

Water-Data Report 2010

**06813500 Missouri River at Rulo, NE**

Missouri-Nishnabotna Basin  
Tarkio-Wolf Subbasin

LOCATION.--Lat 40°03'13", long 95°25'19" referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.17, T.1 N., R.18 E., Richardson County, NE, Hydrologic Unit 10240005, on right bank on downstream side of bridge on U.S. Highway 159 in Rulo, 3.2 mi upstream from Big Nemaha River, and 498.0 mi upstream from mouth.

DRAINAGE AREA.--414,900 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1949 to current year. Gage-height records collected at site 80 ft upstream from January 1886 to December 1899 in reports of Missouri River Commission, and from September 1929 to September 1950 in files of Kansas City office of U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above National Geodetic Vertical Datum of 1929. October 1, 1949, to September 12, 1950, nonrecording gage at site 80 ft upstream at same datum; September 13, 1950, to April 19, 1983, water-stage recorder on downstream end of middle pier at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. 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. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Minimum daily discharge, 4,420 ft<sup>3</sup>/s, January 13, 1957; minimum gage height, -0.19 ft, December 25, 1990, result of freeze-up.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1881 reached a stage of 22.9 ft, from floodmark, discharge not determined.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge, 358,000 ft<sup>3</sup>/s, April 22, 1952, gage height, 25.60 ft.

## 06813500 Missouri River at Rulo, NE—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	41,600	51,000	33,700	28,100	33,900	28,500	82,500	69,900	54,700	123,000	90,200	76,700
2	41,700	49,500	33,300	27,700	33,700	29,000	80,700	62,200	73,100	124,000	93,300	80,800
3	41,800	49,100	32,900	27,200	33,600	29,500	77,300	59,400	79,400	123,000	96,100	85,000
4	42,400	48,000	32,200	26,900	33,200	30,100	75,200	59,100	66,800	124,000	101,000	74,800
5	42,100	47,300	32,500	26,800	32,700	32,000	72,700	58,100	62,400	135,000	109,000	71,200
6	41,900	47,100	31,100	26,400	32,100	36,600	70,900	55,700	76,600	135,000	114,000	69,900
7	41,500	46,800	30,200	27,600	32,200	46,500	70,400	58,500	70,800	127,000	114,000	68,700
8	41,300	46,200	29,700	27,900	32,200	49,400	69,300	59,800	65,400	119,000	111,000	67,800
9	41,300	45,600	27,000	27,500	31,400	54,700	67,000	56,900	74,400	113,000	107,000	67,400
10	41,300	44,800	24,600	27,100	30,700	71,500	64,200	56,500	79,600	105,000	103,000	67,200
11	41,400	44,300	24,300	26,600	30,300	87,100	62,400	57,000	85,100	100,000	101,000	67,500
12	41,300	43,600	22,900	26,800	29,900	115,000	60,900	57,800	105,000	102,000	99,700	68,400
13	41,100	43,000	20,100	27,600	29,800	108,000	59,000	62,400	113,000	95,100	97,700	69,100
14	40,900	42,100	22,000	28,200	30,200	104,000	57,200	67,800	121,000	91,300	95,400	77,700
15	40,900	40,600	26,800	28,100	29,800	104,000	56,800	65,500	137,000	103,000	93,900	74,900
16	40,700	39,700	27,800	27,700	29,000	107,000	57,400	63,000	158,000	108,000	93,100	72,100
17	40,700	40,000	27,800	27,400	28,400	110,000	57,800	63,900	155,000	105,000	92,100	70,500
18	40,900	39,200	26,500	27,200	28,000	112,000	56,600	63,500	138,000	96,200	91,200	70,000
19	40,800	38,500	26,500	27,300	28,700	113,000	54,800	61,000	130,000	88,400	88,100	71,100
20	40,600	38,200	28,200	28,000	28,900	114,000	54,200	62,600	133,000	87,600	84,100	75,800
21	40,700	37,700	29,000	28,900	28,900	117,000	52,600	75,600	152,000	96,200	81,000	76,600
22	42,100	37,500	29,000	30,100	28,400	119,000	52,300	66,000	170,000	92,200	78,000	75,800
23	47,100	37,500	29,000	36,100	28,200	123,000	52,600	60,900	200,000	85,200	75,600	74,000
24	52,700	39,000	30,200	49,300	28,200	126,000	56,000	57,800	213,000	88,700	74,400	75,600
25	57,700	41,700	31,300	42,300	28,200	135,000	56,400	56,700	201,000	95,000	75,900	78,600
26	55,400	39,000	30,300	38,600	28,300	121,000	55,600	56,500	163,000	98,300	75,100	83,800
27	51,500	37,500	29,600	36,000	28,600	111,000	52,500	58,700	133,000	99,300	72,800	87,500
28	48,900	35,600	26,800	33,900	28,200	105,000	52,000	56,400	123,000	97,900	70,700	89,200
29	48,100	34,400	24,500	32,700	---	97,600	53,100	54,800	122,000	95,200	69,100	89,000
30	49,800	33,800	25,400	32,800	---	90,900	58,100	53,800	122,000	91,700	68,200	90,300
31	51,500	---	27,600	33,700	---	86,000	---	54,300	---	88,600	67,500	---
<b>Total</b>	1,371,700	1,258,300	872,800	942,500	845,700	2,713,400	1,848,500	1,872,100	3,577,300	3,232,900	2,783,200	2,267,000
<b>Mean</b>	44,250	41,940	28,150	30,400	30,200	87,530	61,620	60,390	119,200	104,300	89,780	75,570
<b>Max</b>	57,700	51,000	33,700	49,300	33,900	135,000	82,500	75,600	213,000	135,000	114,000	90,300
<b>Min</b>	40,600	33,800	20,100	26,400	28,000	28,500	52,000	53,800	54,700	85,200	67,500	67,200
<b>Ac-ft</b>	2,721,000	2,496,000	1,731,000	1,869,000	1,677,000	5,382,000	3,666,000	3,713,000	7,096,000	6,412,000	5,520,000	4,497,000
<b>Cfsm</b>	0.11	0.10	0.07	0.07	0.07	0.21	0.15	0.15	0.29	0.25	0.22	0.18
<b>In.</b>	0.12	0.11	0.08	0.08	0.08	0.24	0.17	0.17	0.32	0.29	0.25	0.20

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2010, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	43,300	39,190	26,700	22,880	28,210	40,750	50,110	51,770	57,570	50,340	44,550	44,300
<b>Max</b>	80,050	83,880	57,380	42,280	53,140	87,530	106,100	97,280	130,600	164,800	89,780	76,410
<b>(WY)</b>	(1998)	(1998)	(1998)	(1973)	(1997)	(2010)	(1997)	(1997)	(1984)	(1993)	(2010)	(1997)
<b>Min</b>	24,520	17,000	9,953	10,800	13,220	15,380	21,820	33,790	33,710	29,650	29,320	30,350
<b>(WY)</b>	(2007)	(1962)	(1956)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(2002)	(2003)	(2008)

**06813500 Missouri River at Rulo, NE—Continued**

**SUMMARY STATISTICS**

	Calendar Year 2009		Water Year 2010		Water Years 1953 - 2010 <sup>a</sup>	
<b>Annual total</b>	14,223,900		23,585,400			
<b>Annual mean</b>	38,970		64,620		41,670	
<b>Highest annual mean</b>					71,880	1997
<b>Lowest annual mean</b>					26,340	1957
<b>Highest daily mean</b>	70,000	Jun 22	213,000	Jun 24	289,000	Jul 24, 1993
<b>Lowest daily mean</b>	19,200	Mar 3	20,100	Dec 13	4,420	Jan 13, 1957
<b>Annual seven-day minimum</b>	23,500	Jan 12	24,000	Dec 9	5,560	Nov 30, 1955
<b>Maximum peak flow</b>			216,000	Jun 24	307,000	Jul 24, 1993
<b>Maximum peak stage</b>			26.63	Jun 23	26.63	Jun 23, 2010
<b>Instantaneous low flow</b>			19,300	Dec 13		
<b>Annual runoff (ac-ft)</b>	28,210,000		46,780,000		30,190,000	
<b>Annual runoff (cfsm)</b>	0.094		0.156		0.100	
<b>Annual runoff (inches)</b>	1.28		2.11		1.36	
<b>10 percent exceeds</b>	51,900		113,000		66,400	
<b>50 percent exceeds</b>	39,800		57,000		38,000	
<b>90 percent exceeds</b>	24,700		28,200		19,500	

<sup>a</sup> Post regulation.

