

Water-Data Report 2013

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT

Lower Green Basin
San Rafael Subbasin

LOCATION.--Lat 38°51'30", long 110°22'10" referenced to North American Datum of 1927, in SE ¼ SE ¼ NW ¼ sec.34, T.22 S., R.14 E., Emery County, UT, Hydrologic Unit 14060009, on the right-bank, down-stream side of the bridge on State Highway 24, 14.0 mi. southwest of Green River, and 34.3 mi. upstream from the mouth.

DRAINAGE AREA.--1,628 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1909 to September 1918, September 1919 to July 1920 (gage heights only), October 1945 to current year.

REVISED RECORDS.--WDR UT-77-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,190 ft above NGVD of 1929, from topographic map. May 5, 1909 to September 10, 1918, staff gage, and September 10, 1919 to July 10, 1920, tape-weight gage. November 29, 1945 to July 7 1976, water-stage recorder at various sites and datums about 1 mi upstream.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 42,000 acres. Several small transmountain diversions from tributaries for irrigation in Sevier Lake Basin, and some storage since November 3, 1965, in Joes Valley Reservoir (see station 09323900).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s, Sep 2, 1909, gage height, 12.7 ft, site and datum then in use, from rating curve extended above 3,100 ft³/s; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,500 ft³/s, Sep 11, gage height 14.60 ft; minimum daily discharge, 0.93 ft³/s, Jul 7.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	19	29	e23	e6.5	e9.3	21	19	9.3	2.0	1.2	20	46
2	17	26	e23	e6.5	e9.7	22	18	9.7	2.3	1.1	74	474
3	15	26	e25	e6.5	e10	22	19	9.5	1.9	1.1	176	209
4	14	28	e24	e6.5	e11	32	18	7.5	2.1	1.1	169	94
5	12	28	e23	e6.5	e12	35	17	6.9	2.4	0.98	45	48
6	11	24	e22	e6.5	e12	33	16	6.4	2.1	0.99	51	45
7	11	23	e21	e6.6	e13	27	17	15	1.9	0.93	22	28
8	12	23	e20	e9.0	e12	28	21	83	1.8	272	14	31
9	13	23	e15	e9.0	e11	29	21	11	1.9	37	11	36
10	15	e21	e15	e9.5	e10	76	46	9.7	1.8	16	9.0	168
11	17	e20	e14	e10	e9.0	87	49	10	1.8	9.9	9.6	1,020
12	23	e20	e14	e9.0	e10	48	30	8.4	1.7	8.1	9.8	999
13	52	e19	e14	e8.0	e10	36	23	7.6	1.6	6.6	8.8	1,130
14	145	e20	e13	e6.5	e11	30	21	6.4	1.7	6.5	8.2	1,000
15	65	e21	e12	e6.6	e12	27	19	6.6	1.7	5.7	6.7	732
16	39	e22	e11	e6.7	e13	26	18	6.1	1.7	9.8	7.8	328
17	34	e21	e10	e6.7	e12	23	17	4.8	1.7	9.3	6.9	161
18	29	e22	e9.5	e6.7	e12	22	17	3.9	1.6	69	7.7	111
19	41	e21	e8.8	e6.8	e13	21	25	8.1	1.5	124	7.0	81
20	41	e22	e8.6	e6.9	e14	20	21	6.3	1.5	89	6.8	61
21	37	e21	e7.0	e7.0	e15	18	21	4.8	1.5	58	14	50
22	33	e21	e6.5	e7.0	e16	18	20	3.8	1.4	27	21	46
23	29	e21	e6.8	e8.0	e15	17	20	2.9	1.5	18	46	57
24	27	e20	e6.5	e9.0	e17	17	20	3.9	1.4	13	e77	92
25	25	e20	e7.1	e10	e19	17	21	3.8	1.4	10	e132	48
26	24	e19	e8.6	e11	e21	16	20	2.6	1.4	37	e89	38
27	24	e19	e7.3	e11	e23	15	20	2.6	1.3	23	133	34
28	24	e21	e6.8	e10	21	15	17	2.0	1.2	17	515	31
29	24	e23	e6.5	e10	---	17	14	1.9	1.2	26	102	29
30	26	e21	e6.7	e9.5	---	17	11	2.0	1.2	31	137	26
31	29	---	e6.6	e9.0	---	17	---	2.0	---	28	59	---
Total	927	665	402.3	248.5	373.0	849	636	268.5	50.2	958.30	1,995.3	7,253
Mean	29.9	22.2	13.0	8.02	13.3	27.4	21.2	8.66	1.67	30.9	64.4	242
Max	145	29	25	11	23	87	49	83	2.4	272	515	1,130
Min	11	19	6.5	6.5	9.0	15	11	1.9	1.2	0.93	6.7	26
Ac-ft	1,840	1,320	798	493	740	1,680	1,260	533	100	1,900	3,960	14,390

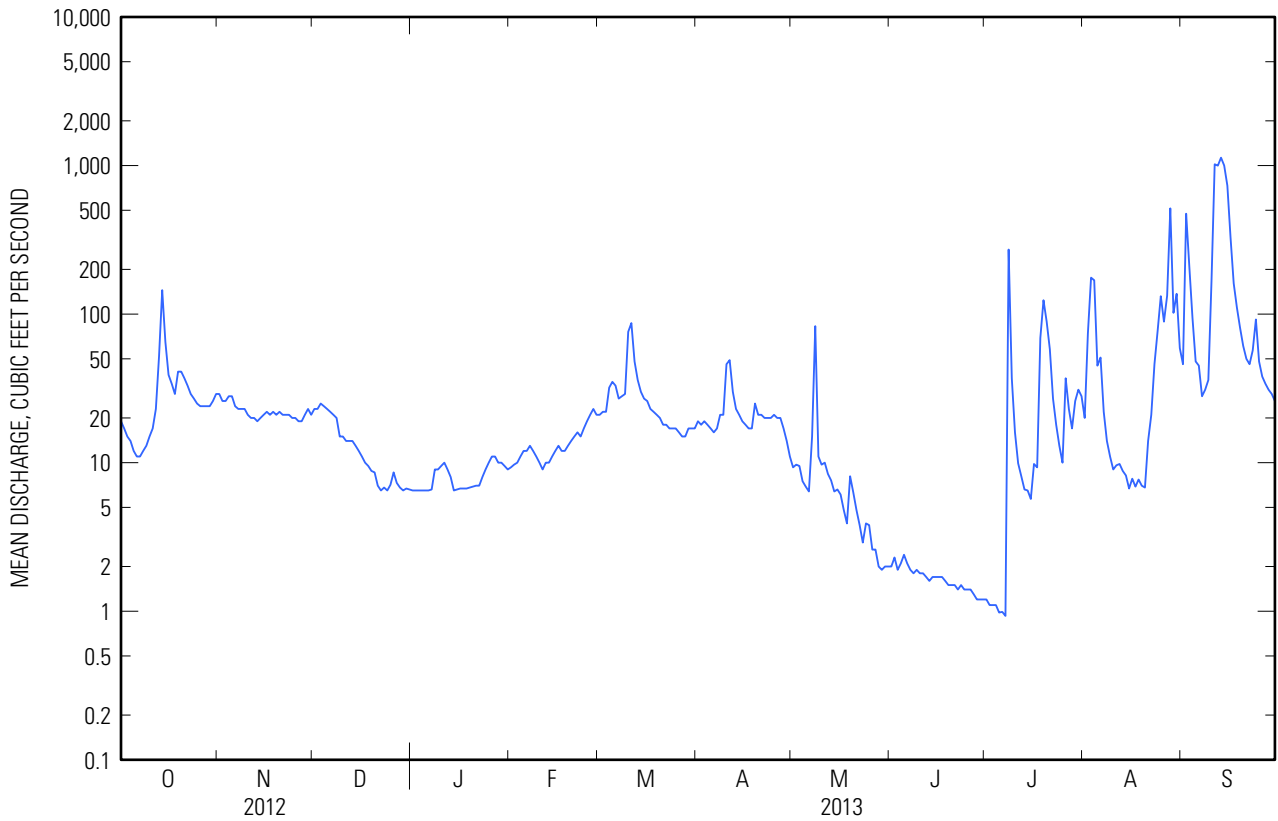
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910-18, 1946-2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	89.0	61.8	43.0	40.5	64.9	95.0	93.5	264	506	146	81.0	73.9
Max	848	358	125	224	200	729	748	1,626	2,772	965	344	309
(WY)	(1917)	(1958)	(1910)	(1911)	(1910)	(1910)	(1910)	(1914)	(1983)	(1983)	(1916)	(1961)
Min	0.00	5.68	7.80	8.02	13.3	19.2	5.41	1.58	1.09	0.13	0.38	0.11
(WY)	(2004)	(1978)	(2004)	(2013)	(2013)	(2003)	(2003)	(2003)	(1977)	(2003)	(1960)	(1956)

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SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1910-18, 1946-2013	
Annual total	9,452.4		14,626.10			
Annual mean	25.8		40.1		130	
Highest annual mean					483	1984
Lowest annual mean					11.8	2003
Highest daily mean	167	Jul 17	1,130	Sep 13	7,300	Oct 8, 1916
Lowest daily mean	1.2	Jun 30	0.93	Jul 7	0.00	Aug 24, 1910
Annual seven-day minimum	1.2	Jun 30	1.1	Jul 1	0.00	Aug 15, 1915
Annual runoff (ac-ft)	18,750		29,010		94,000	
10 percent exceeds	46		57		278	
50 percent exceeds	21		17		45	
90 percent exceeds	6.8		2.0		9.3	



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1946 to September 1949, October 1950 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1949, October 1950 to September 1962, October 1964 to September 1977.

SPECIFIC CONDUCTANCE: July to September 1949, November 1950 to September 1962, October 1964 to September 1979, daily, March 1982 to current year.

SUSPENDED-SEDIMENT DISCHARGE: March 1948 to September 1949, October 1950 to September 1959.

REMARKS.--Unpublished daily records of specific conductance obtained before water year 1965 were included in the determination of extremes for period of daily record and are available at USGS Utah Water Science Center, Salt Lake City, Utah.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 35.0°C, Jul 11, 1954; minimum, 0.0°C, on many days during winter period each year.

SPECIFIC CONDUCTANCE: Maximum observed, 7,230 microsiemens/cm, Jul 15, 1954 and Jun 29, 1977; minimum observed, 632 microsiemens/cm, Jun 28, 2011.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 5,640 microsiemens, Jun 18; minimum observed, 1,230 microsiemens, Aug 4.

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**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY INSTANTANEOUS VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	---	---	---	3,940	3,470	4,880	3,730	---	1,860
2	---	---	---	---	---	---	3,930	2,930	4,330	5,530	---	---
3	---	---	3,480	---	---	3,630	3,920	3,260	3,710	5,530	---	---
4	3,940	2,760	---	---	3,480	---	3,910	3,760	3,890	3,780	1,230	---
5	---	---	---	---	---	---	3,810	3,430	5,380	3,600	---	1,950
6	---	---	3,300	---	3,140	2,910	3,640	3,430	5,350	3,710	---	---
7	3,900	---	---	---	---	---	3,940	3,560	5,350	3,650	1,520	---
8	---	2,890	---	---	---	---	3,460	3,100	3,610	2,730	---	1,330
9	---	---	3,200	---	---	2,890	3,370	2,950	5,030	1,440	---	---
10	---	---	---	---	3,020	---	3,410	2,080	3,450	1,640	---	---
11	2,510	3,170	---	---	---	---	1,910	2,680	5,400	2,330	3,130	2,200
12	---	---	3,440	---	---	---	1,880	3,410	5,440	2,290	---	---
13	---	---	---	---	3,160	2,180	2,300	3,670	5,440	2,380	---	---
14	2,030	3,180	---	---	---	---	2,380	3,790	5,410	2,420	---	---
15	---	---	---	---	---	---	3,360	4,110	5,430	2,720	3,180	2,220
16	---	---	3,520	---	---	---	2,980	4,130	5,420	2,320	---	---
17	2,120	---	---	---	3,240	3,480	3,340	4,120	5,390	---	---	---
18	---	2,770	---	---	---	---	3,700	4,130	5,640	---	3,230	2,200
19	---	---	3,530	---	---	---	3,640	4,150	5,590	---	---	---
20	---	---	---	---	3,310	3,750	3,500	4,140	5,620	2,450	---	---
21	1,930	---	---	---	---	---	3,500	4,130	5,580	---	---	---
22	---	3,090	---	---	---	---	3,330	4,140	5,530	---	3,470	2,200
23	---	---	---	---	3,490	---	3,780	4,280	5,570	---	---	---
24	---	---	---	---	---	3,850	3,770	4,110	5,570	1,840	---	---
25	2,020	3,170	---	---	---	---	3,790	4,150	5,560	---	1,630	---
26	---	---	---	---	---	---	3,800	4,100	3,950	---	---	2,690
27	---	---	---	1,430	3,310	3,890	3,250	4,120	3,910	2,170	---	---
28	2,540	3,390	---	---	---	---	3,100	4,140	3,850	---	---	---
29	---	---	---	---	---	---	3,240	4,080	3,810	---	2,100	---
30	---	---	---	3,850	---	---	3,030	4,160	3,780	2,110	---	2,380
31	2,720	---	---	---	---	3,940	---	3,700	---	---	---	---
Mean	---	---	---	---	---	---	3,360	3,720	4,900	---	---	---
Max	---	---	---	---	---	---	3,940	4,280	5,640	---	---	---
Min	---	---	---	---	---	---	1,880	2,080	3,450	---	---	---

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 2

[CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Discharge, instantaneous, ft ³ /s (00061)	Specific conduc- tance, water, unfiltered, μS/cm at 25°C (00095)	Tempera- ture, water, °C (00010)	Gage height, ft (00065)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constit- uents, mg/L (70301)	Calcium, water, filtered, mg/L (00915)	Magne- sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)
11-28-2012	22	3,650	.0	--	2,850	2,500	199	124	8.68	252
03-06-2013	31	2,900	4.8	5.77	2,440	2,360	202	129	7.07	334
04-17-2013	16	3,330	10.0	5.54	2,900	2,730	240	146	8.82	381
05-24-2013	2.7	4,680	16.5	5.25	4,330	4,030	353	220	10.9	539
08-01-2013	16	2,160	23.1	5.49	1,730	1,590	194	72.2	10.5	183
08-26-2013	50	1,690	20.2	5.93	1,310	1,280	206	56.6	11.6	110
09-12-2013	1,220	1,570	18.7	--	--	--	--	--	--	--
09-25-2013	72	3,480	15.9	5.85	2,960	2,680	287	156	10.7	385

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 2

[CaCO₃, calcium carbonate; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Alkalinity, water, filtered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO ₃ (29801)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)
11-28-2012	287	82.8	.17	4.99	1,650
03-06-2013	293	67.5	.25	5.64	1,440
04-17-2013	294	91.0	< .30	5.74	1,680
05-24-2013	360	125	< .34	7.62	2,560
08-01-2013	218	41.2	.35	7.06	948
08-26-2013	176	28.2	.27	5.45	753
09-12-2013	--	--	--	--	--
09-25-2013	268	85.4	.29	8.57	1,590