

Water-Data Report 2011

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT

Tongue Basin
Upper Tongue Subbasin

LOCATION.--Lat 45°08'29", long 106°46'15" referenced to North American Datum of 1927, in SW ¼ SE ¼ SE ¼ sec.12, T.8 S., R.40 E., Big Horn County, MT, Hydrologic Unit 10090101, on left bank 0.5 mi downstream from Tongue River Dam, 4 mi upstream from Post Creek, 8 mi northeast of Decker, 16 mi southeast of Kirby, and at river mile 188.4.

DRAINAGE AREA.--1,770 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1939 to current year.

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

GAGE.--Water-stage recorder. Elevation of gage is 3,344.40 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Aug. 5, 1975, at elevation 10.00 ft lower.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Flow is regulated by Tongue River Reservoir (station number 06307000) and many small reservoirs with a combined capacity of about 15,000 acre-ft. Diversion for irrigation of about 64,800 acres occurs upstream from station. A U.S. Geological Survey satellite telemeter is located at the station.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	169	178	201	161	186	181	223	450	3,170	3,740	480	374
2	170	178	170	161	186	181	234	450	2,800	3,780	450	388
3	170	180	159	161	185	181	249	449	2,720	3,400	449	387
4	169	178	167	161	186	181	267	446	2,870	3,030	451	388
5	169	178	167	160	185	181	281	446	2,880	2,790	451	388
6	169	181	168	157	183	181	298	446	2,890	2,600	451	388
7	169	181	169	159	183	179	308	446	3,150	2,420	450	388
8	168	182	167	159	183	178	323	446	3,720	2,350	451	358
9	167	189	167	159	183	178	335	446	4,260	2,350	446	342
10	168	184	164	159	183	178	349	463	4,520	2,340	446	342
11	168	192	164	159	184	178	364	499	4,730	2,340	445	341
12	168	195	164	159	184	192	384	519	4,340	2,330	446	339
13	170	195	162	159	184	204	399	536	4,120	2,320	445	342
14	169	195	163	161	183	204	411	548	3,980	2,250	443	306
15	171	197	164	164	183	204	428	547	4,020	2,180	439	284
16	171	197	164	164	183	205	427	548	4,110	1,980	437	284
17	173	195	164	163	184	205	424	571	4,260	1,770	437	284
18	175	197	164	164	183	206	424	635	4,210	1,480	433	284
19	176	198	164	175	183	207	424	673	3,940	1,280	388	259
20	176	196	163	183	183	207	424	746	3,740	1,090	387	245
21	177	197	161	183	181	205	439	870	3,550	921	386	245
22	178	198	161	184	181	204	450	1,180	3,380	818	384	245
23	177	198	159	186	181	204	450	1,590	3,360	601	380	247
24	177	197	159	186	182	204	450	e2,000	3,530	602	378	254
25	178	198	159	186	181	204	450	2,250	3,960	603	378	254
26	178	196	159	186	181	204	450	2,410	4,220	603	380	254
27	178	196	159	186	181	205	450	3,210	4,210	553	380	234
28	178	198	159	186	181	205	450	3,450	4,010	528	380	202
29	178	198	159	186	---	204	450	3,140	3,700	529	382	202
30	177	198	161	186	---	205	450	3,180	3,540	532	383	202
31	178	---	161	186	---	214	---	3,560	---	532	380	---
Total	5,359	5,740	5,092	5,289	5,126	6,069	11,465	37,150	111,890	54,642	13,016	9,050
Mean	173	191	164	171	183	196	382	1,198	3,730	1,763	420	302
Max	178	198	201	186	186	214	450	3,560	4,730	3,780	480	388
Min	167	178	159	157	181	178	223	446	2,720	528	378	202
Ac-ft	10,630	11,390	10,100	10,490	10,170	12,040	22,740	73,690	221,900	108,400	25,820	17,950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	260	246	183	167	173	215	352	889	1,465	588	361	301
Max	665	554	369	287	592	676	958	2,714	3,824	2,083	767	775
(WY)	(1946)	(1942)	(1979)	(1983)	(1971)	(1971)	(1965)	(1978)	(1944)	(1975)	(1975)	(1998)
Min	71.1	40.6	61.7	73.0	56.9	22.7	14.9	142	183	169	103	88.9
(WY)	(1989)	(1976)	(1989)	(2005)	(1961)	(1961)	(1940)	(2006)	(2001)	(1956)	(1943)	(2006)

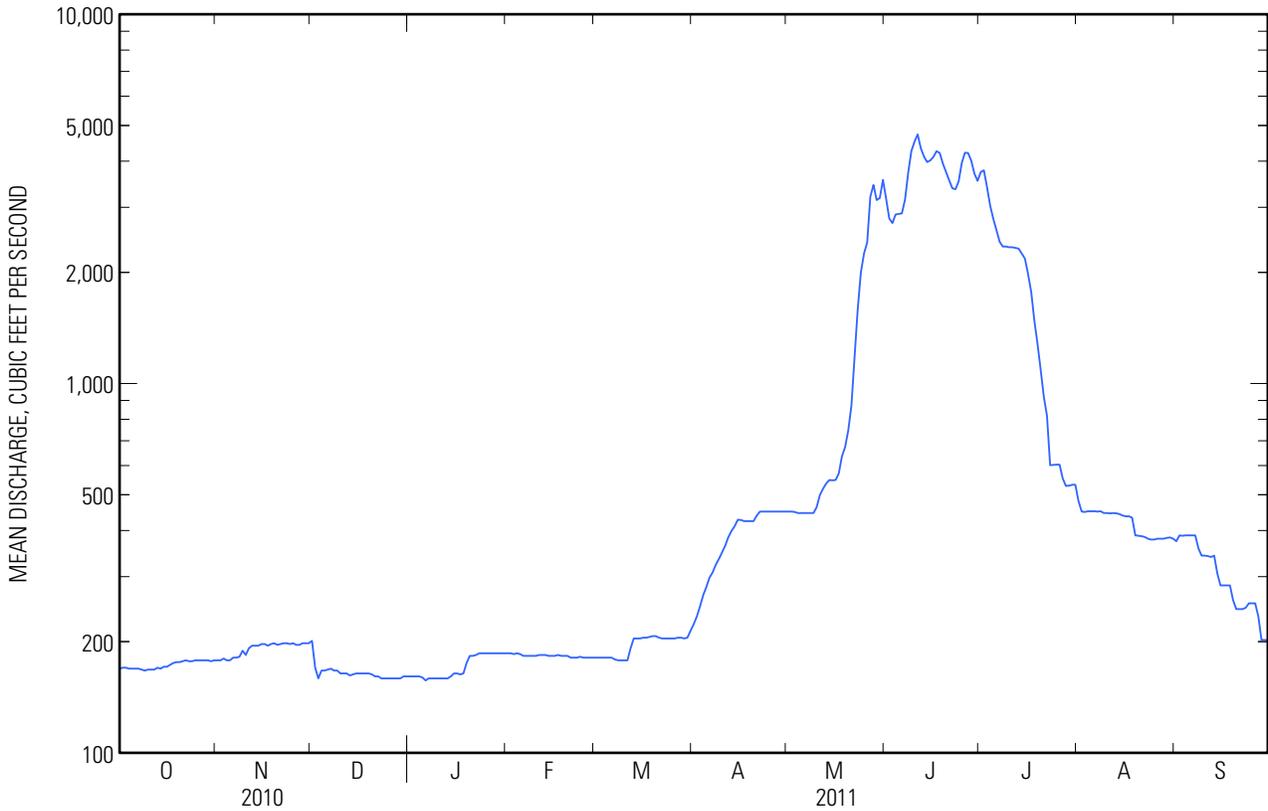
06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1939 - 2011	
Annual total	162,305		269,888			
Annual mean	445		739		435	
Highest annual mean					853	1978
Lowest annual mean					133	2002
Highest daily mean	3,150	Jun 12	4,730	Jun 11	9,580	May 20, 1978
Lowest daily mean	96	Mar 22	157	Jan 6	0.50	Apr 17, 1940
Annual seven-day minimum	96	Mar 22	159	Jan 6	0.50	Apr 17, 1940
Maximum peak flow			4,850	Jun 11	10,800	May 20, 1978
Maximum peak stage			16.49	Jun 11	^a 20.00	May 20, 1978
Instantaneous low flow					^b 0.00	Nov 12, 1969
Annual runoff (ac-ft)	321,900		535,300		314,900	
10 percent exceeds	1,240		2,870		909	
50 percent exceeds	178		207		247	
90 percent exceeds	118		164		107	

^aFrom floodmark in well.

^bResult of dam closure.



06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1976 to 1995, January 2004 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1980 to December 1986, May 2004 to current year.

INSTRUMENTATION.--Specific conductance probe was installed in May 2004.

REMARKS.--Daily specific conductance records are published for the months of the water year during which irrigation occurs (October 2010, April 1 to Sept. 30, 2011); records are rated good to excellent for most days, except for 19 days of partial or missing data which are rated fair to poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 932 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) at 25.0°C, Mar. 12, 14, 1981; minimum daily, 209 $\mu\text{S}/\text{cm}$ at 25.0°C, June 9, 2007.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 876 $\mu\text{S}/\text{cm}$ at 25.0°C, May 22; minimum, 242 $\mu\text{S}/\text{cm}$ at 25.0°C, June 29 and July 1.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

[Remark codes: #, Value computed from partial day with greater than 50% of the day recorded; *, Computed from available daily values. A specific conductance value greater or less than the reported maximum or minimum may have occurred during the missing period of record.]

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	522	495	508	---	---	---	---	---	---	---	---	---
2	522	465	496	---	---	---	---	---	---	---	---	---
3	517	477	489	---	---	---	---	---	---	---	---	---
4	523	440	478	---	---	---	---	---	---	---	---	---
5	529	502	517	---	---	---	---	---	---	---	---	---
6	528	501	515	---	---	---	---	---	---	---	---	---
7	---	---	#529	---	---	---	---	---	---	---	---	---
8	---	---	#551	---	---	---	---	---	---	---	---	---
9	577	540	550	---	---	---	---	---	---	---	---	---
10	552	529	539	---	---	---	---	---	---	---	---	---
11	543	536	538	---	---	---	---	---	---	---	---	---
12	560	536	547	---	---	---	---	---	---	---	---	---
13	559	542	548	---	---	---	---	---	---	---	---	---
14	556	543	548	---	---	---	---	---	---	---	---	---
15	547	525	537	---	---	---	---	---	---	---	---	---
16	548	528	541	---	---	---	---	---	---	---	---	---
17	550	541	545	---	---	---	---	---	---	---	---	---
18	---	---	#553	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	#567	---	---	---	---	---	---	---	---	---
21	590	547	571	---	---	---	---	---	---	---	---	---
22	599	562	585	---	---	---	---	---	---	---	---	---
23	603	536	572	---	---	---	---	---	---	---	---	---
24	623	578	601	---	---	---	---	---	---	---	---	---
25	641	569	596	---	---	---	---	---	---	---	---	---
26	---	---	#571	---	---	---	---	---	---	---	---	---
27	565	561	563	---	---	---	---	---	---	---	---	---
28	567	562	565	---	---	---	---	---	---	---	---	---
29	571	563	566	---	---	---	---	---	---	---	---	---
30	568	559	565	---	---	---	---	---	---	---	---	---
31	563	555	560	---	---	---	---	---	---	---	---	---
Month	*641	*440	*547	---	---	---	---	---	---	---	---	---

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

[Remark codes: #, Value computed from partial day with greater than 50% of the day recorded; *, Computed from available daily values. A specific conductance value greater or less than the reported maximum or minimum may have occurred during the missing period of record.]

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	767	707	740	---	---	---
2	---	---	---	---	---	---	---	---	---	709	691	699
3	---	---	---	---	---	---	---	---	---	702	694	698
4	---	---	---	---	---	---	---	---	---	730	699	711
5	---	---	---	---	---	---	---	---	---	723	712	717
6	---	---	---	---	---	---	742	696	716	735	701	714
7	---	---	---	---	---	---	744	707	724	739	725	732
8	---	---	---	---	---	---	725	697	711	---	---	#734
9	---	---	---	---	---	---	708	698	704	---	---	#746
10	---	---	---	---	---	---	698	676	687	---	---	#754
11	---	---	---	---	---	---	685	667	677	753	734	744
12	---	---	---	---	---	---	676	667	672	763	744	753
13	---	---	---	---	---	---	675	664	668	---	---	#766
14	---	---	---	---	---	---	669	663	666	---	---	#781
15	---	---	---	---	---	---	668	665	666	804	790	798
16	---	---	---	---	---	---	671	665	667	819	793	809
17	---	---	---	---	---	---	672	665	667	829	816	821
18	---	---	---	---	---	---	674	667	669	842	792	823
19	---	---	---	---	---	---	674	668	671	852	811	829
20	---	---	---	---	---	---	674	668	672	858	798	827
21	---	---	---	---	---	---	676	668	673	862	796	839
22	---	---	---	---	---	---	679	673	676	876	796	852
23	---	---	---	---	---	---	682	675	679	---	---	#845
24	---	---	---	---	---	---	684	678	681	---	---	---
25	---	---	---	---	---	---	685	681	683	819	762	791
26	---	---	---	---	---	---	685	680	682	804	733	769
27	---	---	---	---	---	---	686	681	684	771	715	744
28	---	---	---	---	---	---	691	682	686	747	668	703
29	---	---	---	---	---	---	694	688	690	730	664	696
30	---	---	---	---	---	---	---	---	---	717	649	680
31	---	---	---	---	---	---	---	---	---	660	615	629
Month	---	---	---	---	---	---	*767	*663	*684	*876	*615	*759

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

[Remark codes: #, Value computed from partial day with greater than 50% of the day recorded; *, Computed from available daily values. A specific conductance value greater or less than the reported maximum or minimum may have occurred during the missing period of record.]

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	634	596	615	248	242	244	368	355	360	440	420	431
2	632	578	603	248	244	247	369	359	363	432	421	425
3	615	593	605	250	245	247	370	363	367	428	418	423
4	595	577	589	249	244	247	372	368	370	434	423	426
5	587	572	578	251	246	248	377	363	370	436	425	430
6	592	575	580	252	245	248	386	373	379	461	433	443
7	601	581	591	249	245	247	380	367	375	477	459	467
8	584	495	540	251	247	248	383	371	375	490	470	480
9	511	477	496	252	247	249	399	379	390	494	476	485
10	499	436	470	254	249	251	383	375	379	493	472	480
11	437	353	388	258	251	254	397	378	386	494	476	485
12	366	304	338	261	256	258	410	387	396	521	485	502
13	311	291	303	268	259	264	414	395	404	529	495	509
14	296	260	279	281	266	274	415	399	408	528	486	500
15	298	272	288	287	280	283	424	408	415	510	498	503
16	294	267	278	292	286	289	429	414	420	504	493	497
17	281	270	274	299	292	296	417	406	411	510	495	500
18	280	266	274	305	293	300	437	412	422	508	494	500
19	270	254	261	314	301	311	434	418	426	517	499	505
20	265	254	258	314	306	310	423	395	411	513	502	506
21	264	247	257	328	313	323	432	406	413	527	506	517
22	265	249	259	324	315	320	432	410	421	530	518	526
23	263	254	259	329	320	325	444	414	428	544	521	530
24	262	254	258	330	321	325	443	419	429	569	523	544
25	261	252	257	340	329	333	431	420	426	571	554	563
26	254	245	249	338	325	334	430	420	425	574	549	563
27	259	248	254	347	336	342	429	419	424	572	549	560
28	255	244	247	356	345	349	431	421	426	566	539	554
29	250	242	246	356	348	352	432	407	423	565	527	545
30	252	243	249	359	349	352	433	415	423	548	519	535
31	---	---	---	363	355	359	429	413	422	---	---	---
Month	634	242	371	363	242	291	444	355	403	574	418	498