

06486000 Missouri River at Sioux City, IA

Missouri-Little Sioux Basin Blackbird-Soldier Subbasin

LOCATION.--Lat 42°29'09", long 96°24'49" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.16, T.29 N., R.9 E., Dakota County, NE, Hydrologic Unit 10230001, on right bank on upstream side of bridge on U.S. Highway 20 and 77 in South Sioux City, 1.9 mi downstream from Big Sioux River, and 732.2 mi upstream from mouth. Sediment samples collected by boat in vicinity of gage.

DRAINAGE AREA.--314,600 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1897 to current year in reports of U.S. Geological Survey. Prior to October 1928, and October 1931 to September 1938, monthly discharges only, published in WSP 1310. January 1879 to December 1890, monthly discharges only, in House Document 238, 73rd Congress, 2nd session, Missouri River. Gage height record collected in this vicinity from September 1878 to December 1899, in reports of Missouri River Commission, and since July 1889, in reports of U.S. National Weather Service.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

- GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft above NGVD of 1929. September 2, 1878 to December 31, 1905, nonrecording gage at various sites within 1.7 mi of current site at various datums; January 1, 1906 to February 14, 1935, nonrecording gage, and February 15, 1935 to September 30, 1969, water-stage recorder, both at site 227 ft downstream at datum 19.98 ft higher; October 1, 1969 to September 30, 1970, water-stage recorder at site 227 ft downstream at datum 20.00 ft higher; October 1, 1970 to January 30, 1981, water-stage recorder at site 227 ft downstream at same datum.
- REMARKS.--Records are considered good. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Minimum discharge, 2,500 ft³/s, December 29, 1941; minimum gage height, 5.98 ft, December 15, 2008.

EXTREMES FOR PERIOD PRIOR TO REGULATION .-- Maximum discharge, 441,000 ft³/s, April 14, 1952, gage height, 24.28 ft, at datum then in use.

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DISCHARGE, CUBIC FEET PER SECOND WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009 DAILY MEAN VALUES

						[e, estimate	d]					
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep
1	23,800	12,900	11,600	e14,200	e13,900	11,400	25,400	25,600	28,100	35,000	33,000	31,900
2	23,700	12,700	11,200	e15,300	e13,700	14,300	25,000	25,200	26,500	34,400	33,000	32,600
3	23,800	12,600	11,900	e15,200	e13,400	14,300	24,300	24,800	30,600	34,200	33,200	34,300
4	23,700	12,500	13,200	e14,600	e12,900	14,700	24,300	26,200	28,600	34,200	32,900	33,700
5	23,800	12,100	12,500	e14,000	e12,400	16,000	24,700	27,100	25,900	33,900	32,800	31,900
6	24,200	12,100	13,600	e15,400	e12,900	15,000	25,100	27,800	30,700	33,800	32,800	31,200
7	24,400	12,000	13,400	e15,500	e13,300	12,600	24,800	28,800	29,500	34,000	32,700	31,200
8	23,900	11,800	13,300	e14,600	e13,400	12,000	24,000	29,000	28,300	36,100	32,500	31,400
9	23,400	11,600	14,400	e14,000	e13,800	e11,500	24,300	29,100	31,500	38,000	32,300	31,500
10	23,600	11,600	13,300	e14,100	e16,000	e10,700	24,500	29,200	27,900	44,000	32,200	32,400
11	23,900	11,800	15,400	e14,300	e17,200	e7,590	23,900	29,300	28,800	41,900	31,900	33,100
12	23,700	11,900	17,400	e15,200	19,800	e6,990	24,200	28,800	32,200	39,000	31,600	34,300
13	24,200	11,700	16,700	e15,600	20,100	15,000	25,400	29,500	28,200	38,700	31,600	33,100
14	23,800	11,900	16,200	e15,400	19,100	18,500	25,400	29,200	28,100	38,500	31,500	33,100
15	22,500	11,900	7,670	e15,200	17,600	17,800	25,200	28,100	31,700	38,100	31,500	32,900
16	22,200	11,800	8,130	e16,100	16,300	14,900	25,400	28,400	27,100	37,400	32,700	32,700
17	22,300	11,900	14,800	e16,200	15,600	14,900	25,600	27,900	27,900	36,800	31,600	32,400
18	22,200	12,000	e17,600	e16,600	15,600	14,800	25,900	27,100	33,400	35,900	31,000	32,400
19	22,100	11,900	e18,000	e15,900	14,100	16,100	26,200	27,800	33,400	35,200	30,000	32,600
20	22,100	11,900	e17,800	e15,100	13,800	18,700	25,900	32,800	33,100	34,800	29,900	33,100
21	22,100	11,700	e17,100	e14,000	13,300	21,500	25,800	32,000	34,300	35,400	29,600	33,800
22	22,800	11,500	e16,200	e13,900	11,900	22,600	25,100	31,600	34,500	34,200	29,500	34,000
23	22,000	11,600	e17,000	e13,900	13,300	23,400	25,300	30,000	34,100	33,800	29,400	33,900
24	18,800	11,300	e16,800	e13,400	13,500	25,200	25,600	29,000	34,300	33,400	29,200	33,700
25	16,800	11,400	e16,300	e13,300	14,500	24,100	26,000	28,100	34,100	33,000	29,700	33,700
26	16,000	11,600	e16,300	e13,400	14,700	23,100	26,400	27,300	34,500	32,500	30,000	33,700
27	15,500	11,600	e16,100	e14,500	11,200	22,600	26,700	26,800	34,800	32,200	30,800	33,800
28	14,800	11,500	e15,600	e14,300	8,880	23,200	26,300	29,800	35,200	31,900	31,100	33,800
29	13,700	11,500	e15,100	e14,000		23,600	25,400	29,000	35,400	31,600	31,400	33,900
30	13,200	11,600	e15,000	e13,600		23,800	25,000	27,400	35,300	32,200	31,900	33,700
31	13,100		e14,600	e13,800		24,200		29,400		32,800	31,700	
Total	656,100	355,900	454,200	454,600	406,180	535,080	757,100	882,100	938,000	1,096,900	975,000	989,800
Mean	21,160	11,860	14,650	14,660	14,510	17,260	25,240	28,450	31,270	35,380	31,450	32,990
Max	24,400	12,900	18,000	16,600	20,100	25,200	26,700	32,800	35,400	44,000	33,200	34,300
Min	13,100	11,300	7,670	13,300	8,880	6,990	23,900	24,800	25,900	31,600	29,200	31,200
Ac-ft	1,301,000	705,900	900,900	901,700	805,700	1,061,000	1,502,000	1,750,000	1,861,000	2,176,000	1,934,000	1,963,000
Cfsm	0.07	0.04	0.05	0.05	0.05	0.05	0.08	0.09	0.10	0.11	0.10	0.10
ln.	0.08	0.04	0.05	0.05	0.05	0.06	0.09	0.10	0.11	0.13	0.12	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	34,370	29,450	18,380	15,940	16,900	22,640	32,230	32,940	34,790	35,020	35,340	35,570
Max	69,300	71,600	39,880	27,720	31,120	47,020	88,040	78,720	66,400	65,550	65,360	66,400
(WY)	(1998)	(1998)	(1998)	(1987)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)
Min	14,350	6,951	8,271	7,316	6,293	9,135	17,450	20,570	23,270	20,220	24,270	22,250
(WY)	(1962)	(1962)	(1962)	(1964)	(1963)	(1957)	(1957)	(2008)	(1960)	(2008)	(1993)	(2008)

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	Calendar Y	ear 2008	Water Yea	r 2009	Water Years	1953 - 2009 ^a
Annual total	6,897,130		8,500,960			
Annual mean	18,840		23,290		28,670	
Highest annual mean					55,890	1997
Lowest annual mean					18,690	2008
Highest daily mean	39,200	Jun 11	44,000	Jul 10	105,000	Jun 25, 1953
Lowest daily mean	7,670	Dec 15	6,990	Mar 12	3,000	Dec 11, 1961
Annual seven-day minimum	11,500	Nov 22	10,900	Mar 6	5,430	Feb 22, 1963
Maximum peak flow			44,800	Jul 10	101,000	Apr 3, 1960
Maximum peak stage			19.04	Jul 10	30.65	Feb 19, 1971
Instantaneous low flow			5,600	Dec 15		
Annual runoff (ac-ft)	13,680,000		16,860,000		20,770,000	
Annual runoff (cfsm)	0.06	50	0.074	1	0.091	
Annual runoff (inches)	0.82	2	1.01		1.24	
10 percent exceeds	25,200		33,800		45,000	
50 percent exceeds	18,200		24,200		28,900	
90 percent exceeds	11,900		12,000		12,100	

SUMMARY STATISTICS

^a Post regulation.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1971 to September 2000, October 1, 2003 to current year. Daily sediment loads for October 1954 to September 1971 are in reports of U.S. Army Corps of Engineers.

PERIOD OF DAILY RECORD .--

SPECIFIC CONDUCTANCE: October 1972 to September 1976, November 1977 to September 1981, October 1991 to September 30, 2000, October 1, 2003 to current year.

WATER TEMPERATURE: October 1971 to September 1976, November 1977 to September 1981, October 1991 to September 30, 2000, October 1, 2003 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976, October 1991 to September 30, 2000, October 1, 2003 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD .--

SPECIFIC CONDUCTANCE: Maximum daily, 985 microsiemens, April 19, 1999; minimum daily, 410 microsiemens, March 22, 1978. WATER TEMPERATURE: Maximum daily, 30.0°C, July 30, August 6, 13, 2007; minimum daily, 0.0°C on many days during winter period. SEDIMENT CONCENTRATION: Maximum daily mean, 2,420 mg/L, May 18, 2000; minimum daily mean, 24 mg/L, October 27, 2006. SEDIMENT LOAD: Maximum daily, 370,000 tons, July 17, 1996; minimum daily, 722 tons, October 27, 2006.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 865 microsiemens, October 29, January 7; minimum daily, 686 microsiemens, October 8. WATER TEMPERATURE: Maximum daily, 27.3°C, June 25; minimum daily, 0.0°C, February 6.

SEDIMENT CONCENTRATION: Maximum daily mean, 387 mg/L, March 24; minimum daily mean, 48 mg/L, January 22. SEDIMENT LOAD: Maximum daily, 27,500 tons, July 10; minimum daily, 1,380 tons, December 15.

		WAII	ER YEAR O	CIOBER 2	008 I 0 SE	PIEMBER	2009		
Date	Time	Bed sedimnt dry svd sve dia percent <0.0625 mm (80164)	Bed sedi- ment, dry svd sve dia percent <.125mm (80165)	Bed sedi- ment, dry svd sve dia percent <.25mm (80166)	Bed sedi- ment, dry svd sve dia percent <.5 mm (80167)	Bed sedi- ment, dry svd sve dia percent <1 mm (80168)	Bed sedi- ment, dry svd sve dia percent <2 mm (80169)	Bed sedi- ment, dry svd sve dia percent <4 mm (80170)	Bed sedi- ment, dry svd sve dia percent <8 mm (80171)
Oct									
01	1135	.0	.0	23	84	97	99	100	
Nov									
05	1115	.0	.0	15	66	91	98	100	
Jan 21	1245	.0	.0	4	64	91	96	98	100
Feb 11	1200	.0	1	22	80	100			
Mar 05	1130	.0	.0	13	73	97	99	99	100
Apr 03	1115	.0	.0	28	94	98	99	99	100
May 07	1115	.0	.0	13	72	92	98	100	
Jun		_	_						
04	1015	.0	.0	18	81	98	100		
30	1215	.0	.0	15	85	99	100		
Aug 06	1115	.0	.0	23	82	96	99	100	

WATER-QUALITY DATA VATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

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								-				
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	708											
2												770
3			807				733					
4									739			
5		850				600			157			
J		057				0))						
6					785						771	
7				865				776				
8	686									762		
9							773					
10											770	780
11					721				766			
12		837										
13												
14								728				
15	705											
16							707			705		
10							191			/85		
1/												
18									736		778	
19		852				771						
20												
21				821				733				
22	751											
23							805			782		777
24												
25					749				746			
26		852				752					760	
27												
28								736				
29	865											
30							800		754	778		771
31												

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009 DAILY INSTANTANEOUS VALUES

06486000 Missouri River at Sioux City, IA—Continued

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep
1	18.5											
2												20.7
3			1.5				6.0					
4									19.0			
5		13.0				3.5						
6					0.0					24.2	26.3	
7				0.5				17.0				
8	16.5											
9							7.0					
10											26.0	22.4
11					1.5				18.1			
12		5.0										
13												
14								15.5				
15	13.5											
16							10.0			24.0		22.0
17												
18									21.7		26.6	
19		4.5				6.6						
20												
21				1.0				21.3				
22	10.5											
23							14.5			23.6		19.2
24												
25					2.5				27.3			
26		2.5				6.5					26.5	
27												
28								17.2				
29	10.8											
30							12.5		25.6	23.3		16.8
31												

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009 DAILY INSTANTANEOUS VALUES

06486000 Missouri River at Sioux City, IA—Continued

Day	Mean concen- tration (mg/L)	Sediment discharge (tons/ day)										
	0c	tober	Nov	ember	Dec	ember	Jai	nuary	Feb	ruary	М	arch
1	126	8,010	161	5,600	72	2,260	60	2,300	89	3,340	128	3,970
2	117	7,530	155	5,310	64	1,940	62	2,560	85	3,140	170	6,600
3	119	7,620	152	5,160	63	2,040	62	2,540	84	3,040	167	6,430
4	120	7,670	148	5,000	66	2,350	61	2,400	77	2,680	172	6,850
5	139	8,900	143	4,680	66	2,240	58	2,190	91	3,050	187	8,080
6	195	12,700	129	4,220	67	2,440	56	2,330	100	3,480	176	7,170
7	184	12,100	114	3,710	66	2,400	55	2,300	83	2,980	151	5,150
8	168	10,900	103	3,260	67	2,410	55	2,170	74	2,680	142	4,600
9	163	10,300	92	2,880	68	2,650	66	2,490	112	4,170	138	4,280
10	179	11,400	84	2,620	67	2,400	70	2,660	237	10,200	139	4,020
11	200	12,900	83	2,640	69	2,860	79	3,050	247	11,500	99	2,030
12	221	14,200	83	2,650	73	3,400	92	3,780	226	12,100	115	2,170
13	273	17,800	80	2,540	73	3,320	97	4,090	221	12,000	252	10,700
14	327	21,000	82	2,640	73	3,200	89	3,700	209	10,700	287	14,300
15	283	17,200	81	2,610	66	1,380	112	4,600	193	9,200	274	13,300
16	171	10,200	78	2,490	64	1,420	141	6,130	180	7,900	183	7,340
17	178	10,700	81	2,600	70	2,800	153	6,690	169	7,130	179	7,170
18	158	9,480	84	2,700	73	3,470	130	5,830	166	6,980	165	6,600
19	154	9,200	84	2,700	74	3,600	97	4,160	156	5,980	166	7,240
20	177	10,600	81	2,620	74	3,560	78	3,180	150	5,590	217	11,000
21	152	9,050	78	2,470	71	3,280	53	2,000	145	5,240	275	16,000
22	148	9,080	73	2,280	70	3,060	48	1,800	127	4,090	323	19,700
23	212	12,500	74	2,310	69	3,170	50	1,880	142	5,090	352	22,200
24	224	11,400	68	2,100	70	3,180	63	2,280	144	5,230	387	26,300
25	216	9,770	70	2,160	69	3,040	65	2,330	164	6,420	380	24,700
26	210	9,080	74	2,310	68	2,990	78	2,820	166	6,590	370	23,100
27	207	8,640	72	2,260	67	2,910	101	3,950	130	4,000	327	19,900
28	202	8,080	71	2,210	65	2,740	93	3,590	110	2,640	320	20,100
29	195	7,200	72	2,230	64	2,610	85	3,210			335	21,300
30	178	6,360	73	2,300	62	2,510	97	3,560			332	21,300
31	169	5,970			61	2,400	89	3,320			335	21,900
Total		327,540		91,260		84,030		99,890		167,140		375,500

SUSPENDED-SEDIMENT WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

06486000 Missouri River at Sioux City, IA—Continued

Day	Mean concen- tration (mg/L)	Sediment discharge (tons/ day)										
	Α	pril	N	lay	J	une	J	uly	Au	gust	Sept	ember
1	361	24,700	157	10,900	136	10,300	164	15,500	154	13,700	143	12,300
2	352	23,700	149	10,200	124	8,890	162	15,000	153	13,600	149	13,100
3	319	20,900	139	9,330	152	12,600	162	14,900	154	13,800	157	14,600
4	289	19,000	167	11,800	130	10,100	160	14,800	148	13,100	152	13,800
5	297	19,800	152	11,100	119	8,310	159	14,600	144	12,700	139	12,000
6	309	20,900	136	10,300	156	13,000	158	14,400	140	12,400	131	11,100
7	280	18,700	151	11,800	147	11,800	158	14,500	145	12,800	125	10,500
8	214	13,900	161	12,600	138	10,600	167	16,300	149	13,100	123	10,400
9	205	13,400	166	13,000	162	13,800	182	18,700	148	12,900	124	10,500
10	207	13,700	177	13,900	141	10,600	231	27,500	147	12,800	130	11,300
11	191	12,300	183	14,500	160	12,500	215	24,400	143	12,300	143	12,800
12	200	13,100	171	13,300	171	14,900	192	20,200	140	11,900	150	13,900
13	213	14,600	192	15,300	141	10,700	187	19,500	139	11,900	142	12,700
14	201	13,700	207	16,400	144	10,900	181	18,800	138	11,700	143	12,800
15	186	12,700	166	12,600	164	14,000	172	17,700	138	11,700	140	12,500
16	183	12,500	172	13,200	132	9,650	163	16,500	147	12,900	137	12,100
17	182	12,600	164	12,400	147	11,100	161	16,000	138	11,800	134	11,800
18	185	12,900	146	10,700	227	20,500	156	15,200	134	11,200	135	11,800
19	188	13,300	153	11,600	213	19,200	151	14,400	130	10,500	135	11,900
20	184	12,900	198	17,500	186	16,600	150	14,100	129	10,400	137	12,200
21	181	12,600	183	15,800	170	15,700	155	14,800	127	10,200	140	12,800
22	168	11,400	189	16,100	169	15,800	149	13,700	127	10,100	140	12,800
23	173	11,800	172	13,900	168	15,500	145	13,200	127	10,100	138	12,700
24	178	12,300	160	12,500	161	14,900	144	12,900	126	9,960	148	13,500
25	181	12,700	148	11,300	149	13,700	142	12,700	130	10,400	156	14,200
26	185	13,200	136	10,000	159	14,800	141	12,400	133	10,800	159	14,500
27	188	13,600	130	9,430	163	15,400	139	12,100	138	11,500	166	15,200
28	182	12,900	150	12,100	166	15,800	138	11,900	139	11,700	164	15,000
29	155	10,700	144	11,300	168	16,000	139	11,900	140	11,900	174	15,900
30	140	9,470	129	9,550	168	16,000	155	13,500	142	12,200	170	15,300
31			143	11,400			155	13,700	141	12,100		
Total		439,970		385,810		403,650		485,800		368,160		386,000

SUSPENDED-SEDIMENT WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

	Total suspended
	sediment discharge (tons)
Year	3,614,750

06486000 Missouri River at Sioux City, IA—Continued

