	11.93	6.520	5.790	7.798	9.622
MAX	20.2	16.3	20.4	26.6	11.2	10.2	11.3	16.1	9.35	6.79	13.4	10.9
(WY)	2001	2001	2000	2001	2000	2000	2002	2000	2002	2001	2002	2002
MIN	10.4	6.88	10.1	10.9	2.00	2.73	9.15	8.80	1.59	5.00	4.97	8.85
(WY)	2002	2002	2002	2000	2002	2002	2001	2002	2001	2002	2001	2001

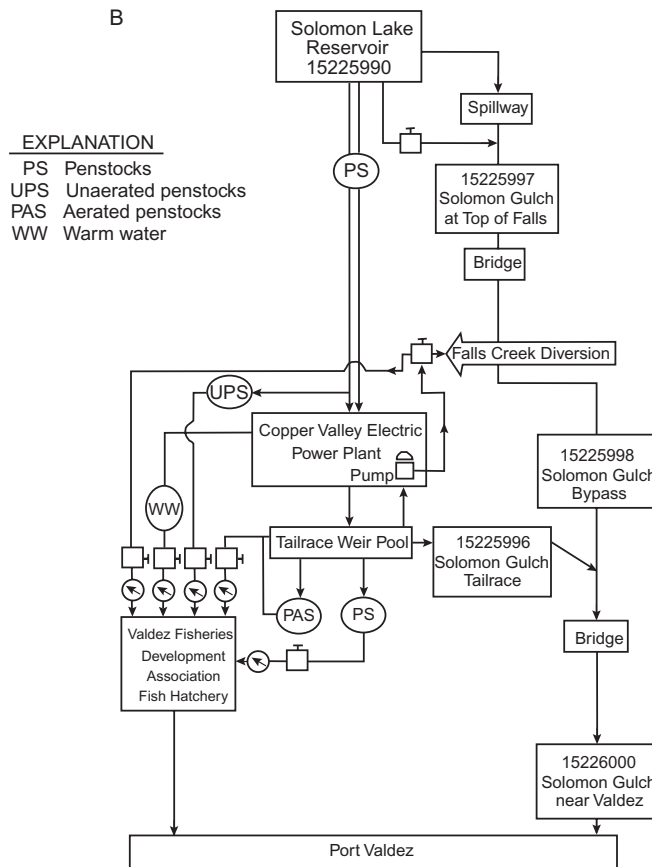
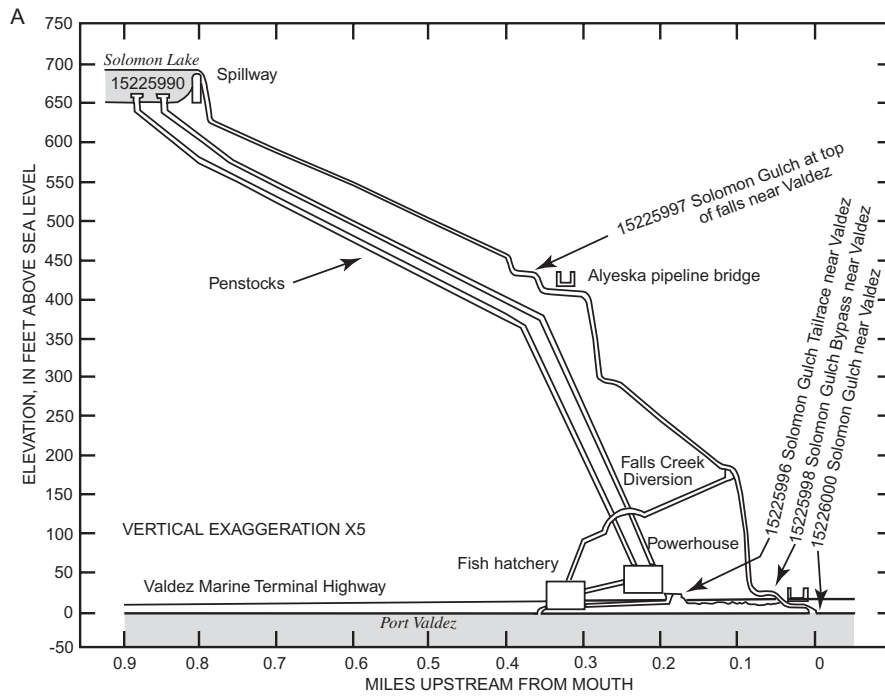
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002#	
ANNUAL TOTAL	3379.53		3308.57			
ANNUAL MEAN	9.259		9.065		10.70	
HIGHEST ANNUAL MEAN					11.7	
LOWEST ANNUAL MEAN					9.06	
HIGHEST DAILY MEAN	80	Jan 7	144	Apr 19	144	Apr 19 2002
LOWEST DAILY MEAN	a0.17	Jul 2	0.36	Jul 17	a0.17	Jul 2 2001
ANNUAL SEVEN-DAY MINIMUM	0.19	Jun 27	0.69	Dec 4	0.19	Jun 27 2001
MAXIMUM PEAK FLOW			b186	Apr 19	cd988	Nov 3 1994
MAXIMUM PEAK STAGE			24.38	Apr 19	d19.60	Nov 3 1994
INSTANTANEOUS LOW FLOW			0.30	Jul 18	0.16	Jul 2 2001
ANNUAL RUNOFF (AC-FT)	6700		6560		7750	
ANNUAL RUNOFF (CFSM)	12.3		12.1		14.3	
ANNUAL RUNOFF (INCHES)	167.62		164.11		193.82	
10 PERCENT EXCEEDS	25		30		31	
50 PERCENT EXCEEDS	4.0		3.3		4.6	
90 PERCENT EXCEEDS	0.79		0.85		1.0	

# See Period of Record and Remarks

a Jul. 2 and 3

b From rating curve extended above 33 ft<sup>3</sup>/s on basis of step-backwater analysisc From rating curve extended above 66 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

d Site and datum then in use



Solomon Gulch (A) profile and (B) schematic diagram of flows.

## 15225990 SOLOMON LAKE NEAR VALDEZ

LOCATION.--Lat 61°04'25", long 146°18'08", in NE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> sec. 21, T. 9 S., R. 6 W. (Valdez A-7 SE quad), Hydrologic Unit 19020201, within Valdez Corporate boundary, at outlet of Solomon Lake, 0.7 mi upstream from mouth of Solomon Gulch, and 4.6 mi southeast of Valdez.

DRAINAGE AREA.--19.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1991 to current year. Additional unpublished records prior to period of record available from Copper Valley Electric Association and in station files of Geological Survey.

REMARKS.--Reservoir is formed by a rockfill dam at outlet of Solomon Lake. Reservoir is used for power; power-plant operation began January 6, 1982. Usable capacity is 31,500 acre-feet below spillway crest at 685 ft. Discharge released to the penstocks is accounted for at Solomon Gulch Tailrace (station 15225996). Releases through the dam to maintain minimum flows, spillway releases, and incremental flow are accounted for at the Solomon Gulch at top of falls gage (station 15225997).

COOPERATION.--Reservoir contents furnished by Copper Valley Electric Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents 32,500 acre-ft, September 21, 1993, from crest-stage gage and rating extended above 31,500 acre-ft; minimum contents, 2,167 acre-ft, May 1, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,000 acre-ft August 23, elevation, 685.93 ft; minimum contents, 3,380 acre-ft, May 15, elevation, 622.50 ft.

MONTH END RESERVOIR ELEVATION, IN FEET, AND CONTENTS, IN ACRE FEET  
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	ELEVATION	CONTENTS	CHANGE IN CONTENTS
SEP 30	683.0	29,800	----
OCT 31	677.8	26,400	-3,400
NOV 30	671.6	22,800	-3,600
DEC 31	664.8	19,400	-3,400
JAN 31	658.4	16,200	-3,200
FEB 28	651.4	13,200	-3,000
MAR 31	641.1	9,000	-4,200
APR 30	628.8	5,000	-4,000
MAY 31	645.8	11,000	+6,000
JUN 30	665.4	19,800	+8,800
JUL 31	670.8	22,400	+2,600
AUG 31	684.6	31,200	+8,800
SEP 30	685.0	31,500	+300
		CAL YR 2001	-1,000
		WTR YR 2002	+1,700

## 15225996 SOLOMON GULCH TAILRACE NEAR VALDEZ

LOCATION.--Lat 61°05'01", long 146°18'10", in NE<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> sec. 16, T. 9 S., R. 6 W. (Valdez A-7 SE quad), Hydrologic Unit 19020201, within Valdez Corporate boundary, on left wingwall of tailrace pool of Copper Valley Electric Association powerhouse facility, 350 ft upstream from mouth at Solomon Gulch, and 3.8 mi southeast of Valdez.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--September 1986 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 40 ft above sea level, from topographic map.

REMARKS.--Records good. Discharge shown herein is flow through the Solomon Gulch Power Plant turbines. Solomon Lake, 0.8 mi upstream, supplies water to the power-plant through two 48-in. diameter penstocks. Water for the fish hatchery, diverted upstream from the gage, is not included in these published daily values. Annual mean discharge for these diversions for 2002 water year was 13.2 ft<sup>3</sup>/s.

COOPERATION.--Records of daily discharge diverted to the fish hatchery are furnished by Valdez Fisheries Development Association. Copper Valley Electric Association provides tables of hourly power output through the turbines.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 293 ft<sup>3</sup>/s, January 2 and 3, 1992, gage height, 3.04 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 269 ft<sup>3</sup>/s, August 27; Maximum gage height, 3.03 ft, July 16; no flow for periods on January 5, March 19, May 20, June 14, August 1 and August 19.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	68	63	74	53	47	75	52	192	166	144	195
2	180	74	61	77	50	43	69	57	189	173	188	202
3	191	70	73	59	51	46	83	75	199	185	183	118
4	186	74	70	48	56	50	72	91	207	222	191	173
5	172	80	79	48	48	46	67	87	206	222	201	216
6	160	78	70	52	47	43	66	94	202	224	203	209
7	165	70	66	49	54	48	64	97	197	229	198	199
8	190	63	59	54	43	52	53	90	204	228	201	199
9	185	66	56	60	62	51	54	84	210	220	201	145
10	188	59	62	65	45	51	53	79	205	224	200	141
11	194	61	56	66	41	53	54	74	201	212	203	155
12	192	66	53	59	42	49	55	70	159	205	204	201
13	186	70	62	62	43	50	53	78	196	218	202	200
14	187	75	63	59	42	49	66	80	139	221	202	191
15	123	60	48	56	47	51	56	92	161	220	200	190
16	79	60	50	58	46	50	54	103	199	226	188	199
17	76	63	50	63	44	52	50	102	199	210	211	199
18	67	70	57	57	45	54	61	94	163	208	215	199
19	65	68	54	58	56	44	60	90	178	203	151	196
20	67	71	51	57	54	51	51	47	216	203	182	201
21	68	65	46	66	49	51	53	164	215	197	207	193
22	66	61	49	52	46	58	63	212	210	198	191	193
23	65	56	48	53	43	54	64	218	213	204	197	202
24	65	51	46	54	42	55	59	224	221	202	209	199
25	82	54	48	59	46	57	53	214	218	202	208	197
26	88	71	52	57	46	83	49	166	217	200	222	199
27	82	75	58	61	44	87	52	200	213	192	215	196
28	83	76	67	52	47	79	52	204	176	190	208	185
29	81	74	67	51	---	92	50	203	211	205	205	187
30	71	68	61	54	---	77	54	200	208	201	208	204
31	68	---	63	49	---	69	---	203	---	203	203	---
TOTAL	3861	2017	1808	1789	1332	1742	1765	3844	5924	6413	6141	5683
MEAN	124.5	67.23	58.32	57.71	47.57	56.19	58.83	124.0	197.5	206.9	198.1	189.4
MAX	194	80	79	77	62	92	83	224	221	229	222	216
MIN	65	51	46	48	41	43	49	47	139	166	144	118
AC-FT	7660	4000	3590	3550	2640	3460	3500	7620	11750	12720	12180	11270

CAL YR 2001 TOTAL 43142.6 MEAN 118.2 MAX 209 MIN 1.0 AC-FT 85570  
WTR YR 2002 TOTAL 42319 MEAN 115.9 MAX 229 MIN 41 AC-FT 83940

15225997 SOLOMON GULCH AT TOP OF FALLS NEAR VALDEZ

LOCATION.--Lat 61°04'45", long 146°18'11", in SE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 21, T. 9 S., R. 6 W. (Valdez A-7 SE quad), Hydrologic Unit 19020201, within Valdez Corporate boundary, on right bank, 72 ft above Alyeska Pipeline Service Company Bridge, 150 ft upstream from top of falls, 0.3 mi upstream from mouth, and 4.2 mi southeast of Valdez.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--September 1986 to current year.

REVISED RECORDS.--WDR AK-00-1: 1999.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map. Prior to October 1, 1991, discharge computed for site 150 ft downstream at datum 72.00 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Discharge shown herein represents controlled releases from bypass valve and flow over the spillway of dam at Solomon Lake, 0.5 mi upstream, plus inflow between the spillway and the gage. Spillway crest elevation is 685 ft above sea level, from construction plans. Water for power generation is diverted from Solomon Lake (see records for station 15225996). Water is diverted for fish hatchery use 1,150 ft downstream from gage. Reservoir spilled August 21-26, September 13-16, September 26-28, and September 30, 2002.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,280 ft<sup>3</sup>/s, October 11, 1986, by computation of peak flow by several indirect measurement methods; gage height, 82.20 ft from water surface profiles for 1986 flood at top of falls and at datum 72.00 ft lower (12.90 ft from profile at present site and datum); minimum daily discharge, about 0.20 ft<sup>3</sup>/s, January 23 to April 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft<sup>3</sup>/s, August 22, gage height, 8.25 ft; minimum daily discharge, 2.3 ft<sup>3</sup>/s, March 20, 22.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	3.6	4.0	3.6	3.5	3.1	3.3	8.0	7.5	4.1	4.6	5.9
2	9.3	3.4	4.2	3.5	3.4	3.1	3.3	7.0	7.2	4.0	4.5	5.0
3	7.0	3.3	3.7	3.6	3.4	3.2	3.1	5.6	7.1	3.9	4.4	4.7
4	7.8	3.4	3.1	3.6	3.4	3.2	3.1	5.3	6.4	4.0	4.4	4.5
5	11	3.3	3.2	3.9	3.5	3.3	3.1	4.7	6.6	3.8	4.4	4.5
6	8.9	3.2	3.2	5.5	3.5	3.2	3.1	4.0	8.0	3.8	4.4	4.9
7	7.4	3.3	3.2	6.1	3.5	3.0	3.1	4.0	6.3	3.7	4.6	4.9
8	5.9	3.3	e3.2	5.2	3.4	2.9	3.2	4.7	5.6	3.6	8.1	4.9
9	6.0	3.2	e3.3	9.6	3.3	2.9	3.3	5.8	6.7	3.6	17	4.6
10	8.8	3.1	e3.3	7.0	3.3	2.9	3.3	7.1	5.6	3.6	9.3	4.6
11	9.0	3.2	e3.4	5.1	3.3	2.8	3.3	7.7	5.2	3.8	17	7.6
12	6.7	3.1	e3.4	4.8	3.3	2.7	3.3	8.2	4.5	3.9	14	9.2
13	5.7	3.0	e3.5	4.5	3.3	2.7	3.2	9.8	4.0	3.8	14	376
14	5.1	3.0	3.0	4.4	3.4	2.7	3.1	11	4.1	3.8	8.2	411
15	4.9	3.0	2.7	4.5	3.3	2.6	3.1	15	4.2	3.9	6.7	145
16	4.7	3.0	2.7	4.3	3.3	2.5	3.2	9.7	4.2	4.0	6.1	20
17	4.6	3.7	2.7	4.2	3.2	2.4	3.1	22	4.3	4.1	5.9	5.8
18	4.4	5.8	2.9	4.1	3.2	2.4	3.0	28	4.0	4.8	5.8	5.6
19	4.4	4.1	3.1	4.0	3.1	2.4	3.0	24	3.9	4.4	6.2	5.4
20	4.3	3.5	3.1	4.0	3.2	2.3	3.1	21	3.8	4.4	13	6.5
21	4.3	3.4	3.2	3.9	3.1	2.4	2.9	20	3.9	4.3	390	6.0
22	4.4	3.4	3.6	e3.8	3.1	2.3	2.8	16	3.9	4.2	1110	5.7
23	4.1	3.5	3.6	3.8	2.8	2.4	2.7	15	3.9	4.2	516	5.8
24	4.0	3.4	3.5	e3.7	2.7	2.5	2.6	15	3.9	5.6	236	8.3
25	3.8	3.3	3.5	e3.7	2.7	2.5	2.4	14	3.9	5.5	79	12
26	3.7	3.2	4.5	3.6	2.9	2.8	2.4	13	3.9	6.6	14	259
27	3.8	3.0	4.3	3.6	3.2	3.1	2.6	12	3.9	9.1	5.2	464
28	3.7	4.2	4.1	3.6	3.2	3.1	3.0	9.7	3.9	6.3	4.7	210
29	3.8	4.3	3.8	3.6	---	3.0	5.0	9.6	3.8	5.5	4.5	35
30	3.8	4.2	3.7	3.6	---	3.1	6.6	10	3.9	5.1	4.5	7.1
31	3.9	---	3.6	3.6	---	3.2	---	9.0	---	4.8	5.4	---
TOTAL	180.2	104.4	106.3	136.0	90.5	86.7	96.3	355.9	148.1	140.2	2531.9	2053.5
MEAN	5.813	3.480	3.429	4.387	3.232	2.797	3.210	11.48	4.937	4.523	81.67	68.45
MAX	11	5.8	4.5	9.6	3.5	3.3	6.6	28	8.0	9.1	1110	464
MIN	3.7	3.0	2.7	3.5	2.7	2.3	2.4	4.0	3.8	3.6	4.4	4.5
AC-FT	357	207	211	270	180	172	191	706	294	278	5020	4070
CAL YR 2001	TOTAL 12156.5	MEAN 33.31	MAX 722	MIN 2.7	AC-FT 24110							
WTR YR 2002	TOTAL 6030.0	MEAN 16.52	MAX 1110	MIN 2.3	AC-FT 11960							

e Estimated



## 15226000 SOLOMON GULCH NEAR VALDEZ

LOCATION.--Lat 61°05'02", long 146°18'13", in NE<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> sec. 16, T. 9 S., R. 6 W. (Valdez A-7 SE quad), Hydrologic Unit 19020201, at bridge crossing at mouth and 3.8 mi southeast across Port Valdez from Valdez.

DRAINAGE AREA.--19.7 mi<sup>2</sup>.

PERIOD OF RECORD.--July to December 1948, October 1949 to September 1956, and September 1986 to current year.

GAGE.--Nonrecording gage. Elevation of gage is at sea level. July 9, 1948 to May 21, 1950, nonrecording gage, and May 22, 1950 to September 30, 1956, water-stage recorder at about present site and datum.

REMARKS.-- Records fair. Discharge data represent the flow at mouth which includes Solomon Gulch at top of falls (station 15225997), power plant tailrace (station 15225996), and all fish hatchery diversions. Water for power generation is diverted by a dam at Solomon Lake, 0.8 mi upstream. Water is diverted for the fish hatchery by a 24-in. penstock aeration system, and a 24-in. penstock line from the tailrace weir pool. An unaerated penstock and an 8-in. pipe for warm water supply are upstream. Additional water is diverted to the fish hatchery from Solomon Gulch bypass channel about 750 ft above gage, by means of a 12-in. diameter pipe. The fish hatchery discharges water directly into Port Valdez. Average daily diversion to fish hatchery for 2002 water year was 13.2 ft<sup>3</sup>/s. Power generation began January 6, 1982.

COOPERATION.--Records of daily discharge diverted to the fish hatchery are furnished by Valdez Fisheries Development Association. Copper Valley Electric Association provides tables of hourly power output through the turbines and monthly storage values for Solomon Lake.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	101	77	86	66	59	85	61	200	171	173	226
2	216	108	75	89	61	54	79	65	197	178	217	233
3	226	103	86	71	62	57	93	82	206	190	213	149
4	222	107	81	59	67	61	82	98	213	227	221	203
5	210	113	89	60	59	57	76	93	212	227	230	246
6	196	111	80	66	58	55	75	99	210	228	232	240
7	199	103	76	63	65	59	75	102	203	233	228	230
8	224	96	e69	67	55	62	64	96	209	233	234	229
9	219	99	e66	77	74	62	66	91	217	225	243	176
10	224	92	e72	80	56	62	63	88	210	229	235	171
11	231	94	e67	80	53	64	65	84	206	216	245	188
12	227	99	e64	72	53	60	64	80	163	210	243	236
13	220	103	e72	75	54	60	63	90	200	224	241	602
14	220	108	73	71	55	60	76	93	143	226	236	629
15	156	92	57	68	59	62	66	109	165	224	232	362
16	112	94	59	70	58	61	64	115	203	231	220	246
17	108	97	61	75	55	62	60	126	203	236	242	232
18	99	106	67	69	56	64	70	123	167	235	246	232
19	98	103	64	70	67	54	69	115	182	229	183	229
20	100	104	61	69	65	60	60	70	219	230	220	235
21	101	96	56	77	60	61	62	185	221	225	622	226
22	98	92	59	e64	57	68	71	229	216	225	1330	225
23	97	88	58	65	54	65	73	234	219	231	740	234
24	97	82	56	e66	53	65	67	240	227	230	472	234
25	114	76	59	e70	57	68	61	229	223	231	314	237
26	120	82	64	68	57	94	59	180	223	230	263	486
27	114	87	70	73	55	98	61	213	219	224	248	688
28	115	90	78	64	59	90	62	215	182	220	238	423
29	113	88	78	62	---	103	62	213	216	234	235	249
30	102	81	72	65	---	90	66	211	214	230	237	239
31	100	---	74	60	---	78	---	214	---	232	234	---
TOTAL	4906	2895	2140	2171	1650	2075	2059	4243	6088	6914	9467	8535
MEAN	158.3	96.50	69.03	70.03	58.93	66.94	68.63	136.9	202.9	223.0	305.4	284.5
MAX	231	113	89	89	74	103	93	240	227	236	1330	688
MIN	97	76	56	59	53	54	59	61	143	171	173	149
AC-FT	9730	5740	4240	4310	3270	4120	4080	8420	12080	13710	18780	16930

ADJUSTED FOR CHANGE IN STORAGE IN SOLOMON LAKE

MEAN	103	36.0	13.7	18.1	e3.4	e0.0	1.3	234	351	265	448	290
AC-FT	6330	2140	840	1110	e190	e0.0	80	14420	20880	16310	27580	17230
CFSM	5.23	1.83	0.69	0.92	e0.17	e0.0	0.07	11.90	17.81	13.46	22.77	14.70
IN	6.03	2.04	0.80	1.06	e0.18	e0.0	0.08	13.74	19.90	15.54	26.28	16.42

e Estimated

15226000 SOLOMON GULCH NEAR VALDEZ—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)#

MEAN	181.8	101.4	94.91	95.86	91.20	80.57	72.09	152.0	183.6	272.6	298.5	339.7
MAX	310	140	116	138	130	120	106	213	229	410	462	501
(WY)	1987	1989	1987	1995	1987	1987	1998	1993	1990	2001	1993	1989
MIN	97.2	77.1	69.7	69.5	64.3	5.08	26.2	103	145	177	152	152
(WY)	1997	1993	2002	2002	1997	1991	1991	1992	1988	1991	1996	1996

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1986 - 2002#

ANNUAL TOTAL	60598.6		53143					
ANNUAL MEAN	166.0		145.6				164.8	
ANNUAL MEAN	*164.0		*147.0				*165.0	
HIGHEST ANNUAL MEAN							197	
LOWEST ANNUAL MEAN							125	
HIGHEST DAILY MEAN	944		Sep 5		1330		Aug 22	
LOWEST DAILY MEAN	9.6		May 9		53		Feb 11	
ANNUAL SEVEN-DAY MINIMUM	40		May 8		55		Feb 11	
MAXIMUM PEAK FLOW							2270	
ANNUAL RUNOFF (AC-FT)	120200				105400		119400	
ANNUAL RUNOFF (AC-FT)	*119170				*107110		*119500	
ANNUAL RUNOFF (CFSM)	*8.32				*7.46		*7.46	
ANNUAL RUNOFF (IN)	*113.55				*102.06		*113.74	
10 PERCENT EXCEEDS	314				234		287	
50 PERCENT EXCEEDS	111				98		122	
90 PERCENT EXCEEDS	71				60		69	

PRIOR TO CONSTRUCTION OF SOLOMON GULCH HYDROELECTRIC PROJECT

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1956, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	124	58.9	18.3	13.3	10.4	8.82	10.9	102	370	385	322	260
MAX	304	131	35.6	20.9	12.2	11.1	18.3	224	544	514	442	574
(WY)	1953	1953	1950	1956	1954	1953	1953	1953	1953	1955	1956	1951
MIN	48.0	21.7	4.00	1.40	3.57	7.19	6.57	36.5	261	277	254	126
(WY)	1951	1951	1949	1951	1951	1951	1950	1955	1951	1950	1950	1955

SUMMARY STATISTICS

WATER YEARS 1948 - 1956#

ANNUAL MEAN	143	
HIGHEST ANNUAL MEAN	194	1953
LOWEST ANNUAL MEAN	126	1950
HIGHEST DAILY MEAN	1530	Sep 4 1951
LOWEST DAILY MEAN	.50	Dec 31 1950
ANNUAL SEVEN-DAY MINIMUM	1.0	Jan 10 1951
MAXIMUM PEAK FLOW	a2420	Sep 4 1951
MAXIMUM PEAK STAGE	b6.50	Sep 4 1951
INSTANTANEOUS LOW FLOW	c.00	Feb 20 1954
ANNUAL RUNOFF (AC-FT)	103900	
ANNUAL RUNOFF (CFSM)	7.28	
ANNUAL RUNOFF (INCHES)	98.89	
10 PERCENT EXCEEDS	396	
50 PERCENT EXCEEDS	49	
90 PERCENT EXCEEDS	8.0	

# See Period of Record and Remarks. Values shown on this page are unadjusted for change in storage in Solomon Lake, unless otherwise noted

\* Adjusted for change in storage in Solomon Lake

a From rating curve extended above 620 ft<sup>3</sup>/s

b Site and datum then in use

c No flow sometime during period Feb. 20 to Mar. 3, 1954, caused by temporary storage upstream

## 15236900 WOLVERINE CREEK NEAR LAWING

LOCATION.--Lat 60°22'14", long 148°53'48", in NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 10, T.3 N., R.3 E. (Seward B-6 quad), Kenai Peninsula Borough, Hydrologic Unit 19020202, on the left bank, about 0.1 mi downstream from terminus of Wolverine Glacier, 2.0 mi upstream from mouth, 16 mi east of Lawing, Alaska.

DRAINAGE AREA.--9.51 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1966 to September 1978, October 1980 to September 1981, May 1997 to September 1997, October 2000 to present.

GAGE.--Water-stage recorder. Elevation of gage is 1,200 ft above sea level from topographic map.

REMARKS.--Records are poor. Large fluctuations from ice melt and alternate damming and storage releases during the melt season. Stream flow modified by Wolverine Glacier, which covers 6.8 mi<sup>2</sup>, more than 70% of the drainage basin. Rain gage and air temperature recorder at station, daily values of precipitation and air temperature available from computer files of the Alaska District. GOES satellite telemetry at station. A recording of air temperature, wind speed, and precipitation gage at 3,250 ft elevation. plus three snow and ice balance measurement sites are located in the basin. Combined snow, ice, and water balances of the basin are published in other reports of the Geological Survey.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 550 ft<sup>3</sup>/s and maximum (\*)

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Jun 26	1045	638	3.03	Sep 14	0100	701	2.97
Jul 24	1630	1170*	3.55*				

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	e5.5	e1.1	e3.0	e0.00	e0.00	e0.00	e2.5	105	199	322	201
2	34	e4.5	e1.0	e2.5	e0.00	e0.00	e0.00	e3.0	110	211	320	249
3	68	e4.0	e1.0	e2.0	e0.00	e0.00	e0.00	e3.0	115	207	342	222
4	202	e3.0	e1.0	e2.0	e0.00	e0.00	e0.00	e3.5	122	237	360	182
5	267	e2.5	e1.0	e2.5	e0.00	e0.00	e0.10	e4.0	103	205	278	179
6	116	e2.5	e1.0	e3.0	e0.00	e0.00	e0.50	e4.5	90	184	293	184
7	70	e2.0	e1.0	e4.0	e0.00	e0.00	e0.50	e5.0	95	206	301	142
8	56	e2.0	e1.0	e2.5	e0.00	e0.00	e0.50	e5.0	87	212	282	120
9	87	e1.9	e1.0	e3.0	e0.00	e0.00	e0.50	e7.0	111	206	262	130
10	57	e1.8	e1.0	e4.0	e0.00	e0.00	e0.50	e8.0	83	237	227	121
11	39	e1.8	e0.50	e4.5	e0.00	e0.00	e0.50	e9.0	73	221	255	91
12	e22	e1.8	e0.50	e1.5	e0.00	e0.00	e0.50	e11	75	218	322	92
13	e20	e1.7	e0.50	e1.0	e0.00	e0.00	e0.50	e14	78	239	326	223
14	e16	e1.7	e0.50	e1.0	e0.00	e0.00	e0.50	e19	146	230	273	507
15	e16	e1.6	e0.10	e1.1	e0.00	e0.00	e1.0	e25	208	244	246	319
16	e16	e1.5	e0.00	e1.0	e0.00	e0.00	e1.0	e30	196	252	280	209
17	e18	e2.4	e0.00	e1.1	e0.00	e0.00	e1.0	e40	220	287	284	249
18	e15	e2.1	e0.00	e1.5	e0.00	e0.00	e1.0	e50	235	299	244	179
19	e15	e1.8	e0.00	e1.1	e0.00	e0.00	e1.0	e60	239	279	204	142
20	e14	e1.6	e0.00	e1.0	e0.00	e0.00	e1.0	e65	229	287	264	80
21	e13	e1.5	e0.00	e1.0	e0.00	e0.00	e1.0	e75	207	343	277	75
22	e11	e1.4	e0.00	e0.50	e0.00	e0.00	e1.0	82	218	373	260	84
23	e11	e1.4	e0.00	e0.50	e0.00	e0.00	e1.0	94	209	502	232	118
24	e10	e1.3	e0.10	e0.10	e0.00	e0.00	e1.0	107	267	679	247	201
25	e9.0	e1.3	e1.0	e0.00	e0.00	e0.00	e1.1	107	297	457	232	250
26	e8.0	e1.2	e5.0	e0.00	e0.00	e0.00	e1.1	107	386	347	201	261
27	e8.0	e1.2	e10	e0.00	e0.00	e0.00	e1.5	138	282	286	198	185
28	e8.0	e1.2	e6.0	e0.00	e0.00	e0.00	e1.5	137	250	278	215	139
29	e7.0	e1.1	e3.0	e0.00	---	e0.00	e1.5	143	263	312	184	116
30	e7.0	e1.1	e3.5	e0.00	---	e0.00	e2.0	154	228	323	220	115
31	e6.0	---	e5.5	e0.00	---	e0.00	---	125	---	338	189	---
TOTAL	1297.0	60.4	46.30	45.40	0.00	0.00	23.30	1637.5	5327	8898	8140	5365
MEAN	41.84	2.013	1.494	1.465	0.000	0.000	0.777	52.82	177.6	287.0	262.6	178.8
MAX	267	5.5	10	4.5	0.00	0.00	2.0	154	386	679	360	507
MIN	6.0	1.1	0.00	0.00	0.00	0.00	0.00	2.5	73	184	184	75
AC-FT	2570	120	92	90	0.00	0.00	46	3250	10570	17650	16150	10640
CFSM	4.40	0.21	0.16	0.15	0.00	0.00	0.08	5.55	18.7	30.2	27.6	18.8
IN.	5.07	0.24	0.18	0.18	0.00	0.00	0.09	6.41	20.84	34.81	31.84	20.99

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)#

	1967	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	36.57	7.226	2.533	1.496	1.109	0.894	1.174	22.06	137.8	292.8	339.9	196.6																	
MAX	114	27.4	5.48	2.71	2.00	2.00	2.27	89.3	262	375	494	351																	
(WY)	1970	1971	1970	1970	1970	1970	1981	1967	1967	1967	1981	1974																	
MIN	13.1	2.01	0.51	0.39	0.000	0.000	0.000	0.61	31.1	146	176	80.0																	
(WY)	1975	2002	2001	2001	2001	2001	2001	1971	1971	1997	1997	1970																	

# See Period of Record; partial years used in monthly statistics  
e Estimated

## 15236900 WOLVERINE CREEK NEAR LAWING—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002#	
ANNUAL TOTAL	37684.44		30839.90			
ANNUAL MEAN	103.2		84.49		88.84	
HIGHEST ANNUAL MEAN					123 1967	
LOWEST ANNUAL MEAN					66.6 1970	
HIGHEST DAILY MEAN	1930	Aug 28	679	Jul 24	1930	Aug 28 2001
LOWEST DAILY MEAN	a0.00	Jan 4	a0.00	Dec 16	a0.00	Dec 2 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 22	0.00	Dec 16	0.00	Dec 2 2000
MAXIMUM PEAK FLOW			1170	Jul 24	b4160	Aug 28 2001
MAXIMUM PEAK STAGE			3.55	Jul 24	6.28	Aug 21 1981
MAXIMUM PEAK STAGE					c14.70	Jun 9 1971
ANNUAL RUNOFF (AC-FT)	74750		61170		64360	
ANNUAL RUNOFF (CFSM)	10.9		8.88		9.34	
ANNUAL RUNOFF (INCHES)	147.41		120.64		126.93	
10 PERCENT EXCEEDS	304		265		310	
50 PERCENT EXCEEDS	2.5		5.0		5.0	
90 PERCENT EXCEEDS	0.00		0.00		0.60	

# See Period of Record; partial years used in monthly statistics

a No flow most days during winter

b From rating curve extended above 1,290 ft<sup>3</sup>/s

c From floodmarks, date approximate: flow over dense snow

## 15237730 GROUSE CREEK AT GROUSE LAKE OUTLET NEAR SEWARD

LOCATION.--Lat 60°11'54", long 149°22'24", in NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 12, T. 1 N., R. 1 W. (Seward A-7 NE quad), Kenai Peninsula Borough, Hydrologic Unit 19020202, on right bank, 200 ft downstream from Grouse Lake outlet, 0.2 mi upstream from Seward Highway, 7 mi north of Seward.

DRAINAGE AREA.--6.22 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1997 to present.

GAGE.--Water stage recorder and crest-stage gage. Elevation of gage is 250 ft above sea level from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Rain gage recorder at station. GOES satellite telemetry and phone modem at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	8.5	5.7	35	e8.5	e5.0	e4.0	15	52	10	6.2	5.5
2	26	8.5	5.6	31	e8.0	e4.5	e4.0	15	49	9.8	6.0	5.3
3	21	8.7	5.9	25	e8.0	e4.5	e4.0	14	47	9.7	5.9	5.0
4	28	8.2	5.6	21	e9.0	e4.0	e4.0	15	45	9.6	5.7	4.9
5	49	7.8	5.6	23	e9.0	e4.0	e4.0	16	43	9.2	5.6	4.9
6	46	7.6	5.7	32	e8.5	e4.0	e4.0	17	41	9.0	5.6	5.4
7	39	6.9	5.5	33	e8.0	e4.0	e4.0	18	39	8.7	5.7	5.8
8	32	6.5	5.1	28	e7.5	e4.0	e4.5	21	38	8.5	7.1	5.4
9	32	7.4	5.4	44	e7.5	e4.0	e4.5	28	36	8.3	7.4	e5.2
10	28	7.5	5.6	39	e7.0	e4.0	e4.5	32	35	8.2	6.7	e5.0
11	27	7.2	5.8	30	e7.0	e4.0	e4.5	34	35	7.9	7.2	e5.0
12	21	7.0	5.9	21	e6.5	e4.0	e4.5	35	32	7.7	8.3	e8.0
13	18	6.8	5.7	18	e6.5	e4.0	e4.5	39	31	7.7	7.8	e24
14	17	6.4	5.4	17	e6.5	e4.0	e5.0	45	29	7.4	6.8	e34
15	16	6.6	5.5	19	e7.5	e4.0	e5.0	49	32	7.3	6.4	e26
16	15	6.5	5.7	19	e7.5	e4.0	5.0	50	31	7.2	6.1	e16
17	14	7.1	5.5	22	e6.5	e4.0	5.0	56	28	7.0	5.8	e18
18	13	9.1	5.4	27	e6.0	e4.0	5.4	71	24	7.6	5.6	e14
19	12	8.2	5.4	21	e5.5	e3.5	6.0	88	20	7.6	5.4	e12
20	12	8.4	5.9	18	e5.0	e3.5	6.4	95	18	7.2	6.0	e11
21	13	7.9	6.6	14	e5.0	e3.5	6.5	92	16	6.8	6.2	e10
22	12	7.7	6.7	13	e5.5	e3.5	6.3	89	15	6.7	7.4	e10
23	11	7.7	6.6	14	e5.5	e3.5	6.3	82	14	6.6	7.5	e12
24	10	7.6	6.1	12	e5.0	e3.5	6.4	77	13	7.2	7.5	18
25	9.8	7.1	8.2	11	e5.0	e3.5	6.4	78	13	7.2	6.8	28
26	9.2	6.3	5.8	10	e5.0	e3.5	6.8	75	13	7.3	6.2	21
27	8.6	7.3	9.0	e10	e5.0	e3.5	7.6	71	12	8.5	5.9	20
28	9.0	6.7	4.7	e10	e5.0	e3.3	9.2	63	11	7.8	5.7	18
29	8.7	6.8	3.5	e10	---	e3.5	12	61	11	7.1	5.5	16
30	8.4	6.4	3.3	e9.5	---	e3.5	14	57	11	6.7	5.5	17
31	8.2	---	3.0	e9.5	---	e3.5	---	55	---	6.4	5.7	---
TOTAL	603.9	222.4	439.1	646.0	186.5	119.3	174.3	1553	834	243.9	197.2	390.4
MEAN	19.5	7.41	14.2	20.8	6.66	3.85	5.81	50.1	27.8	7.87	6.36	13.0
MAX	49	9.1	9.0	44	9.0	5.0	14	95	52	10	8.3	34
MIN	8.2	6.3	5.1	9.5	5.0	3.3	4.0	14	11	6.4	5.4	4.9
AC-FT	1200	441	871	1280	370	237	346	3080	1650	484	391	774
CFSM	3.13	1.19	2.28	3.35	1.07	.62	.93	8.05	4.47	1.26	1.02	2.09
IN.	3.61	1.33	2.63	3.86	1.12	.71	1.04	9.29	4.99	1.46	1.18	2.33

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)#

	1997	1998	1999	2000	2001	2002	2001	2002	2001	1997	1998	1999	2000	2001	2002
MEAN	19.4	21.4	16.4	20.3	8.27	8.43	17.6	52.8	43.1	11.9	8.12	19.5			
MAX	25.7	38.0	25.7	58.0	12.0	15.6	38.6	67.9	70.7	19.2	14.3	35.3			
(WY)	2000	2001	2001	2001	2001	1998	1998	1998	1998	1998	2001	1997			
MIN	11.8	7.41	8.89	5.23	3.34	2.69	5.81	43.5	12.6	6.11	6.04	6.66			
(WY)	1998	2002	1999	1998	1999	1999	2002	2001	1997	1997	1999	2000			

## SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1997 - 2002#

ANNUAL TOTAL	8776.0	5610.0		
ANNUAL MEAN	24.0	15.4	21.0	
HIGHEST ANNUAL MEAN			27.3	2001
LOWEST ANNUAL MEAN			15.4	2002
HIGHEST DAILY MEAN	205	Jan 19	95	May 20
LOWEST DAILY MEAN	5.1	Dec 8	3.3	Mar 28
ANNUAL SEVEN-DAY MINIMUM	5.5	Dec 4	3.5	Mar 22
MAXIMUM PEAK FLOW			114	Dec 27
MAXIMUM PEAK STAGE			6.36	Dec 27
INSTANTANEOUS LOW FLOW				b1.5
ANNUAL RUNOFF (AC-FT)	17410	11130	15210	
ANNUAL RUNOFF (CFSM)	3.87	2.47	3.38	
ANNUAL RUNOFF (INCHES)	52.49	33.55	45.87	
10 PERCENT EXCEEDS	54	35	53	
50 PERCENT EXCEEDS	14	7.8	11	
90 PERCENT EXCEEDS	7.1	4.5	5.1	

# See Period of Record, partial year used in monthly statistics  
a Mar. 9 and 10, 1999  
b From temporary blockage of channel upstream from gage  
e Estimated

15238600 SPRUCE CREEK NEAR SEWARD

LOCATION.--Lat 60°04'10", long 149°27'08", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 21, T. 1 S., R. 1 W. (Seward A-7 quad), Kenai Peninsula Borough, Hydrologic Unit 19020202, on left bank 0.7 mi upstream from mouth at Resurrection Bay and 2.4 mi south of Seward.

DRAINAGE AREA.--9.26 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1967 to September 1979, annual maximum, water years 1980-90. October 1990 to current year.

REVISED RECORDS.--WDR AK-76-1: 1966-67(M), 1970(M), 1972(M). WDR AK-77-1: 1969(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 75 ft above sea level, from topographic map.

REMARKS.--Records fair, except estimated daily discharges and discharges below 7.0 ft<sup>3</sup>/s, which are poor. Precipitation gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 21, 1966, reached a stage of 10.1 ft, from floodmarks; discharge, 3,090 ft<sup>3</sup>/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s, and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Sep. 13	1415	2030*	6.93*	Sep. 24	2015	1530	6.61

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	14	9.5	34	6.2	2.6	0.00	27	157	170	91	88
2	73	13	8.8	26	5.8	2.2	0.00	23	151	152	89	93
3	76	13	8.3	21	5.6	1.9	0.00	22	156	155	90	88
4	162	12	8.0	20	7.7	2.1	0.00	24	162	146	86	69
5	244	12	7.7	26	6.6	e1.5	0.00	25	156	141	72	78
6	145	11	7.3	38	6.1	1.1	0.00	23	156	132	67	182
7	96	11	6.9	31	5.8	1.4	0.00	22	150	140	71	160
8	74	10	6.7	26	5.9	0.65	0.00	24	160	134	88	131
9	85	9.8	6.4	45	5.1	0.35	0.00	27	202	124	76	113
10	73	9.6	6.2	39	4.7	0.20	0.00	29	197	137	111	100
11	62	9.5	6.0	24	4.6	e0.10	0.00	32	192	152	152	95
12	51	9.3	5.7	18	e4.5	e0.10	0.00	34	164	127	139	191
13	46	9.0	e5.5	16	e4.0	e0.10	0.00	44	145	119	101	954
14	44	8.6	e5.0	19	e4.5	e0.10	0.00	51	195	115	80	811
15	39	8.3	e5.0	21	e3.5	e0.10	0.00	53	369	103	63	294
16	35	8.4	4.6	19	e3.5	e0.10	0.00	57	271	110	62	174
17	33	9.2	4.3	22	e3.0	0.00	0.00	79	234	143	66	146
18	31	11	4.0	23	e3.0	0.00	e0.50	118	228	178	60	119
19	27	12	3.7	19	e3.0	0.00	1.1	155	209	149	54	93
20	27	12	3.7	16	e2.5	0.00	2.6	158	163	151	88	75
21	27	13	3.7	14	e2.5	0.00	2.2	160	141	128	129	64
22	24	15	3.5	13	e2.0	0.00	2.1	154	135	125	254	56
23	20	17	3.1	12	e2.0	0.00	2.5	155	131	128	195	123
24	20	16	4.7	e11	1.6	0.00	3.0	158	131	160	135	735
25	18	14	8.7	e10	1.7	0.00	3.3	161	149	142	89	548
26	17	13	73	e9.5	2.4	0.00	4.1	162	184	226	72	339
27	16	12	67	9.0	2.1	0.00	5.9	170	141	167	73	220
28	16	12	29	8.0	2.9	0.00	11	152	133	107	73	140
29	15	11	22	7.5	---	0.00	23	165	166	117	79	104
30	14	10	25	7.0	---	0.00	32	169	201	103	95	104
31	14	---	24	6.5	---	0.00	---	165	---	97	116	---
TOTAL	1716	345.7	387.0	610.5	112.8	14.60	93.30	2798	5329	4278	3016	6487
MEAN	55.4	11.5	12.5	19.7	4.03	0.47	3.11	90.3	178	138	97.3	216
MAX	244	17	73	45	7.7	2.6	32	170	369	226	254	954
MIN	14	8.3	3.1	6.5	1.6	0.00	0.00	22	131	97	54	56
AC-FT	3400	686	768	1210	224	29	185	5550	10570	8490	5980	12870
CFSM	5.98	1.24	1.35	2.13	0.44	0.05	0.34	9.75	19.2	14.9	10.5	23.4
IN.	6.89	1.39	1.55	2.45	0.45	0.06	0.37	11.24	21.41	17.19	12.12	26.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)#

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
MEAN	84.9	36.3	16.1	11.0	9.52	3.92	12.3	73.0	202	191	148	171	333	129	51.1	46.1	46.6	15.3	35.6	135	318	371	323	372	1970	1977	1970	2001	1994	1970	1969	1993	2001	1977	1977	1995	
MAX	333	129	51.1	46.1	46.6	15.3	35.6	135	318	371	323	372	1970	1977	1970	2001	1994	1970	1969	1993	2001	1977	1977	1995	1970	1977	1970	2001	1994	1970	1969	1993	2001	1977	1977	1995	
MIN	17.0	9.40	3.52	0.65	0.000	0.000	0.12	30.6	116	104	56.9	48.8	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997	1974	1997

# See Period of Record, partial year used in monthly statistics  
e Estimated

## 15238600 SPRUCE CREEK NEAR SEWARD—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002#	
ANNUAL TOTAL	34411.0		25187.90			
ANNUAL MEAN	94.3		69.0		79.6	
HIGHEST ANNUAL MEAN					123 1977	
LOWEST ANNUAL MEAN					50.6 1996	
HIGHEST DAILY MEAN	655	Jul 20	954	Sep 13	1650	Oct 11 1969
LOWEST DAILY MEAN	2.8	Apr 2	a0.00	Mar 17	b0.00	Mar 1 1969
ANNUAL SEVEN-DAY MINIMUM	3.4	Mar 27	0.00	Mar 17	0.00	Mar 1 1969
MAXIMUM PEAK FLOW			2030	Jun 19	c13600	Oct 11 1986
MAXIMUM PEAK STAGE			6.93	Sep 13	d13.96	Oct 11 1986
INSTANTANEOUS LOW FLOW					0.00	Mar 1 1969
ANNUAL RUNOFF (AC-FT)	68250		49960		57630	
ANNUAL RUNOFF (CFSM)	10.2		7.45		8.59	
ANNUAL RUNOFF (INCHES)	138.24		101.19		116.73	
10 PERCENT EXCEEDS	275		162		206	
50 PERCENT EXCEEDS	24		24		33	
90 PERCENT EXCEEDS	5.5		0.10		1.4	

# See Period of Record, partial year used in monthly statistics

a No flow Mar. 17 to Apr. 17

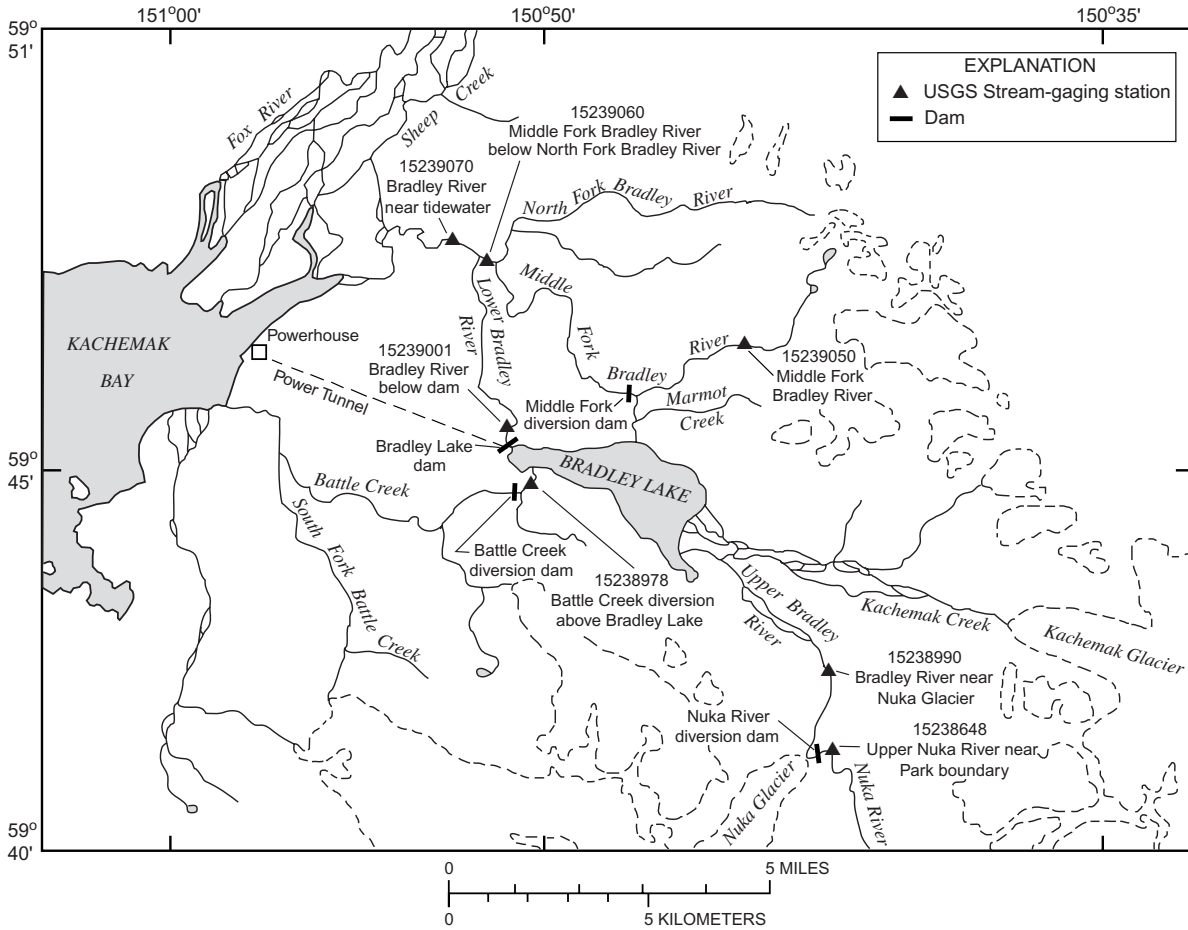
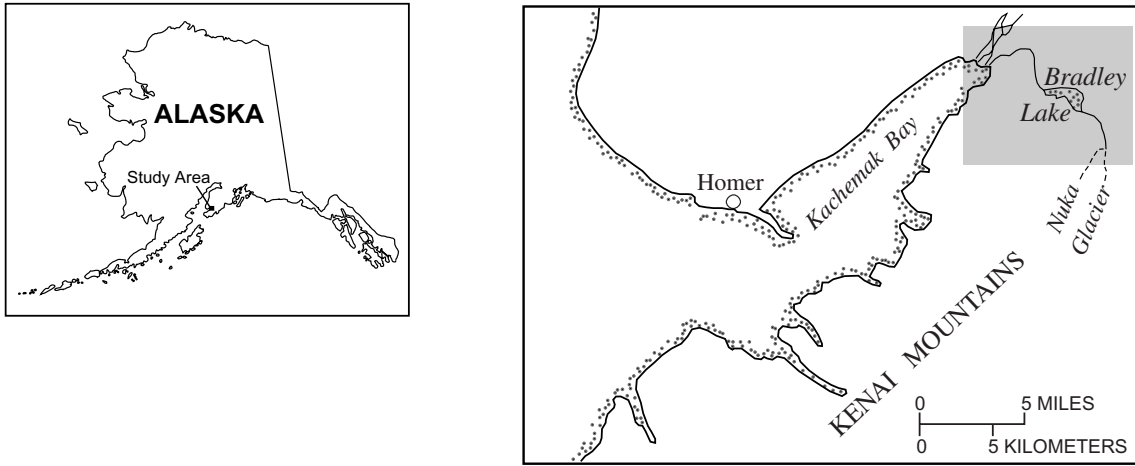
b No flow many days in water years 1969, 1971-76, 1992, 1996, 1999, and 2002

c Slope-area measurement of the release of water temporarily stored behind a

debris-avalanche dam. Inflow into the ponded area was 5,420 ft<sup>3</sup>/s, from a

slope-area measurement made about 0.3 mi upstream at a site with a drainage area of 8.98 mi<sup>2</sup>

d From floodmarks



Location of the Bradley Lake Hydroelectric Project area.



## 15238648 UPPER NUKA RIVER NEAR PARK BOUNDARY NEAR HOMER

LOCATION.--Lat 59°41'04", long 150°42'12" (Seldovia C-2 quad), Kenai Peninsula Borough, Hydrologic Unit 19020202, on left bank, 0.4 mi downstream from terminus of Nuka Glacier, 4.9 mi southeast of Bradley Lake, and 29 mi east of Homer, Alaska.

DRAINAGE AREA.--Indeterminate. Prior to July 29, 1990, drainage area was about 3 mi<sup>2</sup> and varied according to position of glacier terminus.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1980-81, prior to shift in glacier terminus; September 1984 to current year. Records prior to July 29, 1990, are not equivalent. Published as "Upper Nuka River near Homer" prior to October 1989. Low-flow records not equivalent prior to November 1987 because most low-flow measurements were made at site 0.5 mi downstream.

REVISED RECORDS.--WDR AK-89-1: 1985 (M), 1986-88.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,300 ft above sea level, from topographic map.

REMARKS.--Records fair except estimated daily discharges, which are poor. Water is diverted, 300 ft upstream from gage, into Bradley River drainage since July 29, 1990. Precipitation gage and air temperature recorder at station; daily values of precipitation and air temperature are available from the computer files of the Alaska District. GOES satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	e1.2	e.60	e.30	e.00	e.00	.00	e.00	e2.8	e80	38	23
2	3.6	e1.1	e.50	e.20	e.00	e.00	.00	e.00	e3.6	e70	36	28
3	4.8	e1.1	e.50	e.10	e.00	e.00	.00	e.00	e4.5	e70	43	25
4	6.7	e1.1	e.40	e.00	e.00	e.00	.00	e.00	e6.0	e70	34	23
5	6.1	e1.0	e.40	e.00	e.00	e.00	.00	e.00	e8.0	e70	31	25
6	5.2	e1.0	e.30	e.00	e.00	e.00	.00	e.00	e11	e70	32	26
7	4.1	e1.0	e.30	e.00	e.00	e.00	.00	e.00	e15	e70	36	23
8	3.4	e1.0	e.20	e.00	e.00	e.00	.00	e.00	e20	e70	36	21
9	e4.0	e.90	e.20	e.00	e.00	e.00	.00	e.00	e50	e80	29	20
10	e3.6	e.90	e.20	e.00	e.00	e.00	.00	e.00	e40	e80	27	18
11	2.8	e.90	e.10	e.00	e.00	.00	.00	e.00	e30	e70	32	15
12	e2.7	e.80	e.10	e.00	e.00	.00	.00	e.00	e25	e70	36	24
13	2.7	e.80	e.00	e.00	e.00	.00	.00	e.10	e20	e70	37	134
14	2.5	e.80	e.00	e.00	e.00	.00	.00	e.10	e30	e70	33	117
15	2.3	e.80	e.00	e.00	e.00	.00	.00	e.10	e60	e70	25	61
16	4.2	e.80	e.00	e.00	e.00	.00	.00	e.20	e70	e70	27	49
17	3.0	e1.0	e.00	e.00	e.00	.00	.00	e.20	e70	e70	30	33
18	2.3	e2.5	e.00	e.00	e.00	.00	.00	e.20	e70	77	30	24
19	e2.1	e3.0	e.00	e.00	e.00	.00	.00	e.20	e60	84	26	22
20	e2.0	e2.4	e.00	e.00	e.00	.00	.00	e.30	e60	88	29	19
21	e1.8	e2.0	e.00	e.00	e.00	.00	.00	e.30	e60	87	37	15
22	e1.7	e1.6	e.00	e.00	e.00	.00	.00	e.30	e60	73	47	15
23	e1.6	e1.4	e.00	e.00	e.00	.00	.00	e.40	e60	61	39	31
24	e1.5	e1.2	e.00	e.00	e.00	.00	.00	e.50	e60	62	29	87
25	e1.3	e1.1	e.00	e.00	e.00	.00	.00	e.60	e60	48	25	105
26	e1.2	e.90	e.20	e.00	e.00	.00	.00	e.70	e70	61	22	93
27	e1.1	e.80	e.20	e.00	e.00	.00	.00	e.90	e90	58	22	55
28	e1.1	e.70	e.10	e.00	e.00	.00	.00	e1.1	e70	43	22	41
29	e1.2	e.70	e.10	e.00	---	.00	.00	e1.3	e70	43	22	34
30	e1.2	e.60	e.30	e.00	---	.00	.00	e1.7	e70	49	24	28
31	e1.2	---	e.40	e.00	---	.00	---	e2.2	---	46	23	---
TOTAL	87.4	35.10	5.10	0.60	0.00	0.00	0.00	11.40	1325.9	2100	959	1234
MEAN	2.82	1.17	.16	.019	.000	.000	.000	.37	44.2	67.7	30.9	41.1
MAX	6.7	3.0	.60	.30	.00	.00	.00	2.2	90	88	47	134
MIN	1.1	.60	.00	.00	.00	.00	.00	.00	2.8	43	22	15
AC-FT	173	70	10	1.2	.00	.00	.00	23	2630	4170	1900	2450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)#

	2001	1998	2000	1995	1994	1991	1991	1996	1999	1999	1998	2002
MEAN	2.97	1.57	.13	.033	.13	.000	.003	.66	28.9	39.8	18.7	13.0
MAX	5.86	6.45	.83	.16	1.56	.000	.015	2.73	209	272	53.1	41.1
(WY)	2001	1998	2000	1995	1994	1991	1991	1996	1999	1999	1998	2002
MIN	.000	.000	.000	.000	.000	.000	.000	.000	1.06	2.96	.97	1.72
(WY)	1992	1992	1991	1991	1991	1991	1992	1998	1992	1991	1991	1991

# See Period of Record and Remarks. Not adjusted to account for changes in drainage area  
e Estimated

15238648 UPPER NUKA RIVER NEAR PARK BOUNDARY NEAR HOMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002#	
ANNUAL TOTAL	935.90		5758.50			
ANNUAL MEAN	2.56		15.8		8.87	
HIGHEST ANNUAL MEAN					a45.6	1999
LOWEST ANNUAL MEAN					1.09	1991
HIGHEST DAILY MEAN	200	Jul 19	134	Sep 13	335	Jul 4 1999
LOWEST DAILY MEAN	b.00	Jan 3	c.00	Dec 13	d.00	Nov 3 1990
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 3	.00	Dec 13	.00	Nov 3 1990
MAXIMUM PEAK FLOW			219	Sep 24	451	Jul 4 1999
MAXIMUM PEAK STAGE			3.58	Sep 24	4.30	Jul 4 1999
ANNUAL RUNOFF (AC-FT)	1860		11420		6420	
10 PERCENT EXCEEDS	6.3		61		13	
50 PERCENT EXCEEDS	.20		.80		.15	
90 PERCENT EXCEEDS	.00		.00		.00	

PRIOR TO REGULATION AND DIVERSION OF NUKA RIVER

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1989, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	47.6	7.01	2.83	1.48	.49	.21	.22	23.8	34.7	141	180	131
MAX (WY)	72.0 1987	24.9 1987	9.00 1987	5.79 1985	2.24 1985	.87 1985	.72 1985	117 1986	81.2 1989	307 1989	432 1989	321 1989
MIN (WY)	3.84 1989	.024 1989	.000 1989	.000 1989	.000 1988	.000 1988	.000 1988	.016 1987	.76 1987	6.41 1988	12.1 1986	7.08 1988

SUMMARY STATISTICS

WATER YEARS 1985 - 1989#

ANNUAL MEAN	47.9
HIGHEST ANNUAL MEAN	96.2 1989
LOWEST ANNUAL MEAN	8.60 1988
HIGHEST DAILY MEAN	1240 Aug 25 1989
LOWEST DAILY MEAN	f.00 May 6 1987
ANNUAL SEVEN-DAY MINIMUM	.00 May 6 1987
INSTANTANEOUS PEAK FLOW	g1630 Aug 25 1989
INSTANTANEOUS PEAK STAGE	5.47 Aug 25 1989
ANNUAL RUNOFF (AC-FT)	34700
10 PERCENT EXCEEDS	183
50 PERCENT EXCEEDS	1.1
90 PERCENT EXCEEDS	.00

- # See Period of Record and Remarks. Not adjusted to account for changes in drainage area
- a Diversion dam failed Jun. 17, 1999; repaired Sep. 25, 1999
- b From Jan. 3 - 13, Jan. 23 to June 2 and Dec. 13 - 25
- c From Dec. 13 - 25 and Jan. 4 to May 12
- d No flow most days during winter
- f No flow many days each year since 1987 during winter through Jun. See Period of Record for remark on low-flow records
- g From rating curve extended above 380 ft<sup>3</sup>/s

## 15238978 BATTLE CREEK DIVERSION ABOVE BRADLEY LAKE NEAR HOMER

LOCATION.--Lat 59°44'45", long 150°50'22", in SW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 17, T. 5 S., R. 9 W. (Seldovia C-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on right bank 0.6 mi upstream from Bradley Lake and 25 mi east of Homer.

DRAINAGE AREA.--0.95 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,350 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. The entire flow of Battle Creek at the station has been diverted into Bradley Lake since October 1991.

EXTREMES FOR CURRENT YEAR.-- Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximums (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sept. 13	0845	73	6.48	Sept. 24	1430	90*	6.74*

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	0.0	e0.0	e0.0	0.0	0.0	0.0	e0.10	11	18	4.8	2.6
2	2.4	0.0	e0.0	e0.0	0.0	0.0	0.0	e0.10	9.3	16	5.1	2.1
3	5.7	0.0	e0.0	e0.0	0.0	0.0	0.0	e0.10	8.0	12	5.0	1.9
4	15	0.0	e0.0	e0.0	0.0	0.0	0.0	e0.10	8.1	14	4.9	1.6
5	14	0.0	e0.0	e0.0	0.0	0.0	0.0	e0.10	8.1	12	4.9	2.7
6	7.6	0.0	e0.0	e0.0	0.0	0.0	0.0	0.16	6.5	19	6.7	3.2
7	4.9	0.0	e0.0	e0.0	0.0	0.0	0.0	0.17	6.8	21	5.7	2.7
8	3.6	e0.0	e0.0	e0.0	0.0	0.0	0.0	0.24	9.1	13	4.4	2.2
9	5.8	e0.0	e0.0	e0.10	0.0	0.0	0.0	0.37	24	11	4.6	1.6
10	4.7	0.0	e0.0	0.28	0.0	0.0	0.0	0.33	16	11	5.2	1.4
11	2.7	0.0	e0.0	0.14	0.0	0.0	0.0	0.27	11	9.2	5.7	1.1
12	2.2	0.0	e0.0	0.03	0.0	0.0	0.0	0.30	8.4	11	6.2	1.7
13	1.9	0.0	e0.0	0.0	0.0	0.0	0.0	0.37	6.9	15	5.9	52
14	1.8	0.0	e0.0	0.0	0.0	0.0	0.0	0.48	8.4	12	4.6	28
15	1.6	0.0	e0.0	0.0	0.0	0.0	0.0	0.61	14	10	3.4	11
16	1.3	0.0	e0.0	0.0	0.0	0.0	0.0	0.71	17	8.6	3.1	6.0
17	0.95	0.0	e0.0	0.07	0.0	0.0	0.0	0.92	16	8.6	3.0	14
18	e0.80	0.0	e0.0	0.25	0.0	0.0	0.0	1.5	15	13	2.9	5.8
19	e0.60	0.13	e0.0	0.15	0.0	0.0	0.0	2.2	14	12	2.8	3.8
20	e0.40	0.32	e0.0	0.07	0.0	0.0	0.0	2.8	10	11	6.9	2.7
21	e0.30	0.57	e0.0	0.01	0.0	0.0	0.0	3.4	9.5	15	5.6	2.0
22	e0.20	0.51	e0.0	0.0	0.0	0.0	0.0	4.7	8.7	22	3.8	1.7
23	e0.15	0.37	e0.0	0.0	0.0	0.0	0.0	8.3	10	18	3.4	4.6
24	e0.10	0.15	e0.0	0.0	0.0	0.0	0.0	13	14	14	2.6	43
25	e0.08	0.03	e0.0	0.0	0.0	0.0	0.0	9.6	12	8.9	2.3	20
26	e0.06	0.0	e0.0	0.0	0.0	0.0	0.0	8.5	12	9.7	2.1	9.4
27	e0.04	0.0	e0.0	0.0	0.0	0.0	0.0	11	16	7.3	1.7	5.8
28	e0.02	0.0	e0.0	0.0	0.0	0.0	0.0	12	12	5.5	1.5	3.8
29	e0.02	0.0	e0.0	0.0	---	0.0	e0.10	11	11	4.9	1.6	3.2
30	0.0	0.0	e0.0	0.0	---	0.0	e0.10	12	15	4.6	2.4	2.9
31	0.0	---	e0.0	0.0	---	0.0	---	13	---	5.2	2.5	---
TOTAL	81.62	2.08	0.0	1.10	0.0	0.0	0.20	118.43	347.8	372.5	125.3	244.5
MEAN	2.633	0.069	0.000	0.035	0.000	0.000	0.007	3.820	11.59	12.02	4.042	8.150
MAX	15	0.57	0.00	0.28	0.00	0.00	0.10	13	24	22	6.9	52
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	6.5	4.6	1.5	1.1
AC-FT	162	4.1	0.00	2.2	0.00	0.00	0.4	235	690	739	249	485
CFSM	2.77	0.07	0.00	0.04	0.00	0.00	0.01	4.02	12.2	12.6	4.25	8.58
IN.	3.20	0.08	0.00	0.04	0.00	0.00	0.01	4.64	13.62	14.59	4.91	9.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)#

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
MEAN	2.573	0.958	0.169	0.040	0.113	0.002	0.127	2.651	13.97	11.58	5.886	7.139
MAX	5.84	2.83	1.22	0.19	0.48	0.015	0.67	7.67	23.5	20.1	14.5	16.9
(WY)	1994	1998	2000	1995	1994	1998	1997	1993	1998	2001	2001	1995
MIN	0.21	0.009	0.000	0.000	0.000	0.000	0.000	0.21	5.55	1.83	0.094	0.91
(WY)	1997	2000	1996	1996	1996	1994	1999	1999	1996	1996	1996	1992

# See Period of Record and Remarks, partial years used in monthly statistics  
e Estimated

## 15238978 BATTLE CREEK DIVERSION ABOVE BRADLEY LAKE NEAR HOMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002#	
ANNUAL TOTAL	1912.39		1293.53			
ANNUAL MEAN	5.239		3.544		3.828	
HIGHEST ANNUAL MEAN					5.34 1998	
LOWEST ANNUAL MEAN					1.23 1996	
HIGHEST DAILY MEAN					104 Sep 20 1995	
LOWEST DAILY MEAN	57	Jul 19	a0.00	Oct 30	b0.00	Jun 3 1992
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 23	0.00	Oct 30	0.00	Jan 11 1993
MAXIMUM PEAK FLOW			90	Sep 24	134	Sep 20 1995
MAXIMUM PEAK STAGE			6.74	Sep 24	7.32	Sep 20 1995
MAXIMUM PEAK STAGE					c8.09	May 20 1999
ANNUAL RUNOFF (AC-FT)	3790		2570		2770	
ANNUAL RUNOFF (CFSM)	5.52		3.73		4.03	
ANNUAL RUNOFF (INCHES)	74.89		50.65		54.74	
10 PERCENT EXCEEDS	18		12		13	
50 PERCENT EXCEEDS	0.03		0.10		0.30	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

# See Period of Record and Remarks, partial years used in monthly statistics

a No flow many days during the winter

b No flow many days most winters, and Jun. 3, 1992 (observation), Aug. 4, Aug. 5, Aug. 9, and Aug. 14 to Sept. 11, 1996

c Backwater from ice jam

## 15238990 UPPER BRADLEY RIVER NEAR NUKA GLACIER NEAR HOMER

LOCATION.--Lat 59°42'02", long 150°42'09", (Seldovia C-2 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on left bank 1.0 mi downstream from Nuka Glacier terminus, 2.7 mi upstream from confluence with Kachemak Creek, 3.7 mi southeast of Bradley Lake, and 29 mi east of Homer. Prior to July 22, 1991 at site 0.2 mi downstream.

DRAINAGE AREA.--Indeterminate. Prior to July 29, 1990, drainage area was about 10 mi<sup>2</sup> and varied according to position of glacier terminus.

PERIOD OF RECORD.--October 1979 to current year. Prior to October 1989, published as Upper Bradley River near Homer.

REVISED RECORDS.--WDR AK-86-1: 1980-85, WRD AK-96-1: 1991-95.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,250 ft above sea level, from topographic map. Prior to July 22, 1991 at site 0.2 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow diverted from Upper Nuka River into Upper Bradley River drainage since July 29, 1990. Air temperature recorder at station, daily values of air temperature available from the computer files of the Alaska District. GOES satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	e13	e2.6	e1.8	e.20	e.00	e.00	e.20	e65	300	432	334
2	75	e12	e2.5	e1.6	e.20	e.00	e.00	e.20	e80	284	458	444
3	211	e11	e2.3	e1.4	e.00	e.00	e.00	e.40	e95	273	446	361
4	500	e10	e2.1	e1.2	e.00	e.00	e.00	e.40	e110	309	419	310
5	467	e9.5	e2.0	e1.0	e.00	e.00	e.00	e.40	e140	322	376	399
6	271	e9.0	e1.8	e1.0	e.00	e.00	e.00	e.40	161	322	426	392
7	183	e8.5	e1.4	e.80	e.00	e.00	e.00	e.60	170	328	422	353
8	142	e8.0	e1.2	e.80	e.00	e.00	e.00	e.60	201	301	383	282
9	147	e7.5	e1.0	e.60	e.00	e.00	e.00	e.80	262	284	393	257
10	99	e7.0	e1.0	e.60	e.00	e.00	e.00	e1.0	207	289	416	223
11	72	e6.5	e.80	e.40	e.00	e.00	e.00	e1.0	178	314	486	174
12	61	e6.5	e.60	e.20	e.00	e.00	e.00	e1.5	146	306	533	446
13	48	e6.0	e.60	e.20	e.00	e.00	e.00	e1.5	132	290	536	1320
14	42	e5.5	e.40	e.20	e.00	e.00	e.00	e2.0	187	271	429	902
15	37	e5.5	e.40	e.20	e.00	e.00	e.00	e2.0	253	291	382	564
16	34	e5.0	e.20	e.20	e.00	e.00	e.00	e2.5	283	294	406	352
17	32	e4.8	e.20	e.20	e.00	e.00	e.00	e3.0	278	333	391	388
18	29	e5.0	e.00	e1.0	e.00	e.00	e.00	e4.0	290	355	357	241
19	27	e5.5	e.00	e.80	e.00	e.00	e.00	e5.0	278	357	327	199
20	e25	e6.0	e.00	e.60	e.00	e.00	e.00	e6.5	233	380	473	142
21	e23	e7.0	e.00	e.60	e.00	e.00	e.00	e8.0	227	411	565	112
22	e21	e7.0	e.00	e.40	e.00	e.00	e.00	e10	233	521	656	145
23	e20	e6.0	e.00	e.40	e.00	e.00	e.00	e12	236	581	534	417
24	e19	e5.5	e.00	e.20	e.00	e.00	e.00	e14	250	610	423	1100
25	e18	e4.8	e1.0	e.20	e.00	e.00	e.00	e17	265	504	361	832
26	e19	e4.4	e3.0	e.20	e.00	e.00	e.00	e21	276	523	303	643
27	e20	e4.0	e2.8	e.20	e.00	e.00	e.00	e26	361	494	278	431
28	e20	e3.5	e2.6	e.20	e.00	e.00	e.00	e32	293	431	304	338
29	e18	e3.2	e2.3	e.20	---	e.00	e.20	e38	286	499	294	270
30	e16	e2.9	e2.1	e.20	---	e.00	e.20	e46	319	468	339	216
31	e15	---	e2.0	e.20	---	e.00	---	e55	---	447	319	---
TOTAL	2830	200.1	36.90	17.80	0.40	0.00	0.60	313.00	6495	11692	12867	12587
MEAN	91.3	6.67	1.19	.57	.014	.000	.020	10.1	216	377	415	420
MAX	500	13	3.0	1.8	.20	.00	.20	55	361	610	656	1320
MIN	15	2.9	.00	.20	.00	.00	.00	.20	65	271	278	112
AC-FT	5610	397	73	35	.8	.00	1.2	621	12880	23190	25520	24970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)#

	MEAN	73.7	14.8	2.65	.56	.39	.000	.073	19.9	220	404	442	362
MAX	213	38.4	19.4	4.75	4.35	.000	.55	93.6	363	763	597	851	
(WY)	1994	1998	2000	2001	1994	1991	1993	1993	2001	2001	1993	1995	
MIN	12.9	2.39	.000	.000	.000	.000	.000	.008	94.4	106	293	117	
(WY)	1997	2000	1995	1991	1991	1991	1992	1998	1999	1999	1998	1992	

# See Period of Record and Remarks. Not adjusted to account for changes in drainage area  
e Estimated

15238990 UPPER BRADLEY RIVER NEAR NUKA GLACIER NEAR HOMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002#	
ANNUAL TOTAL	66068.30		47039.80			
ANNUAL MEAN	181		129		129	
HIGHEST ANNUAL MEAN					181 2001	
LOWEST ANNUAL MEAN					91.1 1998	
HIGHEST DAILY MEAN	1330	Jul 19	1320	Sep 13	a3600	Sep 21 1995
LOWEST DAILY MEAN	b.00	Feb 9	c.00	Dec 18	d.00	Dec 5 1990
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 9	.00	Dec 18	.00	Dec 5 1990
MAXIMUM PEAK FLOW			1970	Sep 24	f4100	Sep 20 1995
MAXIMUM PEAK STAGE			13.78	Sep 24	g15.10	Sep 20 1995
ANNUAL RUNOFF (AC-FT)	131000		93300		93500	
10 PERCENT EXCEEDS	672		418		420	
50 PERCENT EXCEEDS	6.5		5.5		5.2	
90 PERCENT EXCEEDS	.00		.00		.00	

PRIOR TO DIVERSION FROM UPPER NUKA RIVER

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1989, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	106	22.8	10.2	4.67	1.74	1.35	1.29	38.3	161	290	349	292
MAX	279	75.7	54.6	15.1	4.82	6.50	4.67	92.0	270	458	595	673
(WY)	1980	1980	1987	1981	1981	1984	1981	1986	1988	1981	1986	1982
MIN	26.3	2.60	.50	.000	.000	.000	.000	.33	102	149	133	63.1
(WY)	1986	1988	1989	1989	1989	1989	1986	1987	1985	1985	1985	1983

SUMMARY STATISTICS

WATER YEARS 1980 - 1989 #

ANNUAL MEAN	107	
HIGHEST ANNUAL MEAN	154	1986
LOWEST ANNUAL MEAN	49.6	1985
HIGHEST DAILY MEAN	1890	Aug 27 1986
LOWEST DAILY MEAN	d.00	Dec 25 1979
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 25 1979
INSTANTANEOUS PEAK FLOW	h2530	Oct 10 1986
INSTANTANEOUS PEAK STAGE	i9.86	Oct 10 1986
ANNUAL RUNOFF (AC-FT)	77650	
10 PERCENT EXCEEDS	338	
50 PERCENT EXCEEDS	15	
90 PERCENT EXCEEDS	.50	

- # See Period of Record and Remarks. Not adjusted to account for changes in drainage area
- a Estimated discharge, but may have been higher during period of no gage-height record, Sep. 21 to Sep. 22, 1995
- b From Feb. 9 to May 14 and Dec. 18 - 24
- c From Dec. 18 - 24 and Feb. 3 to Apr. 27
- d No flow in winter most years
- f From rating curve extended above 400 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow
- g From floodmarks
- h From rating curve extended above 440 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow
- i Site and datum then in use

## 15239000 BRADLEY RIVER NEAR HOMER

LOCATION.--Lat 59°45'30", long 150°51'02", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 8, T. 5 S., R. 9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, about 1,300 ft downstream from Bradley Lake dam, 3.3 mi upstream from confluence with Middle Fork Bradley River, and 26 mi northeast of Homer.

DRAINAGE AREA.--About 65 mi<sup>2</sup> since July and August 1990, when additional water was diverted into the basin. Prior drainage area was about 54 mi<sup>2</sup>.

PERIOD OF RECORD.--July to August 1955, October 1957 to September 1990 (discharge). October 1991 to current year (beginning month reservoir contents and monthly discharges).

REVISED RECORDS.--WSP 2136: 1960 (M), 1965. WDR AK-77-1: 1958, 1961, 1963 (M), 1966, 1967, 1970, 1972, 1974, 1976.

GAGE.--Nonrecording gage. Datum of gage is 1,054.16 ft above sea level (levels of dam-site survey for Alaska Power Authority). Totalizing flow meters on penstocks to two turbines in Bradley powerhouse. Lake-level sensor. July 13-22, 1955, non-recording lake gage at site 1 mi upstream and July 23 to August 5, 1955, at site 3 mi upstream at different datum. Prior to November 4, 1980, and April 29 to October 5, 1986, water-stage recorder at site 500 ft upstream at different datum and November 4, 1980 to April 28, 1986, water-stage recorder 1,300 ft upstream at different datum. April 29, 1986 to September 30, 1989, water-stage recorder at present site and datum.

REMARKS.--Reservoir is formed by an earthen dam with impermeable core and concrete face at the outlet of Bradley Lake. Construction began November 1986 and was completed in April 1991. Total and usable capacities below the spillway crest of 1,180 ft are 547,500 and 284,200 acre-ft, respectively. Reservoir is used for power. Discharge released through turbines is computed using totalizing flow meters; release flow enters Kachemak Bay and is not returned to stream. Spill, dam seepage, and fish-water bypass are measured at Bradley River below Dam (15239001) gage. Reservoir capacity table furnished by the Alaska Energy Authority.

COOPERATION.--Reservoir elevations and power generation discharge provided by the Homer Electric Association, for the Alaska Energy Authority.

AVERAGE DISCHARGE.--43 years (water years 1958 to 1989, and 1992 to current year), 454 ft<sup>3</sup>/s, 328,900 acre-ft/yr. The inflow diversions from Middle Fork Bradley River and Battle Creek into the reservoir are excluded. Flow diverted from Upper Nuka River into Upper Bradley since July 29, 1990 was not measurable and is included in the following tabulations.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 549,400 acre-ft, October 1, 1991, elevation 1180.5 ft; minimum contents observed, 246,600 acre-ft, April 23, 1997, elevation 1069.3 ft. Maximum computed discharge, 8,800 ft<sup>3</sup>/s, October 10, 1986, gage height, 10.90 ft from floodmarks, site and datum then in use. Maximum discharge, September 21-22, 1995 was probably higher, as indicated by extremes for period of record on these dates for other sites in the Bradley River basin; minimum daily, about 9.0 ft<sup>3</sup>/s, December 7, 1986, result of power tunnel construction at dam site.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 529,400 acre-ft, October 1, elevation 1175.4 ft; minimum contents observed, 333,900 acre-ft, May 21 and May 22, elevation 1113.7 ft.

BEGINNING OF MONTH RESERVOIR ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS, IN ACRE FEET  
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	ELEVATION	CONTENTS	CHANGE IN CONTENTS
Oct 1	1,175.4	529,400	--
Nov 1	1,169.5	508,300	-21,100
Dec 1	1,164.5	490,500	-17,800
Jan 1	1,157.8	466,700	-23,800
Feb 1	1,151.9	445,800	-20,900
Mar 1	1,142.5	415,900	-29,900
Apr 1	1,132.7	385,700	-30,200
May 1	1,120.5	350,800	-34,900
Jun 1	1,117.0	342,000	-8,800
Jul 1	1,126.5	366,600	24,600
Aug 1	1,142.3	415,300	48,700
Sep 1	1,152.0	446,100	30,800
Oct 1	1,164.3	489,800	43,700
		CAL YR 2001	+97,000
		WTR YR 2002	-39,600

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
MEAN VALUES

MONTH	CHANGE IN CONTENTS	POWER GENERATION	BRADLEY RIVER BELOW DAM 15239001	MIDDLE FORK BRADLEY RIVER 15239050	BATTLE CREEK DIVERSION 15238978	BRADLEY RIVER 15239000
OCT	-343	758	26.4	38.6	2.63	400
NOV	-299	388	31.4	8.47	0.069	112
DEC	-387	496	40.4	6.11	0.000	143
JAN	-340	424	40.4	5.47	0.035	119
FEB	-538	596	44.0	3.70	0.000	97.9
MAR	-491	485	42.9	3.34	0.000	33.1
APR	-586	555	39.2	2.91	0.007	20.0e
MAY	-143	681	11.3	25.0	3.82	505
JUN	+413	751	3.10	104	11.6	1,050
JUL	+792	649	17.2	177	12.0	1,270
AUG	+501	598	55.8	116	4.04	1,040
SEP	+734	575	55.4	100	8.15	1,260
CAL YR 2001	+130	477	27.1	61.1	5.24	569
WTR YR 2002	-57	580	33.9	49.6	3.54	504

e Estimated

## 15239001 BRADLEY RIVER BELOW DAM NEAR HOMER

LOCATION.--Lat 59°45'30", long 150°51'02", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 8, T. 5 S., R. 9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on right bank about 1,300 ft downstream from Bradley Lake Dam, 3.3 mi upstream from Middle Fork Bradley River, and 26 mi northeast of Homer.

DRAINAGE AREA.--About 66 mi<sup>2</sup> since October 1991, when additional water was diverted into the basin. Prior drainage area was about 54 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to current year. Prior to 1990 water year, records are equivalent to "Bradley River near Homer" (station no. 15239000).

GAGE.--Water-stage recorder. Datum of gage is 1,054.16 ft above sea level (levels of dam-site survey for Alaska Power Authority).

REMARKS.--No estimated daily discharges. Records fair. Nuka River and Middle Fork Bradley River were diverted into Bradley Lake, upstream from dam, beginning July 29 and August 7, 1990, respectively. Reservoir began filling April 26, 1991. Water has been diverted out of the basin through the turbines since hydro-power generation began on June 28, 1991. Battle Creek was diverted into reservoir in October 1991. Rain gage and air temperature recorder at station, daily values of precipitation and air temperature available from the computer files of the Alaska District.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,450 ft<sup>3</sup>/s September 21, 1990, gage height, 7.11 ft; minimum, 0.00 ft<sup>3</sup>/s, from rating curve extended below 0.18 ft<sup>3</sup>/s, most likely ponded water, but no measurable flow, June 9 and June 10, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 95 ft<sup>3</sup>/s, August 24, gage height, 3.09 ft; minimum, 0.02 ft<sup>3</sup>/s, July 8., gage-height 1.62 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	29	38	42	43	43	42	9.9	4.0	0.32	39	79
2	5.3	27	40	40	43	43	42	4.5	3.9	0.32	40	81
3	5.9	27	40	40	43	42	41	9.2	3.6	0.11	40	81
4	5.9	27	40	40	43	42	41	18	3.6	0.09	40	81
5	5.6	27	40	40	43	42	41	26	3.5	0.08	46	81
6	5.5	27	40	41	42	42	41	27	3.4	0.06	48	81
7	5.5	27	40	40	42	42	41	23	3.6	0.05	48	81
8	8.0	31	40	42	43	42	39	27	3.8	0.04	51	81
9	6.0	34	40	41	42	43	40	23	4.1	16	50	81
10	19	33	40	41	42	45	40	19	3.5	21	51	81
11	47	33	40	40	44	45	41	27	3.3	15	50	81
12	41	33	40	40	42	45	41	28	3.2	13	50	83
13	34	33	40	40	50	45	41	23	3.1	13	49	60
14	29	33	43	40	46	44	41	8.7	3.3	16	49	46
15	22	33	40	40	46	44	41	4.7	3.4	23	49	58
16	27	33	40	40	46	44	41	5.0	3.4	23	51	56
17	29	33	40	40	45	43	41	5.2	3.3	24	52	33
18	29	34	40	40	44	43	41	5.0	3.3	20	52	24
19	29	33	40	40	44	43	41	5.0	3.2	17	52	29
20	29	33	41	40	44	43	40	4.8	3.4	22	52	32
21	28	33	41	40	44	43	39	4.7	7.5	22	47	33
22	33	33	41	40	45	43	38	5.0	3.0	17	52	33
23	42	32	40	40	44	43	38	4.8	2.9	14	52	22
24	46	32	40	40	44	43	38	4.6	2.9	14	64	9.1
25	45	32	41	40	44	42	38	4.5	2.9	21	75	1.1
26	45	32	43	40	44	42	37	4.4	4.7	26	80	27
27	44	32	42	40	45	42	38	4.3	0.21	31	80	57
28	44	32	41	40	46	42	38	4.0	0.16	41	80	57
29	37	32	41	40	---	42	34	4.0	0.15	42	81	57
30	34	32	41	41	---	42	21	4.2	0.16	40	81	57
31	34	---	41	43	---	42	---	4.1	---	40	80	---
TOTAL	820.0	942	1254	1251	1233	1331	1176	351.6	94.48	532.07	1731	1663.2
MEAN	26.45	31.40	40.45	40.35	44.04	42.94	39.20	11.34	3.149	17.16	55.84	55.44
MAX	47	34	43	43	50	45	42	28	7.5	42	81	83
MIN	5.3	27	38	40	42	42	21	4.0	0.15	0.04	39	1.1
AC-FT	1630	1870	2490	2480	2450	2640	2330	697	187	1060	3430	3300
CAL YR 2001	TOTAL	9895.19	MEAN	27.11	MAX	81	MIN	0.10	AC-FT	19630		
WTR YR 2002	TOTAL	12379.35	MEAN	33.92	MAX	83	MIN	0.04	AC-FT	24550		



## 15239050 MIDDLE FORK BRADLEY RIVER NEAR HOMER

LOCATION.--Lat 59°46'42", long 150°45'15", in NW¼ NE¼ sec.2, T.5 S., R.9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on left bank 6.0 mi upstream from mouth and 27 mi east of Homer.

DRAINAGE AREA.--9.25 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1979 to current year. Published as Bradley River tributary near Homer prior to October 1989.

REVISED RECORDS.-- WDR AK-86-1: 1980(P), 1981-82(M), 1984(M). WRD AK-2000-1: 1995-1997.

GAGE.--Water-stage recorder. Elevation of gage is 2,300 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Precipitation gage and air temperature recorder at station; daily values of air temperature and precipitation are available from the computer files of the Alaska District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximums (\*)

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jul 22	2000	334	8.25	Sept 24	1730	373*	8.33*

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	e12	e6.5	e6.0	e4.0	e3.6	e3.2	e3.2	60	171	134	81
2	38	e12	e6.5	e6.0	e3.8	e3.6	e3.2	e3.2	59	172	138	95
3	46	e11	e6.5	e6.0	e3.8	e3.4	e3.2	e3.4	62	163	142	86
4	84	e11	e6.0	e6.0	e3.8	e3.4	e3.2	e3.4	69	166	147	82
5	126	e11	e5.5	6.0	e3.8	e3.4	e3.2	e3.6	68	167	141	122
6	99	e10	e5.5	7.5	e3.8	e3.4	e3.2	e3.6	64	171	146	117
7	75	e10	e5.5	5.8	e3.8	e3.4	e3.0	e3.8	65	197	151	103
8	62	e9.5	e5.5	e6.0	e3.8	e3.4	e3.0	e4.0	76	179	127	79
9	58	e9.5	e5.5	e6.0	e3.8	e3.4	e3.0	e4.4	88	155	114	65
10	51	e9.0	e5.5	e6.0	e3.8	e3.4	e3.0	e4.8	80	156	113	54
11	49	e9.0	e5.5	e6.0	e3.8	e3.4	e3.0	e5.4	72	158	120	48
12	49	e8.5	e5.5	e6.0	e3.8	e3.4	e3.0	6.0	65	163	145	59
13	46	e8.5	e5.5	e6.0	e3.8	e3.4	e3.0	7.1	60	172	150	219
14	34	e8.0	e5.5	e6.0	e3.6	e3.4	e3.0	8.9	71	162	122	185
15	30	e8.0	e5.0	5.8	e3.6	e3.4	e3.0	9.2	118	155	107	124
16	e30	e8.0	e5.0	5.9	e3.6	e3.4	e3.0	9.5	148	152	101	99
17	31	e7.5	e5.0	5.7	e3.6	e3.4	e3.0	13	157	159	105	100
18	26	e7.5	e5.0	e7.0	e3.6	e3.4	e3.0	18	171	190	102	76
19	e23	e7.5	e5.0	e6.0	e3.6	e3.4	e3.0	26	161	200	99	62
20	e22	e7.5	e8.0	e5.5	e3.6	e3.2	e2.5	36	132	195	158	51
21	e20	e7.0	e8.0	e5.5	e3.6	e3.2	e2.5	40	115	220	157	44
22	e19	e7.0	e6.0	e5.0	e3.6	e3.2	e2.5	53	106	295	128	44
23	e18	e7.0	e5.5	e4.6	e3.6	e3.2	e2.5	71	111	286	110	85
24	e17	e7.0	e5.5	e4.6	e3.6	e3.2	e2.5	52	131	257	100	206
25	e16	e7.0	e8.0	e4.4	e3.6	e3.2	e2.5	50	137	197	87	206
26	e16	e7.0	e10	e4.2	e3.6	e3.2	e2.5	53	135	173	72	160
27	e15	e7.0	e8.0	e4.0	e3.6	e3.2	e2.5	55	142	149	66	112
28	e14	e7.0	e7.0	e4.0	e3.6	e3.2	e3.0	53	124	121	67	93
29	e14	e6.5	e6.0	e4.0	---	e3.2	e3.0	53	130	125	71	86
30	e13	e6.5	e6.0	e4.0	---	e3.2	e3.2	58	153	132	81	72
31	e13	---	e6.0	e4.0	---	e3.2	---	62	---	139	78	---
TOTAL	1197	254.0	189.5	169.5	103.6	103.4	87.4	776.5	3130	5497	3579	3015
MEAN	38.61	8.467	6.113	5.468	3.700	3.335	2.913	25.05	104.3	177.3	115.5	100.5
MAX	126	12	10	7.5	4.0	3.6	3.2	71	171	295	158	219
MIN	13	6.5	5.0	4.0	3.6	3.2	2.5	3.2	59	121	66	44
AC-FT	2370	504	376	336	205	205	173	1540	6210	10900	7100	5980
CFSM	4.17	0.92	0.66	0.59	0.40	0.36	0.31	2.71	11.3	19.2	12.5	10.9
IN.	4.81	1.02	0.76	0.68	0.42	0.42	0.35	3.12	12.59	22.11	14.39	12.13

e Estimated

## 15239050 MIDDLE FORK BRADLEY RIVER NEAR HOMER—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	43.58	16.73	8.438	5.747	4.646	3.620	3.296	16.72	95.62	161.4	143.6	104.2
MAX	144	34.5	33.4	17.0	9.32	7.17	4.42	44.5	162	221	204	220
(WY)	1987	1980	1987	1981	1981	1981	2001	1990	1998	2001	2001	1995
MIN	15.6	5.29	4.45	3.82	2.86	1.30	2.38	5.45	44.7	111	86.9	38.7
(WY)	1997	1985	1985	1991	1991	1986	1999	1987	1985	1996	1996	1992

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1980 - 2002	
ANNUAL TOTAL	22320.1		18101.9			
ANNUAL MEAN	61.15		49.59		50.94	
HIGHEST ANNUAL MEAN					63.8 1980	
LOWEST ANNUAL MEAN					34.6 1996	
HIGHEST DAILY MEAN	460	Jul 20	295	Jul 22	966	Sep 20 1995
LOWEST DAILY MEAN	a3.8	May 8	b2.5	Apr 20	c1.1	Mar 28 1986
ANNUAL SEVEN-DAY MINIMUM	3.9	May 5	2.5	Apr 20	1.1	Mar 28 1986
MAXIMUM PEAK FLOW			373		Sep 24	1470 Sep 20 1995
MAXIMUM PEAK STAGE			8.33		Sep 24	d8.86 Sep 20 1995
MAXIMUM PEAK STAGE			f9.58		Oct 16	g16.16 May 12 1998
ANNUAL RUNOFF (AC-FT)	44270		35910		36900	
ANNUAL RUNOFF (CFSM)	6.61		5.36		5.51	
ANNUAL RUNOFF (INCHES)	89.76		72.80		74.82	
10 PERCENT EXCEEDS	197		152		153	
50 PERCENT EXCEEDS	8.9		8.9		11	
90 PERCENT EXCEEDS	4.5		3.2		3.2	

- a May 8-11  
b Apr. 20-27  
c From Mar. 28 to Apr. 10, 1986  
d From recorded range in stage  
e Backwater from snow bridge collapse  
f Backwater from ice

## 15239060 MIDDLE FORK BRADLEY RIVER BELOW NORTH FORK BRADLEY RIVER NEAR HOMER

LOCATION.--Lat 59°47'54", long 150°51'48", in SE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> sec. 29, T. 4 S., R. 9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on left bank 100 ft upstream from confluence with the main stem Bradley River, 0.2 mi below the mouth of the North Fork Bradley River, 5.5 mi downstream from the Middle Fork Bradley River diversion dam, and 25 mi east of Homer.

DRAINAGE AREA.--24.8 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 200 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Water from upper Middle Fork Bradley River (15239050) is diverted into Bradley Lake at Middle Fork Bradley River diversion dam, located 5.5 mi upstream. Air temperature recorder at station, daily values of air temperature are available from the computer files of the Alaska District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	e20	e19	82	13	9.3	5.5	126	189	170	63	36
2	63	e19	e18	61	13	8.4	5.5	104	169	158	64	33
3	65	e19	e17	44	12	e8.0	5.5	78	156	139	65	34
4	91	19	e16	36	14	e7.5	5.5	60	154	135	62	30
5	101	18	e15	34	14	e7.0	5.5	54	152	125	57	31
6	90	18	e15	37	13	e7.0	5.6	56	134	131	54	38
7	78	17	e14	36	12	e6.5	5.7	56	138	129	53	35
8	70	17	e13	32	11	e6.5	5.8	62	177	111	49	32
9	86	16	e13	78	12	e6.0	5.8	83	248	95	46	30
10	79	16	e12	64	11	e6.0	5.7	85	202	99	47	28
11	69	16	12	44	11	e5.5	5.6	78	158	103	46	26
12	62	16	12	37	12	e5.5	5.5	83	140	109	51	28
13	58	15	11	30	12	5.5	5.4	96	126	109	52	91
14	54	14	11	31	15	6.0	5.4	116	152	93	47	92
15	49	14	10	31	13	6.8	5.4	115	250	86	42	68
16	43	13	9.6	28	12	6.7	5.3	122	253	86	39	54
17	42	17	9.0	36	11	6.6	5.2	157	228	89	39	74
18	45	34	8.8	34	10	6.5	5.7	198	211	101	38	61
19	39	32	8.5	29	9.4	6.4	6.8	233	189	94	38	51
20	36	34	8.1	25	e9.0	6.4	7.2	250	147	86	49	44
21	35	35	9.7	e24	e8.5	6.3	6.8	241	128	88	51	40
22	32	36	11	e22	8.3	6.3	6.8	261	115	116	41	37
23	e30	35	11	e21	8.1	6.2	7.1	272	113	104	38	46
24	29	30	9.6	e20	8.1	6.2	7.7	258	119	95	35	136
25	e26	27	22	e19	8.8	6.1	8.4	249	131	85	32	163
26	e23	e25	e32	e18	10	6.0	8.8	238	130	82	30	110
27	e23	e24	e55	e17	9.8	6.0	11	219	131	73	28	90
28	e24	e22	89	e16	10	5.8	20	200	125	60	27	78
29	e24	e21	62	16	---	5.7	55	196	132	60	27	71
30	23	e20	55	15	---	5.7	97	227	154	62	29	67
31	21	---	54	14	---	5.6	---	227	---	67	32	---
TOTAL	1585	659	662.3	1031	311.0	200.0	342.2	4800	4851	3140	1371	1754
MEAN	51.13	21.97	21.36	33.26	11.11	6.452	11.41	154.8	161.7	101.3	44.23	58.47
MAX	101	36	89	82	15	9.3	97	272	253	170	65	163
MIN	21	13	8.1	14	8.1	5.5	5.2	54	113	60	27	26
AC-FT	3140	1310	1310	2040	617	397	679	9520	9620	6230	2720	3480
CFSM	2.06	0.89	0.86	1.34	0.45	0.26	0.46	6.24	6.52	4.08	1.78	2.36
IN.	2.38	0.99	0.99	1.55	0.47	0.30	0.51	7.20	7.28	4.71	2.06	2.63

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)#

	1996	1997	1998	1999	2000	2001	2002	1996	1997	1998	1999	2000	2001	2002
MEAN	48.35	46.16	20.77	21.68	11.32	9.365	21.38	117.3	194.4	111.6	50.54	75.53		
MAX	75.4	96.3	53.5	75.3	16.7	20.7	36.4	155	277	193	120	116		
(WY)	2000	1998	2001	2001	1998	1998	1998	2002	2001	2001	2001	1997		
MIN	23.2	16.2	7.69	2.68	2.00	2.74	9.59	97.0	103	45.7	12.5	27.6		
(WY)	1997	2000	1997	1999	1999	1999	1999	2000	1997	1997	1996	2000		

## SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1996 - 2002#

ANNUAL TOTAL	30571.2	20706.5		
ANNUAL MEAN	83.76	56.73		61.92
HIGHEST ANNUAL MEAN				90.8
LOWEST ANNUAL MEAN				44.0
HIGHEST DAILY MEAN	342	Jun 29	272	May 23
LOWEST DAILY MEAN	a8.0	Apr 1	5.2	Apr 17
ANNUAL SEVEN-DAY MINIMUM	8.3	Mar 27	5.4	Apr 11
MAXIMUM PEAK FLOW			c308	May 23
MAXIMUM PEAK STAGE			10.88	May 23
ANNUAL RUNOFF (AC-FT)	60640	41070		44860
ANNUAL RUNOFF (CFSM)	3.38	2.29		2.50
ANNUAL RUNOFF (INCHES)	45.86	31.06		33.92
10 PERCENT EXCEEDS	229	139		158
50 PERCENT EXCEEDS	43	34		32
90 PERCENT EXCEEDS	11	6.4		5.8

# See Period of Record; partial years used in monthly statistics

a Apr. 1-2

b Feb. 5-12, 1999

c From rating curve extended above 50 ft<sup>3</sup>/s on basis of comparison of instantaneous discharge of Bradley River below Dam (15239001) and instantaneous discharge of Bradley River near Tidewater (15239070)

e Estimated

## 15239070 BRADLEY RIVER NEAR TIDEWATER NEAR HOMER

LOCATION.--Lat 59°48'06", long 150°52'58", in SE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 30, T. 4 S., R. 9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on right bank 0.7 mi upstream from mouth, 0.8 mi downstream from Middle Fork Bradley River, 4.3 mi downstream from Bradley Lake outlet and dam site, and 25 mi east of Homer.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--May 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 25 ft above sea level, from topographic map.

REMARKS.--Records good, except for estimated daily discharges, which are poor. Flow occasionally affected by high tides. Intermittent regulation during construction at the Bradley River dam site began in November 1986. Flow has been regulated since the reservoir began filling April 26, 1991. (See station 15239001.) Upper Nuka River was diverted into Upper Bradley River on July 29, 1990; flow from about 10 mi<sup>2</sup> of Middle Fork Bradley River upstream drainage has been seasonally diverted into the Bradley Lake reservoir since August 7, 1990. Battle Creek was diverted into the reservoir in October 1990. Water has been diverted out of the basin through the turbines since hydropower generation began June 28, 1991. Rain gage and air temperature recorder at station; daily values of precipitation and air temperature available from the computer files of the Alaska District. GOES satellite telemetry at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	55	e60	168	e65	53	e46	187	217	185	107	123
2	69	50	e60	132	64	51	46	133	199	174	108	122
3	71	48	e60	105	60	e50	46	100	183	150	109	122
4	98	48	e60	92	64	e50	e45	91	180	145	106	118
5	112	46	e60	91	62	e50	e45	93	178	133	105	120
6	100	46	e60	99	60	e50	45	103	158	139	106	127
7	86	e46	e60	98	59	e50	45	96	161	138	105	124
8	78	e44	e55	91	58	e50	44	104	203	117	104	121
9	95	e44	e55	187	e55	e50	45	127	278	110	101	120
10	96	e48	e55	162	e55	e50	45	118	231	127	102	118
11	124	e50	e55	114	e55	e50	46	116	183	125	100	115
12	112	e50	e55	123	e55	e50	e47	125	163	129	106	118
13	94	e50	e55	94	e60	e50	e47	134	145	128	108	172
14	91	e48	e60	92	e60	e50	46	147	170	113	102	148
15	72	e48	e55	95	59	e50	46	147	275	113	96	136
16	72	e46	e55	88	57	e50	46	155	289	114	95	121
17	74	e50	e55	111	55	49	47	195	260	116	97	119
18	79	e70	e50	103	e55	48	48	243	238	128	97	89
19	72	e70	e50	88	55	47	50	278	216	114	98	84
20	69	e70	e50	84	e55	47	51	297	171	113	109	80
21	67	e75	e55	e80	e55	47	48	283	153	114	107	78
22	67	e75	e55	e75	e55	50	47	307	131	139	102	75
23	71	e75	e55	e75	e55	e50	47	321	129	122	99	78
24	78	e70	e60	e75	51	47	49	298	134	113	104	171
25	73	e65	e65	e70	54	47	49	282	148	106	109	190
26	73	e60	e80	e65	58	47	51	265	148	111	114	134
27	73	e60	e110	e65	55	46	53	245	145	104	111	152
28	73	e60	e150	e60	56	46	70	229	137	108	111	139
29	66	e55	140	e60	---	46	136	227	144	109	112	130
30	59	e55	122	e60	---	e46	177	255	167	107	115	126
31	58	---	123	e65	---	e46	---	255	---	113	119	---
TOTAL	2502	1677	2140	2967	1607	1513	1653	5956	5534	3857	3264	3670
MEAN	80.71	55.90	69.03	95.71	57.39	48.81	55.10	192.1	184.5	124.4	105.3	122.3
MAX	124	75	150	187	65	53	177	321	289	185	119	190
MIN	58	44	50	60	51	46	44	91	129	104	95	75
AC-FT	4960	3330	4240	5890	3190	3000	3280	11810	10980	7650	6470	7280

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)#

	1992	1998	1998	1999	1999	1999	1999	1999	1999	1999	2000	2000
MEAN	93.20	88.30	64.98	63.81	63.00	52.73	69.35	160.9	190.3	144.5	133.1	137.2
MAX	145	143	114	137	112	70.5	93.8	205	263	185	178	224
(WY)	1992	1998	2001	2001	1994	1998	1993	1992	1998	2001	1995	1995
MIN	64.0	51.2	47.1	41.6	42.2	43.9	50.5	120	114	115	105	104
(WY)	1998	2000	1998	1999	1999	1999	1999	1996	1997	1997	2002	1993

# See Period of Record and Remarks  
e Estimated

## 15239070 BRADLEY RIVER NEAR TIDEWATER NEAR HOMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002#	
ANNUAL TOTAL	41983		36340			
ANNUAL MEAN	115.0		99.56		105.3	
HIGHEST ANNUAL MEAN					127	
LOWEST ANNUAL MEAN					83.8	
HIGHEST DAILY MEAN					954	
LOWEST DAILY MEAN	a44	Nov 8	b44	Nov 8	c40	
ANNUAL SEVEN-DAY MINIMUM	46	Nov 3	45	Apr 4	40	
MAXIMUM PEAK FLOW			368		11000	
MAXIMUM PEAK STAGE			5.93		13.73	
MAXIMUM PEAK STAGE			d7.68		f8.80	
INSTANTANEOUS LOW FLOW					17	
ANNUAL RUNOFF (AC-FT)	83270		72080		76260	
10 PERCENT EXCEEDS	220		171		177	
50 PERCENT EXCEEDS	90		88		88	
90 PERCENT EXCEEDS	49		48		48	

## PRIOR TO REGULATION AND DIVERSION OF BRADLEY DAM

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1989, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	808	224	198	145	82.1	74.0	72.8	462	1032	1390	1318	966
MAX	1908	480	503	223	114	163	101	676	1357	1577	1781	1746
(WY)	1987	1984	1987	1985	1985	1984	1989	1987	1988	1988	1988	1989
MIN	363	86.1	78.9	72.5	37.4	27.4	42.5	282	862	1153	907	470
(WY)	1984	1986	1988	1989	1989	1989	1985	1985	1986	1983	1983	1983

## SUMMARY STATISTICS

## WATER YEARS 1983 - 1989#

ANNUAL MEAN	583	
HIGHEST ANNUAL MEAN	722	1987
LOWEST ANNUAL MEAN	475	1985
HIGHEST DAILY MEAN	10000	Oct 11 1986
LOWEST DAILY MEAN	19	Dec 7 1986
ANNUAL SEVEN-DAY MINIMUM	22	Mar 26 1989
MAXIMUM PEAK FLOW	g11000	Oct 11 1986
MAXIMUM PEAK STAGE	h13.73	Oct 11 1986
INSTANTANEOUS LOW FLOW	i17	Mar 28 1989
ANNUAL RUNOFF (AC-FT)	422700	
ANNUAL RUNOFF (CFSM)	7.11	
ANNUAL RUNOFF (IN)	96.67	
10 PERCENT EXCEEDS	1470	
50 PERCENT EXCEEDS	388	
90 PERCENT EXCEEDS	52	

# See Period of Record and Remarks

a Nov. 8 and 9

b Nov. 8, 9, and Apr. 8

c Dec. 15 to Dec. 18, 1992; Apr. 20 to Apr. 21, 1995; Jan. 9 and Apr. 22, 1997; Mar. 5, 1998; Jan. 16 to Jan. 20, and Jan. 28 to Feb. 12, 1999

d Backwater from high tide

f Backwater from ice and high tide

g From rating curve extended above 2,400 ft<sup>3</sup>/s on basis of runoff comparisons with nearby stations

h From floodmarks

i Minimum recorded, but may have been less during period of ice effect, Mar. 28 to Mar. 31, 1989

## 15241600 NINILCHIK RIVER AT NINILCHIK

LOCATION.--Lat 60°02'56", long 151°39'48", in NE<sup>1</sup>/<sub>4</sub> sec. 34, T. 1 S., R. 14 W. (Kenai A-5 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, on right bank 60 ft downstream from bridge, 0.9 mi upstream from mouth, at Ninilchik.  
DRAINAGE AREA.--135 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1963 to September 1985, October 1998 to current year.

REVISED RECORDS.--WDR AK-01-1: Drainage area.

GAGE.--Water-stage-recorder. Datum of gage is 8.37 ft above NGVD of 1988. Prior to October 1, 1965, at site 0.2 mi upstream at different datum.

REMARKS.--Records good, except for estimated daily discharges, which are poor. GOES satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	e85	e75	e70	e60	e55	e45	e480	90	51	53	110
2	84	e85	e70	e70	e60	e50	e45	e460	87	50	50	108
3	85	e80	e70	e70	e60	e50	e45	e420	104	49	48	99
4	111	e80	e70	e70	e60	e50	e45	366	109	50	47	87
5	116	e80	e70	e70	e60	e50	e45	315	118	49	48	75
6	124	e80	e65	e70	e60	e50	e45	327	104	48	51	75
7	110	e80	e65	e70	e60	e50	e45	361	92	51	53	75
8	97	e80	e65	e70	e60	e50	e45	321	85	52	55	73
9	92	e80	e65	e70	e60	e50	e45	292	81	51	56	90
10	100	e80	e65	e70	e60	e50	e45	279	85	59	53	87
11	101	e80	e65	e65	e60	e50	e45	249	98	55	72	77
12	93	e80	e60	e65	e60	e50	e45	220	117	48	93	73
13	86	e80	e60	e65	e55	e50	e45	206	116	47	95	75
14	84	e75	e55	e65	e55	e50	e45	204	105	49	72	85
15	86	e75	e55	e65	e55	e50	e45	206	91	50	62	84
16	85	e75	e50	e65	e55	e50	e50	218	80	49	61	79
17	87	e75	e50	e65	e55	e50	e50	230	74	46	57	102
18	e90	e80	e50	e65	e55	e50	e55	252	70	52	53	161
19	e85	e85	e55	e65	e55	e50	e60	279	66	84	51	137
20	e80	e85	e55	e60	e55	e50	e65	282	64	88	60	114
21	e80	e80	e55	e60	e55	e50	e80	240	65	73	88	95
22	e80	e80	e55	e55	e55	e45	e100	188	64	64	106	87
23	e85	e80	e50	e55	e55	e45	e130	155	63	70	107	87
24	e85	e80	e50	e55	e55	e45	e150	121	64	105	108	150
25	e85	e80	e50	e55	e55	e45	e180	107	65	115	110	437
26	e85	e80	e60	e60	e55	e45	e250	100	61	87	100	381
27	e85	e80	e75	e60	e55	e45	e400	95	59	98	87	304
28	e85	e75	e75	e60	e55	e45	e450	91	59	89	74	235
29	e85	e75	e75	e60	---	e45	e500	90	57	72	67	173
30	e85	e75	e75	e60	---	e45	e500	93	53	63	84	143
31	e85	---	e75	e60	---	e45	---	95	---	57	105	---
TOTAL	2805	2385	1930	1985	1600	1505	3695	7342	2446	1971	2226	3958
MEAN	90.48	79.50	62.26	64.03	57.14	48.55	123.2	236.8	81.53	63.58	71.81	131.9
MAX	124	85	75	70	60	55	500	480	118	115	110	437
MIN	80	75	50	55	55	45	45	90	53	46	47	73
AC-FT	5560	4730	3830	3940	3170	2990	7330	14560	4850	3910	4420	7850
CFSM	0.67	0.59	0.46	0.47	0.42	0.36	0.91	1.75	0.60	0.47	0.53	0.98
IN.	0.77	0.66	0.53	0.55	0.44	0.41	1.02	2.02	0.67	0.54	0.61	1.09

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2002, BY WATER YEAR (WY)#

	1963	1964	1966	1974	1974	1974	1985	1969	1969	1983	1969	1969
MEAN	129.2	96.72	63.98	56.02	57.06	64.02	158.4	233.0	117.7	86.94	88.33	116.7
MAX	221	314	98.5	86.0	93.9	108	548	488	238	151	155	204
(WY)	1981	1980	1980	1980	1982	1970	1974	1977	1964	1980	1981	1982
MIN	78.2	41.1	42.0	36.8	36.0	36.9	41.4	81.7	62.2	57.6	47.8	54.6
(WY)	1969	1964	1966	1974	1974	1974	1985	1969	1969	1983	1969	1969

## SUMMARY STATISTICS

## FOR 2001 CALENDAR YEAR

## FOR 2002 WATER YEAR

## WATER YEARS 1963 - 2002#

ANNUAL TOTAL	41684	33848		
ANNUAL MEAN	114.2	92.73	106.0	
HIGHEST ANNUAL MEAN			151	1980
LOWEST ANNUAL MEAN			55.4	1969
HIGHEST DAILY MEAN	689	Apr 26	ae500	Apr 29
LOWEST DAILY MEAN	b50	Dec 16	c45	Mar 22
ANNUAL SEVEN-DAY MINIMUM	53	Dec 14	45	Mar 22
MAXIMUM PEAK FLOW			d	1240
MAXIMUM PEAK STAGE			5.19	Sep 25
MAXIMUM PEAK STAGE			f6.33	Apr 29
ANNUAL RUNOFF (AC-FT)	82680	67140	76830	
ANNUAL RUNOFF (CFSM)	0.85	0.69	0.79	
ANNUAL RUNOFF (INCHES)	11.49	9.33	10.67	
10 PERCENT EXCEEDS	213	150	197	
50 PERCENT EXCEEDS	80	70	76	
90 PERCENT EXCEEDS	58	50	49	

# See Period of Record, partial years used in monthly statistics

a Apr. 29, 30

b From Dec.16 to 18, and Dec. 23 to 25

c From Mar. 22 to Apr, 15

d Not determined, occurred during period of backwater from ice and snow, see highest daily mean

e Estimated

f Backwater from ice



## 15241600 NINILCHIK RIVER AT NINILCHIK—Continued

WATER TEMPERATURE, (DEGREES CELSIUS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	3.5	0.0	1.5
2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	3.0	0.5	1.5
3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	4.0	1.0	2.5
4	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	4.5	1.5	3.0
5	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	4.5	2.5	3.5
6	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	5.0	2.5	3.5
7	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	4.5	2.5	3.5
8	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	4.0	2.5	3.5
9	0.0	0.0	0.0	1.5	0.0	0.0	1.0	0.0	0.0	6.5	2.5	4.5
10	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	7.0	3.5	5.5
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	3.5	5.5
12	0.0	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0	8.5	4.5	6.5
13	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	9.0	4.5	7.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	7.5	5.0	6.5
15	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	6.0	5.0	5.5
16	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	8.5	3.5	6.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	5.5	7.5
18	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	10.0	6.0	8.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	6.0	8.5
20	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	11.5	6.5	9.0
21	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	12.0	7.5	10.0
22	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	11.0	8.5	9.5
23	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	11.5	7.0	9.0
24	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	13.0	7.0	10.0
25	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	13.5	8.0	11.0
26	0.0	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.0	13.5	8.5	11.0
27	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	12.5	9.0	11.0
28	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	11.5	8.0	10.0
29	---	---	---	1.0	0.0	0.0	0.5	0.0	0.0	13.5	9.5	11.5
30	---	---	---	0.0	0.0	0.0	2.0	0.0	1.0	13.0	10.0	11.5
31	---	---	---	0.0	0.0	0.0	---	---	---	14.0	8.5	11.0
MONTH	0.0	0.0	0.0	1.5	0.0	0.0	2.0	0.0	0.0	14.0	0.0	7.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.0	9.5	10.5	18.0	13.5	16.0	18.0	12.0	15.0	12.5	9.5	11.0
2	10.5	8.0	9.5	18.5	13.0	15.5	18.0	12.0	15.0	12.5	9.0	11.0
3	11.0	8.0	9.5	17.5	12.5	15.0	18.5	12.5	15.5	12.0	8.0	10.0
4	11.5	8.5	10.0	18.0	12.0	15.0	18.0	12.0	15.0	11.0	9.0	10.0
5	12.5	9.0	10.5	19.0	12.0	15.5	16.0	13.5	14.5	11.0	10.0	10.5
6	13.5	9.5	11.0	16.0	13.0	14.0	17.0	13.0	14.5	11.0	9.5	10.0
7	14.5	8.5	11.5	14.5	12.0	13.0	15.5	13.0	14.0	12.0	8.0	10.0
8	12.5	9.0	10.0	16.5	11.5	14.0	16.0	12.5	14.0	10.0	7.5	9.0
9	9.5	8.0	9.0	14.5	12.5	13.5	16.5	11.0	14.0	11.0	8.0	9.5
10	10.0	8.0	9.0	17.0	11.0	14.0	14.0	11.5	12.0	10.0	6.5	8.5
11	11.0	8.5	10.0	19.0	12.0	15.5	12.0	11.0	11.5	8.5	6.5	7.5
12	11.0	8.5	10.0	18.0	13.0	15.5	13.0	10.5	11.5	8.0	7.0	7.5
13	12.5	8.5	10.0	15.5	13.0	14.0	15.0	10.0	12.0	9.0	7.5	8.0
14	15.5	8.0	11.5	13.5	11.5	12.5	14.0	10.0	12.0	8.5	7.5	8.0
15	17.0	10.5	14.0	15.5	11.5	13.0	13.0	11.0	12.0	9.5	7.5	8.5
16	17.0	11.5	14.5	17.5	10.5	14.0	14.5	9.0	12.0	9.5	7.5	8.5
17	17.0	12.0	14.5	19.0	12.5	15.5	15.5	10.0	13.0	9.5	8.0	8.5
18	18.0	12.0	15.0	17.0	13.0	14.0	16.0	10.5	13.5	8.5	6.5	7.5
19	15.5	12.0	13.5	14.5	11.5	13.0	13.5	11.5	12.5	8.5	6.5	7.5
20	14.0	11.5	13.0	14.0	11.5	12.5	12.5	11.5	12.0	7.5	5.5	6.5
21	14.5	10.5	12.5	14.0	11.5	12.5	13.0	11.0	12.0	7.5	4.0	5.5
22	15.5	9.5	12.5	14.0	12.0	13.0	12.5	11.0	11.5	8.0	5.0	6.5
23	13.0	10.0	11.5	14.0	11.5	13.0	12.5	10.5	11.5	8.0	6.5	7.5
24	14.0	11.0	12.0	14.0	11.5	12.5	12.0	10.0	11.0	8.0	7.5	7.5
25	15.0	11.5	13.0	15.0	11.0	12.5	11.5	9.0	10.5	9.0	7.5	8.0
26	14.0	11.0	12.5	13.0	11.5	12.0	13.0	8.5	10.5	9.5	8.0	8.5
27	13.5	10.5	12.0	15.0	10.5	12.5	12.5	8.5	10.5	9.0	8.0	8.5
28	16.5	10.5	13.5	16.0	10.5	13.5	13.5	8.5	11.0	9.0	8.0	8.5
29	18.0	11.0	14.5	15.0	10.5	13.0	11.5	9.0	10.0	8.0	7.0	7.5
30	19.0	12.5	16.0	17.5	11.0	14.5	11.0	9.0	10.0	7.5	7.0	7.0
31	---	---	---	17.5	12.0	14.5	12.0	9.5	10.5	---	---	---
MONTH	19.0	8.0	11.9	19.0	10.5	13.8	18.5	8.5	12.4	12.5	4.0	8.4



## SOUTHCENTRAL ALASKA

## 15243900 SNOW RIVER NEAR SEWARD

LOCATION.--Lat 60°17'42", long 149°20'38", in NE $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 6, T. 2 N., R. 1 E. (Seward B-7 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, on left bank, 0.5 mi below the Alaska Railroad bridge, 3.0 mi upstream from the mouth at Kenai Lake, and 13.5 mi north of Seward.

DRAINAGE AREA.--128 mi<sup>2</sup> (revision pending).

PERIOD OF RECORD.--August to September of 1970, 1974, 1977 and April 1997 to current year.

GAGE.--Water stage recorder. Elevation of gage is 470 ft above sea level, from topographic map. Prior to April 9, 1998 at site 0.5 mi upstream at different datum.

REMARKS.--Record poor. Rain gage at station. GOES satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Glacier-dammed lake outburst flood about August 31, 1967, 55,000 ft<sup>3</sup>/s from rating curve extended above 27,000 ft<sup>3</sup>/s, gage-height 42.60 ft from floodmarks, site and datum then in use.

DAY	DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002											
	DAILY MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	e220	e130	e1050	e160	e90	e65	e280	2570	3010	3320	2090
2	817	e220	e130	e750	e150	e90	e65	e260	2410	2740	3300	2110
3	769	e220	e130	e520	e150	e85	e65	e340	2430	2740	3520	1850
4	1660	e200	e140	e380	e150	e85	e65	e340	2480	2610	3810	e1500
5	3340	e200	e150	e340	e140	e80	e65	e360	2430	2580	3480	1580
6	2200	e200	e140	e450	e140	e80	e65	e380	2340	2500	3300	2100
7	1410	e180	e140	e600	e130	e75	e65	e360	2210	2550	3410	e1700
8	951	e180	e130	e500	e130	e75	e65	e420	2310	2640	3320	e1500
9	877	e180	e130	e600	e130	e75	e65	e460	2360	2490	3030	e1300
10	689	e160	e120	e700	e130	e75	e65	e500	2310	2400	2650	e1200
11	527	e160	e110	e600	e120	e70	e65	e550	2150	2540	2860	e1100
12	390	e160	e110	e400	e120	e70	e65	e600	2000	2570	3310	e1400
13	e380	e140	e120	e300	e120	e70	e65	e750	2030	2540	3430	3360
14	e380	e130	e120	e320	e120	e70	e65	e900	2050	2460	2910	5590
15	e360	e130	e120	e340	e110	e70	e65	970	2690	2370	2410	4970
16	e360	e130	e120	e360	e110	e65	e65	987	2920	2450	2200	3520
17	e340	e140	e110	e420	e110	e65	e70	1110	3020	2800	2480	3320
18	e340	e150	e100	e520	e110	e65	e70	1440	3350	3120	2460	2760
19	e320	e160	e100	e420	e110	e65	e75	1770	3300	3030	2200	2050
20	e300	e170	e120	e380	e100	e65	e75	1990	2920	2870	2590	e1500
21	e300	e170	e130	e300	e100	e65	e80	2170	2690	3250	3210	e1100
22	e280	e150	e150	e250	e100	e65	e80	2390	2480	4000	3230	e1000
23	e280	e150	e170	e200	e100	e65	e90	2630	2470	4640	2980	e1300
24	e260	e150	e150	e220	e100	e65	e90	2590	2770	5990	2800	2390
25	e260	e140	e1800	e240	e100	e65	e100	2590	3090	5550	2470	3640
26	e260	e150	e6800	e200	e95	e65	e110	2600	4310	4640	1870	3730
27	e240	e140	e3000	e180	e95	e65	e120	2780	3950	4100	1530	3350
28	e240	e140	e2800	e170	e95	e65	e150	2700	3280	3490	1520	2590
29	e240	e140	2650	e170	---	e65	e170	2850	3030	3370	1640	1730
30	e240	e130	e1000	e160	---	e65	e230	2870	3060	3300	2130	e1500
31	e240	---	e800	e160	---	e65	---	2850	---	3340	2190	---
TOTAL	20330	4890	21920	12200	3325	2200	2550	43787	81410	98680	85560	68830
MEAN	656	163	707	394	119	71.0	85.0	1412	2714	3183	2760	2294
MAX	3340	220	6800	1050	160	90	230	2870	4310	5990	3810	5590
MIN	240	130	100	160	95	65	65	260	2000	2370	1520	1000
AC-FT	40320	9700	43480	24200	6600	4360	5060	86850	161500	195700	169700	136500

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002, BY WATER YEAR (WY)#

MEAN	918	290	304	240	118	101	163	829	2309	3166	2984	3234
MAX	2506	514	707	524	188	220	277	1412	2714	3281	5598	6294
(WY)	1999	1998	2002	2001	1998	1998	1998	2002	2002	1998	1977	1974
MIN	279	163	87.3	57.0	42.0	39.2	81.8	491	1780	2866	1764	1157
(WY)	1998	2002	1999	1999	1999	1999	1999	2001	1999	1999	1998	2000

## SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1970 - 2002#

ANNUAL TOTAL	524241	445682	
ANNUAL MEAN	1436	1221	1135
HIGHEST ANNUAL MEAN			1412
LOWEST ANNUAL MEAN			965
HIGHEST DAILY MEAN	ab13500	Sep 20	6800
LOWEST DAILY MEAN	100	Mar 29	65
ANNUAL SEVEN-DAY MINIMUM	109	Mar 23	65
MAXIMUM PEAK FLOW			d
MAXIMUM PEAK STAGE		f11.20	Dec 26
INSTANTANEOUS LOW FLOW			g40.75
ANNUAL RUNOFF (AC-FT)	1040000	884000	822600
10 PERCENT EXCEEDS	3430	3240	3400
50 PERCENT EXCEEDS	356	380	620
90 PERCENT EXCEEDS	116	70	71

# See Period of Record, partial years used in monthly summary statistics

a Sept. 20 and Sept. 21

b Result of release of stored water from glacier-dammed lake

c Mar. 3 and Mar. 4, 1999

d Not determined, see highest daily mean

e Estimated

f From ice debris floodmarks, backwater from ice, date approximate

g Site and datum then in use

## 15258000 KENAI RIVER AT COOPER LANDING

LOCATION.--Lat 60°29'34", long 149°48'28", in SE<sup>1</sup>/<sub>4</sub> sec. 28, T. 5 N., R. 3 W. (Seward B-8 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, Chugach National Forest, on right bank 10 ft downstream from bridge on Sterling Highway, 0.9 mi upstream from Bean Creek, 0.9 mi east of Cooper Landing, and at Kenai Lake outlet.

DRAINAGE AREA.--634 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 2136: 1964 (M).

GAGE.--Water-stage recorder. Datum of gage is 419.92 ft above sea level (levels by Alaska Department of Transportation). See WSP 2136 for history of changes prior to August 28, 1965. August 28, 1965 to January 21, 1974, at site 10 ft upstream at present datum. January 22, 1974 to September 30, 1981, non-recording gage at site 40 ft upstream at present datum.

REMARKS.--Records good except for estimated daily discharge, which is fair. Diversion from Cooper Lake to Kenai Lake above gage through Cooper Lake power plant began May 1961. No diversions occurred during November. Rain gage at station. GOES satellite telemetry and telephone modem at station.

COOPERATION.--Records of diversion provided by Chugach Electric Association.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6220	1360	786	1540	1140	782	531	645	7040	7310	6380	4280
2	5640	1330	764	1600	1110	765	525	695	6990	7180	6220	4210
3	5160	1310	743	1660	1110	753	527	750	6890	7120	6100	4210
4	4790	1280	722	1690	1110	748	528	806	6780	6990	6140	4130
5	4960	1250	711	1700	1080	745	527	860	6680	6940	6220	4020
6	5360	1210	697	1700	1050	734	526	921	6600	6850	6150	3970
7	5330	1160	683	1690	1010	732	527	975	6530	6730	6110	3990
8	5170	1120	676	1710	990	716	521	1040	6500	6740	6120	3960
9	4920	1080	661	1800	936	702	515	1100	6370	6690	6140	3840
10	4610	1050	656	1870	907	686	508	1160	6270	6540	6020	3710
11	4340	1040	657	1850	898	670	501	1230	6170	6430	5870	3570
12	4040	1010	639	1830	868	665	490	1300	6030	6360	5800	3510
13	3780	984	626	1810	874	657	481	1380	5890	6280	5900	3600
14	3530	958	617	1790	879	645	480	1500	5730	6220	5910	4230
15	3230	946	609	1720	877	635	479	1620	5790	6110	5890	4820
16	3030	931	611	1710	879	629	478	1760	6070	6030	5690	5100
17	2870	934	e600	1680	868	619	487	1910	6340	6040	5520	5150
18	2680	952	594	1620	863	617	496	2120	6750	6220	5440	5100
19	2540	929	602	1580	851	613	495	2420	7170	6380	5300	4890
20	2430	937	622	1530	842	611	494	2800	7360	6420	5210	4620
21	2290	924	660	1490	840	603	486	3280	7340	6430	5220	4320
22	2190	921	672	1440	844	598	484	3820	7180	6550	5340	4030
23	2080	916	667	1390	835	593	487	4320	7010	6780	5440	3770
24	1970	904	668	1340	824	588	490	4840	6890	7270	5470	3660
25	1860	894	711	1310	821	576	490	5340	6880	7850	5320	3830
26	1760	878	832	1280	821	568	494	5790	7060	8010	5060	4060
27	1660	861	1010	1270	815	565	502	6170	7410	7840	4810	4280
28	1580	834	1190	1260	796	561	521	6480	7480	7510	4570	4360
29	1520	823	1310	1240	---	551	554	6660	7400	7130	4440	4280
30	1460	804	1390	1190	---	543	604	6850	7350	6820	4350	4150
31	1420	---	1460	1160	---	536	---	7020	---	6570	4310	---
TOTAL	104420	30530	23846	48450	25738	20006	15228	87562	201950	210340	172460	125650
MEAN	3368	1018	769.2	1563	919.2	645.4	507.6	2825	6732	6785	5563	4188
MAX	6220	1360	1460	1870	1140	782	604	7020	7480	8010	6380	5150
MIN	1420	804	594	1160	796	536	478	645	5730	6030	4310	3510
MED	3030	949	672	1620	876	629	499	1760	6830	6730	5690	4140
AC-FT	207100	60560	47300	96100	51050	39680	30200	173700	400600	417200	342100	249200
CFSM	5.31	1.61	1.21	2.47	1.45	1.02	0.80	4.46	10.6	10.7	8.77	6.61
IN.	6.13	1.79	1.40	2.84	1.51	1.17	0.89	5.14	11.85	12.34	10.12	7.37

## ADJUSTED TO EXCLUDE DIVERSION FROM COOPER LAKE

MEAN	3297	1018	703	1267	720	464	348	2678	6617	6664	5452	4072
CFSM	5.20	1.61	1.11	2.00	1.14	0.73	0.55	4.22	10.44	10.51	8.60	6.42
IN	6.00	1.79	1.28	2.30	1.18	0.84	0.61	4.87	11.64	12.12	9.91	7.17
AC-FT	202750	60560	43240	77880	39970	28550	20700	164680	393770	409770	335230	242330

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)#

MEAN	3272	1783	1122	827.7	657.5	514.4	545.6	1924	5436	7002	6366	5288
MAX	8955	4877	3469	2807	2066	1122	1071	3508	10010	10480	11430	11490
(WY)	1980	1958	1986	1981	1981	1977	1980	1990	1953	1980	1977	1967
MIN	1264	654	364	310	251	208	262	658	3268	4868	3651	2629
(WY)	1956	1951	1951	1951	1949	1951	1952	1952	1972	1996	1969	1969

# See Period of Record and Remarks; partial years used in monthly statistics.  
e Estimated

## SOUTHCENTRAL ALASKA

## 15258000 KENAI RIVER AT COOPER LANDING—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1947 - 2002#	
ANNUAL TOTAL	1403275		1066180			
ANNUAL MEAN	3845		2921		2913	
ANNUAL MEAN	3718		2789		2839	
HIGHEST ANNUAL MEAN					4499	1977
LOWEST ANNUAL MEAN					2102	1969
HIGHEST DAILY MEAN	15000	Sep 23	8010	Jul 26	22500	Sep 21 1974
LOWEST DAILY MEAN	587	Mar 29	478	Apr 16	100	Mar 28 1964
ANNUAL SEVEN-DAY MINIMUM	592	Mar 25	484	Apr 12	190	Mar 15 1951
MAXIMUM PEAK FLOW			8080	Jul 26	a23100	Sep 21 1974
MAXIMUM PEAK STAGE			11.66	Jul 26	17.18	Sep 21 1974
INSTANTANEOUS LOW FLOW			462	Apr 15	b0.00	Mar 27 1964
ANNUAL RUNOFF (AC-FT)	2783000		2115000		2110000	
ANNUAL RUNOFF (AC-FT)	*2692000		*2019000		*2057000	
ANNUAL RUNOFF (CFSM)	*5.86		*4.40		*4.48	
ANNUAL RUNOFF (INCHES)	*79.61		*59.71		*60.81	
10 PERCENT EXCEEDS	9730		6680		6980	
50 PERCENT EXCEEDS	1620		1600		1620	
90 PERCENT EXCEEDS	663		583		414	

- # See Period of Record and Remarks; partial years used in monthly statistics  
 Values shown on this page are unadjusted for inflow from diversion, unless otherwise noted
- \* Adjusted to account for inflow from diversion, see Remarks
- a Result of release of stored water from glacier-dammed lake at head of unnamed glacier in the Snow River Basin
- b No flow, Mar. 27 and Mar. 28, 1964, caused by earthquake



15261000 COOPER CREEK AT MOUTH NEAR COOPER LANDING—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1998 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1998 to current year.

INSTRUMENTATION.--Electronic water-temperature recorder set for 15 minute recording interval.

REMARKS.--Records represent water temperature at the sensor within 0.5°C. Temperature at the sensor was compared with the average for the stream by cross section on August 8. No variations were found within the cross section. No variation was found between mean stream temperature and sensor temperature. Heavy shore ice occurs near the gage.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 11.5°C, July 14, 1999; Minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 11.0°C, August 3-4; Minimum, 0.0°C on many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	STREAM WIDTH (FT) (00004)	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	GAGE HEIGHT (FEET) (00065)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SAM-PLING METHOD, CODES (82398)	SAMPLER TYPE (CODE) (84164)	TEMPER-ATURE WATER (DEG C) (00010)	TEMPER-ATURE AIR (DEG C) (00020)
AUG									
08...	1247	28.2	3.00	10.09	41	10	8010	7.0	13.5
08...	1249	28.2	8.00	10.09	41	10	8010	7.0	13.5
08...	1251	28.2	13.0	10.09	41	10	8010	7.0	13.5
08...	1253	28.2	18.0	10.09	41	10	8010	7.0	13.5
08...	1255	28.2	23.0	10.09	41	10	8010	7.0	13.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
3	5.5	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
4	6.5	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
5	5.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
6	4.5	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
7	4.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
8	3.5	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
9	4.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
10	4.0	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
11	2.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
12	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
14	2.5	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5
15	2.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5
16	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5
17	2.5	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
18	2.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
19	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.0
20	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0
21	0.5	0.0	0.5	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.5	0.0	0.0	1.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	6.5	0.0	1.6	1.5	0.0	0.1	0.0	0.0	0.0	1.0	0.0	0.3

## 15261000 COOPER CREEK AT MOUTH NEAR COOPER LANDING—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	2.0	0.5	1.0
2	0.5	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	2.5	0.5	1.5
3	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	1.5
4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.0	2.0
5	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	2.0
6	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	1.5
7	0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	3.0	1.0	2.0
8	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	3.0	1.0	2.0
9	0.5	0.0	0.5	0.0	0.0	0.0	1.0	0.5	0.5	2.0	1.0	1.5
10	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5	3.0	1.0	1.5
11	0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	3.0	1.0	2.0
12	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.0	2.0
13	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.0	2.0
14	0.5	0.0	0.5	0.0	0.0	0.0	1.0	0.0	0.5	3.5	1.0	2.0
15	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	3.0	1.5	2.0
16	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	4.0	1.0	2.0
17	0.5	0.0	0.5	0.0	0.0	0.0	1.0	0.5	1.0	4.0	1.5	2.0
18	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5	4.0	1.0	2.0
19	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.5	4.0	1.5	2.5
20	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.5	1.0	4.5	1.5	2.5
21	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.5	0.5	4.5	1.5	2.5
22	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	3.5	1.5	2.5
23	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	4.5	2.0	3.0
24	0.0	0.0	0.0	0.5	0.0	0.5	1.5	0.0	0.5	5.0	1.5	3.0
25	0.5	0.0	0.5	1.0	0.5	0.5	2.0	0.0	1.0	5.0	2.0	3.0
26	1.0	0.5	0.5	1.0	0.5	1.0	2.0	0.5	1.0	4.5	2.0	3.0
27	0.5	0.0	0.5	1.0	0.5	1.0	2.5	0.0	1.0	4.0	2.5	3.0
28	1.0	0.0	0.5	1.0	0.0	0.5	2.0	0.0	0.5	4.5	2.0	3.0
29	---	---	---	0.5	0.0	0.5	1.5	0.0	0.5	4.5	2.5	3.5
30	---	---	---	0.0	0.0	0.0	2.0	0.0	1.0	5.0	2.5	3.5
31	---	---	---	0.0	0.0	0.0	---	---	---	5.5	2.0	3.5
MONTH	1.0	0.0	0.2	1.0	0.0	0.1	2.5	0.0	0.4	5.5	0.5	2.3

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4.5	2.5	3.5	7.5	4.0	5.5	10.5	6.0	8.0	8.0	6.0	7.0
2	4.5	2.0	3.5	7.5	4.0	5.5	10.5	6.0	8.0	7.5	5.5	7.0
3	5.0	2.5	3.5	8.5	4.0	6.0	11.0	6.0	8.5	7.0	4.0	5.0
4	5.5	2.5	3.5	8.0	4.5	6.0	11.0	6.0	8.5	8.0	5.5	6.5
5	4.5	2.5	3.5	9.0	4.0	6.0	9.0	5.5	7.5	8.5	6.5	7.5
6	4.0	3.0	3.5	8.5	4.5	6.5	10.5	6.5	8.5	7.5	6.5	7.0
7	6.5	3.0	4.0	9.0	4.5	6.5	8.5	7.0	7.5	---	5.0	---
8	5.0	3.0	3.5	8.0	5.0	6.0	8.0	6.5	7.0	7.5	5.5	6.5
9	5.0	3.0	4.0	7.5	4.5	6.0	8.5	4.5	6.5	7.5	5.5	6.0
10	5.5	3.0	4.0	8.5	5.0	6.5	7.5	5.5	6.5	6.0	3.5	5.0
11	5.5	3.0	4.0	9.0	5.0	7.0	7.5	6.0	7.0	5.5	3.5	4.5
12	6.0	3.0	4.5	9.0	4.5	6.5	8.0	6.5	7.0	6.0	5.0	5.5
13	5.0	3.0	4.0	9.0	5.0	7.0	9.0	6.0	7.5	7.0	5.5	6.0
14	7.5	3.0	4.5	9.0	5.5	6.5	8.0	4.5	6.5	6.0	5.0	5.5
15	7.0	3.0	4.5	9.0	5.0	7.0	7.5	6.0	6.5	6.5	4.5	5.0
16	7.0	3.0	4.5	10.0	4.5	7.0	9.0	5.0	7.0	6.5	4.0	5.0
17	7.5	3.0	5.0	10.5	6.0	8.0	9.5	6.0	7.5	6.0	4.5	5.5
18	7.5	3.0	5.0	8.0	6.0	7.0	9.5	6.0	8.0	5.5	3.0	4.0
19	5.5	3.5	4.5	8.5	5.0	6.5	8.0	6.0	7.0	5.5	3.5	4.5
20	5.5	3.0	4.5	7.5	5.5	6.5	8.5	7.0	7.5	4.0	2.0	3.0
21	6.0	3.5	4.5	9.0	6.0	7.5	8.5	7.0	7.5	4.5	2.0	3.0
22	8.0	3.5	5.0	9.0	6.5	7.5	8.5	6.5	7.5	6.0	3.5	4.5
23	6.0	3.5	4.5	8.5	6.0	7.5	8.5	6.0	7.5	7.0	5.5	6.0
24	6.5	4.0	5.0	8.0	6.5	7.0	8.0	6.0	7.0	6.5	6.0	6.5
25	6.5	4.0	5.0	8.5	5.5	7.0	8.5	6.0	7.0	7.5	6.0	6.5
26	6.5	4.0	4.5	7.5	6.0	6.5	7.5	4.0	6.0	7.5	6.0	6.5
27	6.0	3.5	5.0	7.5	5.0	6.0	8.0	4.5	6.5	6.0	4.5	5.5
28	8.0	3.0	5.5	8.5	5.0	7.0	8.0	5.0	7.0	6.0	4.0	5.0
29	9.0	3.5	6.0	9.0	6.0	7.5	7.5	6.0	7.0	5.0	3.0	4.0
30	9.0	4.5	6.0	10.0	5.5	7.5	8.0	6.0	7.0	5.0	4.5	4.5
31	---	---	---	10.5	6.0	8.0	8.0	6.0	7.0	---	---	---
MONTH	9.0	2.0	4.4	10.5	4.0	6.7	11.0	4.0	7.3	---	2.0	---

## 15266110 KENAI RIVER BELOW SKILAK LAKE OUTLET NEAR STERLING

LOCATION.--Lat 60°28'00", long 150°35'56", in SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 1, T. 4 N., R. 8 W. (Kenai B-2 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, on right bank, 3.5 mi downstream from Skilak Lake, 7 mi southeast of Sterling.

DRAINAGE AREA.--1,206 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1997 to current year.

REVISED RECORDS.-- WRD-AK-00-1: Drainage area.

GAGE.--Water stage recorder. Elevation of gage is 240 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Rain gage recorder at station. GOES satellite telemetry and phone modem at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11600	3040	1510	2000	2050	1300	935	946	8460	11300	13000	10400
2	10800	2940	1460	2030	2020	1290	943	1030	8770	11500	12800	10300
3	10300	2850	1410	2050	1970	1290	947	1080	9040	11600	12600	10200
4	9460	2760	1380	2120	2020	1280	933	1130	9190	11600	12500	10000
5	8830	2690	1360	2130	1950	1270	927	1170	9270	11600	12400	9800
6	8670	2600	1330	2150	1910	1250	934	1220	9470	11600	12300	9710
7	8530	2520	1300	2170	1880	1230	931	1260	9540	11600	12300	9700
8	8360	2440	1290	2210	1830	1220	908	1300	9790	11700	12300	9410
9	8090	2360	1250	2520	1720	1210	931	1370	9560	11700	12200	9240
10	7730	2270	1240	2650	1680	1180	933	1450	9300	11700	12100	9020
11	7650	2200	1220	2610	1670	1180	911	1550	9230	11700	11900	8740
12	7350	2140	1200	2620	1580	1160	899	1630	9190	11700	12000	8670
13	7020	2070	e1150	2630	1670	1140	894	1720	9150	11600	12000	8500
14	6670	1990	e1150	2730	1570	1130	888	1820	9060	11600	12000	8500
15	6360	1960	e1100	2650	1530	1100	878	1940	8990	11500	11800	9200
16	6030	1910	e1100	2700	1510	1130	871	2080	8990	11400	11600	9730
17	5800	1910	e1100	2650	1530	1090	867	2220	9170	11400	11400	10300
18	5550	1960	e1100	2620	1460	1080	937	2390	9410	11500	11400	10500
19	5310	1890	e1100	2600	1430	1070	864	2610	9780	11700	11500	10400
20	5070	1870	e1100	2580	1430	1060	843	2860	10100	11800	11400	10100
21	4930	1820	e1200	2520	1430	1040	832	3180	10300	11900	11400	9710
22	4730	1790	e1300	2470	1430	1030	832	3580	10300	12000	11500	9390
23	4490	1740	e1400	2410	1400	1020	845	3960	10600	12200	11300	8930
24	4280	1720	e1500	2360	1330	1020	846	4450	10600	12600	11300	8820
25	4080	1700	e1600	2300	1360	992	832	4960	10600	13000	11400	8610
26	3910	1690	e1700	2260	1360	985	812	5530	10600	13300	11500	8970
27	3720	1640	1800	2220	1310	975	832	6150	10700	13600	11400	9120
28	3550	1600	1870	2210	1300	980	855	6640	10800	13700	11000	9240
29	3400	1560	1900	2200	---	962	876	7180	10900	13600	10700	9260
30	3270	1540	1920	2150	---	947	918	7660	11100	13500	10600	9160
31	3150	---	1950	2110	---	939	---	8050	---	13300	10500	---
TOTAL	198690	63170	42990	73630	45330	34550	26654	94116	291960	374500	364100	283630
MEAN	6409	2106	1387	2375	1619	1115	888.5	3036	9732	12080	11750	9454
MAX	11600	3040	1950	2730	2050	1300	947	8050	11100	13700	13000	10500
MIN	3150	1540	1100	2000	1300	939	812	946	8460	11300	10500	8500
AC-FT	394100	125300	85270	146000	89910	68530	52870	186700	579100	742800	722200	562600
CFSM	5.31	1.75	1.15	1.97	1.34	0.92	0.74	2.52	8.07	10.0	9.74	7.84
IN.	6.13	1.95	1.33	2.27	1.40	1.07	0.82	2.90	9.01	11.55	11.23	8.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)#

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
MEAN	5896	2989	1746	1883	1463	1064	1060	2522	8328	13100	11900	10100
MAX	7498	4441	2116	2960	2315	1325	1241	3036	9795	15400	13600	13860
(WY)	1998	2000	2001	2001	2001	2001	1998	2002	1998	2001	2001	2001
MIN	3937	2106	1387	1164	891	870	888	2210	6156	11960	10310	5659
(WY)	2001	2002	2002	1999	1998	1998	2002	2001	1997	1999	1998	2000

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1997 - 2002#

ANNUAL TOTAL	2193660	1893320		
ANNUAL MEAN	6010	5187	5198	
HIGHEST ANNUAL MEAN			5886	2001
LOWEST ANNUAL MEAN			4742	2000
HIGHEST DAILY MEAN	18300	Sep 3	18300	Sep 3 2001
LOWEST DAILY MEAN	a1060	Apr 8	812	Apr 26
ANNUAL SEVEN-DAY MINIMUM	1070	Apr 12	833	Apr 21
MAXIMUM PEAK FLOW			b13800	Jul 27
MAXIMUM PEAK STAGE			11.87	Jul 28
INSTANTANEOUS LOW FLOW			765	Apr 20
ANNUAL RUNOFF (AC-FT)	4351000	3755000	3765000	
ANNUAL RUNOFF (CFSM)	4.98	4.30	4.31	
ANNUAL RUNOFF (INCHES)	67.67	58.40	58.56	
10 PERCENT EXCEEDS	15000	11600	12600	
50 PERCENT EXCEEDS	2940	2580	2700	
90 PERCENT EXCEEDS	1160	983	1020	

# See Period of Record, partial year used in monthly statistics

a Apr. 8, 14 and 15

b July 27 to 29

c Mar. 12 and 13, 1998 and Apr. 20, 2002

e Estimated

## 15266150 KENAI RIVER BELOW MOUTH OF KILLEY RIVER NEAR STERLING

LOCATION.--Lat 60°29'28", long 150°37'50", in NW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 26, T. 5 N., R. 8 W. (Kenai B-2 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, on right bank, 1.5 mi downstream from Killey River, 4.5 mi southeast of Sterling.

DRAINAGE AREA.--1,496 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1997 to current year.

GAGE.--Water stage recorder. Elevation of gage is 230 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. GOES satellite telemetry and phone modem at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12200	3000	1630	2210	2050	1400	1040	1580	9660	12800	14400	10700
2	11300	2940	1600	2200	2020	1390	1030	1610	9840	13000	14100	10500
3	10700	2860	e1600	2220	1960	1390	1030	1590	9960	13100	14000	10400
4	9970	2770	e1600	2230	2030	1390	1020	1600	10100	13200	13900	10200
5	9630	2690	e1550	2250	1970	1370	1020	1610	10200	13200	13800	10100
6	9460	2580	e1550	2290	1930	1360	1010	1640	10300	13100	13500	10500
7	9190	2470	e1550	2300	1900	1340	1000	1680	10200	13100	13600	10500
8	9030	2360	1550	2420	1870	1330	997	1730	10400	13200	13600	10100
9	8770	2270	1510	2680	1840	1310	1000	1800	10500	13200	e13500	9940
10	8340	2230	1460	2760	1800	1270	1000	1880	10300	13000	e13400	9580
11	7870	2190	1440	2710	1790	1280	995	1970	10100	13300	e13300	9360
12	7560	2140	1420	2720	1710	1250	987	2030	9830	13000	e13200	9220
13	7230	2090	e1400	2690	e1700	1240	981	2100	9860	12900	e13100	9090
14	6970	2030	e1400	2790	1690	1220	977	2200	9810	12800	e13000	9840
15	6700	2000	e1350	2720	1640	1200	977	2330	10000	12800	12800	10100
16	6360	1960	e1350	2750	1630	1210	963	2490	10300	12700	12500	10400
17	6100	1950	e1350	2720	e1600	1180	966	2640	10700	12700	12200	10700
18	5820	2020	e1400	2700	e1600	1170	1020	2900	11200	12800	12000	10900
19	5570	1960	e1450	2670	1550	1170	979	3280	11600	13200	11800	10900
20	5250	1940	e1500	2640	e1500	1160	982	3690	11600	13100	11700	10700
21	5070	1900	e1550	2560	e1500	1140	991	4160	11700	13200	11800	10300
22	4800	1880	e1600	2490	e1500	1130	1010	4680	11700	13500	11800	10000
23	4530	1860	e1650	2430	1500	1110	1020	5190	11800	14000	11800	9660
24	4330	1840	e1750	2370	1440	1110	1030	5790	11900	14500	11700	9650
25	4070	1790	e1850	e2350	1460	1090	1040	6380	11900	15000	11700	9690
26	3840	1750	e1950	e2300	1470	1080	1050	6980	12000	15100	11600	10000
27	3640	1700	e2000	2240	1440	1080	1110	7620	12000	15400	11500	10100
28	3470	1680	e2050	2210	1410	1080	1220	8190	12000	15300	11200	10100
29	3360	1660	e2150	2190	---	1070	1370	8640	12100	15100	11000	10000
30	3230	1660	e2200	2140	---	1060	1500	9140	12400	14900	10900	9860
31	3080	---	2200	2110	---	1050	---	9400	---	14700	10800	---
TOTAL	207440	64170	50610	76060	47500	37630	31315	118520	325960	420900	389200	303090
MEAN	6692	2139	1633	2454	1696	1214	1044	3823	10870	13580	12550	10100
MAX	12200	3000	2200	2790	2050	1400	1500	9400	12400	15400	14400	10900
MIN	3080	1660	1350	2110	1410	1050	963	1580	9660	12700	10800	9090
AC-FT	411500	127300	100400	150900	94220	74640	62110	235100	646500	834900	772000	601200
CFSM	4.47	1.43	1.09	1.64	1.13	0.81	0.70	2.56	7.26	9.08	8.39	6.75
IN.	5.16	1.60	1.26	1.89	1.18	0.94	0.78	2.95	8.11	10.47	9.68	7.54

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)#

	1997	1998	1999	2000	2001	2002
MEAN	6199	3142	1889	1970	1514	1147
MAX	7859	4451	2276	3140	2337	1399
(WY)	1998	2000	2001	2001	2001	1998
MIN	4291	2139	1633	1126	989	926
(WY)	2001	2002	2002	1999	1998	1999

## SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	FOR 1997 WATER YEAR	FOR 2002 WATER YEAR	FOR 1999 WATER YEAR
ANNUAL TOTAL	2460710	2072395	5644	6632	2001
ANNUAL MEAN	6742	5678	5010	5010	2000
HIGHEST ANNUAL MEAN					
LOWEST ANNUAL MEAN					
HIGHEST DAILY MEAN	a19400	Jul 25	15400	Jul 27	a19400
LOWEST DAILY MEAN	b1170	Mar 29	963	Apr 16	c800
ANNUAL SEVEN-DAY MINIMUM	1190	Mar 26	978	Apr 11	836
MAXIMUM PEAK FLOW			15600	Jul 27	d19600
MAXIMUM PEAK STAGE			11.20	Jul 27	12.25
INSTANTANEOUS LOW FLOW			910	Apr 17	f
ANNUAL RUNOFF (AC-FT)	4881000	4111000	4089000		
ANNUAL RUNOFF (CFSM)	4.51	3.80	3.77		
ANNUAL RUNOFF (INCHES)	61.19	51.53	51.26		
10 PERCENT EXCEEDS	17400	13000	13500		
50 PERCENT EXCEEDS	3000	2670	2890		
90 PERCENT EXCEEDS	1370	1120	1100		

# See Period of Record, partial year used in monthly statistics

a Jul. 25 and 26, 2001

b Mar. 29 and Apr. 6

c Apr 19, 1997 and Apr. 6-7, 1999

d Jul. 24 and 25

e Estimated

f Not determined, see lowest daily mean



## 15266300 KENAI RIVER AT SOLDOTNA

LOCATION.--Lat 60°28'39", long 151°04'46", in W<sup>1</sup>/<sub>2</sub> SW<sup>1</sup>/<sub>4</sub> sec. 32, T. 5 N., R. 10 W. (Kenai B-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, near center of span on downstream side of bridge on Sterling Highway, 1.0 mi southwest of Soldotna.

DRAINAGE AREA.--1,951 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD AK-00-1 drainage area.

GAGE.--Water-stage recorder. Datum of gage is 35.34 ft above sea level. Prior to May 1, 1997, non-recording gage at same site and datum.

REMARKS.--Records good, except for estimated daily discharges, which are poor. GOES satellite telemetry and phone modem at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12900	3310	e1800	e2400	e2250	e1500	e1100	2750	9960	12700	14600	10900
2	11900	3230	e1750	e2400	e2200	e1500	e1100	2660	10100	12900	14400	10600
3	11300	3180	e1750	e2450	e2150	e1500	e1050	2560	10200	13100	14200	10400
4	10700	2930	e1700	e2450	e2100	e1500	e1050	2450	10200	13100	14100	10300
5	10000	2820	e1700	e2500	e2100	e1500	e1050	2340	10300	13200	14000	10400
6	9690	2720	e1700	e2500	e2050	e1450	e1050	2370	10600	13000	14000	10700
7	9220	2610	e1700	e2650	e2050	e1450	e1050	2410	10700	13100	13900	10700
8	8980	2640	e1700	e2900	e2000	e1400	e1000	2440	10800	13200	13900	10400
9	9070	2400	e1650	e2950	e2000	e1400	e1000	2580	10900	13000	13700	10200
10	8670	2340	e1600	e3000	e1950	e1400	e1000	2650	10700	13200	13400	9740
11	8010	2320	e1600	e3000	e1950	e1400	e1050	2760	10500	13200	13300	9520
12	7580	2290	e1550	e2950	e1900	e1350	e1050	2770	10400	13100	13600	9500
13	7210	2270	e1500	e2950	e1900	e1350	e1050	2780	10300	13000	13500	9510
14	7020	e2250	e1450	e3000	e1850	e1350	e1050	2860	10500	13100	13300	10000
15	6810	e2200	e1450	e3000	e1800	e1300	e1050	2930	10700	12900	12900	10500
16	6430	2070	e1450	e2950	e1800	e1300	1070	3080	10800	12900	12700	10600
17	6390	e2100	e1500	e2900	e1750	e1250	1120	3310	11100	12900	12600	10900
18	6070	e2100	e1550	e2900	e1700	e1250	e1150	3590	11400	12800	12500	11100
19	5670	e2100	e1550	e2900	e1700	e1250	e1150	3930	11800	13300	12300	11000
20	5380	e2050	e1600	e2900	e1650	e1200	e1200	4240	12000	13300	12300	10800
21	5360	e2050	e1700	e2800	e1600	e1200	e1200	4810	12000	13400	12200	10500
22	4990	e2000	e1800	e2800	e1600	e1200	1230	5140	12100	13600	12200	10200
23	4660	e1950	e1850	e2700	e1600	e1200	1290	5610	12000	14100	12000	9930
24	4400	e1950	e1900	e2650	e1600	e1200	1410	6100	12300	14500	11800	9910
25	4170	1830	e2000	e2600	e1550	e1150	1510	6490	12400	14800	11700	10000
26	3950	1780	e2100	e2550	e1550	e1150	1730	7020	12400	14900	11700	10500
27	3780	e1850	e2150	e2500	e1550	e1150	2100	7700	12300	15200	11600	10600
28	3660	e1850	e2250	e2400	e1500	e1150	2350	8230	12300	15300	11500	10600
29	3630	e1800	e2300	e2350	---	e1150	2620	8590	12400	15100	11100	10400
30	3410	e1800	e2350	e2300	---	e1100	2830	9130	12400	15100	11100	10300
31	3380	---	e2400	e2300	---	e1100	---	9700	---	14800	11000	---
TOTAL	214390	68790	55050	83600	51400	40350	39660	135980	336560	421800	397100	310710
MEAN	6916	2293	1776	2697	1836	1302	1322	4386	11220	13610	12810	10360
MAX	12900	3310	2400	3000	2250	1500	2830	9700	12400	15300	14600	11100
MIN	3380	1780	1450	2300	1500	1100	1000	2340	9960	12700	11000	9500
AC-FT	425200	136400	109200	165800	102000	80030	78670	269700	667600	836600	787600	616300
CFSM	3.54	1.18	0.91	1.38	0.94	0.67	0.68	2.25	5.75	6.97	6.57	5.31
IN.	4.09	1.31	1.05	1.59	0.98	0.77	0.76	2.59	6.42	8.04	7.57	5.92

## 15266300 KENAI RIVER AT SOLDOTNA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)#

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7150	3415	2211	1887	1639	1340	1557	3174	8568	13480	14390	11730
MAX	14370	7335	5469	4290	4575	2696	2836	5645	12570	18740	24890	21280
(WY)	1970	1980	1977	1981	1981	1981	1980	1990	1980	1977	1977	1995
MIN	2852	1631	1132	823	822	800	812	1950	4940	9696	8706	5873
(WY)	1993	1974	1976	1976	1976	1976	1972	1973	1972	1973	1969	1969

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR			FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002#	
ANNUAL TOTAL	2585650			2155390			
ANNUAL MEAN	7084			5905		5925	
HIGHEST ANNUAL MEAN						8810	
LOWEST ANNUAL MEAN						4002	
HIGHEST DAILY MEAN	19800			Sep 3		15300	
LOWEST DAILY MEAN	1340			Apr 1		a1000	
ANNUAL SEVEN-DAY MINIMUM	1390			Mar 27		1030	
MAXIMUM PEAK FLOW						15600	
MAXIMUM PEAK STAGE						9.89	
MAXIMUM PEAK STAGE						c22.62	
INSTANTANEOUS LOW FLOW						989	
ANNUAL RUNOFF (AC-FT)	5129000			4275000		4293000	
ANNUAL RUNOFF (CFSM)	3.63			3.03		3.04	
ANNUAL RUNOFF (INCHES)	49.30			41.10		41.27	
10 PERCENT EXCEEDS	17200			13000		14200	
50 PERCENT EXCEEDS	3330			2900		3200	
90 PERCENT EXCEEDS	1680			1250		1200	

# See Period of Record; partial years used in monthly statistics  
a Apr. 8 to Apr. 10  
b Apr. 1 to Apr. 4, 1966  
c Backwater from ice  
e Estimated

## 15271000 SIXMILE CREEK NEAR HOPE

LOCATION.--Lat 60°49'15", long 149°25'31", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 34, T. 8 N., R. 1 W. (Seward D-7 quad), Kenai Peninsula Borough, Hydrologic Unit 19020302, Chugach National Forest, on left bank, 6.0 mi upstream from mouth at Turnagain Arm, and 10.6 mi southeast of Hope.

DRAINAGE AREA.-- 234 mi<sup>2</sup>

PERIOD OF RECORD.--June 1979 to September 1990, August 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 250 ft above sea level, from topographic map. Prior to November 26, 1979, recording gage at site 0.8 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Rain gage at station. GOES satellite telemetry at station.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Dec.27	0300	3580	11.48	June 18	04:15	3810*	11.60*
May 26	0115	3810*	11.60*				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	994	426	e250	736	e230	165	142	547	2920	2420	1030	689
2	901	412	e250	667	e220	156	147	523	2710	2230	1020	670
3	846	401	e250	568	e220	158	149	507	2720	2160	1040	648
4	892	389	e250	477	e220	e160	147	491	2730	2160	1090	613
5	1370	373	e250	e460	e220	e160	147	511	2650	2020	1050	616
6	1230	355	e250	e800	e220	e160	146	524	2590	2020	983	672
7	1030	331	e250	e500	e220	e160	132	518	2630	1960	987	656
8	925	337	e250	442	e220	e150	132	552	2780	1930	1040	622
9	957	e350	e250	413	e220	e150	130	608	2600	1880	979	602
10	890	e350	e250	387	e200	e150	127	654	2490	1680	865	581
11	823	361	e250	360	e200	e140	130	690	2400	1640	913	556
12	740	356	e250	340	e200	e140	134	766	2220	1670	1060	591
13	685	313	e250	325	e200	e140	137	924	2250	1670	1150	602
14	683	324	e250	315	e190	e140	129	1070	2230	1580	984	1110
15	651	345	e250	311	188	e140	126	1140	2820	1450	865	1180
16	612	309	e240	297	190	e140	128	1130	3130	1430	782	830
17	603	325	e240	294	191	e140	132	1310	3340	1560	795	846
18	584	348	e240	294	180	e140	131	1760	3450	1760	798	853
19	554	335	e240	285	173	e130	133	2200	3240	1560	792	713
20	529	356	e280	266	e180	e130	135	2520	2780	1380	944	654
21	543	345	e280	238	e180	e130	137	2750	2400	1350	1010	612
22	514	330	e280	e240	e170	e130	137	2940	2190	1420	911	576
23	476	321	e260	e240	e170	e130	139	3090	2300	1500	847	561
24	452	301	e350	e240	e170	e130	143	3380	2410	2040	809	611
25	405	278	460	e240	e160	e130	149	3360	2530	1630	751	745
26	397	e275	1310	e220	e160	136	160	3450	2950	1320	695	764
27	398	e275	2920	e220	164	134	189	3490	2670	1170	656	733
28	449	e275	1180	e220	161	133	237	3240	2250	1050	628	663
29	422	e275	652	e220	---	143	352	3160	2170	1010	637	613
30	412	e250	660	e230	---	142	481	3230	2320	1010	674	626
31	421	---	638	e230	---	144	---	3070	---	1030	676	---
TOTAL	21388	10021	13980	11075	5417	4431	4838	54105	78870	50690	27461	20808
MEAN	690	334	451	357	193	143	161	1745	2629	1635	886	694
MAX	1370	426	2920	800	230	165	481	3490	3450	2420	1150	1180
MIN	397	250	240	220	160	130	126	491	2170	1010	628	556
AC-FT	42420	19880	27730	21970	10740	8790	9600	107300	156400	100500	54470	41270
CFSM	2.95	1.43	1.93	1.53	.83	.61	.69	7.46	11.2	6.99	3.79	2.96
IN.	3.40	1.59	2.22	1.76	.86	.70	.77	8.60	12.54	8.06	4.37	3.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2002, BY WATER YEAR (WY)#

	876	415	279	239	176	155	244	1269	2723	2251	1306	1027
MEAN	876	415	279	239	176	155	244	1269	2723	2251	1306	1027
MAX	1777	654	451	528	306	240	397	1811	3957	3986	2699	1556
(WY)	1981	1980	2002	1981	1981	1984	1990	1981	2001	1980	1981	1999
MIN	500	221	198	133	113	106	119	748	1736	1166	760	607
(WY)	1998	1986	1999	1999	1999	1999	1985	1985	1989	1990	1990	1983

# See Period of Record; partial years used in monthly statistics  
e Estimated

## 15271000 SIXMILE CREEK NEAR HOPE—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1979 - 2002#	
ANNUAL TOTAL	428291		303084			
ANNUAL MEAN	1173		830		924	
HIGHEST ANNUAL MEAN					1335	
LOWEST ANNUAL MEAN					675	
HIGHEST DAILY MEAN	5890	Jun 28	3490	May 27	7570	Jul 12 1980
LOWEST DAILY MEAN	a126	Apr 6	126	Apr 15	b80	Apr 1 1986
ANNUAL SEVEN-DAY MINIMUM	128	Apr 4	130	Mar 19	80	Apr 1 1986
MAXIMUM PEAK FLOW			3810	May 26	c8070	Jul 2 1980
MAXIMUM PEAK STAGE			11.60	May 26	13.22	Jul 2 1980
INSTANTANEOUS LOW FLOW					d29	Nov 26 1979
ANNUAL RUNOFF (AC-FT)	849500		601200		669500	
ANNUAL RUNOFF (CFSM)	5.01		3.55		3.95	
ANNUAL RUNOFF (INCHES)	68.09		48.18		53.66	
10 PERCENT EXCEEDS	3120		2350		2440	
50 PERCENT EXCEEDS	476		511		551	
90 PERCENT EXCEEDS	157		142		140	

# See Period of Record; partial years used in monthly statistics

a Apr. 6, Apr. 7 and Apr. 9

b Apr. 1 to Apr. 9, 1986

c Peak discharge was probably greater sometime during the period, Nov. 26, 1979 to Jan. 9, 1980, during release from storage behind snow-avalanche dam upstream from former gage site

d Sometime between Nov. 26, 1979 and Jan. 9, 1980, during release from storage behind snow-avalanche dam upstream from former gage site, site and datum then in use

## 15272280 PORTAGE CREEK AT PORTAGE LAKE OUTLET NEAR WHITTIER

LOCATION.--Lat 60°47'07", long 148°50'20", in SW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 13, T. 8 N., R. 3 E. (Seward D-5 SW quad), Municipality of Anchorage, Hydrologic Unit 19020302, on left bank at lake outlet, 5.0 mi west of Whittier, 5.8 mi southeast of Portage, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--40.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 95 ft above sea level, from topographic map.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 12,500 ft<sup>3</sup>/s, August 19, 1984 (elevation about 97.05 ft above sea level from USFS levels) by contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 4,600 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height
Oct 5	1600	5070	7.60	Sept 14	1315	*7210	*8.57

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	774	135	111	1120	e90	e60	e29	e95	1040	1630	1520	1520
2	673	132	101	789	89	e55	e30	122	996	1530	1510	1380
3	720	141	92	571	93	e50	e30	130	1450	1510	1600	1290
4	1590	128	e88	437	e100	e45	e30	133	1770	1480	1700	1110
5	4230	118	e83	541	e110	e40	e30	136	1490	1450	1680	1060
6	2980	106	e82	990	e100	e35	e30	137	1200	1460	1630	1110
7	1640	95	e79	1020	e95	e30	e31	137	1020	1460	2090	1090
8	1070	87	e78	735	e90	e30	e31	139	1060	1490	2040	1010
9	1260	81	e75	1130	e85	e30	e32	150	1590	1500	1670	949
10	1050	78	75	788	e80	e30	e31	164	2040	1440	1530	869
11	725	79	80	459	e80	e30	e31	173	2000	1450	2170	778
12	542	95	82	308	e75	e28	e30	184	1710	1460	2300	955
13	431	88	78	242	e70	e27	e30	199	1360	1470	2130	2350
14	368	82	e76	257	e80	e28	e30	219	1160	1460	1750	6270
15	338	90	e74	292	e85	e32	e32	242	1240	1390	1440	4400
16	293	84	e70	262	e80	e35	e34	250	1420	1380	1220	2150
17	272	103	69	269	e75	e34	e38	262	1490	1480	1260	1720
18	240	180	62	376	e65	e32	e40	301	1510	1790	1290	1820
19	218	206	58	323	e65	e30	e40	366	1570	2110	1250	1280
20	225	275	84	250	e60	e29	e42	454	1440	1960	1610	923
21	299	307	107	209	e55	e28	e40	537	1310	1820	2510	694
22	258	280	130	174	e55	e28	e38	630	1200	1970	2730	583
23	218	301	116	148	e55	e30	e38	847	1170	2210	2850	653
24	191	280	101	129	e50	e32	e36	920	1470	3390	2550	1440
25	170	230	190	e120	e45	e34	e40	906	1900	3120	2030	3160
26	150	191	1430	e110	e45	e35	e42	907	2430	2610	1520	2830
27	137	163	2490	e100	e50	e32	e44	1030	2560	2310	1230	2110
28	132	147	1150	e94	e55	e30	e46	1040	1960	1760	1070	1360
29	121	137	718	e90	---	e30	e50	1030	1630	1580	1190	957
30	112	122	964	e90	---	e29	e75	1120	1610	1510	1820	915
31	112	---	962	e90	---	e28	---	1110	---	1530	1780	---
TOTAL	21539	4541	9955	12513	2077	1046	1100	14070	45796	54710	54670	48736
MEAN	694.8	151.4	321.1	403.6	74.18	33.74	36.67	453.9	1527	1765	1764	1625
MAX	4230	307	2490	1130	110	60	75	1120	2560	3390	2850	6270
MIN	112	78	58	90	45	27	29	95	996	1380	1070	583
AC-FT	42720	9010	19750	24820	4120	2070	2180	27910	90840	108500	108400	96670
CFSM	17.2	3.74	7.93	9.97	1.83	0.83	0.91	11.2	37.7	43.6	43.5	40.1
IN.	19.78	4.17	9.14	11.49	1.91	0.96	1.01	12.92	42.06	50.25	50.22	44.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)#

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	545.1	228.1	139.0	146.2	114.4	84.04	229.6	599.0	1448	2104	2040	1855		
MAX	1014	553	325	460	277	189	393	1158	1728	2518	3164	3583		
(WY)	1994	1998	2002	2001	1997	1998	1995	1995	1990	1990	1989	1995		
MIN	136	90.5	26.3	26.0	26.0	26.0	36.7	286	1178	1714	1409	649		
(WY)	1997	1991	1991	1991	1991	1991	2002	2001	2001	1999	1998	1992		

# See Period of Record, partial years used in monthly statistics  
e Estimated

## 15272280 PORTAGE CREEK AT PORTAGE LAKE OUTLET NEAR WHITTIER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	295440		270753			
ANNUAL MEAN	809.4		741.8		786.1	
HIGHEST ANNUAL MEAN					972	1995
LOWEST ANNUAL MEAN					656	2000
HIGHEST DAILY MEAN	7970	Aug 29	6270	Sep 14	10700	Sep 20 1995
LOWEST DAILY MEAN	58	Dec 19	27	Mar 13	a26	Dec 5 1990
ANNUAL SEVEN-DAY MINIMUM	69	Feb 19	29	Mar 8	26	Dec 5 1990
MAXIMUM PEAK FLOW			7620	Sep 14	13000	Sep 20 1995
MAXIMUM PEAK STAGE			8.57	Sep 14	10.66	Sep 20 1995
INSTANTANEOUS LOW FLOW			b		26	Dec 5 1990
ANNUAL RUNOFF (AC-FT)	586000		537000		569500	
ANNUAL RUNOFF (CFSM)	20.0		18.3		19.4	
ANNUAL RUNOFF (INCHES)	271.37		248.69		263.73	
10 PERCENT EXCEEDS	1880		1820		1980	
50 PERCENT EXCEEDS	280		262		304	
90 PERCENT EXCEEDS	89		33		55	

# See Period of Record, partial years used in monthly statistics

a From Dec. 5, 1990 to Mar. 31, 1991

b Not determined, see lowest daily mean

## 15272380 TWENTYMILE RIVER BELOW GLACIER RIVER NEAR PORTAGE

LOCATION.--Lat 60°53'53", long 148°55'19", in NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 4, T. 9 N., R. 3 E. (Seward D-6 quad), Hydrologic Unit 19020401, on right bank, 0.1 miles downstream from Glacier River, 4.0 miles upstream from mouth at Seward Highway, and 6.0 miles northeast of Portage.

DRAINAGE AREA.--141 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.--Record is good except for July 18 to September 1 which are fair, and estimated daily discharges which are poor. GOES satellite telemetry at station.

REVISIONS.--Revised figures of discharge for water year 2001 are given below. These figures supercede those published in report for 2001.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	e195	547	1760	3510	e2900	4500
2	---	---	---	---	---	---	e195	521	1950	3490	3010	3260
3	---	---	---	---	---	---	258	533	2090	3380	3180	2820
4	---	---	---	---	---	---	271	469	2030	3190	3180	3170
5	---	---	---	---	---	---	226	416	2020	3310	3070	4410
6	---	---	---	---	---	---	197	483	2070	3310	3010	3260
7	---	---	---	---	---	---	183	490	1920	3020	2900	2730
8	---	---	---	---	---	---	180	440	1750	2810	2710	2330
9	---	---	---	---	---	---	178	439	1870	2660	2600	2030
10	---	---	---	---	---	---	191	433	2070	2670	2450	1810
11	---	---	---	---	---	---	344	422	2230	2630	2370	1660
12	---	---	---	---	---	---	439	412	2230	2800	2590	2170
13	†758	---	---	---	---	---	345	432	2100	2790	2910	3100
14	---	---	---	---	---	---	294	505	2170	2720	3210	2850
15	---	---	---	---	---	---	263	603	2380	2770	3270	2530
16	---	‡552	---	---	---	---	264	682	2700	2650	3150	2200
17	---	---	---	---	---	---	254	731	3050	2780	2980	2450
18	---	---	---	---	---	---	243	789	3160	2890	3090	2590
19	---	---	---	---	---	---	243	866	2970	3040	3110	2380
20	---	---	---	---	---	---	247	1010	2850	4440	6140	2110
21	---	---	---	---	---	---	267	1090	3020	4830	5620	2140
22	---	---	---	---	---	---	282	1170	3250	5160	4130	2070
23	---	---	---	---	---	---	300	1130	3730	4900	3170	2650
24	---	---	---	---	---	---	295	1140	4050	4040	2920	4090
25	---	---	---	---	---	---	395	1100	3840	3360	2760	3080
26	---	---	---	---	---	---	437	1060	4020	e3200	2580	2520
27	---	---	---	---	---	---	464	1060	4480	e3100	2530	2080
28	---	---	---	---	---	---	734	1200	4640	e2900	5510	1940
29	---	---	---	---	---	---	626	1400	4410	e2800	11000	1860
30	---	---	---	---	---	---	559	1460	3880	e2700	9230	1600
31	---	---	---	---	---	---	---	1630	---	e2800	7170	---
TOTAL	---	---	---	---	---	---	9369	24663	84690	100650	118450	78390
MEAN	---	---	---	---	---	---	312	796	2823	3247	3821	2613
MAX	---	---	---	---	---	---	734	1630	4640	5160	11000	4500
MIN	---	---	---	---	---	---	178	412	1750	2630	2370	1600
MED	---	---	---	---	---	---	266	682	2540	3020	3070	2480
AC-FT	---	---	---	---	---	---	18580	48920	168000	199600	234900	155500
CFSM	---	---	---	---	---	---	2.21	5.64	20.0	23.0	27.1	18.5
IN.	---	---	---	---	---	---	2.47	6.51	22.34	26.55	31.25	20.68

† Result of discharge measurement  
e Estimated

## 15272380 TWENTYMILE RIVER BELOW GLACIER RIVER NEAR PORTAGE—Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	459	e340	1510	e190	e95	e75	565	2320	2810	2620	2390
2	1410	451	e340	1360	e180	e95	e75	512	2150	2680	2640	2180
3	1290	444	e340	1180	e170	e90	e75	501	2250	2680	2700	2050
4	1660	432	e330	983	e180	e80	e80	491	2420	2710	2900	1850
5	4170	404	e330	998	e170	e70	e80	496	2300	2580	2870	1830
6	4020	381	e330	1710	e150	e65	e80	503	2180	2550	2700	1990
7	2720	e360	e320	1900	e150	e65	e80	507	2120	2580	2800	1870
8	1990	354	e310	1440	e160	e65	e75	575	2170	2640	2900	1710
9	1990	e340	e300	1990	e130	e70	e80	644	2280	2610	2750	1590
10	1920	375	e310	1510	e120	e70	e85	719	2440	2460	2520	1450
11	1600	356	e330	1030	e140	e70	e80	753	2430	2530	2920	1330
12	1320	383	e340	819	e140	e65	e75	806	2300	2570	3300	1400
13	1110	368	e330	689	e130	e60	e70	886	2210	2640	3240	2600
14	975	335	e320	e560	e130	e65	e75	968	2110	2590	2770	6280
15	872	e320	e310	e490	e120	e75	e70	1030	2390	2470	2380	4970
16	807	381	e300	e470	e130	e80	e65	1020	2630	2540	2130	2830
17	737	368	e300	e500	e140	e90	e65	1110	2800	2770	2180	2190
18	715	571	e290	e560	e110	e85	70	1320	2910	2950	2220	1930
19	659	612	e390	e450	e90	e80	97	1610	2870	2980	2200	1570
20	629	660	501	e380	e80	e80	115	1870	2650	2750	2560	1270
21	836	695	589	e350	e70	e75	113	2040	2490	2640	3350	1040
22	712	646	701	e240	e80	e75	122	2140	2360	2860	3900	892
23	669	609	674	e210	e90	e70	121	2200	2360	3070	3770	930
24	600	e550	644	e190	e110	e75	130	2400	2500	4120	3320	1500
25	553	e480	849	e170	e100	e85	142	2460	2860	3900	2750	3750
26	505	e430	3410	e150	e95	e95	159	2490	3120	3320	2300	3680
27	507	e400	3700	e170	e95	e90	205	2510	3280	3160	1980	3000
28	469	e380	2070	e190	e100	e85	251	2400	2910	2760	1840	2090
29	471	e370	1480	e210	---	e80	353	2290	2770	2600	1980	1530
30	449	e360	1520	e200	---	e75	471	2370	2800	2550	2530	1360
31	445	---	1360	e180	---	e70	---	2380	---	2620	2680	---
TOTAL	38300	13274	23658	22789	3550	2390	3634	42566	75380	86690	83700	65052
MEAN	1235	442	763	735	127	77.1	121	1373	2513	2796	2700	2168
MAX	4170	695	3700	1990	190	95	471	2510	3280	4120	3900	6280
MIN	445	320	290	150	70	60	65	491	2110	2460	1840	892
MED	836	392	340	500	130	75	80	1030	2430	2640	2700	1860
AC-FT	75970	26330	46930	45200	7040	4740	7210	84430	149500	171900	166000	129000
CFSM	8.76	3.14	5.41	5.21	0.90	0.55	0.86	9.74	17.8	19.8	19.1	15.4
IN.	10.10	3.50	6.24	6.01	0.94	0.63	0.96	11.23	19.89	22.87	22.08	17.16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)#

MEAN	1235	442	763	735	127	77.1	217	1084	2668	3022	3260	2391
MAX	1235	442	763	735	127	77.1	312	1373	2823	3247	3821	2613
(WY)	2002	2002	2002	2002	2002	2002	2001	2002	2001	2001	2001	2001
MIN	1235	442	763	735	127	77.1	121	796	2513	2796	2700	2168
(WY)	2002	2002	2002	2002	2002	2002	2002	2001	2002	2002	2002	2002

## SUMMARY STATISTICS

## FOR 2002 WATER YEAR

## WATER YEARS 2001 - 2002#

ANNUAL TOTAL	460983											
ANNUAL MEAN	1263									1263		
HIGHEST ANNUAL MEAN										1263		2002
LOWEST ANNUAL MEAN										1263		2002
HIGHEST DAILY MEAN	6280					Sep 14				11000		Aug 29 2001
LOWEST DAILY MEAN	60					Mar 13				60		Mar 13 2002
ANNUAL SEVEN-DAY MINIMUM	66					Mar 7				66		Mar 7 2002
MAXIMUM PEAK FLOW	7400					Sep 14				12300		Aug 29 2001
MAXIMUM PEAK STAGE	23.27					Sep 14				25.47		Aug 29 2001
ANNUAL RUNOFF (AC-FT)	914400									915000		
ANNUAL RUNOFF (CFSM)	8.96									8.96		
ANNUAL RUNOFF (INCHES)	121.62									121.70		
10 PERCENT EXCEEDS	2800									2800		
50 PERCENT EXCEEDS	712									712		
90 PERCENT EXCEEDS	80									80		

# See Period of Record, partial years used in monthly statistics  
e Estimated



## 15272380 TWENTYMILE RIVER BELOW GRANITE RIVER NEAR PORTAGE—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to September 2002.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 2002 to Spetember 2002.

INSTRUMENTATION.--Electronic water-temperature recorder set for 15 minute recording interval.

REMARKS.--Probe installed on April 22. Records represent water temperature at the sensor within 0.5°C. Temperature at the sensor was compared with the average for the stream by cross section on April 22 and September 3. No variation more than 0.5°C was found within the cross sections. No variation more than 0.5°C was found between mean stream temperature and sensor temperature. Heavy shore ice occurs near the gage.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 9.0°C, several days in June, July and August; Minimum, 0.0°C on April 23 and 24.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	STREAM WIDTH (FT) (00004)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SAM- PLING METHOD, CODES (82398)	SAMPLER TYPE (CODE) (84164)	TEMPER- ATURE WATER (DEG C) (00010)
APR								
22...	1245	57.0	5.00	14.98	121	10	8010	2.5
22...	1247	57.0	15.0	14.98	121	10	8010	2.6
22...	1249	57.0	25.0	14.98	121	10	8010	2.5
22...	1251	57.0	35.0	14.98	121	10	8010	2.5
22...	1253	57.0	45.0	14.98	121	10	8010	2.6
22...	1255	57.0	55.0	14.98	121	10	8010	2.6
SEP								
03...	1342	150	15.0	18.15	1960	10	8010	6.2
03...	1344	150	45.0	18.15	1960	10	8010	6.2
03...	1346	150	75.0	18.15	1960	10	8010	6.2
03...	1348	150	105	18.15	1960	10	8010	6.1
03...	1350	150	135	18.15	1960	10	8010	6.1

## 15272380 TWENTYMILE RIVER BELOW GRANITE RIVER NEAR PORTAGE—Continued

WATER TEMPERATURE, (DEGREES CELSIUS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	4.5	0.5	2.0
2	---	---	---	---	---	---	---	---	---	6.0	0.5	2.5
3	---	---	---	---	---	---	---	---	---	5.5	1.0	3.0
4	---	---	---	---	---	---	---	---	---	6.5	0.5	3.0
5	---	---	---	---	---	---	---	---	---	6.0	1.0	3.5
6	---	---	---	---	---	---	---	---	---	3.5	2.0	2.5
7	---	---	---	---	---	---	---	---	---	7.0	1.5	4.0
8	---	---	---	---	---	---	---	---	---	6.0	2.0	3.5
9	---	---	---	---	---	---	---	---	---	5.5	2.0	3.5
10	---	---	---	---	---	---	---	---	---	6.5	1.5	4.0
11	---	---	---	---	---	---	---	---	---	7.5	2.0	4.0
12	---	---	---	---	---	---	---	---	---	8.0	1.5	4.5
13	---	---	---	---	---	---	---	---	---	8.5	1.5	4.5
14	---	---	---	---	---	---	---	---	---	7.0	2.0	4.0
15	---	---	---	---	---	---	---	---	---	5.5	2.5	3.5
16	---	---	---	---	---	---	---	---	---	8.5	1.5	4.5
17	---	---	---	---	---	---	---	---	---	8.5	2.0	5.0
18	---	---	---	---	---	---	---	---	---	8.5	2.0	5.0
19	---	---	---	---	---	---	---	---	---	8.0	2.0	4.5
20	---	---	---	---	---	---	---	---	---	8.0	2.5	4.5
21	---	---	---	---	---	---	---	---	---	8.0	2.5	5.0
22	---	---	---	---	---	---	5.0	---	---	5.5	3.0	4.0
23	---	---	---	---	---	---	5.5	0.0	2.5	8.0	3.5	5.5
24	---	---	---	---	---	---	6.0	0.0	3.0	8.0	3.0	5.0
25	---	---	---	---	---	---	5.5	0.5	3.0	8.0	3.0	5.0
26	---	---	---	---	---	---	6.0	1.5	3.5	7.0	3.0	5.0
27	---	---	---	---	---	---	6.5	1.0	3.5	6.0	3.5	4.5
28	---	---	---	---	---	---	4.5	1.0	2.5	6.0	3.0	4.5
29	---	---	---	---	---	---	5.0	1.0	2.5	6.5	4.0	5.0
30	---	---	---	---	---	---	3.0	0.5	2.0	6.0	3.5	4.5
31	---	---	---	---	---	---	---	---	---	7.5	3.5	5.0
MONTH	---	---	---	---	---	---	---	---	---	8.5	0.5	4.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.0	3.5	4.5	6.5	5.0	5.5	9.0	4.5	6.5	7.0	4.5	5.5
2	6.0	3.5	4.5	8.5	4.5	6.0	8.5	4.5	6.5	7.5	4.0	5.5
3	6.0	4.0	5.0	7.5	4.5	6.0	9.0	5.0	6.5	7.0	4.0	5.0
4	6.5	4.0	4.5	8.0	4.5	6.0	9.0	5.0	6.5	7.5	4.5	5.5
5	6.0	4.0	5.0	8.5	4.0	6.0	8.0	5.0	6.0	6.0	5.0	5.5
6	5.5	3.5	4.5	6.5	5.0	5.5	7.0	5.0	6.0	5.5	5.0	5.0
7	8.5	3.5	5.5	9.0	4.5	6.5	7.5	5.0	6.0	6.5	4.0	5.0
8	6.0	4.0	5.0	9.0	4.5	6.5	6.0	5.0	5.5	6.5	4.5	5.0
9	5.5	4.0	4.5	6.0	5.0	5.5	8.0	4.5	6.0	7.0	4.5	5.5
10	5.5	3.5	4.5	9.0	4.5	6.5	6.0	5.0	5.5	7.0	3.5	5.0
11	6.5	4.0	5.0	8.0	5.0	6.5	5.5	5.0	5.0	5.5	4.0	5.0
12	7.5	4.0	5.5	8.5	5.0	6.5	6.5	5.0	5.5	5.0	4.5	5.0
13	6.5	4.0	5.0	9.0	5.0	6.5	8.0	5.0	6.0	5.5	4.5	5.0
14	9.0	3.5	6.0	7.0	5.0	6.0	8.0	4.5	5.5	5.5	4.5	4.5
15	9.0	3.5	6.0	9.0	5.0	6.5	6.5	4.5	5.5	5.5	4.5	5.0
16	9.0	4.0	6.0	9.0	4.5	6.5	6.5	4.5	5.5	6.5	4.0	5.0
17	8.5	4.0	6.0	9.0	5.0	6.5	8.5	4.5	6.0	6.0	4.5	5.0
18	8.0	4.0	5.5	7.0	5.5	6.0	8.0	5.0	6.0	6.0	4.0	5.0
19	7.0	4.5	5.0	7.5	4.5	6.0	6.0	5.0	5.5	5.0	4.0	4.5
20	7.5	4.0	5.5	7.5	5.0	6.0	6.0	5.0	5.5	5.5	3.5	4.0
21	7.5	4.0	5.5	7.0	5.0	6.0	5.5	5.0	5.0	6.0	3.0	4.0
22	9.0	4.0	6.0	6.5	5.0	6.0	5.5	5.0	5.0	6.0	3.5	4.5
23	6.0	4.5	5.0	6.5	5.0	5.5	6.5	4.5	5.5	6.0	5.0	5.0
24	7.0	4.5	5.5	6.5	5.0	5.5	6.0	5.0	5.5	5.5	5.0	5.0
25	6.0	4.5	5.0	6.0	5.0	5.5	6.5	4.5	5.5	5.5	4.0	4.5
26	6.0	4.0	5.0	6.0	5.0	5.0	7.5	4.0	5.5	5.5	4.5	5.0
27	6.0	4.0	5.0	7.5	4.5	6.0	6.0	4.0	5.0	5.5	4.5	4.5
28	8.0	4.0	5.5	7.5	4.5	6.0	8.0	4.0	5.5	5.5	4.0	4.5
29	8.5	4.0	6.0	8.0	4.5	6.0	6.0	5.0	5.5	4.5	3.5	4.0
30	8.5	4.5	6.0	9.0	4.5	6.5	5.5	4.5	5.0	5.0	4.0	4.5
31	---	---	---	9.0	4.5	6.5	6.5	4.5	5.0	---	---	---
MONTH	9.0	3.5	5.2	9.0	4.0	6.0	9.0	4.0	5.6	7.5	3.0	4.9

## 15276000 SHIP CREEK NEAR ANCHORAGE

LOCATION.--Lat 61°13'32", long 149°38'06", in SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 9, T. 13 N., R. 2 W. (Anchorage A-8 quad), Municipality of Anchorage, Hydrologic Unit 19020401, in Fort Richardson Military Reservation, on left bank, 800 ft downstream from diversion dam, 3.3 mi upstream from North Fork Ship Creek, and 7.8 mi east of intersection of Seward and Glenn Highways in Anchorage.

DRAINAGE AREA.--90.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1936: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 490 ft above sea level, from topographic map. Prior to August 22, 1985, water-stage recorder at dam 800 ft upstream. See WSP 1936 for history of changes prior to October 1, 1954.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Discharge data represent the net flow remaining after diversion for water supply to Fort Richardson, Elmendorf Air Force Base, and Municipality of Anchorage. Average diversion for water year 2002 was 7.43 ft<sup>3</sup>/s. Diversion began in 1944. Magnitude of discharges downstream of dam may be affected by periodic spillway adjustment.

COOPERATION.--Gage inspected and records of diversion provided by Office of Post Engineers, Fort Richardson.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	e80	e55	e42	e36	e30	e26	81	493	233	105	163
2	117	e75	e50	e42	e34	e30	e26	68	453	233	100	163
3	117	e75	e50	e42	e32	e30	e26	65	429	223	98	152
4	127	e75	e50	e42	e34	e30	e26	64	417	231	97	146
5	130	e70	e50	e42	e34	e30	e24	67	404	219	96	145
6	133	e70	e50	e42	e34	e30	e24	73	409	211	103	195
7	128	e70	e50	e40	e34	e28	e24	73	408	202	98	185
8	125	e70	e50	e40	e34	e28	e22	81	404	193	112	182
9	123	e65	e50	e40	e34	e28	e24	93	384	188	114	178
10	125	e65	e50	e40	e34	e28	e24	90	353	179	107	173
11	123	e65	e55	e40	e32	e28	e26	88	336	171	132	168
12	e115	e65	e50	e40	e32	e28	e26	95	321	163	151	200
13	e110	e65	e48	e40	e32	e28	e28	116	321	168	219	204
14	111	e65	e46	e38	e32	e28	e28	140	330	164	193	197
15	111	e65	e46	e38	e32	e28	e28	158	391	158	171	193
16	e100	e70	e46	e38	e32	e28	e30	162	435	154	152	184
17	e100	e65	e46	e38	e32	e28	e30	208	462	151	138	177
18	105	e65	e46	e38	e32	e28	31	278	467	184	129	170
19	e100	e65	e50	e38	e32	e28	32	356	439	168	123	167
20	e100	e65	e46	e36	e32	e28	32	448	378	156	154	160
21	e95	e65	e46	e36	e32	e28	32	512	329	149	192	154
22	e95	e65	e44	e36	e32	e28	32	561	298	145	208	148
23	e95	e65	e44	e36	e30	e28	32	570	299	143	207	143
24	e90	e65	e44	e36	e30	e26	32	599	291	162	186	168
25	e90	e65	e44	e36	e30	e26	32	643	290	159	170	194
26	e90	e60	e55	e36	e30	e26	33	677	271	151	167	225
27	e85	e60	e50	e36	e30	e26	37	660	256	159	161	278
28	e85	e60	e46	e36	e30	e26	39	611	248	151	154	280
29	e85	e55	e44	e36	---	e26	56	560	243	135	152	273
30	e80	e55	e44	e36	---	e26	70	560	241	117	167	294
31	e80	---	e44	e36	---	e26	---	535	---	110	170	---
TOTAL	3290	1985	1489	1192	904	864	932	9292	10800	5330	4526	5659
MEAN	106.1	66.17	48.03	38.45	32.29	27.87	31.07	299.7	360.0	171.9	146.0	188.6
MAX	133	80	55	42	36	30	70	677	493	233	219	294
MIN	80	55	44	36	30	26	22	64	241	110	96	143
AC-FT	6530	3940	2950	2360	1790	1710	1850	18430	21420	10570	8980	11220
ADJUSTED TO INCLUDE DIVERSION												
MEAN	112	72.5	54.6	44.7	36.6	33.0	36.0	306	366	180	168	194
CFSM	1.24	0.80	0.60	0.49	0.40	0.36	0.40	3.39	4.04	1.99	1.85	2.14
IN	1.43	0.89	0.70	0.57	0.44	0.42	0.44	3.90	4.51	2.30	2.14	2.39
AC-FT	6890	4320	3360	2750	2110	2030	2140	18840	21770	11090	10320	11550
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)#												
MEAN	148.6	77.39	47.22	31.27	22.26	16.83	24.92	166.9	453.7	305.5	207.6	210.6
MAX	318	177	107	79.3	54.6	42.1	69.7	456	798	645	510	471
(WY)	1994	1953	1948	1961	1961	1947	1990	1990	1977	1980	1981	1967
MIN	48.7	24.3	13.9	7.13	5.36	3.61	4.77	39.9	132	72.0	73.0	55.8
(WY)	1969	1969	1969	1956	1983	1956	1954	1971	1996	1996	1996	1969

# See Period of Record and Remarks. Values shown on this page are unadjusted for diversion, unless otherwise noted  
e Estimated

## 15276000 SHIP CREEK NEAR ANCHORAGE—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1947 - 2002#	
ANNUAL TOTAL	58906		46263			
ANNUAL MEAN	161.4		126.7		143.1	
ANNUAL MEAN	*170		*134		*161	
HIGHEST ANNUAL MEAN					223 1980	
LOWEST ANNUAL MEAN					67.3 1969	
HIGHEST DAILY MEAN	826	Jun 18	677	May 26	1420	Aug 9 1971
LOWEST DAILY MEAN	a27	Apr 5	22	Apr 8	b0.00	Jan 2 1956
ANNUAL SEVEN-DAY MINIMUM	28	Apr 5	24	Apr 4	0.43	Jan 9 1956
MAXIMUM PEAK FLOW			750	May 25	1860	Jun 21 1949
MAXIMUM PEAK STAGE			5.90	May 25	c3.44	Jun 21 1949
MAXIMUM PEAK STAGE					d6.52	Jun 21 1949
INSTANTANEOUS LOW FLOW					0.00	Jan 2 1956
ANNUAL RUNOFF (AC-FT)	116800		91760		103700	
ANNUAL RUNOFF (AC-FT)	*122900		*97200		*116600	
ANNUAL RUNOFF (CFSM)	*1.87		*1.48		*1.78	
ANNUAL RUNOFF (IN)	*25.4		*20.1		*24.2	
10 PERCENT EXCEEDS	511		296		369	
50 PERCENT EXCEEDS	65		73		76	
90 PERCENT EXCEEDS	32		28		14	

# See Period of Record and Remarks. Values shown on this page are unadjusted for diversion, unless otherwise noted

\* Adjusted to account for diversion, see Remarks

a Apr. 5 and Apr. 7

b No flow during one or more days in water years 1956, 1960, 1969, and 1971

c Site and datum then in use

d Current site and datum

## 15278000 EKLUTNA LAKE NEAR PALMER

LOCATION.--Lat 61°24'39", long 149°07'20", in NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 18, T. 15 N., R. 2 E. (Anchorage B-6 quad), Municipality of Anchorage, Hydrologic Unit 19020402, on north shore, 0.7 mi upstream from lake outlet, 12 mi upstream from mouth of Eklutna River, and 14 mi south of Palmer.

DRAINAGE AREA.--119 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1946 to September 1962 (fragmentary after January 1955), June 1983 to current year. Fragmentary records for the period October 1962 to June 1983 available from Eklutna Hydroelectric Project.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Alaska Power Administration). Prior to June 1983, non-recording gage at lake outlet at datum of 859.8 ft above sea level.

REMARKS.--Lake outlet consists of earth and rockfill dam with uncontrolled spillway crest at an elevation of 871 ft. Prior to 1965, control structure 1400 ft upstream with spillway crest at elevation of 867.5 ft which could be flash-boarded to elevation of 871 ft. Outflow was controlled by the flash boards and sluice gates. Dead storage below elevation of 859 ft. Reservoir is used for power generation and water supply. GOES satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 877.68 ft, September 25, 1995; minimum observed, 814.2 ft, June 1, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 867.14 ft, October 1; minimum, 833.51 ft, May 19.

GAGE HEIGHT from DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	867.05	863.04	860.00	855.75	851.71	848.02	842.43	834.87	835.08	841.60	856.17	864.31
2	866.93	862.96	859.91	855.66	851.58	847.89	842.22	834.73	835.16	841.97	856.51	864.41
3	866.82	862.80	859.84	855.57	851.42	847.77	842.02	834.56	835.22	842.34	856.87	864.46
4	866.73	862.61	859.70	855.48	851.27	847.62	841.77	834.44	835.31	842.88	857.36	864.53
5	866.72	862.47	859.55	855.38	851.12	847.46	841.56	834.34	835.44	843.49	857.86	864.63
6	866.75	862.36	859.39	855.33	851.00	847.30	841.35	834.25	835.57	844.03	858.39	864.84
7	866.64	862.22	859.21	855.25	850.90	847.16	841.14	834.30	835.70	844.62	858.87	865.02
8	866.45	862.07	859.06	855.11	850.78	847.04	840.94	834.35	835.85	845.15	859.33	865.13
9	866.26	861.95	858.95	855.01	850.66	846.91	840.71	834.40	835.94	845.61	859.77	865.16
10	866.06	861.86	858.81	854.91	850.59	846.77	840.50	834.46	836.00	845.98	860.15	865.18
11	865.87	861.76	858.65	854.76	850.52	846.63	840.30	834.40	836.04	846.35	860.55	865.18
12	865.69	861.67	858.50	854.65	850.38	846.48	840.09	834.29	836.05	846.85	861.00	865.13
13	865.53	861.57	858.38	854.54	850.21	846.36	839.81	834.14	836.07	847.36	861.47	865.09
14	865.43	861.49	858.24	854.37	850.05	846.22	839.60	834.02	836.11	847.90	861.78	865.16
15	865.30	861.41	858.09	854.21	849.89	846.02	839.42	833.88	836.22	848.41	861.96	865.22
16	865.18	861.35	857.97	854.10	849.73	845.85	839.21	833.72	836.40	848.84	862.04	865.19
17	865.04	861.30	857.79	853.96	849.59	845.66	838.94	833.59	836.63	849.27	862.13	865.09
18	864.93	861.27	857.60	853.83	849.47	845.42	838.62	833.54	836.93	849.85	862.25	864.98
19	864.85	861.19	857.38	853.69	849.34	845.16	838.27	833.57	837.27	850.47	862.42	864.84
20	864.75	861.10	857.18	853.55	849.20	844.87	837.96	833.58	837.61	850.99	862.69	864.70
21	864.67	860.99	857.01	853.35	849.08	844.62	837.64	833.62	837.95	851.48	863.02	864.57
22	864.51	860.91	856.87	853.19	848.97	844.39	837.27	833.69	838.30	851.97	863.33	864.44
23	864.34	860.81	856.76	853.04	848.86	844.25	836.92	833.73	838.69	852.47	863.59	864.29
24	864.19	860.69	856.62	852.87	848.75	844.13	836.53	833.79	839.09	853.13	863.77	864.19
25	864.00	860.60	856.44	852.68	848.65	844.00	836.18	833.94	839.54	853.77	863.91	864.18
26	863.83	860.49	856.33	852.54	848.52	843.78	835.85	834.16	839.92	854.24	863.97	864.20
27	863.75	860.37	856.27	852.43	848.35	843.55	835.56	834.38	840.20	854.64	863.98	864.24
28	863.70	860.26	856.17	852.29	848.17	843.32	835.29	834.56	840.46	854.96	863.96	864.23
29	863.55	860.15	856.05	852.13	---	843.10	835.14	834.67	840.76	855.21	864.01	864.21
30	863.35	860.07	855.92	851.97	---	842.84	835.00	834.83	841.16	855.50	864.14	864.14
31	863.17	---	855.82	851.84	---	842.61	---	834.98	---	855.82	864.22	---
MEAN	865.23	861.46	857.89	853.98	849.96	845.59	838.94	834.19	837.22	848.94	861.34	864.70
MAX	867.05	863.04	860.00	855.75	851.71	848.02	842.43	834.98	841.16	855.82	864.22	865.22
MIN	863.17	860.07	855.82	851.84	848.17	842.61	835.00	833.54	835.08	841.60	856.17	864.14

## 15280200 EKLUTNA RIVER AT OLD GLENN HIGHWAY AT EKLUTNA

LOCATION.--Lat 61°27'01", long 149°22'02", in NE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 25, T. 16 N., R. 1 W. (Anchorage B-7 quad), Municipality of Anchorage, Hydrologic Unit 19020402, on right bank, 1.3 mi upstream from mouth, 0.7 mi south of Eklutna.

DRAINAGE AREA.--172 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1 to September 30, 2002.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. GOES satellite telemetry at station.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period May to September, 111 ft<sup>3</sup>/s, May 26 and 27, gage-height, 85.79 ft; minimum daily discharge, 26 ft<sup>3</sup>/s, May 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	†40	86	62	46	69
2	---	---	---	---	---	---	---	e32	85	61	47	69
3	---	---	---	---	---	---	---	e28	77	61	47	67
4	---	---	---	---	---	---	---	e26	74	59	49	65
5	---	---	---	---	---	---	---	e27	82	58	48	65
6	---	---	---	---	---	---	---	e28	82	57	48	76
7	---	---	---	---	---	---	---	e28	79	55	50	71
8	---	---	---	---	---	---	---	e29	80	55	52	70
9	---	---	---	---	---	---	---	e30	76	55	56	74
10	---	---	---	---	---	---	---	†31	75	56	52	77
11	---	---	---	---	---	---	---	e32	71	55	55	77
12	---	---	---	---	---	---	---	e33	70	54	59	76
13	---	---	---	---	---	---	---	e34	68	54	66	73
14	---	---	---	---	---	---	---	e35	74	53	70	70
15	---	---	---	---	---	---	---	†36	85	53	76	68
16	---	---	---	---	---	---	---	38	90	53	76	66
17	---	---	---	---	---	---	---	42	90	51	74	64
18	---	---	---	---	---	---	---	48	87	53	69	63
19	---	---	---	---	---	---	---	53	82	50	69	61
20	---	---	---	---	---	---	---	61	81	52	73	59
21	---	---	---	---	---	---	---	69	82	49	70	57
22	---	---	---	---	---	---	---	72	80	48	71	55
23	---	---	---	---	---	---	---	69	76	49	70	54
24	---	---	---	---	---	---	---	75	74	51	76	53
25	---	---	---	---	---	---	---	82	73	51	80	53
26	---	---	---	---	---	---	---	97	72	50	72	57
27	---	---	---	---	---	---	---	104	70	52	68	57
28	---	---	---	---	---	---	---	91	71	50	65	55
29	---	---	---	---	---	---	---	84	68	48	66	55
30	---	---	---	---	---	---	---	87	66	48	68	56
31	---	---	---	---	---	---	---	87	---	48	70	---
TOTAL	---	---	---	---	---	---	---	1628	2326	1651	1958	1932
MEAN	---	---	---	---	---	---	---	52.52	77.53	53.26	63.16	64.40
MAX	---	---	---	---	---	---	---	104	90	62	80	77
MIN	---	---	---	---	---	---	---	26	66	48	46	53
AC-FT	---	---	---	---	---	---	---	3230	4610	3270	3880	3830
CFSM	---	---	---	---	---	---	---	0.31	0.45	0.31	0.37	0.37
IN.	---	---	---	---	---	---	---	0.35	0.50	0.36	0.42	0.42

† Result of discharge measurement  
e Estimated

## SOUTHCENTRAL ALASKA

## 15281000 KNIK RIVER NEAR PALMER

LOCATION.--Lat 61°30'18", long 149°01'50", in NE<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 2, T.16 N., R.2 E. (Anchorage C-6 quad), Matanuska-Susitna Borough, Hydrologic Unit 19020402, near the right bank on downstream side of bridge on Old Glenn Highway, 7 mi south of Palmer, 7 mi upstream from Alaska Railroad bridge, 9 mi downstream from Friday Creek, and about 17 mi downstream from Knik Glacier.

DRAINAGE AREA.--1,180 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1959 to January 1988, annual maximum, water year 1989, October 1991 to September 1992, and April, 2001 to current year.

REVISED RECORDS.--WRD-AK-77-1: 1974-75 (M).

GAGE.--Water-stage recorder. Datum of gage is 27.51 ft above National Geodetic Vertical Datum of 1929 (surveys show a correction of -2.69 ft needed after earthquake of Mar. 27, 1964. Correction used beginning in 1985) Prior to June 27, 1960, nonrecording gage, and June 27, 1960 to Apr. 25, 1974, water-stage recorder at old bridge 100 ft upstream at original 1929 datum. Apr. 26, 1974 to Apr. 18, 1976, recording gage at site 0.4 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flood peaks due to outbreak of glacier-dammed Lake George, 1948-62, 1964, 1965, published in WSP 1936. Streamflow augmented by glaciers, which cover 54 percent of the basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1948, 359,000 ft<sup>3</sup>/s, July 18, 1958, gage height, 25.30 ft, at site in use beginning 1959, from outbreak of glacier-dammed Lake George.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6040	e2200	e1500	e1200	e900	e850	e950	e1300	14700	22800	26000	14000
2	6020	e2200	e1500	e1200	e900	e850	e950	e1600	13600	e23000	26100	13300
3	5670	e2200	e1500	e1200	e900	e850	e950	e1600	13100	e24000	26200	12500
4	6270	e2100	e1500	e1100	e900	e850	e950	e1500	12800	e23000	28200	11500
5	7430	e2100	e1500	e1100	e900	e850	e950	e1500	12500	e23000	29000	11800
6	8300	e2100	e1500	e1100	e900	e850	e950	e1700	11800	e22000	29800	13800
7	7840	e2000	e1400	e1100	e900	e850	e950	e1800	11400	e23000	29400	13100
8	7020	e2000	e1400	e1100	e900	e850	e950	e2000	12100	e24000	28700	11700
9	6660	e2000	e1400	e1100	e900	e850	e950	e2200	12600	e23000	27300	10300
10	6350	e2000	e1400	e1100	e900	e850	e950	e2400	11900	e22000	24100	9110
11	5890	e1900	e1400	e1100	e850	e850	e950	e2800	12300	23200	22800	8040
12	5130	e1900	e1400	e1100	e850	e850	e950	e3200	12500	24600	23500	7460
13	4560	e1900	e1400	e1000	e850	e850	e1000	e3100	12700	25400	24700	7800
14	4040	e1900	e1400	e1000	e850	e850	e1000	e3600	12600	25600	22800	9210
15	3750	e1800	e1400	e1000	e850	e850	e1000	e4000	13900	25000	20300	10200
16	e3500	e1800	e1300	e1000	e850	e850	e1000	e5000	16500	24700	17500	8950
17	3350	e1800	e1300	e1000	e850	e850	e1000	5570	19200	26200	15700	7610
18	3180	e1800	e1300	e1000	e850	e850	e1000	6130	21100	29600	17000	6690
19	3070	e1800	e1300	e1000	e850	e850	e1000	7080	22600	29300	19100	5860
20	e3000	e1700	e1300	e1000	e850	e900	e1000	8010	22000	28500	20300	5280
21	2920	e1700	e1300	e1000	e850	e900	e1000	9040	21200	27800	21200	4340
22	2870	e1700	e1300	e950	e850	e900	e1000	10100	20400	28000	21700	3720
23	e2800	e1700	e1300	e950	e850	e900	e1000	10100	20500	28500	22700	3750
24	e2700	e1700	e1300	e950	e850	e900	e1000	10600	19500	32300	22000	4250
25	e2600	e1600	e1200	e950	e850	e900	e1000	11200	20000	33600	19900	5540
26	e2500	e1600	e1200	e950	e850	e900	e1000	12000	20300	32400	17600	7210
27	e2500	e1600	e1200	e950	e850	e900	e1000	14200	19400	29200	15600	9400
28	e2400	e1600	e1200	e950	e850	e900	e1100	14100	19900	25300	13300	9750
29	e2400	e1600	e1200	e950	---	e900	e1200	13700	20400	22900	13400	9430
30	e2300	e1600	e1200	e950	---	e900	e1300	16200	21400	23000	14200	8800
31	e2300	---	e1200	e950	---	e900	---	15800	---	24700	14200	---
TOTAL	135360	55600	41700	32000	24300	26950	30000	203130	494900	799600	674300	264400
MEAN	4366	1853	1345	1032	867.9	869.4	1000	6553	16500	25790	21750	8813
MAX	8300	2200	1500	1200	900	900	1300	16200	22600	33600	29800	14000
MIN	2300	1600	1200	950	850	850	950	1300	11400	22000	13300	3720
AC-FT	268500	110300	82710	63470	48200	53460	59500	402900	981600	1586000	1337000	524400
CFSM	3.70	1.57	1.14	0.87	0.74	0.74	0.85	5.55	14.0	21.9	18.4	7.47
IN.	4.27	1.75	1.31	1.01	0.77	0.85	0.95	6.40	15.60	25.21	21.26	8.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)#

MEAN	4346	1776	968.8	870.1	731.2	651.7	913.9	3775	12800	23560	21380	11260
MAX	9419	4844	1932	3781	2464	1314	1534	7347	19960	37450	28300	16960
(WY)	1970	1965	1977	1981	1977	1977	1983	1981	1969	1960	1979	1974
MIN	1782	637	500	460	338	260	348	1039	2598	17440	15260	6594
(WY)	1982	1969	1974	1976	1962	1962	1972	1965	1965	1970	1969	1992

# See Period of Record; partial years used in monthly statistics  
e Estimated

## 15281000 KNIK RIVER NEAR PALMER—Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002#	
ANNUAL TOTAL	2782240			
ANNUAL MEAN	7623		7002	
HIGHEST ANNUAL MEAN			13800	2001
LOWEST ANNUAL MEAN			2286	1988
HIGHEST DAILY MEAN	33600	Jul 25	341000	Jul 26 1961
LOWEST DAILY MEAN	a850	Feb 11	b260	Mar 1 1962
ANNUAL SEVEN-DAY MINIMUM	850	Feb 11	260	Mar 1 1962
MAXIMUM PEAK FLOW	34800	Jul 25	cd355000	Jul 26 1961
MAXIMUM PEAK STAGE	11.96	Jul 25	24.35	Jul 17 1960
ANNUAL RUNOFF (AC-FT)	5519000		5072000	
ANNUAL RUNOFF (CFSM)	6.46		5.93	
ANNUAL RUNOFF (INCHES)	87.71		80.62	
10 PERCENT EXCEEDS	23000		21200	
50 PERCENT EXCEEDS	2000		2000	
90 PERCENT EXCEEDS	850		500	

# See Period of Record; partial years used in monthly statistics

a Feb. 11 to Mar. 19

b Mar. 1-31, 1962

c Site then in use, caused by release of stored water (Lake George) behind Knik Glacier

d Gage height, 24.3 ft



## SOUTHCENTRAL ALASKA

## 15284000 MATANUSKA RIVER AT PALMER

LOCATION.--Lat 61°36'33", long 149°04'15", in SE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 34, T. 18 N., R. 2 E. (Anchorage C-6 quad), Matanuska-Susitna Borough, Hydrologic Unit 19020402, on downstream left bank of old Glenn Highway bike path bridge, and 1 mi east of Palmer.

DRAINAGE AREA.--2,070 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--April 1949 to September 1973, May 1985 to September 1986, October 1991 to September 1992, and May 2000 to current year. Annual maximum, water year 1974 and 1995.

GAGE.--Water-stage recorder. Datum of gage is 170.92 ft above National Geodetic Vertical Datum of 1929 (Alaska Railroad Commission benchmark, prior to Mar. 27, 1964 earthquake). Prior to Nov. 2, 1950, non-recording gage at bridge 20 ft upstream at same datum. Nov. 2, 1950 to Apr. 30, 1952, non-recording gage at current site and same datum. May 1, 1952 to Sep. 30, 1973, July 19 to Oct. 20, 1987, and Oct. 1, 1991 to Sep. 30, 1992, water-stage recorder at site 100 ft downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Rain gage at station. GOES satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 21,000 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Jul 18	0700	*a15,600	*11.51

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2160	e1200	e850	e700	e550	e550	e500	4470	7320	9860	8960	5540
2	2130	e1200	e850	e700	e550	e550	e500	3440	6870	9850	9490	5770
3	2020	e1200	e800	e700	e550	e500	e500	2980	6340	9700	10000	5650
4	2060	e1100	e800	e700	e550	e500	e500	2730	6190	11600	11800	5220
5	2040	e1100	e800	e700	e550	e500	e500	2400	6250	10800	12900	5210
6	2080	e1100	e800	e750	e550	e500	e500	2380	6250	9310	13800	6430
7	2000	e1100	e800	e700	e550	e500	e500	2330	6070	8910	12300	6210
8	1950	e1100	e800	e650	e550	e500	e500	2380	6360	9500	10900	5700
9	1900	e1000	e800	e700	e550	e500	e500	2570	5860	10300	10300	5240
10	1890	e1000	e800	e650	e550	e500	e500	2600	5270	9520	9060	5000
11	1860	e1000	e800	e650	e550	e500	e500	2500	5170	10000	8720	4590
12	1750	e1000	e750	e650	e550	e500	e500	2390	5190	10700	9530	4220
13	1630	e1000	e750	e650	e550	e500	e500	2520	5280	10600	11100	3980
14	1590	e950	e750	e700	e550	e500	e500	3000	5470	10500	10000	3780
15	1550	e950	e750	e700	e550	e500	e500	3270	6490	10600	9000	3660
16	1510	e950	e750	e700	e550	e490	e500	3050	7860	11000	7970	3620
17	1480	e950	e750	e650	e550	e490	e500	3190	9550	13500	7570	3520
18	1490	e950	e750	e600	e550	e490	e500	3820	10200	14700	7780	3480
19	1520	e950	e750	e600	e550	e490	e500	4960	10900	13300	8250	3370
20	1520	e900	e750	e600	e550	e490	e500	5850	9340	12000	9040	3320
21	1550	e900	e750	e600	e550	e490	e500	8430	8750	11700	9490	3090
22	1480	e900	e750	e600	e550	e490	e500	9510	8370	11500	8910	2850
23	1440	e900	e750	e600	e550	e490	e500	8750	8580	11100	8000	2690
24	e1400	e900	e700	e600	e550	e490	e500	9280	8480	11700	7360	2650
25	e1400	e900	e700	e600	e550	e490	e520	10400	10100	11600	7020	2920
26	e1300	e850	e750	e600	e550	e490	e540	10900	10400	10700	6710	3230
27	e1300	e850	e700	e600	e550	e490	e560	10000	8780	9130	6290	4030
28	e1300	e850	e700	e600	e550	e490	e650	8330	8480	8030	5770	3810
29	e1300	e850	e700	e600	---	e490	e900	8420	8650	7620	5650	3580
30	e1200	e850	e700	e600	---	e490	e4000	8440	9630	8730	5510	3440
31	e1200	---	e700	e600	---	e490	---	7460	---	8980	5450	---
TOTAL	51000	29450	23550	20050	15400	15440	19170	162750	228450	327040	274630	125800
MEAN	1645	981.7	759.7	646.8	550.0	498.1	639.0	5250	7615	10550	8859	4193
MAX	2160	1200	850	750	550	550	4000	10900	10900	14700	13800	6430
MIN	1200	850	700	600	550	490	500	2330	5170	7620	5450	2650
AC-FT	101200	58410	46710	39770	30550	30630	38020	322800	453100	648700	544700	249500
CFSM	0.79	0.47	0.37	0.31	0.27	0.24	0.31	2.54	3.68	5.10	4.28	2.03
IN.	0.92	0.53	0.42	0.36	0.28	0.28	0.34	2.92	4.11	5.88	4.94	2.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002, BY WATER YEAR (WY) #

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
MEAN	1929	984.9	728.7	621.8	520.1	473.5	636.8	2744	10120	13080	9910	4893
MAX	3093	1793	1024	821	629	583	985	6019	17250	18750	15730	8966
(WY)	2001	1972	1972	1961	2001	2001	1964	1960	1964	2000	1971	1951
MIN	1166	568	440	349	381	360	465	1007	5415	9206	4992	2123
(WY)	1992	1959	1969	1959	1971	1971	1972	1966	1965	1973	1969	1969

a Peak discharge adjusted to exclude surge; peak gage-height not adjusted to exclude surge  
e Estimated

## 15284000 MATANUSKA RIVER AT PALMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002#	
ANNUAL TOTAL	1547976		1292730			
ANNUAL MEAN	4241		3542		3825	
HIGHEST ANNUAL MEAN					4815 1957	
LOWEST ANNUAL MEAN					2562 1969	
HIGHEST DAILY MEAN	31300	Jun 29	14700	Jul 18	40700	Aug 10 1971
LOWEST DAILY MEAN	507	Apr 9	b490	Mar 16	234	Apr 25 1956
ANNUAL SEVEN-DAY MINIMUM	523	Apr 4	490	Mar 16	304	Apr 20 1956
MAXIMUM PEAK FLOW			a15600	Jul 18	c82100	Aug 10 1971
MAXIMUM PEAK STAGE			11.51	Jul 18	d13.60	Aug 10 1971
ANNUAL RUNOFF (AC-FT)	3070000		2564000		2771000	
ANNUAL RUNOFF (CFSM)	2.05		1.71		1.85	
ANNUAL RUNOFF (INCHES)	27.82		23.23		25.10	
10 PERCENT EXCEEDS	12700		9850		11700	
50 PERCENT EXCEEDS	1000		1300		1160	
90 PERCENT EXCEEDS	579		500		480	

# See Period of Record; partial years used in monthly statistics

a Peak discharge adjusted to exclude surge; peak stage not adjusted to exclude surge

b Mar. 16 to 31

c From rating curve extended above 34,000 ft<sup>3</sup>/s on basis of velocity-area study, from break-out of natural reservoir on Granite Creek tributary

d Site then in use

SOUTHCENTRAL ALASKA

15290000 LITTLE SUSITNA RIVER NEAR PALMER

LOCATION.--Lat 61°42'37", long 149°13'47", in SE 1/4 NW 1/4 sec. 26, T. 19 N., R. 1 E. (Anchorage C-6 NW quad), Matanuska-Susitna Borough, Hydrologic Unit 19020505, on right bank 100 ft downstream from highway bridge on Wasilla-Fishhook Road, 1.5 mi north of road junction, 1.8 mi downstream from unnamed tributary, and 8 mi northwest of Palmer. Prior to October 1, 1991 at site 60 ft upstream.

DRAINAGE AREA.--61.9 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1948 to current year. Low-flow records not equivalent prior to January 1962 because most measurements below 300 ft<sup>3</sup>/s were made at site 3.4 mi downstream.

GAGE.--Water-stage recorder. Datum of gage is 916.6 ft above sea level (river-profile survey). Prior to August 16, 1948, non-recording gage and August 17, 1948 to May 15, 1972, water-stage recorder on left bank; water-stage recorder on right bank, May 16, 1972 to September 30, 1991, at site 60 ft upstream. Prior to October 1, 1974, at datum 4.00 ft higher; October 1, 1974 to September 30, 1991, at datum 2.00 ft higher.

REMARKS.--Records fair except for October 16 to April 30 (flow under ice), and for discharges above 700 ft<sup>3</sup>/s, which are poor. GOES satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 21	2000	1270	5.37	Aug. 13	0415	*1600	*5.69
May 25	2230	*1600	5.68				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	e65	e37	29	24	21	18	151	572	303	186	305
2	112	e65	e37	29	23	21	18	94	441	283	185	282
3	108	e60	e36	29	23	20	18	77	430	274	189	258
4	137	e60	e36	28	23	20	18	74	434	644	193	240
5	124	e60	e36	29	23	20	18	68	512	337	188	246
6	122	e60	36	28	23	20	18	61	423	289	190	663
7	116	e55	34	28	23	20	18	55	386	268	177	528
8	109	e55	e34	28	23	20	18	60	385	267	310	429
9	107	e55	e34	28	23	e20	18	71	317	260	372	389
10	107	e50	e34	28	23	e20	18	65	301	232	314	359
11	104	e50	e34	27	22	e20	18	70	319	243	451	346
12	99	e48	e34	27	22	e20	18	84	326	265	668	492
13	93	e46	e34	27	22	e20	18	113	338	287	1180	497
14	96	e44	e32	27	22	e20	18	143	415	247	737	428
15	92	e44	e32	27	22	e19	18	145	516	224	535	391
16	e90	e44	e32	27	22	e19	18	133	616	225	418	371
17	e90	e43	e32	27	22	e19	18	194	682	229	359	359
18	86	e43	e32	27	22	e19	18	278	608	255	323	356
19	83	e43	e32	26	22	19	18	382	576	233	331	332
20	84	e42	32	26	21	19	18	573	465	215	693	313
21	82	e42	32	25	21	19	18	805	339	202	828	288
22	78	e41	32	25	21	19	18	854	312	193	787	267
23	77	e41	31	25	22	19	18	738	324	190	621	248
24	e75	e40	31	25	21	19	18	789	317	205	492	296
25	e75	e40	31	25	21	19	18	1080	399	240	418	416
26	e75	e39	31	25	21	19	19	1130	321	208	373	595
27	e70	e39	31	25	21	19	22	799	293	247	339	894
28	e70	e38	30	e25	21	18	e29	692	303	220	312	819
29	e70	e38	30	e24	---	18	e50	865	335	200	298	672
30	e70	e37	30	24	---	18	e170	802	313	194	290	674
31	e70	---	29	24	---	18	---	612	---	189	322	---
TOTAL	2879	1427	1018	824	619	601	740	12057	12318	7868	13079	12753
MEAN	92.9	47.6	32.8	26.6	22.1	19.4	24.7	389	411	254	422	425
MAX	137	65	37	29	24	21	170	1130	682	644	1180	894
MIN	70	37	29	24	21	18	18	55	293	189	177	240
MED	90	44	32	27	22	19	18	151	386	240	339	365
AC-FT	5710	2830	2020	1630	1230	1190	1470	23920	24430	15610	25940	25300
CFSM	1.50	0.77	0.53	0.43	0.36	0.31	0.40	6.28	6.63	4.10	6.82	6.87
IN.	1.73	0.86	0.61	0.50	0.37	0.36	0.44	7.25	7.40	4.73	7.86	7.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)#

MEAN	137	62.4	40.1	30.7	24.8	20.3	25.2	221	666	496	408	304
MAX	391	134	61.7	54.1	41.2	29.7	68.0	649	1215	1047	909	651
(WY)	1984	1980	1980	1961	1982	1991	1990	1990	1977	1963	1971	1985
MIN	51.3	24.5	17.4	17.5	14.0	10.0	10.0	52.9	276	193	169	82.2
(WY)	1969	1969	1955	1959	1952	1956	1955	1971	1996	1996	1969	1969

# See Period of Record for remark on low-flow records; partial years used in monthly statistics  
e Estimated

## 15290000 LITTLE SUSITNA RIVER NEAR PALMER—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002#	
ANNUAL TOTAL	62434		66183			
ANNUAL MEAN	171		181		203	
HIGHEST ANNUAL MEAN					316 1949	
LOWEST ANNUAL MEAN					95.8 1969	
HIGHEST DAILY MEAN	1100	Jun 17	1180	Aug 13	5040	Aug 10 1971
LOWEST DAILY MEAN	a20	Mar 21	b18	Mar 28	c8.0	Apr 1 1956
ANNUAL SEVEN-DAY MINIMUM	20	Apr 2	18	Mar 28	8.0	Apr 1 1956
MAXIMUM PEAK FLOW			d1600	Aug 13	f7840	Aug 10 1971
MAXIMUM PEAK STAGE			5.69	Aug 13	g13.00	Aug 10 1971
INSTANTANEOUS LOW FLOW			16	Apr 21	8.0	Apr 1 1956
ANNUAL RUNOFF (AC-FT)	123800		131300		147200	
ANNUAL RUNOFF (CFSM)	2.76		2.93		3.28	
ANNUAL RUNOFF (INCHES)	37.52		39.77		44.60	
10 PERCENT EXCEEDS	432		494		565	
50 PERCENT EXCEEDS	53		65		68	
90 PERCENT EXCEEDS	22		19		20	

# See Period of Record for remark on low-flow records; partial years used in monthly statistics

a Mar. 21 to Mar. 23, Mar. 31, Apr. 2, Apr. 5 to Apr. 7 and Apr. 9

b Mar. 28 to Apr. 25

c Apr. 1 to Apr. 20, 1956; and Mar. 11 and 12, 1957

d Also May 25

f From rating curve extended above 4,600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

g Gage height about 13.0 ft, from floodmarks; 9.84 ft in gage well;

12.30 ft at top of needle peak in gage well; at prior datum (WY 1974-91) at sites then in use

15292000 SUSITNA RIVER AT GOLD CREEK

LOCATION.--Lat 62°46'04", long 149°41'28", in NW¼ sec. 20, T. 31 N., R. 2 W. (Talkeetna Mts. D-6 quad), Matanuska-Susitna Borough, Hydrologic Unit 19020501, near left bank under Alaska Railroad bridge, 0.1 mi downstream from Gold Creek, 0.9 mi north of Gold Creek railroad station, and 2.0 mi. downstream from Indian River.

DRAINAGE AREA.--6,160 mi², approximately.

PERIOD OF RECORD.--August 1949 to 1996 and May 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 676.50 ft above sea level. Prior to June 6, 1957, non-recording gage at same site and datum. June 7, 1957 to June 2, 1964, water-stage recorder at site 0.3 mi upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. GOES satellite telemetry at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

Table with 13 columns (DAY, OCT, NOV, DEC, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP) and 33 rows (1-31) of daily discharge data in CFS.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002, BY WATER YEAR (WY)#

Table with 13 columns (MEAN, MAX, MIN, AC-FT, CFMS, IN.) and 13 rows of monthly mean discharge statistics for water years 1949-2002.

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1949 - 2002#

Summary statistics table comparing 2002 values with historical 1949-2002 values for metrics like Annual Total, Mean, Peak Flow, etc.

# See Period of Record; partial years used in monthly statistics
a Apr. 2-16
b Feb. 16-20, 1950
c Maximum observed, ice jam
e Estimated

15292700 TALKEETNA RIVER NEAR TALKEETNA  
(Hydrologic Bench-Mark Station)

LOCATION.--Lat 62°20'49", long 150°01'01", in NE<sup>1</sup>/<sub>4</sub> sec. 16, T. 26 N., R. 4 W. (Talkeetna B-1 quad), Matanuska-Susitna Borough, Hydrologic Unit 19020503, on left bank 1.7 mi downstream from Chunilna Creek, 3.5 mi northeast of Talkeetna, and about 5 mi upstream from mouth.

DRAINAGE AREA.--1,996 mi<sup>2</sup>.

REVISED RECORDS.-- WRD AK 2000-1: Drainage Area.

PERIOD OF RECORD.--June 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map. From October 1, 1992 to September 30, 1994 at site 0.5 mi upstream at different datum.

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

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2620	e1200	e750	e550	e500	e460	e400	e800	6990	6640	6470	8980
2	2920	e1200	e750	e550	e500	e460	e380	e900	5950	7340	6460	8130
3	2660	e1100	e750	e550	e500	e460	e380	e950	5670	6840	6610	7260
4	2680	e1100	e750	e550	e500	e460	e380	e1000	6160	8930	7150	6680
5	2780	e1100	e700	e550	e500	e460	e380	e1100	7980	8080	7420	6500
6	3050	e1100	e700	e550	e500	e460	e380	e1200	8170	6710	8030	11200
7	3030	e1100	e700	e550	e500	e460	e380	e1400	7840	6440	8600	11800
8	2750	e1000	e700	e550	e500	e440	e380	e1500	7900	6760	10500	10500
9	2590	e1000	e700	e550	e500	e440	e380	e1600	6150	6880	12100	9890
10	2610	e1000	e700	e550	e500	e440	e380	e1800	6370	5980	11400	9130
11	2660	e1000	e700	e550	e500	e440	e380	e2000	6240	6290	11900	8380
12	2430	e1000	e700	e550	e500	e440	e380	2240	5950	6810	14900	11600
13	2080	e1000	e700	e550	e500	e440	e360	2750	5750	6910	16000	13000
14	2040	e950	e700	e550	e500	e440	e360	3480	5590	6840	12700	10700
15	2100	e950	e650	e550	e500	e440	e380	4220	5990	6530	10200	9300
16	1880	e900	e650	e550	e500	e420	e380	3700	6170	6950	8570	8530
17	1790	e900	e650	e550	e500	e420	e400	5250	6630	7220	7780	7920
18	e1700	e900	e650	e550	e500	e420	e400	8300	7170	7530	7470	7390
19	e1700	e900	e650	e550	e500	e420	e400	12200	7240	8540	7710	6910
20	e1600	e850	e650	e550	e480	e420	e400	15400	7300	8180	11600	6590
21	e1600	e850	e650	e550	e480	e420	e400	20100	6200	7760	15500	6080
22	e1500	e850	e650	e550	e480	e420	e420	19000	5450	7690	15000	5620
23	e1500	e800	e600	e550	e480	e420	e460	15300	5350	7100	13100	5270
24	e1400	e800	e600	e550	e480	e420	e480	14300	5320	8590	11900	5460
25	e1400	e800	e600	e500	e480	e420	e500	14500	6540	8880	11200	8050
26	e1400	e800	e600	e500	e480	e400	e550	15200	8690	8140	10600	8010
27	e1300	e800	e600	e500	e480	e400	e600	13100	6850	7240	9490	11600
28	e1300	e800	e600	e500	e460	e400	e650	9440	6060	6760	8450	10700
29	e1300	e800	e600	e500	---	e400	e700	10200	6330	6330	8080	9630
30	e1200	e750	e600	e500	---	e400	e750	11400	6290	6160	8550	10200
31	e1200	---	e600	e500	---	e400	---	8970	---	6450	9190	---
TOTAL	62770	28300	20600	16700	13800	13340	13170	223300	196290	223500	314630	261010
MEAN	2025	943.3	664.5	538.7	492.9	430.3	439.0	7203	6543	7210	10150	8700
MAX	3050	1200	750	550	500	460	750	20100	8690	8930	16000	13000
MIN	1200	750	600	500	460	400	360	800	5320	5980	6460	5270
AC-FT	124500	56130	40860	33120	27370	26460	26120	442900	389300	443300	624100	517700
CFSM	1.01	0.47	0.33	0.27	0.25	0.22	0.22	3.61	3.28	3.61	5.08	4.36
IN.	1.17	0.53	0.38	0.31	0.26	0.25	0.25	4.16	3.66	4.17	5.86	4.86

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)#

MEAN	2778	1165	829.7	680.4	573.9	514.3	660.0	4791	10950	10290	9159	5874
MAX	10000	1992	1122	996	990	1058	1912	11510	19040	15410	16770	12090
(WY)	1987	1987	1987	1990	1990	1990	1990	1990	1971	1981	1971	1993
MIN	1424	672	538	457	401	285	396	2145	5207	7080	3787	2070
(WY)	1997	1992	1996	1996	1969	1982	1986	1971	1969	1969	1969	1969

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1964 - 2002#

ANNUAL TOTAL	1299400	1387410										
ANNUAL MEAN	3560	3081										
HIGHEST ANNUAL MEAN									4035			
LOWEST ANNUAL MEAN									5389			1990
HIGHEST DAILY MEAN	16200	Jun 12	20100	May 22	63200	Oct 11	1986					
LOWEST DAILY MEAN	a500	Mar 22	b360	Apr 13	c260	Feb 27	1982					
ANNUAL SEVEN-DAY MINIMUM	500	Mar 22	374	Apr 8	260	Feb 27	1982					
MAXIMUM PEAK FLOW			22800	May 22	75700	Oct 11	1986					
MAXIMUM PEAK STAGE			10.25	May 22	17.38	Oct 11	1986					
ANNUAL RUNOFF (AC-FT)	2577000	2752000	2923000									
ANNUAL RUNOFF (CFSM)	1.78	1.90	2.02									
ANNUAL RUNOFF (INCHES)	24.22	25.86	27.47									
10 PERCENT EXCEEDS	10200	9730	10600									
50 PERCENT EXCEEDS	1100	1100	1400									
90 PERCENT EXCEEDS	550	420	500									

# See Period of Record; partial years used in monthly statistics  
a Mar. 22 to Apr. 1  
b Apr. 13-14  
c From Feb. 27 to Mar. 20, 1982  
e Estimated

## SOUTHCENTRAL ALASKA

## 15294005 WILLOW CREEK NEAR WILLOW

LOCATION.--Lat 61°46'51", long 149°53'04", in NW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub> sec. 31, T.20 N., R.3 W. (Anchorage D-8 quad), Matanuska-Susitna Borough, Hydrologic Unit 19020505, on the right bank, 0.9 mi downstream from unnamed tributary, 5.5 mi northeast of Willow, and 6.7 mi upstream from Deception Creek.

DRAINAGE AREA.--166 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1978 to September 1993, and May 2001 to current year.

REVISED RECORDS.--WRD-AK-80-1: 1979 (M).

GAGE.--Water-stage recorder. Elevation of gage is 350 ft above sea level from topographic map. Prior to Apr. 2, 1981 at site 0.2 mi upstream at different datum.

REMARKS.--Records good, except for estimated daily discharges, which are poor. Rain gage at station. GOES satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge 2,300 ft<sup>3</sup>/s and maximums (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Aug. 13	0600	*2120	*4.65

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205	e120	e80	e65	e60	e50	e46	e300	929	433	217	660
2	253	e110	e75	e60	e60	e50	e46	e290	813	412	204	656
3	218	e110	e75	e60	e60	e50	e46	e280	742	387	193	558
4	321	e110	e75	e60	e60	e50	e46	288	779	519	186	512
5	291	e110	e75	e60	e60	e50	e44	243	943	412	179	499
6	308	e110	e75	e60	e60	e50	e44	211	856	365	221	1260
7	275	e100	e75	e60	e60	e50	e44	179	729	344	254	1070
8	249	e100	e75	e60	e60	e50	e44	185	712	321	595	932
9	235	e100	e75	e60	e55	e50	e42	258	605	303	720	849
10	246	e100	e75	e60	e55	e50	e42	229	568	288	501	789
11	244	e100	e75	e60	e55	e50	e42	212	610	276	750	752
12	221	e100	e70	e60	e55	e50	e42	248	654	e270	1040	1220
13	e200	e100	e70	e60	e55	e50	e40	344	659	e270	1610	1250
14	e190	e95	e70	e60	e55	e50	e40	453	681	e280	989	998
15	e180	e95	e70	e60	e55	e50	e40	455	722	e280	778	881
16	e170	e90	e70	e60	e55	e50	e40	386	770	e290	674	835
17	e160	e90	e70	e60	e55	e50	e38	549	789	e300	596	786
18	e160	e90	e70	e60	e55	e50	e38	674	760	293	528	819
19	e150	e90	e70	e60	e55	e50	e38	797	745	282	522	733
20	e150	e90	e70	e60	e55	e50	e40	963	708	253	1080	693
21	e140	e90	e70	e60	e55	e50	e40	1160	573	224	1280	637
22	e140	e85	e70	e60	e55	e50	e40	1230	510	211	1080	594
23	e140	e85	e70	e60	e55	e50	e40	1210	497	205	890	564
24	e140	e85	e65	e60	e55	e50	e40	1170	488	221	794	683
25	e140	e85	e65	e60	e55	e50	e40	1380	635	298	857	1010
26	e130	e85	e65	e60	e55	e50	e40	1450	531	293	774	1160
27	e130	e80	e65	e60	e55	e50	e42	1130	470	407	682	1670
28	e130	e80	e65	e60	e55	e48	e50	1020	459	359	618	1470
29	e120	e80	e65	e60	---	e48	e80	1150	459	326	583	1230
30	e120	e80	e65	e60	---	e48	e120	1190	456	266	604	1370
31	e120	---	e65	e60	---	e48	---	954	---	235	661	---
TOTAL	5876	2845	2190	1865	1580	1542	1374	20588	19852	9623	20660	27140
MEAN	189.5	94.83	70.65	60.16	56.43	49.74	45.80	664.1	661.7	310.4	666.5	904.7
MAX	321	120	80	65	60	50	120	1450	943	519	1610	1670
MIN	120	80	65	60	55	48	38	179	456	205	179	499
AC-FT	11660	5640	4340	3700	3130	3060	2730	40840	39380	19090	40980	53830
CFSM	1.14	0.57	0.43	0.36	0.34	0.30	0.28	4.00	3.99	1.87	4.01	5.45
IN.	1.32	0.64	0.49	0.42	0.35	0.35	0.31	4.61	4.45	2.16	4.63	6.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)#

MEAN	391.8	157.5	107.3	84.94	73.02	63.62	90.87	636.5	1052	699.0	622.4	658.2
MAX	1197	364	152	112	98.8	97.5	205	1578	1500	1287	1286	1177
(WY)	1987	1980	1980	1980	1990	1990	1990	1990	1990	1980	1981	1993
MIN	177	81.5	57.3	57.1	52.9	33.7	45.8	340	484	310	307	259
(WY)	1985	1985	1981	1981	1981	1982	2002	1985	1981	2002	1978	1978

# See Period of Record; partial years used in monthly statistics  
e Estimated

## 15294005 WILLOW CREEK NEAR WILLOW—Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002#	
ANNUAL TOTAL	115135			
ANNUAL MEAN	315.4		395.9	
HIGHEST ANNUAL MEAN			536	1990
LOWEST ANNUAL MEAN			315	2002
HIGHEST DAILY MEAN	1670	Sep 27	8670	Oct 11 1986
LOWEST DAILY MEAN	a38	Apr 17	b33	Mar 9 1982
ANNUAL SEVEN-DAY MINIMUM	39	Apr 13	33	Mar 9 1982
MAXIMUM PEAK FLOW	2120	Aug 13	c12000	Oct 11 1986
MAXIMUM PEAK STAGE	4.65	Aug 13	9.01	Oct 11 1986
MAXIMUM PEAK STAGE			d9.40	Dec 18 1986
ANNUAL RUNOFF (AC-FT)	228400		286800	
ANNUAL RUNOFF (CFSM)	1.90		2.39	
ANNUAL RUNOFF (INCHES)	25.80		32.41	
10 PERCENT EXCEEDS	852		1000	
50 PERCENT EXCEEDS	120		195	
90 PERCENT EXCEEDS	50		62	

# See Period of Record; partial years used in monthly statistics

a Apr. 17-19

b Mar. 9-30, 1982

c From rating curve extended above 3,900 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

d Backwater from ice



## 15294700 JOHNSON RIVER ABOVE LATERAL GLACIER NEAR TUXEDNI BAY

LOCATION.--Lat 60°05'41", long 152°54'38", in SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 16, T. 1 S., R. 21 W. (Kenai A-8 quad), Kenai Peninsula Borough, Hydrologic Unit 19020602, on the right bank about 20 mi upstream from mouth, 10 mi south of Tuxedni Bay, and 60 mi northeast of Iliamna.

DRAINAGE AREA.--24.8 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1995 to current year (no winter record).

GAGE.--Water-stage recorder. Elevation of gage is 450 ft above sea level, from topographic map. July 1995 to June 1996, at site 300 ft downstream at same datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 8,800 ft<sup>3</sup>/s, September 21, 1995 from rating curve extended above 3,500 ft<sup>3</sup>/s on the basis of slope-area measurement, gage height 14.60 ft at site then in use, gage height 16.27 ft at the current site; minimum not determined, occurs during the winter.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge for the period October 2001 and May through September 2002, 2,080 ft<sup>3</sup>/s, September 24, gage height, 12.68 ft; minimum not determined, occurs during the winter.

REMARKS.--Records are fair except for estimated discharges, which are poor. Rain gage at station. GOES satellite telemetry at station.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	---	---	---	---	---	---	e50	525	837	685	481
2	186	---	---	---	---	---	---	e46	463	796	681	480
3	460	---	---	---	---	---	---	e42	507	778	687	420
4	1090	---	---	---	---	---	---	e36	536	849	662	369
5	863	---	---	---	---	---	---	e32	505	805	604	477
6	528	---	---	---	---	---	---	e32	535	765	588	464
7	378	---	---	---	---	---	---	e34	560	672	567	393
8	302	---	---	---	---	---	---	e38	589	595	556	334
9	349	---	---	---	---	---	---	e40	953	545	563	314
10	259	---	---	---	---	---	---	e40	869	524	611	257
11	194	---	---	---	---	---	---	e42	635	604	692	210
12	171	---	---	---	---	---	---	e44	603	647	624	594
13	151	---	---	---	---	---	---	e44	587	590	606	1660
14	140	---	---	---	---	---	---	e46	603	527	537	1430
15	129	---	---	---	---	---	---	e50	726	538	493	910
16	120	---	---	---	---	---	---	e60	814	572	559	597
17	e115	---	---	---	---	---	---	e90	814	690	628	807
18	108	---	---	---	---	---	---	e150	824	825	619	589
19	104	---	---	---	---	---	---	e250	774	733	558	399
20	99	---	---	---	---	---	---	e350	645	655	633	273
21	95	---	---	---	---	---	---	e600	636	651	759	219
22	e90	---	---	---	---	---	---	e1000	666	769	749	221
23	e85	---	---	---	---	---	---	e1500	653	962	644	709
24	e85	---	---	---	---	---	---	e1300	689	1110	483	1630
25	e80	---	---	---	---	---	---	e900	725	831	422	1040
26	e80	---	---	---	---	---	---	e800	717	925	389	967
27	e75	---	---	---	---	---	---	e750	776	763	393	627
28	e75	---	---	---	---	---	---	e650	697	639	418	434
29	e70	---	---	---	---	---	---	e600	740	647	398	322
30	e65	---	---	---	---	---	---	e550	818	682	483	278
31	e60	---	---	---	---	---	---	584	---	717	464	---
TOTAL	6839	---	---	---	---	---	---	10750	20184	22243	17755	17905
MEAN	220.6	---	---	---	---	---	---	346.8	672.8	717.5	572.7	596.8
MAX	1090	---	---	---	---	---	---	1500	953	1110	759	1660
MIN	60	---	---	---	---	---	---	32	463	524	389	210
AC-FT	13570	---	---	---	---	---	---	21320	40030	44120	35220	35510
CFSM	8.90	---	---	---	---	---	---	14.0	27.1	28.9	23.1	24.1
IN.	10.26	---	---	---	---	---	---	16.12	30.28	33.36	26.63	26.86

e Estimated

## 15295700 TERROR RIVER AT MOUTH NEAR KODIAK

LOCATION.--Lat 57°41'41", long 153°09'42", in SW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> sec. 5, T. 29 S., R. 24 W. (Kodiak C-4 quad), Kodiak Island Borough, Hydrologic Unit 19020701, on Kodiak Island, in Kodiak National Wildlife Refuge, on right bank, 0.9 mi upstream from mouth, 7.5 mi downstream from Terror Lake Dam, and 29 mi southwest of Kodiak.

DRAINAGE AREA.--30.7 mi<sup>2</sup>, 45.7 mi<sup>2</sup> prior to partial diversion of Terror Lake to hydropower plant in February 1985.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1964 to October 1968, October 1981 to current year.

REVISED RECORDS.--WDR AK-84-1: 1982-83. WDR AK-96-1: 1995(M).

GAGE.--Water-stage recorder. Elevation of gage is 30 ft above sea level, from topographic map. Prior to October 1, 1981 at site 0.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Flow from 15 mi<sup>2</sup> at headwaters regulated by Terror Lake Dam and some flow diverted from Terror Lake to Kizhuyak River. Regulation for construction began in November 1982. Began filling reservoir April 29, 1984. Diversion to hydropower plant began February 12, 1985. GOES satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	154	81	642	95	100	118	550	472	455	211	180
2	207	126	81	277	93	91	122	346	447	417	218	186
3	305	127	81	180	108	87	120	270	448	383	197	195
4	1650	124	83	198	100	98	120	239	418	392	229	190
5	649	123	96	396	91	98	122	244	351	375	266	209
6	360	123	84	212	90	96	124	340	301	354	202	196
7	252	125	91	147	88	94	126	341	290	312	208	188
8	229	121	92	238	88	91	122	374	633	266	213	180
9	220	129	107	330	103	91	121	375	864	227	213	173
10	185	126	102	181	93	91	122	312	541	247	248	179
11	160	121	89	121	103	89	121	250	457	233	229	178
12	169	133	83	118	101	88	130	227	399	230	248	174
13	189	148	94	104	101	90	125	243	354	263	223	182
14	180	133	110	128	89	95	127	268	368	320	211	234
15	177	129	105	98	95	98	131	269	416	355	210	216
16	197	126	111	93	93	146	134	267	502	248	200	173
17	237	208	109	152	99	107	135	335	465	213	196	190
18	191	324	103	138	93	100	153	439	425	250	178	192
19	185	882	101	106	92	94	147	480	373	333	175	178
20	192	795	110	84	90	89	145	527	298	276	218	186
21	179	363	106	88	94	87	135	537	275	300	200	184
22	177	223	105	90	98	83	124	658	255	339	219	246
23	175	159	98	84	102	83	128	595	309	288	236	273
24	180	120	126	79	103	77	130	464	427	215	249	271
25	184	94	151	70	130	80	134	415	780	169	227	201
26	179	80	156	106	177	84	148	368	1400	196	210	195
27	176	87	128	111	128	84	164	460	806	195	226	197
28	178	79	109	109	116	83	464	564	573	212	196	186
29	177	83	192	113	---	83	769	609	474	210	203	192
30	179	77	714	102	---	82	684	523	473	225	199	200
31	182	---	720	96	---	87	---	481	---	223	188	---
TOTAL	8144	5642	4518	4991	2853	2846	5445	12370	14594	8721	6646	5924
MEAN	263	188	146	161	102	91.8	182	399	486	281	214	197
MAX	1650	882	720	642	177	146	769	658	1400	455	266	273
MIN	160	77	81	70	88	77	118	227	255	169	175	173
AC-FT	16150	11190	8960	9900	5660	5650	10800	24540	28950	17300	13180	11750

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)#

MEAN	273	184	145	123	110	101	173	328	499	363	285	289
MAX	427	354	313	161	168	152	247	454	872	1070	662	707
(WY)	1995	1987	1986	2002	1994	1998	1993	1993	1987	1987	1988	1995
MIN	192	93.8	78.4	81.8	72.6	60.9	115	244	305	228	183	175
(WY)	1998	1995	1988	1989	1989	1986	1986	2000	1990	1989	1994	2000

# See Period of Record and Remarks

## 15295700 TERROR RIVER AT MOUTH NEAR KODIAK—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002#	
ANNUAL TOTAL	85620		82694			
ANNUAL MEAN	235		227		240	
HIGHEST ANNUAL MEAN					369 1987	
LOWEST ANNUAL MEAN					193 2000	
HIGHEST DAILY MEAN	1650	Oct 4	1650	Oct 4	4610 Sep 20 1995	
LOWEST DAILY MEAN	75	Feb 15	70	Jan 25	a26 Dec 11 1996	
ANNUAL SEVEN-DAY MINIMUM	81	Nov 28	81	Nov 28	39 Nov 19 1985	
MAXIMUM PEAK FLOW			3030	Oct 4	b10000 Sep 19 1995	
MAXIMUM PEAK STAGE			4.78	Oct 4	7.67 Sep 19 1995	
INSTANTANEOUS LOW FLOW			59	Jan 25	a9.8 Dec 11 1996	
ANNUAL RUNOFF (AC-FT)	169800		164000		173900	
10 PERCENT EXCEEDS	478		451		460	
50 PERCENT EXCEEDS	177		180		185	
90 PERCENT EXCEEDS	89		90		85	

## PRIOR TO CONSTRUCTION OF TERROR LAKE DAM

## SUMMARY STATISTICS, WATER YEARS 1965 - 1983 #

ANNUAL MEAN		293
HIGHEST ANNUAL MEAN	421	1983
LOWEST ANNUAL MEAN	230	1967
HIGHEST DAILY MEAN	2600	Oct 2 1965
LOWEST DAILY MEAN	c19	Feb 23 1967
ANNUAL SEVEN-DAY MINIMUM	20	Feb 23 1967
INSTANTANEOUS PEAK FLOW	3820	Sep 26 1966
INSTANTANEOUS PEAK STAGE	d6.48	Sep 26 1966
INSTANTANEOUS PEAK STAGE	f7.54	Mar 28 1964
ANNUAL RUNOFF (AC-FT)	212200	
ANNUAL RUNOFF (CFSM)	9.54	
ANNUAL RUNOFF (IN)	129.66	
10 PERCENT EXCEEDS	774	
50 PERCENT EXCEEDS	157	
90 PERCENT EXCEEDS	39	

# See Period of Record and Remarks

a Occurred while dam release valve was closed for repair

b From rating curve extended above 960 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow

c Feb. 23 and Mar. 1, 1967

d Site and datum then in use

f Site and datum then in use; from tidal wave

15295700 TERROR RIVER AT MOUTH NEAR KODIAK—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1982 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1981 to current year.

INSTRUMENTATION.--Water-temperature recorder since December 10, 1981. Electronic water temperature recorder set for 1-hour recording interval.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Temperature at the sensor was compared with the average for the river by cross section on February 19, April 22, and September 7. No variation was found within the cross sections. No variation was found between mean stream temperature and sensor temperature.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 13.5°C, July 19, 1990 and August 8, 1993; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 12.0°C, July 30-31; minimum, 0.0°C on many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLE LOCATION, CROSS SECTION (FT FM R BK) (72103)	GAGE HEIGHT (FEET) (00065)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER-ATURE WATER (DEG C) (00010)	TEMPER-ATURE AIR (DEG C) (00020)
FEB								
19...	1300	44.5	--	3.0	1.20	93	1.0	-2.3
19...	1302	44.5	--	18.0	1.20	93	1.0	-2.3
19...	1304	44.5	--	28.0	1.20	93	1.0	-2.3
19...	1306	44.5	--	38.0	1.20	93	1.0	-2.3
19...	1308	44.5	--	41.0	1.20	93	1.0	-2.3
APR								
22...	1056	40.0	--	0.0	1.32	122	2.0	2.5
22...	1057	40.0	--	10.0	1.32	122	2.0	2.5
22...	1058	40.0	--	20.0	1.32	122	2.0	2.5
22...	1059	40.0	--	30.0	1.32	122	2.0	2.5
22...	1100	40.0	--	40.0	1.32	122	2.0	2.5
SEP								
07...	1340	48.0	4.00	--	1.53	181	8.0	14.0
07...	1342	48.0	14.0	--	1.53	181	8.0	14.0
07...	1344	48.0	24.0	--	1.53	181	8.0	14.0
07...	1346	48.0	34.0	--	1.53	181	8.0	14.0
07...	1348	48.0	44.0	--	1.53	181	8.0	14.0

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.0	5.0	5.5	4.0	2.5	3.5	1.5	1.0	1.0	1.5	1.0	1.5
2	6.0	4.0	5.0	2.5	1.5	2.0	1.0	0.5	1.0	1.5	1.0	1.0
3	8.5	6.0	7.5	3.0	1.5	2.5	1.5	0.5	1.0	1.0	0.5	0.5
4	8.0	6.0	7.5	3.0	1.5	2.0	0.5	0.0	0.5	2.0	1.0	1.5
5	6.5	5.5	6.0	2.5	1.5	2.0	0.5	0.0	0.5	2.0	1.0	1.0
6	5.5	4.0	5.0	3.0	2.0	2.5	0.5	0.0	0.0	2.0	1.5	1.5
7	5.5	3.5	4.5	3.0	1.0	2.5	0.5	0.0	0.0	2.0	0.5	1.0
8	6.0	4.0	5.0	2.5	1.0	2.0	0.5	0.0	0.5	1.5	0.5	1.5
9	6.0	5.0	5.5	3.0	2.0	2.5	0.5	0.5	0.5	1.5	1.0	1.0
10	5.5	2.5	4.0	3.5	2.5	3.0	1.5	0.5	1.0	1.5	1.0	1.5
11	3.0	2.0	2.5	3.0	2.0	2.5	2.0	1.5	1.5	1.0	0.0	0.5
12	4.0	1.5	2.5	3.0	3.0	3.0	1.5	0.5	1.0	0.5	0.0	0.5
13	5.0	3.0	4.0	3.0	2.5	2.5	0.5	0.0	0.0	1.5	0.5	1.0
14	5.5	4.0	4.5	2.5	2.0	2.5	0.0	0.0	0.0	2.0	1.5	1.5
15	5.5	3.5	4.5	2.5	2.0	2.0	0.0	0.0	0.0	2.0	0.5	1.0
16	4.5	3.0	3.5	2.5	2.0	2.0	0.0	0.0	0.0	2.5	1.0	2.0
17	5.5	4.0	5.0	2.0	1.5	2.0	0.5	0.0	0.5	2.5	1.5	2.0
18	4.5	3.0	4.0	2.5	1.5	2.0	0.5	0.0	0.0	1.5	1.0	1.0
19	3.5	2.5	3.0	2.0	2.0	2.0	0.0	0.0	0.0	1.5	1.0	1.5
20	4.5	3.0	4.0	3.0	2.0	2.5	1.5	0.0	1.0	1.0	0.0	0.5
21	3.0	2.0	2.5	2.5	2.0	2.0	1.5	1.0	1.5	0.5	0.0	0.0
22	3.5	2.0	3.0	2.0	1.0	1.5	1.0	0.0	0.5	0.5	0.0	0.5
23	3.5	2.5	3.0	1.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.0
24	3.0	2.0	2.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25	4.0	2.5	3.0	0.5	0.5	0.5	2.0	0.0	1.5	0.5	0.0	0.0
26	3.0	2.0	2.5	1.0	0.5	0.5	2.0	1.5	2.0	0.5	0.0	0.5
27	3.0	1.5	2.0	1.5	1.0	1.0	1.5	1.0	1.5	0.5	0.5	0.5
28	3.0	2.0	2.5	2.0	1.5	1.5	2.0	1.0	1.5	2.0	0.5	1.5
29	3.0	1.5	2.0	2.0	1.5	1.5	2.0	1.0	1.5	2.0	1.5	1.5
30	3.0	2.0	2.5	1.5	1.5	1.5	1.0	0.5	0.5	1.5	0.5	1.5
31	4.0	2.5	3.5	---	---	---	1.5	0.5	1.0	1.5	0.0	0.5
MONTH	8.5	1.5	3.9	4.0	0.5	1.9	2.0	0.0	0.7	2.5	0.0	1.0

## SOUTHCENTRAL ALASKA

## 15295700 TERROR RIVER AT MOUTH NEAR KODIAK—Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.0	1.5	1.5	2.0	1.0	1.5	3.5	0.5	2.0	5.0	1.5	2.5
2	2.0	1.5	1.5	2.0	0.5	1.0	5.0	1.5	2.5	4.5	1.0	2.5
3	2.0	1.0	1.5	2.0	0.0	1.0	4.0	1.0	2.0	6.5	2.5	3.5
4	1.5	1.0	1.5	2.0	0.0	0.5	4.5	1.5	2.5	5.0	1.5	3.5
5	1.5	1.0	1.5	2.0	0.0	0.5	4.5	0.5	2.0	5.5	3.0	4.0
6	2.0	1.0	1.5	2.5	0.0	1.0	4.5	0.5	2.5	5.5	3.0	4.0
7	1.5	0.0	0.5	2.0	0.0	0.5	4.5	1.0	2.5	5.0	2.5	3.5
8	0.5	0.0	0.5	2.5	0.0	1.0	4.5	1.0	2.5	5.5	3.0	4.0
9	1.0	0.5	1.0	3.0	0.5	1.5	5.0	1.5	3.0	5.5	2.5	3.5
10	1.0	0.0	0.5	2.0	0.5	1.0	5.0	1.5	2.5	5.0	2.0	3.5
11	2.5	1.0	1.5	2.5	0.5	1.5	3.5	0.5	2.0	6.0	2.0	3.5
12	1.5	0.0	1.0	2.5	0.0	1.0	4.0	0.5	2.0	6.0	1.5	3.5
13	2.0	0.5	1.5	2.0	0.0	1.0	4.0	0.5	2.0	7.5	2.0	4.5
14	1.5	0.5	1.0	3.5	1.0	2.0	5.0	1.5	3.0	6.5	2.5	4.5
15	1.5	0.0	0.5	4.0	1.5	2.5	5.0	2.0	3.5	5.0	2.5	3.5
16	0.5	0.0	0.5	3.0	1.5	2.0	5.5	1.5	3.0	6.0	3.0	4.5
17	0.5	0.0	0.5	2.5	1.5	2.0	4.5	2.5	3.0	8.5	2.0	4.5
18	1.5	0.5	1.0	3.5	1.5	2.5	5.5	2.5	3.5	8.0	2.5	4.5
19	1.5	0.0	0.5	3.0	1.5	2.0	5.5	2.5	3.5	8.0	2.5	4.5
20	0.5	0.0	0.0	3.0	1.5	2.0	4.5	2.0	3.0	8.0	2.5	4.5
21	1.0	0.0	0.0	3.5	1.5	2.5	5.5	1.0	2.5	7.0	2.5	4.5
22	1.0	0.5	0.5	3.5	1.5	2.5	5.0	0.5	2.5	6.5	3.0	4.5
23	2.5	0.5	1.5	4.0	2.0	2.5	5.5	1.0	3.0	6.0	3.0	4.0
24	2.0	1.0	1.5	3.5	2.0	2.5	6.0	2.0	3.5	7.5	2.0	4.5
25	3.0	1.5	2.0	3.5	2.0	2.5	6.5	1.5	3.5	6.0	2.5	4.0
26	2.5	1.0	1.5	3.5	1.5	2.0	7.0	2.0	4.0	5.5	3.5	4.0
27	2.0	1.0	1.5	3.0	1.0	2.0	6.0	2.0	4.0	5.5	3.5	4.0
28	2.5	1.0	1.5	4.0	1.0	2.0	5.5	2.5	4.0	4.5	3.0	3.5
29	---	---	---	4.0	0.5	2.0	5.5	2.0	3.0	5.0	3.0	4.0
30	---	---	---	4.0	0.5	2.0	5.0	2.0	3.0	5.5	3.0	4.0
31	---	---	---	3.5	0.0	1.5	---	---	---	5.0	3.5	4.0
MONTH	3.0	0.0	1.1	4.0	0.0	1.7	7.0	0.5	2.9	8.5	1.0	3.9
	JUNE			JULY			AUGUST			SEPTEMBER		
1	4.5	3.0	4.0	10.0	5.5	7.5	11.5	7.0	9.0	9.0	7.0	7.5
2	7.0	3.0	4.5	9.0	6.0	7.0	11.5	7.0	9.0	9.0	6.0	7.0
3	5.5	3.0	4.5	10.5	5.0	7.5	11.5	7.0	9.0	8.5	5.5	7.0
4	7.0	3.0	4.5	9.5	5.5	7.0	10.5	7.0	9.0	9.0	7.0	7.5
5	7.5	2.5	4.5	10.5	5.5	8.0	9.5	8.0	8.5	9.0	7.5	8.0
6	6.5	3.0	5.0	8.5	6.0	7.0	9.5	7.5	8.5	8.5	7.0	7.5
7	7.5	2.5	5.0	9.5	6.0	7.5	10.0	7.5	8.5	8.0	7.0	7.5
8	5.5	3.5	4.0	8.0	6.0	7.0	10.0	7.0	8.5	8.5	6.5	7.0
9	5.5	3.0	4.0	8.5	6.0	7.0	10.5	7.0	8.5	8.5	6.0	7.0
10	6.0	3.5	4.5	8.5	6.0	7.0	9.0	7.5	8.0	8.0	5.0	6.0
11	5.5	3.5	4.5	10.0	5.5	7.5	9.0	6.5	7.5	7.0	5.0	6.0
12	6.0	4.0	5.0	10.5	6.0	8.0	9.0	7.5	8.0	8.0	6.0	7.0
13	7.5	3.5	5.5	8.0	6.5	7.0	10.0	7.0	8.5	8.5	6.5	7.0
14	9.5	3.0	6.0	7.5	6.0	6.5	9.0	7.0	8.0	7.5	6.5	7.0
15	10.0	4.0	6.5	7.5	6.0	7.0	10.0	7.5	8.5	8.5	6.0	7.5
16	9.5	4.0	6.5	10.5	5.0	7.5	11.0	7.0	8.5	8.0	5.5	6.5
17	9.5	3.5	6.0	10.0	6.5	8.0	10.5	7.0	8.5	7.0	5.5	6.5
18	9.5	4.5	6.5	10.5	7.5	8.5	10.5	6.5	8.0	8.0	6.0	6.5
19	6.5	4.0	5.5	9.0	7.0	8.0	8.5	7.0	8.0	7.0	5.5	6.5
20	6.0	4.5	5.5	8.0	6.5	7.0	10.5	7.5	9.0	6.5	4.5	5.5
21	7.0	4.5	5.5	9.5	7.0	8.0	8.5	7.5	8.0	6.5	5.0	6.0
22	8.0	4.0	6.0	10.0	7.0	8.5	9.0	7.5	8.0	7.5	6.5	7.0
23	7.5	5.0	6.0	9.0	7.5	8.0	9.0	7.5	8.0	8.0	7.0	7.5
24	6.0	5.0	5.5	9.5	7.5	8.5	9.0	7.5	8.0	9.0	7.5	8.0
25	5.5	4.5	5.0	9.5	6.5	7.5	9.0	7.0	8.0	8.0	6.5	7.5
26	5.5	4.5	5.0	10.5	7.0	8.0	8.0	6.5	7.0	8.0	6.5	7.5
27	5.5	4.5	5.0	8.5	7.0	7.5	8.5	7.0	7.5	7.0	6.0	6.5
28	7.0	4.5	5.5	10.0	6.5	8.0	9.5	6.0	7.5	7.5	6.0	6.5
29	10.0	4.5	7.0	11.0	6.0	8.5	9.0	6.5	7.5	7.0	6.0	6.5
30	9.0	5.5	7.0	12.0	7.5	9.0	9.0	7.5	8.0	6.5	6.0	6.5
31	---	---	---	12.0	7.0	9.5	9.5	7.5	8.0	---	---	---
MONTH	10.0	2.5	5.3	12.0	5.0	7.7	11.5	6.0	8.2	9.0	4.5	6.9