12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA

Puget Sound Basin
Lower Skagit Subbasin

LOCATION.--Lat 48°26′42″, long 122°20′03″ referenced to North American Datum of 1927, in SE ¼ SE ¼ sec.7, T.34 N., R.4 E., Skagit County, WA, Hydrologic Unit 17110007, on right bank 220 ft downstream of bridge on U.S. Highway 99, 1.5 mi north of Skagit Valley Junior College in Mount Vernon, and at mile 15.7.

DRAINAGE AREA.--3,093 mi², of which 400 mi² is in Canada.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only October 1940, published in WSP 1316.

REVISED RECORDS.--WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Supplementary water-stage recorder in bridge pier 0.2 mi downstream from base gage from Dec. 3, 1957, to Oct. 15, 1964. Water-stage recorder located on downstream pier of the Highway 99 bridge from Oct. 15, 1964, to Jan. 6, 1993.

REMARKS.--Records good. Flow regulated by Ross Reservoir (station 12175000), Diablo Reservoir (station 12176500), Gorge Reservoir (station 12177700), Baker Lake (station 12191600), and Lake Shannon (station 12193000). Small diversions for domestic and municipal use. Chemical analyses July 1959 to September 1971, October 1973 to September 1994. Prior to November 1962, published as "at Lawrence." Specific conductance February 1974 to November 1981. Water temperature July 1962 to August 1970, February 1974 to November 1981. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--67 years (water years 1941-2007), 16,580 ft³/s, 12,010,000 acre-ft, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft³/s, Nov. 25, 1990, elevation, 37.37 ft, from floodmarks; minimum discharge, 2,740 ft³/s, Oct. 26, 1942, elevation, 7.37 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1906 reached a stage of 37 ft, from Great Northern Railway high-water profile, discharge 180,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov 7	2015	*138,000	*33.85
Nov 16	1500	64,500	25.78
Jan 3	0830	54,500	24.27
Mar 13	0000	75,300	27.26
Mar 25	1330	78,400	27.65

Minimum discharge, 3,460 ft³/s, Oct. 14, gage height, 9.26 ft.

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,090	7,160	12,300	12,600	13,800	15,900	19,900	20,800	26,800	22,900	12,800	6,450
2	4,410	7,080	12,800	23,700	14,200	15,400	19,300	19,600	30,900	22,300	12,900	7,000
3	4,370	11,600	12,000	49,900	11,800	14,200	18,100	17,900	35,500	22,200	12,900	6,730
4	4,470	38,100	11,600	34,500	11,000	13,100	17,200	16,800	42,400	24,200	11,500	7,090
5	4,300	52,500	11,200	25,800	10,900	14,200	16,600	14,300	41,200	28,100	10,800	7,030
6	4,470	60,200	9,850	25,200	11,700	16,900	16,500	14,600	36,900	34,200	10,600	7,050
7	4,380	116,000	12,400	24,700	13,600	18,100	17,700	14,800	30,900	34,000	9,610	7,150
8	4,250	125,000	13,000	28,900	13,300	20,500	20,200	18,200	26,500	28,800	10,500	6,680
9	3,790	86,800	12,300	24,100	15,100	19,800	21,100	19,700	22,700	24,900	10,700	6,520
10	3,700	49,500	12,200	23,500	14,000	19,900	21,300	18,400	25,500	24,000	9,620	6,880
11	3,640	39,500	14,600	19,700	12,200	27,300	18,400	17,700	27,300	24,700	9,590	5,760
12	3,610	32,700	25,100	19,200	12,100	60,000	16,400	19,200	24,600	26,100	8,700	5,770
13	3,620	43,700	23,900	16,500	15,400	61,100	15,200	17,000	22,500	28,400	8,310	6,460
14	3,600	38,100	26,300	17,200	16,200	36,700	16,100	18,500	22,400	29,000	8,170	6,680
15	3,610	28,300	34,000	17,500	18,800	28,400	17,100	18,600	23,700	26,900	8,420	6,680
16	3,790	54,000	23,000	17,200	23,900	25,800	15,800	21,800	22,000	25,300	8,330	6,010
17	4,080	41,200	17,100	13,800	19,600	26,600	15,300	23,400	23,000	22,000	8,170	5,810
18	3,930	28,400	15,200	14,300	19,500	34,000	14,600	22,200	24,100	19,700	7,560	6,020
19	3,920	25,500	16,000	13,200	20,000	33,400	13,900	18,900	22,400	19,000	6,490	5,990
20	4,600	31,500	13,200	12,500	25,600	35,800	13,300	17,300	22,600	20,000	8,410	5,720
21	4,420	30,000	14,800	12,400	24,400	31,300	15,900	18,000	24,100	20,000	7,810	5,620
22	4,040	28,100	16,900	13,800	21,100	26,700	17,000	15,600	26,000	22,400	7,130	5,770
23	3,840	25,600	14,700	17,900	18,900	26,100	16,900	14,200	26,600	24,300	8,700	5,730
24	3,720	24,200	14,300	18,300	17,900	42,600	17,500	14,200	22,700	23,100	8,930	5,610
25	5,030	22,800	17,000	14,100	17,700	74,200	18,700	15,500	22,100	20,700	8,050	5,430
26	4,280	21,700	14,800	15,900	17,200	54,400	18,600	17,300	21,200	19,000	8,050	5,540
27	6,130	20,800	15,400	16,500	16,400	37,900	20,000	18,000	19,900	18,100	8,930	5,540
28	6,730	18,200	14,500	15,800	16,200	29,500	28,400	17,800	18,500	15,900	8,340	5,770
29	5,560	13,500	13,700	16,200	---	24,800	28,900	16,400	20,300	14,900	7,800	6,200
30	7,740	12,300	13,800	14,500	---	22,100	23,600	16,500	19,100	13,300	8,100	6,470
31	7,700	---	12,200	12,300	---	21,400	---	21,800	---	13,500	7,780	---
Total	140,820	1,134,040	490,150	601,700	462,500	928,100	549,500	555,000	774,400	711,900	283,700	187,160
Mean	4,543	37,800	15,810	19,410	16,520	29,940	18,320	17,900	25,810	22,960	9,152	6,239
Max	7,740	125,000	34,000	49,900	25,600	74,200	28,900	23,400	42,400	34,200	12,900	7,150
Min	3,600	7,080	9,850	12,300	10,900	13,100	13,300	14,200	18,500	13,300	6,490	5,430
Ac-ft	279,300	2,249,000	972,200	1,193,000	917,400	1,841,000	1,090,000	1,101,000	1,536,000	1,412,000	562,700	371,200

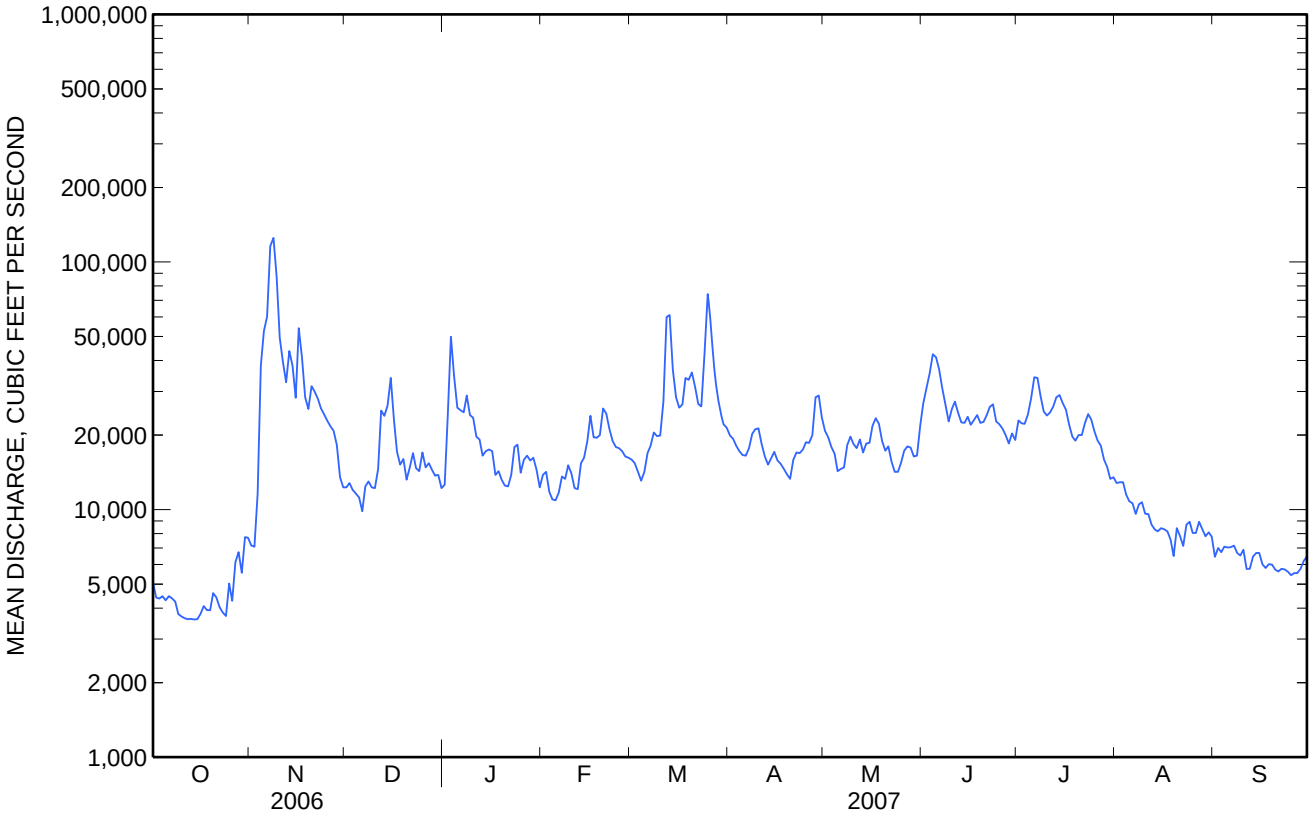
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	12,290	18,450	18,620	17,930	16,710	14,450	15,060	20,210	24,370	19,950	11,580	9,334
Max	27,970	52,550	37,930	28,630	31,140	29,940	23,360	36,530	43,460	37,650	21,890	17,540
(WY)	(2004)	(1991)	(1976)	(2006)	(1951)	(2007)	(1943)	(1946)	(1972)	(1972)	(1999)	(1959)
Min	4,323	6,592	8,358	7,636	7,626	6,856	8,857	12,460	11,720	9,310	6,441	5,023
(WY)	(1943)	(1944)	(2001)	(1942)	(1942)	(1942)	(1973)	(1970)	(2005)	(1977)	(1941)	(1942)

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1941 - 2007	
Annual total	6,070,350		6,818,970			
Annual mean	16,630		18,680		16,580	
Highest annual mean					23,140	1991
Lowest annual mean					10,500	2001
Highest daily mean	125,000	Nov 8	125,000	Nov 8	142,000	Nov 25, 1990
Lowest daily mean	3,600	Oct 14	3,600	Oct 14	3,050	Oct 26, 1942
Annual seven-day minimum	3,650	Oct 9	3,650	Oct 9	3,530	Oct 22, 1942
Annual runoff (ac-ft)	12,040,000		13,530,000		12,010,000	
10 percent exceeds	29,100		30,400		27,200	
50 percent exceeds	13,600		16,900		14,500	
90 percent exceeds	5,410		5,770		7,850	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-70, 1974-82, 2006-07.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1974 to November 1981.
WATER TEMPERATURE: July 1962 to August, February 1974 to November 1981.
SEDIMENT CONCENTRATION: March 2006 to September 2007.

INSTRUMENTATION.--Water quality monitor July 1962 to Aug. 1970 and Feb. 1971 to Nov. 1981. Automatic pumping sampler Mar. 2006 to Sept. 2007.

REMARKS.--In addition to the water-quality monitor record, EDI samples were collected on an event driven basis.

EXTREMES OUTSIDE PERIOD OF RECORD.--A water temperature of 17.8 °C was observed on Aug. 3, 1961.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum observed, 95 microsiemens Mar. 15, 1978; minimum, 25 microsiemens July 7, 1975, Feb. 27 and Dec. 27, 1980.
WATER TEMPERATURE: Maximum, 19.0 °C, Aug. 12, 1977; minimum 1.0 °C, Jan. 28 to Feb. 1, 1969.
SEDIMENT CONCENTRATION: Maximum daily mean, 2,200 mg/L Nov. 7, 2006; minimum daily mean, 15 mg/L Sept. 17, 2006.
SEDIMENT DISCHARGE: Maximum daily, 681,000 tons/day Nov. 7, 2006; minimum daily, 227 tons/day Sept. 17, 2006.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,200 mg/L Nov. 7; minimum daily mean 16 mg/L Aug. 12.
SEDIMENT DISCHARGE: Maximum daily 681,00 tons/day Nov. 7; minimum daily 354 tons/day Sept. 20.

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
		October			November			December	
1	5,090	46	628	7,160	34	650	12,300	101	3,340
2	4,410	46	546	7,080	46	894	12,800	117	4,040
3	4,370	45	533	11,600	222	8,020	12,000	119	3,870
4	4,470	45	543	38,100	940	99,300	11,600	117	3,680
5	4,300	45	522	52,500	1,230	174,000	11,200	111	3,370
6	4,470	45	542	60,200	1,530	258,000	9,850	105	2,800
7	4,380	45	528	116,000	2,200	681,000	12,400	107	3,580
8	4,250	44	509	125,000	1,460	495,000	13,000	109	3,850
9	3,790	44	451	86,800	845	202,000	12,300	103	3,450
10	3,700	44	440	49,500	779	104,000	12,200	98	3,230
11	3,640	44	433	39,500	659	70,600	14,600	117	4,650
12	3,610	44	429	32,700	508	44,900	25,100	183	12,400
13	3,620	44	427	43,700	608	72,100	23,900	114	7,410
14	3,600	43	421	38,100	537	55,600	26,300	137	9,670
15	3,610	43	421	28,300	389	29,900	34,000	203	18,800
16	3,790	44	450	54,000	445	66,000	23,000	126	8,060
17	4,080	45	495	41,200	291	33,100	17,100	74	3,480
18	3,930	46	486	28,400	224	17,300	15,200	51	2,110
19	3,920	47	495	25,500	192	13,200	16,000	95	4,140
20	4,600	48	592	31,500	180	15,400	13,200	73	2,630
21	4,420	48	567	30,000	144	11,700	14,800	39	1,560
22	4,040	47	509	28,100	150	11,400	16,900	32	1,440
23	3,840	46	477	25,600	156	10,800	14,700	29	1,140
24	3,720	45	457	24,200	110	7,180	14,300	44	1,690
25	5,030	50	675	22,800	93	5,710	17,000	94	4,320
26	4,280	47	544	21,700	86	5,010	14,800	108	4,300
27	6,130	48	797	20,800	78	4,410	15,400	97	4,030
28	6,730	50	931	18,200	75	3,690	14,500	269	10,200
29	5,560	36	544	13,500	73	2,670	13,700	1,090	40,300
30	7,740	34	701	12,300	82	2,710	13,800	598	22,500
31	7,700	34	699	---	---	---	12,200	172	5,910
Total	140,820	---	16,792	1,134,040	---	2,506,244	490,150	---	205,950

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
		January			February			March	
1	12,600	135	4,580	13,800	25	938	15,900	23	987
2	23,700	256	18,700	14,200	24	935	15,400	21	887
3	49,900	453	61,500	11,800	21	657	14,200	20	753
4	34,500	247	23,700	11,000	18	528	13,100	22	783
5	25,800	112	7,910	10,900	18	519	14,200	26	981
6	25,200	82	5,570	11,700	20	625	16,900	30	1,380
7	24,700	86	5,740	13,600	22	795	18,100	35	1,730
8	28,900	106	8,320	13,300	19	682	20,500	42	2,350
9	24,100	67	4,400	15,100	27	1,100	19,800	40	2,120
10	23,500	52	3,310	14,000	23	883	19,900	68	3,670
11	19,700	47	2,440	12,200	18	589	27,300	473	36,700
12	19,200	73	3,760	12,100	20	654	60,000	1,340	231,000
13	16,500	63	2,820	15,400	41	1,730	61,100	1,240	211,000
14	17,200	48	2,220	16,200	28	1,210	36,700	557	56,100
15	17,500	43	2,030	18,800	63	3,390	28,400	418	32,200
16	17,200	39	1,810	23,900	187	12,100	25,800	317	22,100
17	13,800	40	1,480	19,600	94	5,070	26,600	159	11,400
18	14,300	42	1,610	19,500	49	2,590	34,000	226	20,900
19	13,200	42	1,490	20,000	62	3,390	33,400	256	23,100
20	12,500	28	940	25,600	206	14,500	35,800	231	22,300
21	12,400	26	873	24,400	132	8,870	31,300	179	15,200
22	13,800	37	1,370	21,100	60	3,430	26,700	123	8,880
23	17,900	91	4,440	18,900	41	2,080	26,100	105	7,380
24	18,300	72	3,570	17,900	31	1,500	42,600	495	61,600
25	14,100	33	1,260	17,700	26	1,260	74,200	828	166,000
26	15,900	41	1,740	17,200	27	1,250	54,400	680	101,000
27	16,500	41	1,830	16,400	22	976	37,900	508	52,200
28	15,800	31	1,340	16,200	21	927	29,500	438	35,000
29	16,200	28	1,220	---	---	---	24,800	352	23,700
30	14,500	34	1,310	---	---	---	22,100	229	13,700
31	12,300	27	896	---	---	---	21,400	139	8,040
Total	601,700	---	184,179	462,500	---	73,178	928,100	---	1,175,141

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
		April			May			June	
1	19,900	119	6,400	20,800	56	3,180	26,800	229	16,800
2	19,300	77	4,050	19,600	44	2,360	30,900	312	26,100
3	18,100	64	3,140	17,900	33	1,610	35,500	374	36,100
4	17,200	63	2,920	16,800	26	1,190	42,400	593	68,500
5	16,600	69	3,100	14,300	22	837	41,200	571	63,700
6	16,500	57	2,550	14,600	19	752	36,900	429	42,800
7	17,700	55	2,630	14,800	18	742	30,900	315	26,400
8	20,200	84	4,620	18,200	29	1,420	26,500	215	15,400
9	21,100	93	5,310	19,700	56	3,040	22,700	145	8,900
10	21,300	114	6,580	18,400	68	3,350	25,500	165	11,500
11	18,400	71	3,570	17,700	49	2,310	27,300	189	14,000
12	16,400	53	2,330	19,200	42	2,200	24,600	131	8,750
13	15,200	39	1,580	17,000	38	1,750	22,500	88	5,350
14	16,100	45	1,970	18,500	61	3,060	22,400	123	7,420
15	17,100	48	2,200	18,600	46	2,330	23,700	332	21,200
16	15,800	41	1,770	21,800	58	3,470	22,000	98	5,970
17	15,300	26	1,090	23,400	95	6,000	23,000	60	3,760
18	14,600	20	790	22,200	82	4,930	24,100	93	6,050
19	13,900	21	794	18,900	55	2,850	22,400	72	4,380
20	13,300	20	704	17,300	43	2,010	22,600	85	5,210
21	15,900	44	1,970	18,000	45	2,170	24,100	74	4,840
22	17,000	42	1,920	15,600	45	1,880	26,000	82	5,760
23	16,900	25	1,150	14,200	51	1,960	26,600	99	7,120
24	17,500	24	1,150	14,200	30	1,140	22,700	83	5,040
25	18,700	30	1,530	15,500	31	1,300	22,100	58	3,470
26	18,600	28	1,410	17,300	36	1,670	21,200	51	2,920
27	20,000	51	2,790	18,000	40	1,960	19,900	50	2,700
28	28,400	153	11,900	17,800	45	2,170	18,500	54	2,690
29	28,900	149	11,700	16,400	35	1,570	20,300	48	2,660
30	23,600	93	5,990	16,500	38	1,700	19,100	55	2,810
31	---	---	---	21,800	117	7,130	---	---	---
Total	549,500	---	99,608	555,000	---	74,041	774,400	---	438,300

12200500 SKAGIT RIVER NEAR MOUNT VERNON, WA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
		July			August			September	
1	22,900	70	4,320	12,800	23	796	6,450	23	401
2	22,300	54	3,280	12,900	23	790	7,000	24	452
3	22,200	56	3,380	12,900	25	870	6,730	24	442
4	24,200	66	4,360	11,500	27	836	7,090	25	471
5	28,100	141	10,800	10,800	31	908	7,030	25	483
6	34,200	305	28,300	10,600	40	1,150	7,050	29	549
7	34,000	287	26,400	9,610	22	596	7,150	33	642
8	28,800	178	13,900	10,500	21	582	6,680	31	552
9	24,900	116	7,830	10,700	19	539	6,520	25	449
10	24,000	110	7,100	9,620	18	479	6,880	25	462
11	24,700	93	6,230	9,590	18	468	5,760	25	392
12	26,100	172	12,100	8,700	16	384	5,770	28	439
13	28,400	121	9,220	8,310	19	424	6,460	36	623
14	29,000	146	11,500	8,170	24	527	6,680	31	553
15	26,900	110	8,030	8,420	25	578	6,680	31	553
16	25,300	85	5,840	8,330	28	627	6,010	26	431
17	22,000	63	3,760	8,170	30	667	5,810	26	401
18	19,700	52	2,780	7,560	26	539	6,020	26	415
19	19,000	46	2,380	6,490	23	405	5,990	25	408
20	20,000	47	2,520	8,410	26	583	5,720	23	354
21	20,000	44	2,390	7,810	35	737	5,620	26	390
22	22,400	64	4,020	7,130	36	697	5,770	49	755
23	24,300	92	6,080	8,700	35	812	5,730	29	444
24	23,100	82	5,150	8,930	31	754	5,610	27	416
25	20,700	64	3,610	8,050	26	574	5,430	26	383
26	19,000	42	2,170	8,050	25	546	5,540	26	383
27	18,100	36	1,790	8,930	24	587	5,540	26	392
28	15,900	40	1,730	8,340	20	454	5,770	31	483
29	14,900	37	1,480	7,800	20	418	6,200	32	532
30	13,300	40	1,430	8,100	21	458	6,470	32	556
31	13,500	29	1,060	7,780	22	461	---	---	---
Total	711,900	---	204,940	283,700	---	19,246	187,160	---	14,206

	Mean discharge (ft³/s)	Sediment discharge (tons/day)
Year	6,818,970	5,011,825