Water-Data Report 2012

05487520 Des Moines River near Swan, IA

Des Moines Basin
Lake Red Rock Subbasin

LOCATION.--Lat 41°29'21.84", long 93°16'41.70" referenced to North American Datum of 1983, in NE ¼ SW ¼ NE ¼ sec.9, T.77 N., R.21 W., Marion County, IA, Hydrologic Unit 07100008, on left bank 75 ft south of Beardsley Drive, 4.5 mi downstream of bridge on State Highway 316, 1.6 mi northeast of Swan, 3.9 mi downstream from Camp Creek, 23.7 mi upstream from Red Rock Dam, and 162.9 mi upstream from mouth.

DRAINAGE AREA.--11,700 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge records from October 2009 to current year. October 1985 to September 2009, at site 4.5 mi upstream and published as "near Runnells" (station 05487500). Records are not equivalent because of difference in drainage area.

GAGE.--Water-stage recorder. Datum of gage is 699.24 ft above North American Vertical Datum of 1988.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Saylorville Lake (station 05481630), 38.7 mi upstream. Stage-discharge relation is affected at times by backwater from Lake Red Rock (station 05488100). U.S. Geological Survey data collection platform with satellite telemetry at station.

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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	e628	e470	e811	e793	e723	e2,960	2,940	4,220	6,030	e3,460	e477	562
2	e591	e562	e778	e686	e727	e3,200	2,760	e4,760	6,120	e3,010	e470	479
3	666	e663	e1,400	e668	e789	e3,520	2,060	e7,190	6,140	e2,640	e480	496
4	656	e567	e1,630	e760	e780	e3,760	1,730	e9,080	6,070	e2,220	e670	503
5	648	e571	e1,620	827	e700	e3,640	e1,550	e9,460	6,000	e2,270	e811	571
6	764	e580	e1,600	766	e732	e3,440	e1,430	e9,750	5,770	e2,110	e536	507
7	850	e567	e1,510	780	782	e3,220	e1,400	e13,900	5,600	e1,920	e699	439
8	669	e791	1,330	807	710	2,800	e1,350	e13,100	5,520	e1,840	e784	286
9	667	e1,410	e887	744	e630	2,670	e1,440	e10,900	5,410	e1,560	e584	327
10	596	e1,260	e762	787	e587	2,390	e1,330	e9,980	5,250	e1,280	e360	391
11	594	e896	e814	e749	e516	2,290	e1,120	e9,490	4,870	e1,140	e377	366
12	642	e738	e866	e661	e558	2,510	e912	8,700	4,770	e953	e365	340
13	602	e685	1,150	e617	e549	2,660	1,180	8,260	4,420	e930	e416	369
14	578	702	1,580	e547	e538	2,530	1,560	7,540	e4,160	e964	e411	439
15	691	754	e1,780	e587	e570	2,030	12,100	7,200	e4,050	e1,050	e395	e394
16	639	783	e1,920	e591	e592	1,850	15,000	6,810	4,760	e998	e386	e365
17	591	e811	e1,610	e565	e608	1,810	12,400	6,660	4,470	e930	e384	e367
18	e541	e827	e1,190	e551	e684	1,860	10,700	6,320	4,310	e807	e384	379
19	e501	e835	e1,240	e556	e786	1,820	8,520	5,910	4,160	e718	402	e369
20	e484	e819	e1,270	e551	e806	e2,750	7,710	5,220	5,310	698	431	373
21	e470	e811	e1,180	e534	e986	3,420	6,990	4,820	5,040	595	450	e365
22	e466	e819	e959	e556	1,120	4,030	5,650	e4,190	4,490	586	423	e323
23	e479	e794	e876	e560	1,630	3,980	5,350	e4,190	4,240	500	375	323
24	e484	e729	e679	e556	e2,640	3,710	5,550	e4,190	5,280	690	336	e307
25	e492	e729	e686	e569	e2,420	3,240	5,870	e4,130	6,750	537	325	e306
26	e479	e761	e711	e604	e1,970	3,540	5,340	4,060	6,520	593	456	e298
27	e470	e811	e752	e578	e1,590	2,700	5,060	e4,080	5,270	e529	505	e303
28	e462	e819	e736	e604	e1,590	2,020	4,320	e4,620	4,620	e545	529	e298
29	e475	e802	e826	e600	e1,910	2,260	4,370	e5,380	e4,080	e655	554	301
30	e475	e827	e850	e653	---	4,590	4,390	e5,820	e3,790	e575	529	309
31	e475	---	e859	e692	---	e3,340	---	5,890	---	e474	536	---
Total	17,825	23,193	34,862	20,099	29,223	90,540	142,082	215,820	153,270	37,777	14,840	11,455
Mean	575	773	1,125	648	1,008	2,921	4,736	6,962	5,109	1,219	479	382
Max	850	1,410	1,920	827	2,640	4,590	15,000	13,900	6,750	3,460	811	571
Min	462	470	679	534	516	1,810	912	4,060	3,790	474	325	286
Ac-ft	35,360	46,000	69,150	39,870	57,960	179,600	281,800	428,100	304,000	74,930	29,440	22,720
Cfsm	0.05	0.07	0.10	0.06	0.09	0.25	0.40	0.60	0.44	0.10	0.04	0.03
In.	0.06	0.07	0.11	0.06	0.09	0.29	0.45	0.69	0.49	0.12	0.05	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2010 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	5,688	6,424	3,446	2,600	4,031	15,750	15,450	14,040	20,830	22,040	12,520	4,432
Max	10,640	11,100	4,616	3,740	7,462	34,050	24,960	17,610	34,110	45,300	32,100	11,590
(WY)	(2011)	(2010)	(2010)	(2010)	(2011)	(2010)	(2010)	(2010)	(2010)	(2010)	(2010)	(2010)
Min	575	773	1,125	648	1,008	2,921	4,736	6,962	5,109	1,219	479	382
(WY)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)

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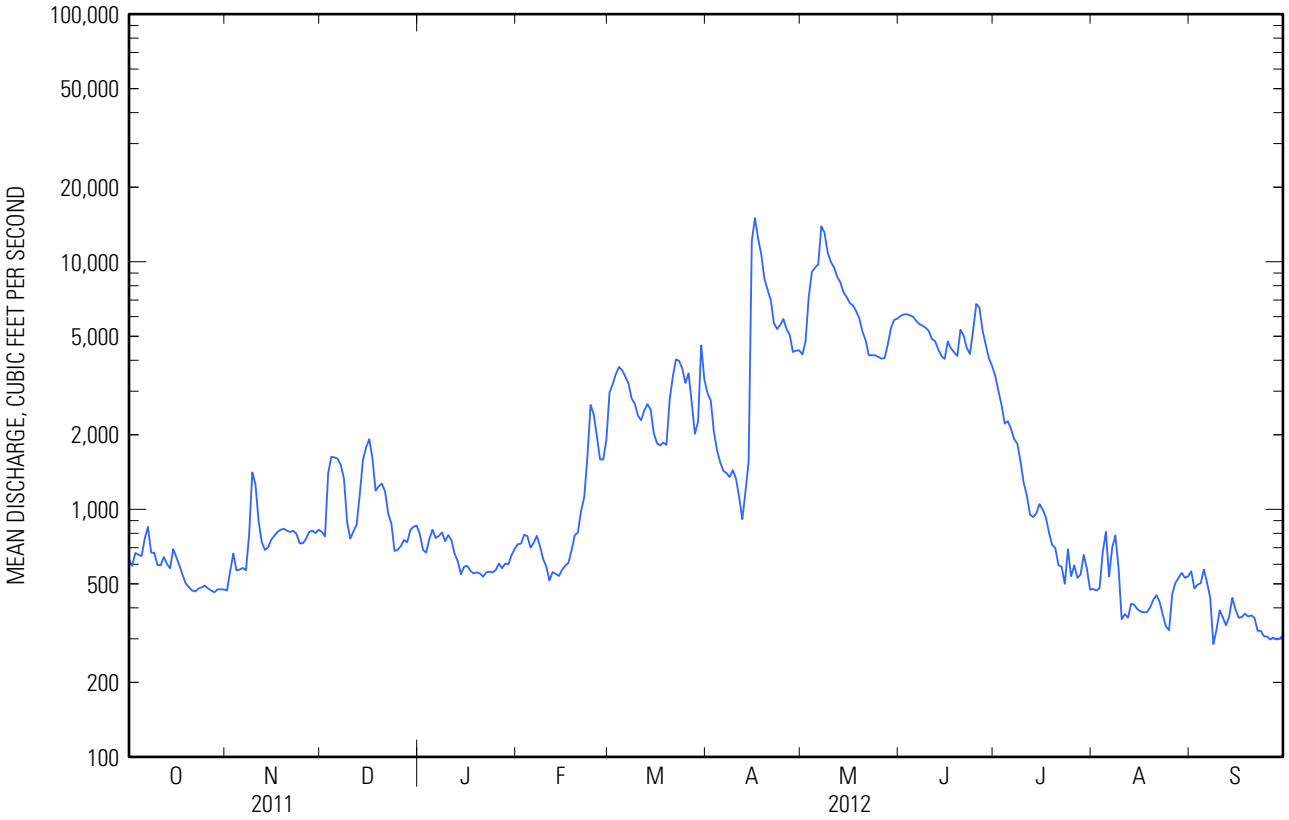
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 2010 - 2012	
Annual total	3,253,594		790,986			
Annual mean	8,914		2,161		10,640	
Highest annual mean					19,170	2010
Lowest annual mean					2,161	2012
Highest daily mean	28,400	Jun 28	15,000	Apr 16	55,600	Jul 5, 2010[a]
Lowest daily mean	462	Oct 28	286	Sep 8	286	Sep 8, 2012
Annual seven-day minimum	472	Oct 26	303	Sep 24	303	Sep 24, 2012
Maximum peak flow			16,000	Apr 16	55,900	Jul 5, 2010
Maximum peak stage			50.67	Apr 16	79.26	Jul 5, 2010
Annual runoff (ac-ft)	6,454,000		1,569,000		7,708,000	
Annual runoff (cfsm)	0.762		0.185		0.909	
Annual runoff (inches)	10.34		2.51		12.36	
10 percent exceeds	21,600		5,620		28,600	
50 percent exceeds	4,220		811		5,160	
90 percent exceeds	665		429		594	

[a] Also Jul 6.



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2011 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum instantaneous, 32.8°C, July 24, 2012; minimum instantaneous, -0.20°C, January 12, 13, 2012.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum instantaneous, 32.8°C, July 24; minimum instantaneous, -0.20°C, January 12, 13.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	16.5	10.2	3.1	3.2	4.2	3.5	17.1	14.9	19.7	28.9	30.2	26.2
2	16.1	10.8	2.7	0.6	3.6	3.9	19.2	17.9	20.8	29.6	30.2	25.9
3	16.6	9.1	2.7	0.1	3.2	3.0	19.8	19.5	21.5	29.9	30.3	26.2
4	17.1	8.4	3.3	0.2	2.2	2.1	17.8	20.2	22.2	30.3	29.3	27.3
5	18.0	8.1	2.4	0.5	1.2	1.9	16.0	20.4	23.0	30.4	26.6	27.5
6	18.3	8.8	0.7	2.5	1.3	4.1	15.1	21.2	22.9	30.5	26.7	26.7
7	18.4	9.4	0.0	2.4	1.6	6.6	14.2	21.1	22.5	31.1	27.7	24.9
8	19.0	9.2	0.1	1.7	1.6	6.3	13.6	20.1	23.0	30.0	27.8	22.3
9	19.6	7.5	0.4	1.5	0.8	6.0	14.4	19.0	23.8	28.6	26.4	21.3
10	19.3	5.9	0.1	2.1	0.6	6.6	13.8	19.1	24.1	28.4	25.7	21.5
11	18.8	5.1	0.0	2.4	0.4	7.4	13.2	19.7	24.4	27.7	24.7	21.9
12	18.5	5.4	0.3	0.3	0.3	8.5	13.4	19.6	24.1	27.4	24.1	22.3
13	17.3	6.3	2.1	0.0	-0.1	9.8	13.0	19.7	23.5	27.6	22.7	21.1
14	16.0	7.0	3.1	0.0	0.1	11.6	13.1	20.3	23.8	27.5	23.4	18.7
15	14.3	7.7	3.3	0.1	0.4	13.1	14.5	20.7	24.3	29.1	24.8	19.4
16	14.1	7.1	2.2	0.1	2.7	14.6	15.0	20.5	24.2	29.8	25.3	19.9
17	12.9	5.5	1.6	0.0	3.6	16.1	14.4	20.8	24.8	---	24.2	20.0
18	11.5	4.8	1.5	0.0	3.5	17.2	15.0	20.6	26.0	31.0	23.2	18.6
19	10.2	5.6	1.9	0.0	3.2	17.6	15.2	21.4	26.8	30.9	22.3	18.2
20	9.1	5.5	1.9	-0.1	3.3	16.8	14.0	21.1	26.8	30.5	22.9	18.4
21	9.3	4.6	2.3	-0.1	4.3	15.9	13.4	20.7	26.2	29.7	23.8	18.3
22	10.5	4.8	2.4	-0.1	5.2	15.5	12.8	21.4	26.2	29.3	24.3	17.9
23	11.9	5.4	1.1	0.0	5.1	15.1	13.1	21.8	25.6	29.9	24.9	16.7
24	12.8	6.0	0.6	0.0	2.9	16.0	14.8	21.7	25.2	31.1	25.7	16.2
25	13.7	6.9	1.2	0.0	2.2	16.9	16.8	20.9	26.5	30.7	25.2	17.3
26	13.6	7.5	1.4	0.0	2.7	16.9	17.4	20.9	25.7	30.5	24.4	18.7
27	12.2	6.4	1.5	-0.1	3.3	15.7	15.8	23.7	25.8	29.6	25.6	18.9
28	11.1	4.9	1.4	0.1	3.5	16.5	13.4	24.6	27.7	28.0	27.3	18.4
29	10.1	4.3	2.1	0.2	4.0	16.4	12.7	23.4	27.8	26.6	27.4	18.3
30	10	3.5	3.2	0.9	---	15.1	12.9	22.5	27.7	28.4	27.3	18.3
31	10	---	3.5	3.2	---	14.8	---	20.9	---	29.7	27.1	---
Mean	14.4	6.7	1.7	0.7	2.4	11.3	14.8	20.7	24.6	---	25.9	20.9
Max	19.6	10.8	3.5	3.2	5.2	17.6	19.8	24.6	27.8	---	30.3	27.5
Min	9.1	3.5	0.0	-0.1	-0.1	1.9	12.7	14.9	19.7	---	22.3	16.2