Water-Data Report 2008

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO

Mississippi River Main Stem

LOCATION.--Lat 38°37'44.4", long 90°10'47.2" referenced to North American Datum of 1983, in T.45 N., R.7 E., St. Louis City, MO, Hydrologic Unit 07140101, on downstream side of west pier of Eads Bridge at St. Louis, 15.0 mi downstream from Missouri River, 19.2 mi upstream from Meramec River, and at mile 180.0 above the Ohio River.

DRAINAGE AREA.--697,000 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--

DISCHARGE: January 1861 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE HEIGHT: March 1933 to current year. Since January 1861 in reports of Mississippi River Commission. Since January 1890 in reports of the National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area, WDR MO-98-1: Extreme outside period of record.

GAGE.--Water-stage recorder. Datum of gage is 379.94 ft above National Geodetic Vertical Datum of 1929. Prior to May 5, 1934, nonrecording gage 0.4 mi downstream; May 5, 1934, to Dec. 9, 1952, water-stage recorder at site 20 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Natural flow of stream affected by many reservoirs and navigation dams in upper Mississippi River Basin and by many reservoirs and diversions for irrigation in Missouri River Basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 27, 1844, reached a stage of 41.32 ft, from floodmarks, discharge, 1,000,000 ft^3/s, computed by U.S. Army Corps of Engineers. Flood in April 1785 may have reached a stage of 42.0 ft. Minimum flow, 18,000 ft^3/s, Dec. 23, 1863.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 720,000 ft^3/s, June 30, July 1, gage height, 38.67 ft; minimum discharge, 83,700 ft^3/s, Dec. 7, gage height, -0.26 ft.

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	118,000	216,000	96,700	133,000	129,000	217,000	361,000	508,000	385,000	716,000	515,000	115,000
2	116,000	211,000	93,100	114,000	125,000	212,000	397,000	495,000	378,000	708,000	516,000	113,000
3	124,000	205,000	94,600	105,000	140,000	235,000	388,000	486,000	391,000	697,000	494,000	112,000
4	127,000	200,000	91,700	110,000	145,000	283,000	379,000	486,000	428,000	686,000	447,000	127,000
5	132,000	194,000	89,700	116,000	157,000	352,000	379,000	492,000	453,000	669,000	382,000	209,000
6	140,000	186,000	84,600	123,000	214,000	400,000	365,000	496,000	476,000	640,000	322,000	284,000
7	147,000	177,000	87,300	129,000	244,000	405,000	350,000	490,000	505,000	599,000	290,000	252,000
8	153,000	171,000	96,000	160,000	230,000	393,000	343,000	491,000	508,000	555,000	264,000	206,000
9	159,000	155,000	101,000	232,000	233,000	371,000	339,000	513,000	516,000	515,000	250,000	172,000
10	169,000	146,000	102,000	244,000	217,000	334,000	354,000	514,000	530,000	488,000	236,000	161,000
11	171,000	132,000	96,600	243,000	192,000	293,000	446,000	516,000	544,000	471,000	222,000	149,000
12	169,000	131,000	96,600	245,000	171,000	264,000	520,000	515,000	555,000	454,000	204,000	172,000
13	171,000	137,000	103,000	236,000	166,000	248,000	536,000	515,000	562,000	435,000	181,000	208,000
14	174,000	134,000	111,000	222,000	172,000	243,000	528,000	518,000	571,000	422,000	162,000	318,000
15	179,000	130,000	119,000	205,000	183,000	250,000	511,000	510,000	587,000	406,000	164,000	517,000
16	183,000	122,000	149,000	186,000	176,000	258,000	497,000	498,000	612,000	388,000	167,000	607,000
17	185,000	118,000	163,000	189,000	184,000	273,000	476,000	482,000	636,000	373,000	162,000	649,000
18	195,000	112,000	147,000	187,000	245,000	310,000	454,000	468,000	658,000	361,000	156,000	660,000
19	232,000	111,000	137,000	176,000	298,000	433,000	444,000	456,000	669,000	348,000	151,000	650,000
20	284,000	108,000	139,000	150,000	303,000	512,000	439,000	444,000	674,000	335,000	144,000	611,000
21	300,000	107,000	134,000	142,000	271,000	520,000	458,000	428,000	677,000	322,000	143,000	539,000
22	289,000	103,000	130,000	145,000	259,000	518,000	477,000	411,000	674,000	321,000	143,000	451,000
23	276,000	103,000	134,000	149,000	260,000	521,000	487,000	394,000	675,000	323,000	136,000	367,000
24	268,000	105,000	127,000	146,000	241,000	492,000	491,000	377,000	680,000	357,000	129,000	317,000
25	259,000	106,000	122,000	139,000	232,000	440,000	494,000	362,000	682,000	357,000	118,000	285,000
26	252,000	106,000	126,000	141,000	237,000	389,000	508,000	385,000	683,000	365,000	119,000	264,000
27	243,000	104,000	139,000	143,000	225,000	360,000	521,000	414,000	690,000	397,000	114,000	251,000
28	230,000	98,500	140,000	143,000	227,000	349,000	523,000	432,000	702,000	429,000	111,000	242,000
29	223,000	99,200	142,000	141,000	225,000	333,000	521,000	407,000	711,000	458,000	113,000	243,000
30	221,000	98,400	136,000	133,000	---	315,000	518,000	385,000	716,000	473,000	122,000	241,000
31	218,000	---	138,000	122,000	---	309,000	---	389,000	---	493,000	116,000	---
Mean	197,000	137,500	118,300	162,900	210,400	349,400	450,100	460,500	584,300	469,700	219,100	316,400
Max	300,000	216,000	163,000	245,000	303,000	521,000	536,000	518,000	716,000	716,000	516,000	660,000
Min	116,000	98,400	84,600	105,000	125,000	212,000	339,000	362,000	378,000	321,000	111,000	112,000
In.	0.33	0.22	0.20	0.27	0.33	0.58	0.72	0.76	0.94	0.78	0.36	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2008, BY WATER YEAR (WY)

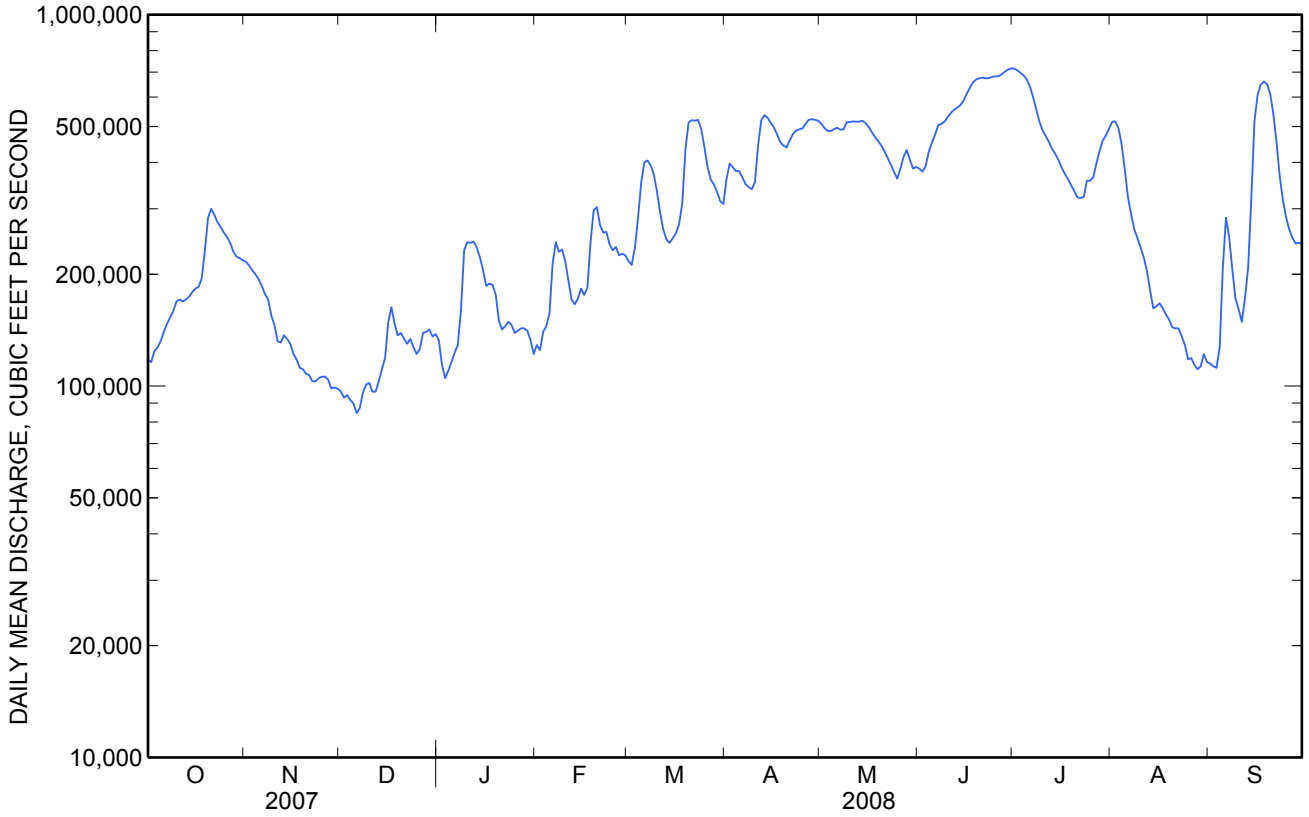
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	137,900	141,700	123,700	117,600	145,500	228,500	303,100	296,500	275,500	222,500	145,000	138,400
Max	575,300	359,200	452,400	307,800	301,400	521,800	692,500	588,700	600,600	808,800	700,200	531,800
(WY)	(1987)	(1986)	(1983)	(1973)	(1974)	(1973)	(1973)	(1995)	(1947)	(1993)	(1993)	(1993)
Min	44,170	47,920	42,130	31,340	41,900	74,550	110,100	79,500	70,260	67,130	43,510	54,640
(WY)	(1940)	(1940)	(1938)	(1940)	(1940)	(1964)	(1934)	(1934)	(1934)	(1936)	(1936)	(1939)

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1933 - 2008	
Annual mean	209,600		306,100		189,700	
Highest annual mean					429,700	1993
Lowest annual mean					67,700	1934
Highest daily mean	488,000	May 11	716,000	Jun 30[a]	1,050,000	Aug 1, 1993
Lowest daily mean	77,000	Feb 12	84,600	Dec 6	27,800	Dec 12, 1937
Annual seven-day minimum	79,100	Feb 7	91,000	Dec 2	28,200	Jan 18, 1940
Maximum peak flow			720,000	Jun 30[a]	1,080,000	Aug 1, 1993
Maximum peak stage			38.67	Jun 30[a]	49.58	Aug 1, 1993
Instantaneous low flow			83,700	Dec 7	27,800	Dec 12, 1937
Annual runoff (inches)	4.08		5.98		3.70	
10 percent exceeds	356,000		529,000		370,000	
50 percent exceeds	181,000		250,000		152,000	
90 percent exceeds	105,000		116,000		70,600	

[a]Also Jul 1



07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
WATER TEMPERATURE: October 1951 to September 1992.
SEDIMENT RECORDS: April 1948 to current year.
WATER-QUALITY RECORDS: October 2004 to current year.

REMARKS.--Sediment discharge computed from turbidity readings. Sediment records fair.

EXTREMES FOR PERIOD OF RECORD.--
SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean, 6,720 mg/L, Feb. 24, 1985; minimum daily mean, 19 mg/L, Jan. 21 and 22, 1967.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 9,830,000 tons, Feb. 24, 1985; minimum daily, 2,800 tons, Jan. 21, 1967.

EXTREMES FOR CURRENT YEAR.--
SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean 1,320 mg/L, Jun. 7; minimum daily mean 67 mg/L, Dec. 1.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily 1,910,000 tons, Jun. 11; minimum daily 16,000 tons, Dec. 6.

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
[e, estimated; ×10^6, million]

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	118,000	99	31,600	216,000	265	155,000	96,700	67	17,500
2	116,000	102	32,100	211,000	260	148,000	93,100	68	17,100
3	124,000	108	36,000	205,000	228	126,000	94,600	71	18,300
4	127,000	114	39,100	200,000	221	119,000	91,700	71	17,600
5	132,000	115	41,000	194,000	201	105,000	89,700	76	18,500
6	140,000	112	42,300	186,000	193	96,900	84,600	70	16,000
7	147,000	117	46,400	177,000	187	89,300	87,300	108	25,400
8	153,000	114	47,100	171,000	163	75,000	96,000	121	31,500
9	159,000	117	50,100	155,000	162	67,800	101,000	107	29,300
10	169,000	132	60,000	146,000	159	62,800	102,000	104	28,600
11	171,000	138	63,500	132,000	153	54,500	96,600	110	28,700
12	169,000	126	57,500	131,000	123	43,700	96,600	85	22,200
13	171,000	135	62,200	137,000	124	45,900	103,000	93	25,900
14	174,000	146	68,500	134,000	122	44,000	111,000	109	32,700
15	179,000	153	73,800	130,000	117	41,000	119,000	104	33,600
16	183,000	166	81,900	122,000	115	38,100	149,000	129	51,900
17	185,000	172	85,900	118,000	95	30,100	163,000	325	143,000
18	195,000	224	118,000	112,000	99	30,100	147,000	357	141,000
19	232,000	390	244,000	111,000	93	27,900	137,000	308	114,000
20	284,000	724	556,000	108,000	95	27,900	139,000	337	126,000
21	300,000	1,060	862,000	107,000	92	26,600	134,000	273	98,500
22	289,000	888	693,000	103,000	91	25,300	130,000	207	72,700
23	276,000	702	524,000	103,000	87	24,200	134,000	201	72,500
24	268,000	551	398,000	105,000	84	23,700	127,000	185	63,400
25	259,000	443	309,000	106,000	97	27,800	122,000	155	50,800
26	252,000	445	303,000	106,000	106	30,500	126,000	145	49,100
27	243,000	381	250,000	104,000	82	23,100	139,000	126	47,100
28	230,000	350	217,000	98,500	97	25,800	140,000	128	48,300
29	223,000	370	223,000	99,200	85	22,800	142,000	165	63,200
30	221,000	303	181,000	98,400	84	22,300	136,000	150	55,100
31	218,000	285	168,000	---	---	---	138,000	154	57,000
Total	6,107,000	---	5,965,000	4,126,100	---	1,680,100	3,665,900	---	1,616,500

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
[e, estimated; $\times 10^6$, million]

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	133,000	124	44,700	129,000	103	35,600	217,000	191	112,000
2	114,000	129	39,700	125,000	91	30,700	212,000	186	106,000
3	105,000	106	30,200	140,000	91	34,500	235,000	202	128,000
4	110,000	97	28,800	145,000	99	38,600	283,000	236	180,000
5	116,000	80	25,000	157,000	168	71,000	352,000	342	325,000
6	123,000	85	28,200	214,000	371	214,000	400,000	914	987,000
7	129,000	83	29,000	244,000	534	351,000	405,000	1,060	1,160,000
8	160,000	114	49,200	230,000	517	321,000	393,000	925	981,000
9	232,000	252	158,000	233,000	702	442,000	371,000	831	834,000
10	244,000	411	271,000	217,000	720	422,000	334,000	695	626,000
11	243,000	495	326,000	192,000	569	295,000	293,000	572	453,000
12	245,000	505	334,000	171,000	472	218,000	264,000	482	344,000
13	236,000	422	269,000	166,000	348	156,000	248,000	418	280,000
14	222,000	406	243,000	172,000	372	173,000	243,000	340	223,000
15	205,000	375	208,000	183,000	276	137,000	250,000	228	154,000
16	186,000	296	149,000	176,000	270	128,000	258,000	221	154,000
17	189,000	281	143,000	184,000	287	142,000	273,000	205	151,000
18	187,000	269	136,000	245,000	328	217,000	310,000	241	202,000
19	176,000	274	130,000	298,000	461	371,000	433,000	560	655,000
20	150,000	240	97,300	303,000	642	524,000	512,000	749	1,040,000
21	142,000	237	91,000	271,000	682	499,000	520,000	728	1,020,000
22	145,000	245	95,900	259,000	580	406,000	518,000	633	886,000
23	149,000	250	101,000	260,000	485	341,000	521,000	743	1,050,000
24	146,000	224	88,400	241,000	431	280,000	492,000	458	608,000
25	139,000	215	80,700	232,000	403	252,000	440,000	377	448,000
26	141,000	205	77,800	237,000	373	239,000	389,000	267	281,000
27	143,000	185	71,200	225,000	320	195,000	360,000	270	262,000
28	143,000	170	65,600	227,000	257	158,000	349,000	308	290,000
29	141,000	147	55,700	225,000	220	134,000	333,000	301	271,000
30	133,000	167	60,200	---	---	---	315,000	225	191,000
31	122,000	127	41,900	---	---	---	309,000	190	159,000
Total	5,049,000	---	3,568,500	6,101,000	---	6,825,400	10.83×10^6	---	14.56×10^6

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
[e, estimated; $\times 10^6$, million]

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)
		April			May			June	
1	361,000	398	387,000	508,000	306	420,000	385,000	414	430,000
2	397,000	517	555,000	495,000	494	660,000	378,000	442	450,000
3	388,000	479	502,000	486,000	507	666,000	391,000	582	615,000
4	379,000	397	406,000	486,000	336	441,000	428,000	723	836,000
5	379,000	265	272,000	492,000	341	453,000	453,000	987	1,210,000
6	365,000	209	206,000	496,000	312	418,000	476,000	1,280	1,650,000
7	350,000	197	186,000	490,000	384	508,000	505,000	1,320	1,800,000
8	343,000	189	175,000	491,000	262	348,000	508,000	958	1,310,000
9	339,000	191	175,000	513,000	260	359,000	516,000	836	1,160,000
10	354,000	218	208,000	514,000	195	270,000	530,000	994	1,420,000
11	446,000	372	449,000	516,000	224	312,000	544,000	1,300	1,910,000
12	520,000	765	1,080,000	515,000	225	313,000	555,000	1,090	1,630,000
13	536,000	715	1,040,000	515,000	190	264,000	562,000	788	1,200,000
14	528,000	740	1,060,000	518,000	223	311,000	571,000	746	1,150,000
15	511,000	631	871,000	510,000	357	491,000	587,000	660	1,050,000
16	497,000	453	608,000	498,000	508	683,000	612,000	863	1,430,000
17	476,000	396	509,000	482,000	421	548,000	636,000	746	1,280,000
18	454,000	293	359,000	468,000	325	411,000	658,000	622	1,100,000
19	444,000	286	343,000	456,000	262	322,000	669,000	528	954,000
20	439,000	232	275,000	444,000	222	266,000	674,000	502	913,000
21	458,000	217	268,000	428,000	174	201,000	677,000	507	926,000
22	477,000	386	497,000	411,000	171	189,000	674,000	458	834,000
23	487,000	461	605,000	394,000	172	184,000	675,000	434	790,000
24	491,000	345	457,000	377,000	165	168,000	680,000	551	1,010,000
25	494,000	351	468,000	362,000	172	168,000	682,000	448	826,000
26	508,000	406	557,000	385,000	379	393,000	683,000	371	684,000
27	521,000	480	675,000	414,000	429	479,000	690,000	399	743,000
28	523,000	389	550,000	432,000	397	463,000	702,000	545	1,030,000
29	521,000	346	486,000	407,000	426	468,000	711,000	502	964,000
30	518,000	415	580,000	385,000	486	505,000	716,000	421	814,000
31	---	---	---	389,000	383	402,000	---	---	---
Total	13.50×10^6	---	14.80×10^6	14.27×10^6	---	12.08×10^6	17.52×10^6	---	32.11×10^6

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
[e, estimated; $\times 10^6$, million]

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	716,000	462	894,000	515,000	760	1,060,000	115,000	116	36,000
2	708,000	437	836,000	516,000	784	1,090,000	113,000	108	32,900
3	697,000	422	793,000	494,000	774	1,030,000	112,000	89	26,800
4	686,000	474	878,000	447,000	630	760,000	127,000	147	50,400
5	669,000	421	760,000	382,000	421	435,000	209,000	237	134,000
6	640,000	338	584,000	322,000	369	321,000	284,000	508	390,000
7	599,000	362	585,000	290,000	326	254,000	252,000	536	364,000
8	555,000	325	487,000	264,000	281	200,000	206,000	396	220,000
9	515,000	305	424,000	250,000	258	174,000	172,000	305	141,000
10	488,000	299	395,000	236,000	225	143,000	161,000	239	104,000
11	471,000	348	444,000	222,000	194	116,000	149,000	180	72,700
12	454,000	408	501,000	204,000	182	100,000	172,000	280	130,000
13	435,000	426	501,000	181,000	154	75,600	208,000	246	138,000
14	422,000	370	422,000	162,000	124	54,100	318,000	654	563,000
15	406,000	281	308,000	164,000	120	53,100	517,000	879	1,230,000
16	388,000	294	307,000	167,000	116	52,200	607,000	904	1,480,000
17	373,000	288	290,000	162,000	111	48,600	649,000	671	1,180,000
18	361,000	278	270,000	156,000	119	49,900	660,000	606	1,080,000
19	348,000	274	258,000	151,000	120	49,000	650,000	633	1,110,000
20	335,000	251	227,000	144,000	108	42,100	611,000	592	977,000
21	322,000	232	202,000	143,000	114	43,800	539,000	466	678,000
22	321,000	227	197,000	143,000	e131	e50,700	451,000	484	589,000
23	323,000	214	186,000	136,000	150	55,200	367,000	492	488,000
24	357,000	260	251,000	129,000	153	53,400	317,000	413	353,000
25	357,000	360	347,000	118,000	150	48,000	285,000	416	320,000
26	365,000	465	458,000	119,000	130	41,600	264,000	264	188,000
27	397,000	444	476,000	114,000	102	31,400	251,000	243	165,000
28	429,000	559	647,000	111,000	94	27,900	242,000	222	145,000
29	458,000	754	932,000	113,000	80	24,300	243,000	181	119,000
30	473,000	600	766,000	122,000	84	27,800	241,000	133	86,500
31	493,000	722	961,000	116,000	111	34,800	---	---	---
Total	14.56×10^6	---	15.58×10^6	6,793,000	---	6,546,500	9,492,000	---	12.59×10^6

	Mean discharge (ft³/s)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
Year	112,036,000	---	127,953,300