Water-Data Report 2011

12505450 GRANGER DRAIN AT GRANGER, WA

Yakima Basin
Lower Yakima Subbasin

LOCATION.--Lat 46°20′37″, long 120°11′09″ referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.22, T.10 N., R.21 E., Yakima County, WA, Hydrologic Unit 17030003, on left bank 330 ft upstream from E Street at Granger, WA.

DRAINAGE AREA.--62.0 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1975 to September 1976, August to September 1981 (discharge measurements only), May to September 1991, August 1999 to September 2004, November 2006 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 720 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. Most flow is return and waste from irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 2000-04), 34.4 ft^3/s, 24,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 175 ft^3/s, June 20, 1991, gage height, 4.62 ft; minimum discharge, 12 ft^3/s, part or all of each day Dec. 15, 16, 19, 20, 26, 2009.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 91 ft^3/s, May 15, gage height 3.64 ft; minimum discharge, 18 ft^3/s, part or all of each day Nov. 16, and Feb. 19, 25, 26.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 12505450, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/12505450.2011.pdf

12505450 GRANGER DRAIN AT GRANGER, WA—Continued

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	51	23	22	24	22	20	23	44	46	49	53	58
2	51	23	22	24	22	21	24	45	47	52	53	59
3	51	23	21	23	22	21	25	46	49	53	56	58
4	51	23	22	23	22	20	25	45	49	54	60	61
5	51	23	22	23	22	20	27	44	50	54	57	64
6	50	22	22	23	22	20	31	44	49	53	55	56
7	51	23	22	23	22	21	30	45	47	52	55	55
8	51	23	23	23	22	20	29	47	48	54	55	53
9	54	23	23	22	21	20	31	47	51	55	54	56
10	56	23	23	22	22	21	35	44	52	61	52	58
11	54	23	23	22	22	20	33	44	52	60	51	61
12	53	22	25	22	22	20	32	47	53	60	57	59
13	54	23	25	22	21	21	35	47	53	58	57	57
14	55	23	25	23	21	21	38	47	52	56	56	59
15	53	23	23	23	21	21	40	65	50	57	57	59
16	53	21	23	24	21	21	42	58	51	56	57	59
17	54	21	23	23	21	21	42	49	49	57	57	58
18	52	21	23	23	21	21	40	47	51	57	58	62
19	43	21	23	23	20	21	35	46	53	57	55	61
20	34	21	23	23	20	21	38	45	54	55	55	55
21	34	20	23	23	20	21	37	45	55	56	57	56
22	31	21	23	24	20	24	37	45	53	59	57	55
23	31	21	23	24	20	24	37	45	52	56	58	56
24	30	21	23	23	20	23	38	45	53	54	60	55
25	25	22	24	23	19	20	40	45	53	56	61	57
26	29	21	24	23	20	20	35	44	55	59	61	58
27	32	21	24	23	20	20	37	45	52	55	58	58
28	28	21	24	23	20	20	43	46	49	54	60	57
29	29	21	31	23	---	21	44	46	50	51	59	58
30	25	21	25	23	---	22	43	46	49	51	57	57
31	24	---	25	22	---	21	---	45	---	53	57	---
Total	1,340	658	727	712	588	648	1,046	1,443	1,527	1,714	1,755	1,735
Mean	43.2	21.9	23.5	23.0	21.0	20.9	34.9	46.5	50.9	55.3	56.6	57.8
Max	56	23	31	24	22	24	44	65	55	61	61	64
Min	24	20	21	22	19	20	23	44	46	49	51	53
Ac-ft	2,660	1,310	1,440	1,410	1,170	1,290	2,070	2,860	3,030	3,400	3,480	3,440

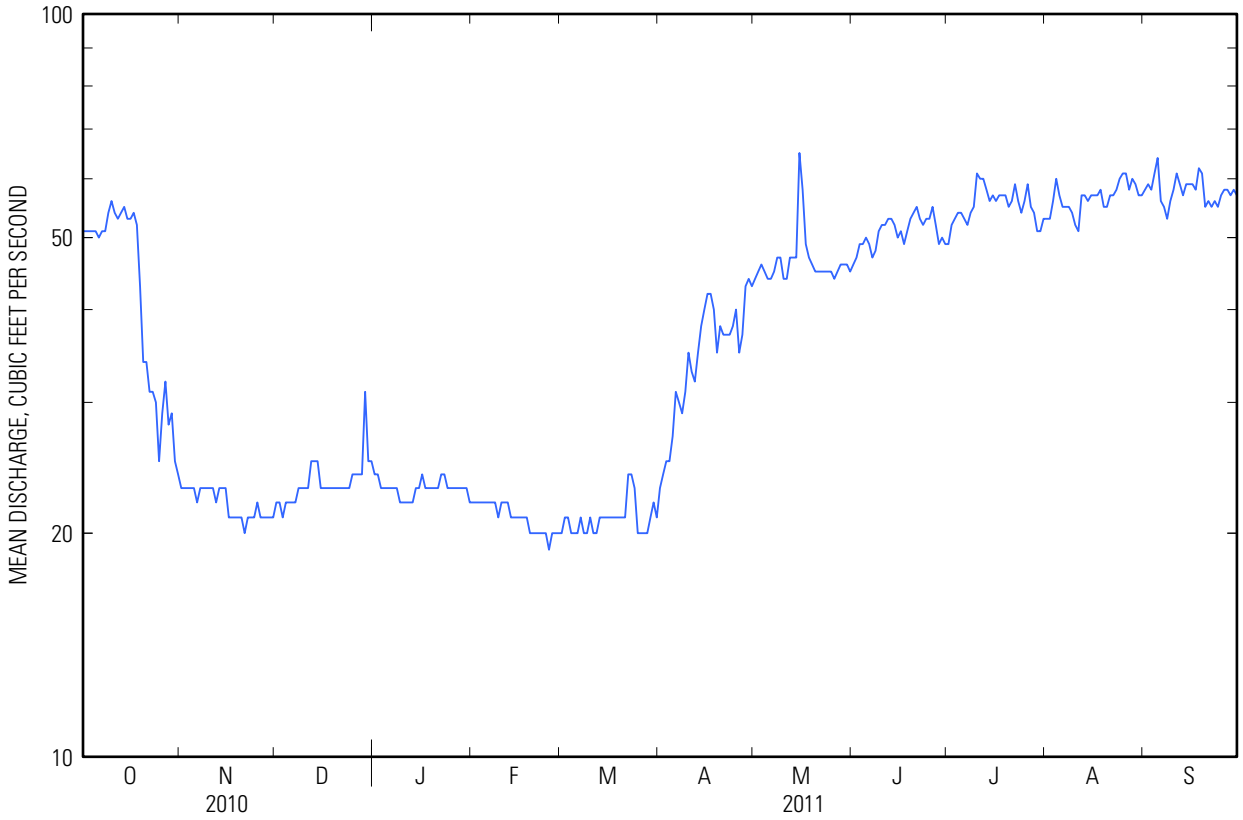
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	39.5	21.3	20.8	21.3	21.1	20.0	33.0	42.4	46.5	48.2	50.1	48.3
Max	49.9	24.2	22.1	23.0	24.5	23.8	36.0	46.2	55.1	58.7	59.2	61.4
(WY)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)
Min	26.5	18.6	19.7	20.1	18.2	17.7	26.0	32.3	30.9	28.8	32.2	25.8
(WY)	(2002)	(2004)	(2004)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)

12505450 GRANGER DRAIN AT GRANGER, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 2000 - 2004	
Annual total	13,888		13,893			
Annual mean	38.0		38.1		34.4	
Highest annual mean					40.4	2000
Lowest annual mean					27.6	2001
Highest daily mean	70	Aug 1	65	May 15	66	Sep 4, 2000
Lowest daily mean	17	Mar 18	19	Feb 25	15	Mar 27, 2002
Annual seven-day minimum	17	Mar 15	20	Feb 19	16	Mar 25, 2002
Annual runoff (ac-ft)	27,550		27,560		24,950	
10 percent exceeds	58		57		56	
50 percent exceeds	40		38		29	
90 percent exceeds	21		21		19	



12505450 GRANGER DRAIN AT GRANGER, WA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1975 to September 1976, November 1990 to September 1991, May 1999 to November 2000, March 2001 to September 2004, September 2007, August 2008, October 2009 to October 2010.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1999 to June 2000, October 2001 to September 2004.
WATER TEMPERATURE: August 1999 to June 2000, October 2001 to September 2004.

INSTRUMENTATION.--Water-quality monitor with 15-minute logging interval.

REMARKS.--Specific conductance records excellent except those for Oct. 13-15, Nov. 2-8, 26-30, Dec. 1-11, 15-25, Feb. 14-18, Jul. 24-27, Sept. 5-7, 14, which are good; Nov. 9-14, Dec. 26-31, Jan. 1-2, which are fair; Nov. 15-18, Jan. 3-20, which are poor. WY 2004 water temperature records excellent. Interruptions in the record were caused by instrument malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 883 microsiemens, Nov. 29, 2001; minimum, 268 microsiemens, July 1, 2002.
WATER TEMPERATURE: Maximum, 24.7°C, July 13, 2002; minimum, 4.7°C, Jan. 5, 2004.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 1 of 2
[ft, feet; ft³/s, cubic feet per second; g/m2, grams per square meter; mg/L, milligrams per liter; mg/m2, milligrams per square meter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Discharge, instantaneous, ft³/s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Gage height, ft (00065)	Biomass, periphyton, ash free dry mass, g/m2 (49954)	Biomass, periphyton, ash weight, grams per square meter (00572)
10-04-2010	**1200**	742	51	10.0	8.0	399	16.1	2.56	186.2	8,725.6

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 2 of 2
[ft, feet; ft³/s, cubic feet per second; g/m2, grams per square meter; mg/L, milligrams per liter; mg/m2, milligrams per square meter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter]

Date	Sample start time	Biomass, periphyton, dry weight, grams per square meter (00573)	Chlorophyll a, periphyton, chromatographic-fluorometric method, mg/m2 (70957)	Pheophytin a, periphyton, mg/m2 (62359)
10-04-2010	**1200**	8,911.8	12.6	46.6