06115200 MISSOURI RIVER NEAR LANDUSKY, MT

Fort Peck Lake Basin
Fort Peck Reservoir Subbasin

LOCATION.--Lat 47°37′51″, long 108°41′13″ referenced to North American Datum of 1927, in NW ¼ NE ¼ sec.31, T.22 N., R.24 E., Fergus County, Hydrologic Unit 10040104, C. M. Russell National Wildlife Refuge, on right bank 380 ft upstream from bridge on U.S. Highway 191, 0.9 mi upstream from Armells Creek, 20 mi south of Landusky, and at river mile 1,921.61.

DRAINAGE AREA.--40,987 mi², area at site used prior to Dec. 13, 1968, 40,763 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1934 to current year. Prior to October 1968, published as "at powerplant ferry, near Zortman."

REVISED RECORDS. --Water Supply Paper 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,239.96 ft, referenced to National Geodetic Vertical Datum of 1929 (State Highway bench mark). Prior to Feb. 7, 1935, nonrecording gage, and Feb. 7, 1935, to Dec. 12, 1968, water-stage recorder, at site 16.5 mi upstream at elevation 33.06 ft higher.

REMARKS.--Records are good except those for estimated daily discharges, which are fair. Flow is regulated by 24 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), Canyon Ferry Lake (station number 06058500), and Lake Elwell (station number 06101300). Diversions for irrigation include about 870,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter is locaed at the station.

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,510	5,580	5,810	e6,000	e5,500	e6,800	7,380	9,570	10,500	6,880	5,840	5,350
2	5,540	5,620	e5,200	e6,000	e5,600	e6,700	7,170	9,740	10,000	6,810	6,080	5,370
3	5,710	5,700	e5,600	e6,000	e5,800	e6,600	7,170	9,860	9,190	6,560	5,760	5,180
4	5,990	5,710	e5,400	e6,000	e5,600	e7,300	7,180	10,100	8,630	6,370	5,720	5,050
5	6,130	5,670	e4,800	e6,000	e5,600	e6,700	7,250	10,000	9,100	6,480	5,910	5,100
6	5,930	5,550	e4,800	e5,900	e5,600	e6,300	e7,800	10,100	9,820	5,960	e5,700	5,180
7	5,790	5,580	e5,000	e5,800	e5,700	e6,200	8,420	10,000	9,980	6,230	5,390	5,330
8	5,910	5,420	e5,000	e5,800	e5,500	e6,300	9,370	9,700	9,680	6,060	5,490	5,090
9	5,860	5,620	e5,000	e5,800	e5,400	e6,200	12,200	9,490	9,420	5,930	5,920	5,130
10	5,870	5,680	e4,900	e5,800	e5,600	e6,000	12,500	9,500	9,610	6,090	5,780	5,160
11	5,630	5,650	e4,800	e5,700	e5,800	e6,000	11,100	9,330	10,100	6,160	5,550	4,860
12	5,820	5,540	e4,900	e5,600	e6,100	e5,800	10,300	9,550	13,600	6,230	5,450	5,020
13	5,450	5,530	e5,700	e5,700	e5,800	e5,700	9,920	9,420	20,500	6,110	4,960	5,110
14	5,600	5,530	e6,100	e5,900	e5,600	e5,600	9,410	9,220	20,900	6,100	5,110	5,010
15	5,620	5,540	e6,400	e5,700	e6,100	e5,500	9,590	9,210	19,300	5,930	5,270	5,060
16	5,570	5,430	e6,300	e5,700	e6,000	e5,500	9,580	9,310	18,600	5,870	5,240	5,010
17	5,620	5,400	e6,100	e5,800	e5,800	e5,800	10,600	9,480	18,000	5,730	5,320	5,000
18	5,670	5,400	e5,800	e5,800	e5,400	e5,900	11,200	9,670	17,000	5,870	5,350	5,400
19	5,660	5,470	e5,500	e5,600	e4,200	e6,200	11,400	9,980	15,300	5,860	5,370	5,540
20	5,600	5,520	e5,200	e5,500	e3,900	e6,400	10,700	10,700	13,800	5,830	5,380	5,560
21	5,610	5,560	e5,000	e5,600	e3,600	e6,300	10,800	12,100	12,700	5,550	5,280	5,660
22	5,670	5,350	e5,200	e5,600	e4,700	6,810	10,500	12,300	11,300	5,540	5,270	5,540
23	5,620	5,640	e5,300	e5,500	e5,200	6,900	10,700	12,500	10,300	5,590	5,430	5,500
24	5,670	5,440	e5,600	e5,400	e5,700	7,420	10,600	11,600	10,100	5,720	5,080	5,360
25	5,700	5,670	e6,700	e5,400	e7,000	7,470	10,300	11,400	8,440	5,840	5,220	5,530
26	5,720	5,920	e7,000	e5,700	e7,600	7,360	9,760	9,800	7,930	6,210	5,130	5,630
27	5,770	5,920	e6,700	e6,000	e7,600	7,280	9,910	11,000	7,760	5,980	5,230	5,730
28	5,870	6,080	e6,400	e5,800	e7,000	7,100	9,990	11,300	7,620	6,220	5,290	5,530
29	5,940	5,980	e6,200	e5,500	---	7,180	9,880	11,300	7,360	6,210	5,360	5,460
30	5,910	5,860	e6,000	e5,200	---	7,260	9,660	12,300	6,960	6,250	5,370	5,390
31	5,830	---	e6,000	e5,400	---	7,300	---	11,400	---	5,850	5,250	---
Total	177,790	168,560	174,410	177,200	159,000	201,880	292,340	320,930	353,500	188,020	168,500	158,840
Mean	5,735	5,619	5,626	5,716	5,679	6,512	9,745	10,350	11,780	6,065	5,435	5,295
Max	6,130	6,080	7,000	6,000	7,600	7,470	12,500	12,500	20,900	6,880	6,080	5,730
Min	5,450	5,350	4,800	5,200	3,600	5,500	7,170	9,210	6,960	5,540	4,960	4,860
Ac-ft	352,600	334,300	345,900	351,500	315,400	400,400	579,900	636,600	701,200	372,900	334,200	315,100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2006, BY WATER YEAR (WY)

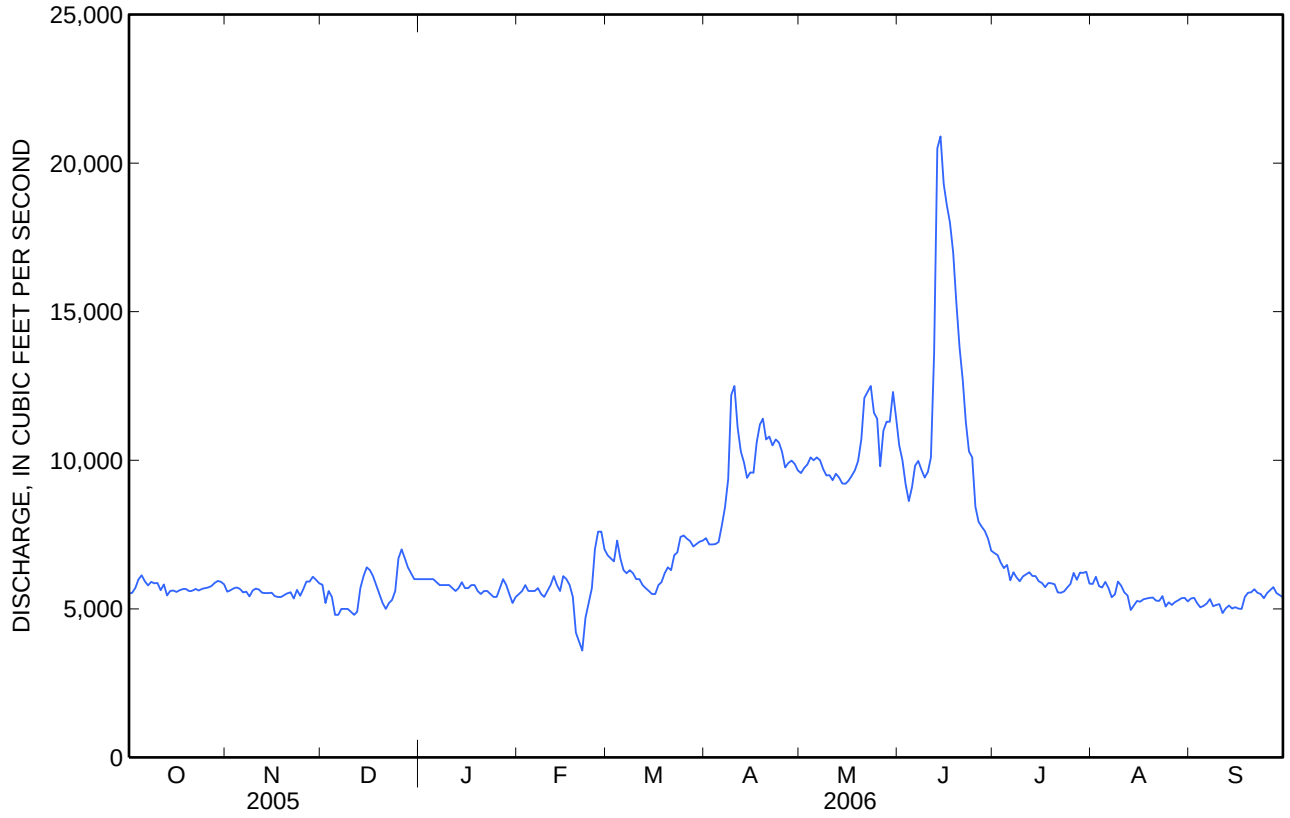
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	6,460	6,664	6,551	6,556	7,048	8,411	9,415	13,970	19,020	10,510	6,508	6,143
Max	16,480	13,920	13,180	10,840	11,380	19,700	19,240	30,510	55,270	33,590	12,620	12,310
(WY)	(1966)	(1966)	(1960)	(1979)	(1965)	(1978)	(1952)	(1975)	(1948)	(1975)	(1975)	(1965)
Min	3,270	3,581	3,121	2,805	2,511	4,313	4,338	4,860	4,939	3,956	2,075	2,501
(WY)	(1935)	(1938)	(1937)	(1937)	(1936)	(2002)	(1961)	(1992)	(1977)	(1940)	(1934)	(1934)

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1934 - 2006	
Annual total	2,263,220		2,540,970			
Annual mean	6,201		6,962		8,960	
Highest annual mean					15,280	1975
Lowest annual mean					4,438	1937
Highest daily mean	17,000	Jun 6	20,900	Jun 14	136,000	Jun 6, 1953
Lowest daily mean	4,000	Jan 4	3,600	Feb 21	1,220	Dec 13, 1936
Annual seven-day minimum	4,460	Jan 2	4,670	Feb 18	1,620	Dec 9, 1936
Maximum peak flow			[a]22,200	Jun 13	[c]137,000	Jun 3, 1953
Maximum peak stage			[b]25.00	Feb 24	[b]34.17	Mar 22, 1978
Annual runoff (ac-ft)	4,489,000		5,040,000		6,491,000	
10 percent exceeds	9,490		10,300		15,700	
50 percent exceeds	5,540		5,850		7,200	
90 percent exceeds	4,740		5,210		4,430	

[a] Gage height, 21.07 ft.
[b] Backwater from ice.
[c] Gage height, 22.20 ft, from graph based on gage readings, site and datum then in use.



06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1979 to September 1981.

WATER TEMPERATURE: March to September 1979, October 2004 to September 2005.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1991, October 1991 to September 2006 (seasonal records only, March through November), discontinued.

REMARKS.--Daily sediment records rated good for most of the seasonal period; rated fair to poor for several short-duration runoff events. Daily sediment data not available from Dec. 1 to Mar. 22 due to ice cover. Prior to July 1972, sampling and record computations were under supervision of Corps of Engineers, U.S. Army. Several unpublished observations of specific conductance and water temperature were made during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1979-81): Maximum daily, 1,240 microsiemens per centimeter (µS/cm), June 20, 1979; minimumdaily, 410 µS/cm, July 3, 1980.

WATER TEMPERATURE: Maximum, 27.0°C, on Aug. 1, 2005; minimum, 0.05°C, on many days during winter period.

SEDIMENT CONCENTRATION: Maximum daily mean, 27,400 mg/L, June 22, 1976; minimum daily mean, 2 mg/L, Dec. 21, 1983.

SEDIMENT LOAD: Maximum daily, 1,680,000 tons, June 22, 1976; minimum daily, 33 tons, Dec. 21, 1983.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: During period of collection, maximum daily mean, 5,900 mg/L, Apr. 7; minimum daily mean, 43 mg/L, Sept. 8 and 9.

SEDIMENT LOAD: During period of seasonal collection, maximum daily, 134,000 tons, Apr. 7; minimum daily, 590 tons, Sept. 11.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 1 of 2

Date	Time	Instan-taneous dis-charge, cfs (00061)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
Oct							
12...	1030	5,920	470	11.0	41	108	1,730
Apr							
04...	1445	7,110	540	10.0	57	310	5,950
Jun							
01...	1000	10,600	463	16.5	57	356	10,200
14...	1000	21,400	558	19.5	65	985	56,900
Jul							
31...	1230	5,860	405	24.0	77	73	1,160
Sep							
27...	1152	5,750	382	14.5	55	57	885

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 2 of 2
[Remark codes: <, less than.]

Date	Bed sedi-ment, dry svd sve dia percent <.063mm (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)	Bed sedi-ment, dry svd sve dia percent <16 mm (80172)	Bed sedi-ment, dry svd sve dia percent <32 mm (80173)
Apr										
04...	1	5	9	44	75	83	88	95	98	100
Jun										
01...	<1	1	15	74	90	93	96	99	99	100
14...	<1	3	51	94	100	--	--	--	--	--
Jul										
31...	1	6	42	69	80	86	90	95	100	--
Sep										
27...	<1	<1	42	87	99	100	--	--	--	--

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)
	October		November		December		January		February		March	
1	141	2,100	101	1,520	---	---	---	---	---	---	---	---
2	139	2,080	118	1,790	---	---	---	---	---	---	---	---
3	160	2,470	129	1,990	---	---	---	---	---	---	---	---
4	920	14,900	131	2,020	---	---	---	---	---	---	---	---
5	1,060	17,500	118	1,810	---	---	---	---	---	---	---	---
6	1,090	17,500	104	1,560	---	---	---	---	---	---	---	---
7	690	10,800	88	1,330	---	---	---	---	---	---	---	---
8	465	7,420	75	1,100	---	---	---	---	---	---	---	---
9	170	2,690	67	1,020	---	---	---	---	---	---	---	---
10	170	2,690	59	905	---	---	---	---	---	---	---	---
11	95	1,440	56	854	---	---	---	---	---	---	---	---
12	100	1,570	60	897	---	---	---	---	---	---	---	---
13	105	1,550	68	1,020	---	---	---	---	---	---	---	---
14	107	1,620	80	1,190	---	---	---	---	---	---	---	---
15	108	1,640	92	1,380	---	---	---	---	---	---	---	---
16	108	1,620	100	1,470	---	---	---	---	---	---	---	---
17	110	1,670	107	1,560	---	---	---	---	---	---	---	---
18	110	1,680	110	1,600	---	---	---	---	---	---	---	---
19	108	1,650	108	1,600	---	---	---	---	---	---	---	---
20	104	1,570	107	1,590	---	---	---	---	---	---	---	---
21	98	1,480	105	1,580	---	---	---	---	---	---	---	---
22	92	1,410	103	1,490	---	---	---	---	---	---	---	---
23	87	1,320	102	1,550	---	---	---	---	---	---	250	4,660
24	84	1,290	103	1,510	---	---	---	---	---	---	1,400	28,000
25	86	1,320	103	1,580	---	---	---	---	---	---	2,990	60,300
26	94	1,450	104	1,660	---	---	---	---	---	---	2,900	57,600
27	104	1,620	104	1,660	---	---	---	---	---	---	1,420	27,900
28	110	1,740	104	1,710	---	---	---	---	---	---	750	14,400
29	110	1,760	105	1,700	---	---	---	---	---	---	610	11,800
30	102	1,630	105	1,660	---	---	---	---	---	---	915	17,900
31	94	1,480	---	---	---	---	---	---	---	---	640	12,600
Total	---	112,660	---	44,306	---	---	---	---	---	---	---	---

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Day	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)	Mean concentration (mg/l)	Sediment discharge (tons/day)
	April		May		June		July		August		September	
1	430	8,570	390	10,100	356	10,100	142	2,640	70	1,100	55	794
2	380	7,360	400	10,500	265	7,160	142	2,610	74	1,210	56	812
3	290	5,610	422	11,200	220	5,460	141	2,500	73	1,140	56	783
4	330	6,400	277	7,550	185	4,310	128	2,200	68	1,050	55	750
5	310	6,070	349	9,420	218	5,360	100	1,750	68	1,090	53	730
6	1,600	33,700	302	8,240	269	7,130	84	1,350	68	1,050	49	685
7	5,900	134,000	286	7,720	278	7,490	90	1,510	67	975	45	648
8	3,200	81,000	278	7,280	258	6,740	96	1,570	67	993	43	591
9	2,390	78,700	313	8,020	240	6,100	99	1,590	73	1,170	43	596
10	1,690	57,000	333	8,540	245	6,360	98	1,610	66	1,030	44	613
11	915	27,400	298	7,510	296	8,070	90	1,500	59	884	45	590
12	680	18,900	275	7,090	1,060	38,900	82	1,380	63	927	46	623
13	640	17,100	295	7,500	1,750	96,900	75	1,240	55	737	48	662
14	590	15,000	316	7,870	1,020	57,600	72	1,190	56	773	49	663
15	510	13,200	306	7,610	820	42,700	73	1,170	58	825	49	669
16	510	13,200	266	6,690	920	46,200	76	1,200	60	849	50	676
17	1,600	45,800	238	6,090	790	38,400	80	1,240	48	689	77	1,040
18	1,410	42,600	242	6,320	630	28,900	83	1,320	55	794	265	3,860
19	820	25,200	285	7,680	500	20,700	84	1,330	64	928	233	3,490
20	630	18,200	460	13,300	435	16,200	79	1,240	67	973	150	2,250
21	490	14,300	621	20,300	426	14,600	70	1,050	92	1,310	125	1,910
22	460	13,000	664	22,100	292	8,910	62	927	85	1,210	59	883
23	780	22,500	375	12,700	215	5,980	59	890	78	1,140	58	861
24	1,490	42,600	262	8,210	236	6,440	65	1,000	69	946	58	839
25	650	18,100	382	11,800	163	3,710	78	1,230	66	930	58	866
26	440	11,600	338	8,940	140	3,000	75	1,260	64	886	59	897
27	379	10,100	550	16,300	138	2,890	82	1,320	64	904	60	928
28	409	11,000	2,010	61,300	142	2,920	127	2,130	62	886	73	1,090
29	349	9,310	1,050	32,000	142	2,820	92	1,540	60	868	78	1,150
30	368	9,600	1,210	40,200	142	2,670	77	1,300	57	826	78	1,140
31	---	---	670	20,600	---	---	77	1,220	55	780	---	---
Total	---	817,120	---	420,680	---	514,720	---	46,007	---	29,873	---	32,089