Water-Data Report 2012

06089000 SUN RIVER NEAR VAUGHN, MT

Upper Missouri Basin
Sun Subbasin

LOCATION.--Lat 47°31'33", long 111°30'40" referenced to North American Datum of 1983, in SE ¼ SW ¼ SW ¼ sec.32, T.21 N., R.2 E., Cascade County, MT, Hydrologic Unit 10030104, on right bank 2.3 mi downstream from Muddy Creek, 2.8 mi southeast of Vaughn, and at river mile 15.0.

DRAINAGE AREA.--1,849 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1934 to current year. Monthly discharge for some months published in Water Supply Paper (WSP) 1309. Gage heights and discharge measurements only from July to October 1897 published as "near Great Falls."

REVISED RECORDS.--WSP 786: 1934. WSP 1729: Drainage area. Water Data Report MT-03-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,340 ft, referenced to the National Geodetic Vertical Datum of 1929. July 11 to Oct. 30, 1897, nonrecording gage at site 0.6 mi downstream at different elevation. Apr. 19 to Aug. 3, 1934, non-recording gage 1.4 mi downstream at different elevation. Aug. 4, 1934 to Oct. 15, 2002, water-stage recorder 1.4 mi downstream at different elevation.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Flow is regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs. Diversion for irrigation of about 110,000 acres occurs upstream from station. U.S. Army Corps of Engineers satellite telemeter is located at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1964 exceeded the stage of the June 1908 flood by about 3 ft and is the highest since 1908, from information by local residents.

Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 06089000, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/06089000.2012.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	505	417	e400	e320	e400	e290	295	1,760	997	835	468	400
2	514	406	e380	e380	e350	e270	284	1,170	865	901	437	416
3	580	407	e380	e390	e300	e290	280	802	1,160	722	475	436
4	701	407	e350	386	e320	311	280	575	2,310	613	500	481
5	742	530	e300	e350	e350	347	276	423	2,360	588	486	491
6	825	e600	e320	e320	e320	344	284	332	3,430	546	508	465
7	821	e600	e450	e320	e300	287	291	355	6,060	452	490	501
8	837	601	e400	e350	e300	285	287	404	4,610	443	445	492
9	699	608	e350	e380	e340	304	282	448	3,380	470	473	468
10	585	594	e370	e320	e300	301	277	403	2,520	422	530	500
11	532	584	e400	e280	e280	293	279	421	1,930	407	582	460
12	516	586	e420	e320	e300	291	286	440	1,290	407	544	430
13	489	590	e380	e340	e320	288	290	358	1,050	398	531	442
14	486	605	e400	e340	e330	285	281	418	1,440	437	570	395
15	505	593	e400	e300	e310	288	278	410	2,060	724	613	359
16	505	e600	e420	e270	e300	291	283	433	1,780	711	665	356
17	478	e620	e450	e250	e300	291	271	736	1,470	653	620	332
18	475	e550	e420	e240	e310	302	268	1,960	1,630	666	546	290
19	466	e450	e400	e270	e320	313	276	2,450	2,100	653	538	265
20	463	e400	e400	e280	e310	303	435	1,810	1,650	619	549	265
21	453	e550	e350	e320	e310	307	446	1,150	1,100	675	530	266
22	446	e600	e300	e370	316	309	455	1,060	879	654	565	273
23	442	623	e320	e380	315	315	427	2,100	1,090	612	564	288
24	432	606	e350	e380	e300	325	397	2,670	1,330	547	498	304
25	436	495	e360	e420	318	316	384	2,360	1,700	552	427	308
26	440	438	e350	e400	e300	319	395	1,720	2,030	542	405	305
27	428	454	e350	e370	e290	314	392	1,450	2,060	525	441	322
28	425	466	e360	e400	e280	305	664	1,340	1,670	557	477	336
29	428	444	e400	e450	e290	299	1,850	1,370	1,110	558	466	369
30	420	442	e380	e420	---	295	1,990	1,390	935	577	437	384
31	433	---	e350	e400	---	288	---	1,190	---	563	400	---
Total	16,507	15,866	11,660	10,716	9,079	9,366	13,183	33,908	57,996	18,029	15,780	11,399
Mean	532	529	376	346	313	302	439	1,094	1,933	582	509	380
Max	837	623	450	450	400	347	1,990	2,670	6,060	901	665	501
Min	420	400	300	240	280	270	268	332	865	398	400	265
Ac-ft	32,740	31,470	23,130	21,260	18,010	18,580	26,150	67,260	115,000	35,760	31,300	22,610

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	377	334	297	255	264	316	473	1,534	2,495	774	558	441
Max	779	908	896	656	601	868	3,000	4,333	8,014	2,508	1,025	1,040
(WY)	(1952)	(1990)	(1996)	(1986)	(1986)	(1969)	(1934)	(1976)	(1964)	(1975)	(1975)	(1993)
Min	143	149	114	66.5	82.4	133	93.3	87.1	280	265	250	164
(WY)	(1937)	(1937)	(1936)	(1937)	(1936)	(1941)	(1941)	(1941)	(1941)	(1939)	(1940)	(1936)

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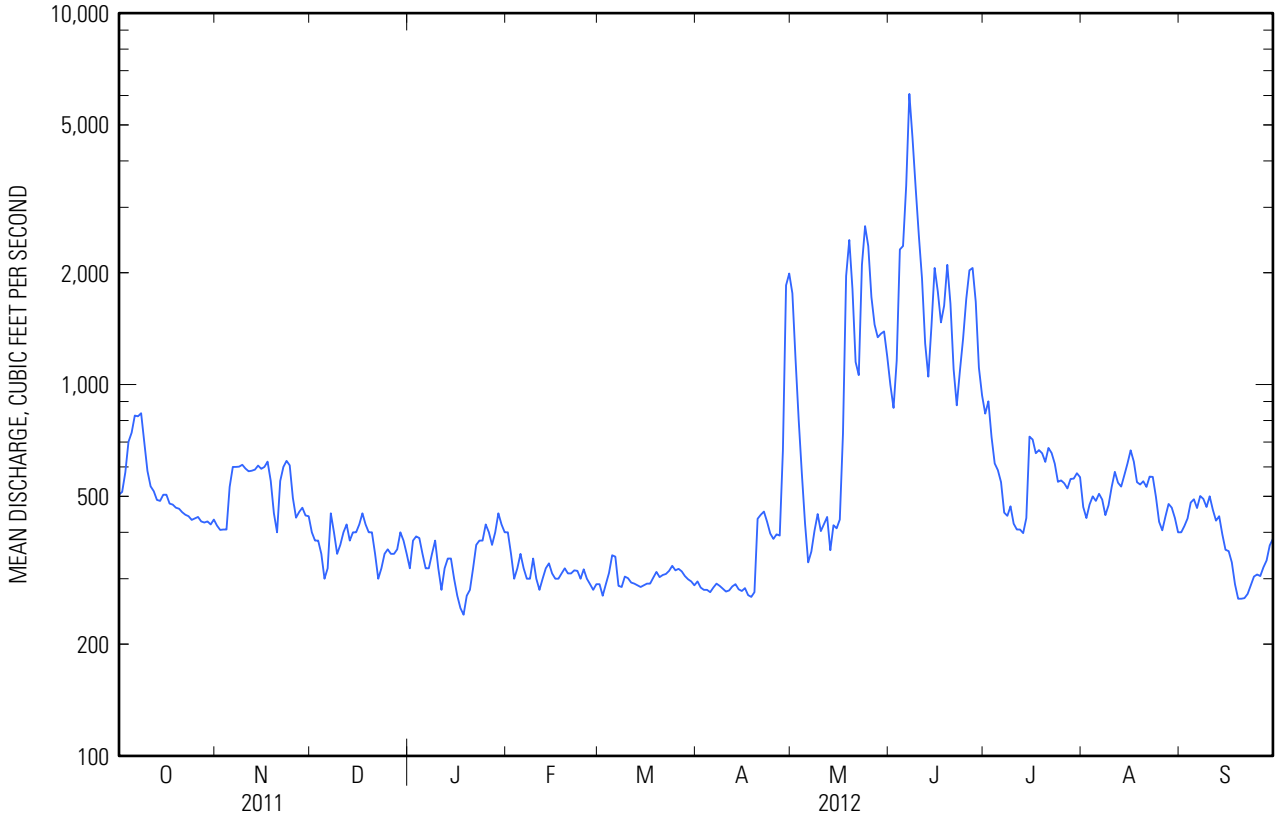
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1934 - 2012	
Annual total	427,666		223,489			
Annual mean	1,172		611		671	
Highest annual mean					1,307	1943
Lowest annual mean					210	1941
Highest daily mean	14,500	Jun 10	6,060	Jun 7	37,000	Jun 10, 1964
Lowest daily mean	170	Feb 25	240	Jan 18	23	May 26, 1941
Annual seven-day minimum	209	Feb 19	276	Jan 15	38	May 21, 1941
Maximum peak flow			6,600	Jun 7	[b]53,500	Jun 9, 1964
Maximum peak stage			5.43	Jun 7	[c]23.40	Jun 9, 1964
Instantaneous low flow			[a]234	Apr 19	[d]20	Apr 24, 1944
Annual runoff (ac-ft)	848,300		443,300		486,400	
10 percent exceeds	3,580		1,180		1,360	
50 percent exceeds	485		426		357	
90 percent exceeds	260		289		180	

[a]Gage height, 2.02 ft.
[b]42,200 ft³/s in main channel plus 11,300 ft³/s in bypass channel.
[c]From floodmark.
[d]Gage height, 0.52 ft, result of irrigation, site and datum then in use.