

Water-Data Report 2012

## 12510500 YAKIMA RIVER AT KIONA, WA

Yakima Basin  
Lower Yakima Subbasin

LOCATION.--Lat 46°15'13", long 119°28'37" referenced to North American Datum of 1927, in SE ¼ NE ¼ sec.19, T.9 N., R.27 E., Benton County, WA, Hydrologic Unit 17030003, on left bank just upstream from abandoned highway bridge pier at Kiona, 0.1 mi upstream from highway bridge, 3.6 mi downstream from Corral Canyon Creek, 5.0 mi downstream from intake of Kiona Canal, and at mile 29.9.

DRAINAGE AREA.--5,615 mi<sup>2</sup>.

### **SURFACE-WATER RECORDS**

PERIOD OF RECORD.--August to December 1895 (gage heights only, fragmentary), August 1896 to March 1915, February 1933 to current year. Monthly discharge only 1887 to 1933, published in WSP 1316 and are available at the Pasco, Washington, field office.

REVISED RECORDS.--WSP 214: 1905. WSP 1122: 1934(M). WSP 1216: 1949-50. WSP 1286: 1907(M), 1909, 1936. WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 454.41 ft above NGVD of 1929. Prior to Mar. 31, 1915, nonrecording gages at approximately same site and datum. Feb. 6, 1933, to July 26, 1934, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges during the water year. Records fair. Diversion upstream from station for irrigation of about 424,000 acres. Flow affected by diversions and by Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes. The Kiona Canal bypasses station with a mean flow of approximately 23 ft<sup>3</sup>/s for irrigation of about 1,100 acres downstream from station. Diversion by the Kennewick Canal, which bypasses station, began in August 1956, and diverts about 96,000 acre-ft per year. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--79 years (water years 1934-2012), 3,508 ft<sup>3</sup>/s, 2,541,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,000 ft<sup>3</sup>/s, Dec. 23, 1933, gage height, 21.57 ft, from high-water marks; minimum discharge observed, 105 ft<sup>3</sup>/s, Sept. 11, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,600 ft<sup>3</sup>/s, Apr. 28, gage height, 12.81 ft; minimum discharge, 1,420 ft<sup>3</sup>/s, Aug. 9, gage height, 3.31 ft.

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,840	2,290	2,350	4,720	3,600	5,430	10,100	15,700	5,540	5,110	1,610	1,760
2	1,830	2,270	2,300	4,370	3,750	5,130	8,640	15,600	5,860	5,770	1,560	1,710
3	1,810	2,260	2,230	3,980	3,750	4,880	7,650	15,100	6,880	5,770	1,540	1,710
4	1,810	2,260	2,190	3,730	3,640	4,660	7,310	14,000	8,320	5,230	1,600	1,760
5	1,830	2,350	2,120	3,530	3,550	4,710	6,940	12,800	9,600	4,440	1,720	1,680
6	1,860	2,310	2,090	3,370	3,450	4,830	6,510	11,100	10,600	3,950	1,910	1,530
7	1,960	2,180	2,030	3,330	3,370	5,000	6,250	9,630	10,800	3,330	2,010	1,560
8	2,050	2,120	2,000	3,300	3,290	4,950	5,890	8,480	10,100	2,820	1,830	1,650
9	2,050	2,090	2,010	3,210	3,310	4,810	5,670	8,070	9,500	2,900	1,500	1,760
10	2,030	2,070	1,970	3,150	3,330	4,700	5,350	8,250	8,780	3,480	1,500	1,820
11	2,050	2,060	1,940	3,080	3,300	4,670	5,330	8,530	8,040	3,960	1,660	1,860
12	2,060	2,040	1,910	3,030	3,360	4,700	5,800	8,100	7,200	3,940	1,770	1,870
13	2,070	2,030	1,920	2,900	3,530	4,810	6,410	7,790	6,720	3,160	1,760	1,850
14	2,110	2,070	1,920	2,770	3,460	4,920	6,770	7,790	7,310	2,500	1,760	1,860
15	2,230	2,080	1,910	2,750	3,360	4,960	6,890	8,150	8,000	2,160	1,700	1,840
16	2,530	2,050	2,020	2,780	3,270	5,260	7,010	9,100	8,070	2,270	1,560	1,850
17	2,510	2,060	2,130	2,750	3,140	6,140	7,120	10,600	7,100	2,470	1,570	1,830
18	2,410	2,090	2,130	2,670	3,090	6,500	7,330	11,900	7,250	2,300	1,690	1,740
19	2,270	2,090	2,030	2,820	3,050	6,460	7,220	11,900	8,330	2,410	1,680	1,720
20	2,200	2,110	1,970	2,790	3,030	6,320	6,710	10,800	9,100	2,510	1,720	1,710
21	2,280	2,080	1,910	2,670	3,020	5,630	6,770	10,200	7,780	2,380	1,780	1,760
22	2,600	2,040	1,880	2,630	2,990	5,280	7,460	10,200	6,420	2,260	1,850	1,840
23	2,590	2,040	1,880	2,720	4,860	4,740	8,600	10,600	6,410	2,080	1,900	1,930
24	2,530	2,130	1,810	2,770	9,100	4,580	10,300	11,200	7,710	1,950	1,930	2,020
25	2,560	2,450	1,770	2,720	9,330	4,490	14,500	10,800	8,410	1,850	1,960	2,060
26	2,490	2,660	1,830	2,780	7,680	4,370	17,500	9,920	7,500	1,610	1,990	2,080
27	2,480	2,620	1,880	3,110	6,800	4,060	18,500	8,730	6,370	1,470	2,000	2,040
28	2,430	2,450	1,890	3,260	6,190	4,100	18,400	7,930	5,540	1,490	1,970	2,060
29	2,350	2,360	1,900	3,100	5,730	4,610	17,500	7,480	4,910	1,570	1,970	2,070
30	2,290	2,370	2,650	3,040	---	5,250	16,400	6,950	4,590	1,690	2,040	2,030
31	2,290	---	4,230	3,300	---	9,210	---	6,010	---	1,670	1,920	---
<b>Total</b>	68,400	66,080	64,800	97,130	123,330	160,160	272,830	313,410	228,740	90,500	54,960	54,960
<b>Mean</b>	2,206	2,203	2,090	3,133	4,253	5,166	9,094	10,110	7,625	2,919	1,773	1,832
<b>Max</b>	2,600	2,660	4,230	4,720	9,330	9,210	18,500	15,700	10,800	5,770	2,040	2,080
<b>Min</b>	1,810	2,030	1,770	2,630	2,990	4,060	5,330	6,010	4,590	1,470	1,500	1,530
<b>Ac-ft</b>	135,700	131,100	128,500	192,700	244,600	317,700	541,200	621,600	453,700	179,500	109,000	109,000

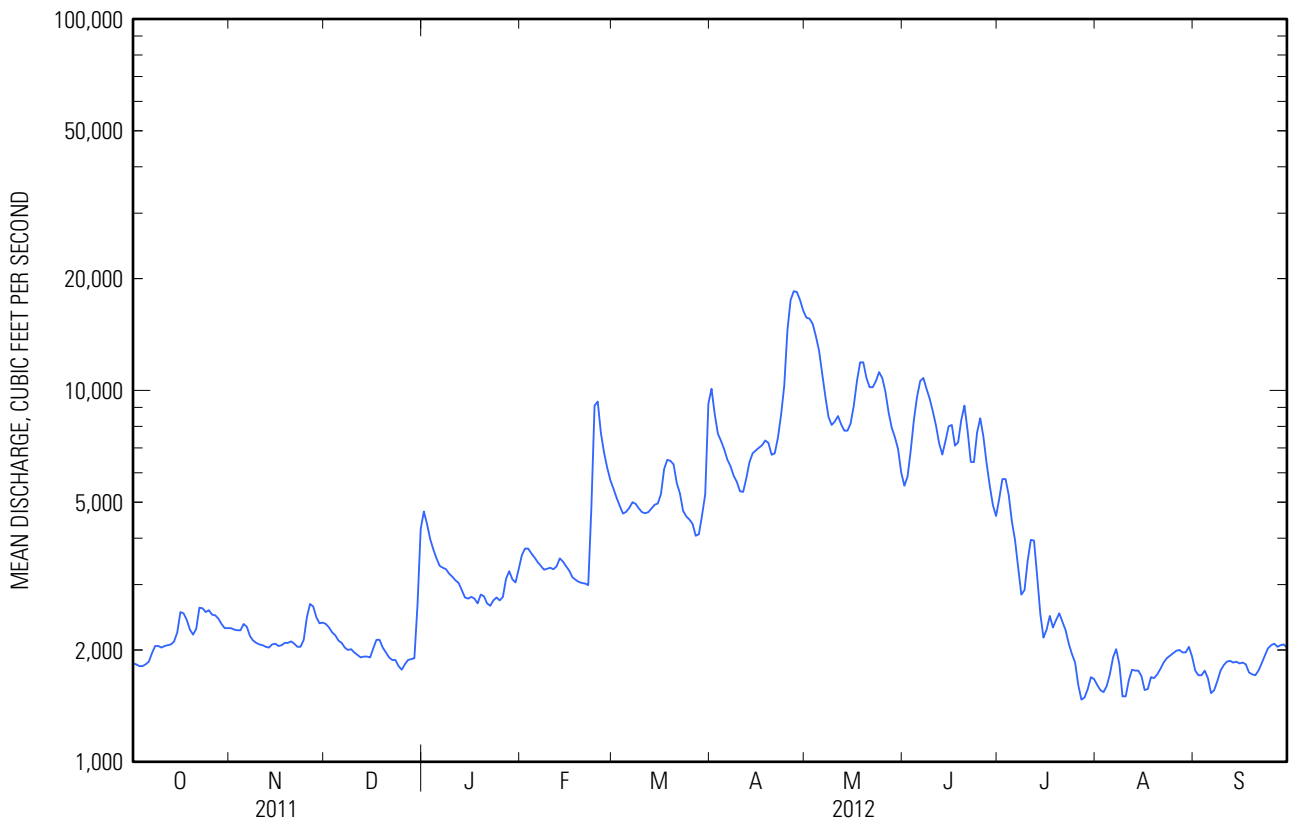
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2012, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	2,243	2,863	3,844	4,010	4,456	4,609	4,704	5,328	4,831	1,907	1,568	1,822
<b>Max</b>	4,252	6,293	17,330	14,100	17,570	16,750	13,190	13,930	16,470	5,398	2,333	2,549
<b>(WY)</b>	(1950)	(1960)	(1934)	(1934)	(1996)	(1972)	(1956)	(1997)	(1948)	(1954)	(1976)	(1978)
<b>Min</b>	1,021	1,462	1,546	1,335	1,163	486	493	902	869	598	751	784
<b>(WY)</b>	(1980)	(1988)	(1936)	(1937)	(1977)	(1977)	(1977)	(1977)	(1994)	(1994)	(1979)	(1979)

12510500 YAKIMA RIVER AT KIONA, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1934 - 2012	
<b>Annual total</b>	1,727,940		1,595,300			
<b>Annual mean</b>	4,734		4,359		3,508	
<b>Highest annual mean</b>					7,055	1956
<b>Lowest annual mean</b>					1,293	1977
<b>Highest daily mean</b>	24,100	May 18	18,500	Apr 27	59,400	Dec 24, 1933
<b>Lowest daily mean</b>	1,160	Aug 5	1,470	Jul 27	225	Apr 4, 1977
<b>Annual seven-day minimum</b>	1,250	Aug 3	1,580	Jul 27	263	Apr 19, 1977
<b>Annual runoff (ac-ft)</b>	3,427,000		3,164,000		2,541,000	
<b>10 percent exceeds</b>	9,530		8,740		7,130	
<b>50 percent exceeds</b>	3,000		2,820		2,430	
<b>90 percent exceeds</b>	1,460		1,770		1,350	



**12510500 YAKIMA RIVER AT KIONA, WA—Continued**

**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1953-94, 1999 to 2008, 2012.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1952 to September 1969 (composite samples), October 1969 to September 1977, July 1999 to June 2000, February 2001 to September 2008.

pH: April 2004 to September 2008.

WATER TEMPERATURE: December 1952 to September 1980, March 1981 to February 1982, July 1999 to June 2000, Oct. 2000 to September 2008.

DISSOLVED OXYGEN: April 2004 to September 2008.

SUSPENDED SEDIMENT: June 1977 to October 1980.

TURBIDITY: April 2004 to September 2007.

CHLOROPHYLL: April 2004 to September 2005.

INSTRUMENTATION.--Water-quality monitor July 1999 to September 2008. Electronic data logger, with 15-minute logging interval. Bureau of Reclamation satellite telemeter at station. Any use of trade, product, or firm names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Government.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 675 microsiemens, Dec. 3, 1970; minimum recorded, 82 microsiemens, June 17, 2002.

pH: Maximum recorded, 10.3 units, June 28, 2006; minimum recorded, 7.5 units, July 6, 2004, July 21, 2004, Aug. 9, 2004, Jan. 20-22, 2005, Jan. 24, 2005, Nov. 8, 2006, and Nov. 9, 2006.

WATER TEMPERATURE: Maximum, 30.8 °C, July 20, 2001; minimum, 0.0°C on several days during winter months most years.

DISSOLVED OXYGEN: Maximum recorded, 18.2 mg/L, June 25, 2007; minimum recorded, 2.4 mg/L, July 6, 2004.

TURBIDITY: Maximum recorded, 420 FNU, Apr. 22, and Apr. 24, 2004, but may have been greater during periods of missing record; minimum recorded, 0.0 on Oct. 7-14, Nov. 13, 2005 (minimum reported as <1 previously).

SUSPENDED SEDIMENT: Maximum daily mean, 1,750 mg/L Dec. 4, 1977; minimum daily mean, 1 mg/L Dec. 11, 14, 1978.

SEDIMENT DISCHARGE: Maximum daily, 110,000 tons; minimum daily 6.2 tons Dec. 14, 1978.

CHLOROPHYLL: Maximum recorded, 28 units, Jan.20, 2005; minimum recorded, <0.1 units, June 26, 2004.

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 1 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft <sup>3</sup> /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)	2,4,5-T, surrogate, Schedule 9060/2060, water, filtered, percent recovery (99958)	alpha-HCH-d6, surrogate, Schedule 2003, water, filtered, percent recovery (99995)
10-26-2011	1000	758	5.4	2,490	10.7	7.8	251	10.3	--	--
11-14-2011	1000	744	11.5	2,060	13.2	7.5	256	6.3	--	112
12-20-2011	1000	755	.6	1,970	14.0	7.5	232	2.4	--	--
01-23-2012	0950	748	.8	2,710	13.4	7.4	223	1.6	--	116
02-27-2012	1010	754	4.9	6,820	12.6	7.5	139	3.8	--	--
03-20-2012	0830	740	11.2	6,340	11.9	7.6	145	6.3	--	99.8
04-10-2012	0930	743	21.1	5,340	10.5	7.8	168	10.3	--	89.1
05-07-2012	0920	757	14.8	9,810	11.1	7.8	125	10.8	--	91.0
05-22-2012	0900	746	16.0	10,200	10.6	7.7	109	12.1	--	92.6
06-05-2012	0910	746	12.8	9,460	10.0	7.4	102	12.9	--	66.7
06-19-2012	0850	749	16.2	8,220	9.6	7.8	105	15.7	--	101
07-10-2012	0840	748	25.6	3,370	8.5	7.9	168	23.0	--	93.9
07-10-2012	0841	--	--	3,370	--	--	--	--	82.8	--
07-24-2012	0850	750	20.0	1,960	8.6	7.9	209	21.0	--	108
07-24-2012	0851	--	20.0	1,960	--	--	209	21.0	--	--
08-06-2012	1130	748	--	1,910	11.5	8.1	229	24.4	--	105
08-06-2012	1131	--	--	1,910	--	--	--	--	79.1	--
08-21-2012	0930	745	22.6	1,780	8.0	8.1	228	22.4	--	95.3
09-05-2012	0910	749	17.6	1,740	8.8	8.0	249	19.1	--	101
09-05-2012	0911	--	--	1,740	--	--	--	--	88.3	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 2 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Barban, surrogate, Schedules 2060/9060, water, filtered, percent recovery (90640)	Caffeine-13C, surrogate, Schedule 9060/2060, water, filtered, percent recovery (99959)	Diazinon-d10, surrogate, Schedule 2003, water, filtered, percent recovery (99994)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO <sub>3</sub> (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Carbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00452)	Chloride, water, filtered, mg/L (00940)	Sulfate, water, filtered, mg/L (00945)
10-26-2011	1000	--	--	--	84.5	103	0.0	6.96	12.4
11-14-2011	1000	--	--	120	82.5	101	.0	7.45	13.0
12-20-2011	1000	--	--	--	72.4	88.3	.0	6.96	11.6
01-23-2012	0950	--	--	95.1	60.2	73.5	.0	7.22	11.6
02-27-2012	1010	--	--	--	31.3	38.2	.0	5.58	5.87
03-20-2012	0830	--	--	98.5	54.7	66.7	.0	5.28	4.82
04-10-2012	0930	--	--	89.3	69.6	84.9	.0	4.99	6.16
05-07-2012	0920	--	--	95.4	52.0	63.0	.1	2.92	4.56
05-22-2012	0900	--	--	94.6	45.4	55.2	.1	2.56	4.08
06-05-2012	0910	--	--	68.5	42.4	51.6	.0	2.38	3.85
06-19-2012	0850	--	--	97.4	44.0	53.5	.1	2.42	4.20
07-10-2012	0840	--	--	98.5	66.4	80.3	.3	4.06	8.21
07-10-2012	0841	82.4	119	--	--	--	--	--	--
07-24-2012	0850	--	--	84.8	81.1	98.1	.4	5.37	11.3
07-24-2012	0851	--	--	--	--	--	--	--	--
08-06-2012	1130	--	--	99.6	95.9	116	.6	5.89	12.7
08-06-2012	1131	71.3	108	--	--	--	--	--	--
08-21-2012	0930	--	--	84.7	88.6	108	.2	5.72	12.3
09-05-2012	0910	--	--	98.7	100	121	.3	6.31	13.4
09-05-2012	0911	69.1	93.5	--	--	--	--	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 3 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)	1-Naphthol, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49295)	2,4-D methyl ester, water, filtered, recoverable, µg/L (50470)
10-26-2011	1000	<.010	1.14	0.006	0.061	0.080	1.31	--	--
11-14-2011	1000	.027	1.11	.009	.038	.055	1.22	<.0360 m	--
12-20-2011	1000	.015 n	1.19	.012	.057	.064	1.31	--	--
01-23-2012	0950	.023	1.06	.006	.062	.074	1.23	<.0360 m	--
02-27-2012	1010	.023	.452	.007	.051	.141	.80	--	--
03-20-2012	0830	<.010	.352	.002	.036	.094	.56	<.0360 m	--
04-10-2012	0930	<.010	.356	.004	.049	.102	.57	<.0360 m	--
05-07-2012	0920	.012 n	.303	.002	.039	.152	.52	<.0360 m	--
05-22-2012	0900	<.010	.297	.002	.037	.128	.42	<.0360 m	--
06-05-2012	0910	<.010	.303	.001 n	.030	.147	.51	<.0360 m	--
06-19-2012	0850	.014 n	.269	.002 n	.027	.106	.42	<.0360 m	--
07-10-2012	0840	<.010	.519	.008	.030	.070	.78	<.0360 m	--
07-10-2012	0841	--	--	--	--	--	--	--	<.200 m
07-24-2012	0850	<.010	.983	.010	.052	.101	1.22	<.0360 m	--
07-24-2012	0851	--	--	--	--	--	--	--	--
08-06-2012	1130	<.010	.899	.012	.040	.078	1.20	<.0360 m	--
08-06-2012	1131	--	--	--	--	--	--	--	<.200 m
08-21-2012	0930	<.010	1.03	.013	.055	.080	1.26	<.0360 m	--
09-05-2012	0910	<.010	1.06	.010	.041	.061	1.19	<.0360 m	--
09-05-2012	0911	--	--	--	--	--	--	--	<.200 m

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 4 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	2,4-D, water, filtered, recoverable, μg/L (39732)	2,4-DB, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (38746)	2,6-Diethyl-aniline, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82660)	2-Chloro-2',6'-diethyl-acetanilide, water, filtered, recoverable, μg/L (61618)	2-Chloro-4-isopropyl-amino-6-triazine, water, filtered, recoverable, μg/L (04040)	2-Chloro-6-ethyl-amino-4-triazine, water, filtered, recoverable, μg/L (04038)	2-Ethyl-6-methyl-aniline, water, filtered, recoverable, μg/L (61620)	2-Hydroxy-4-iso-propyl-amino-6-ethyl-amino-s-triazine, water, filtered, recoverable, μg/L (50355)	3,4-Dichloro-aniline, water, filtered, recoverable, μg/L (61625)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	--	--	< .0060	< .010	< .015 m	--	< .010 m	--	< .0060 m
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	--	--	< .0060	< .010	E .009 m	--	< .010 m	--	< .0060 m
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	--	--	< .0060	< .010	E .006 bm	--	< .010 m	--	< .0060 m
04-10-2012	0930	--	--	< .0060	< .010	E .007 bm	--	< .010 m	--	< .0060 m
05-07-2012	0920	--	--	< .0060	< .010	E .006 bmn	--	< .010 m	--	< .0060 m
05-22-2012	0900	--	--	< .0060	< .010	E .005 bmn	--	< .010 m	--	< .0060 m
06-05-2012	0910	--	--	< .0060	< .010	E .005 bmn	--	< .010 m	--	< .0060 m
06-19-2012	0850	--	--	< .0060	< .010	E .006 bmn	--	< .010 m	--	< .0060 m
07-10-2012	0840	--	--	< .0060	< .010	< .007 m	--	< .010 m	--	< .0060 m
07-10-2012	0841	.02 t	< .02	--	--	< .06	< .08	--	< .060	--
07-24-2012	0850	--	--	< .0060	< .010	E .008 bm	--	< .010 m	--	< .0060 m
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	--	--	< .0060	< .010	E .007 bm	--	< .010 m	--	< .0060 m
08-06-2012	1131	.02 t	< .02	--	--	< .06	< .08	--	.006 t	--
08-21-2012	0930	--	--	< .0060	< .010	E .007 bm	--	< .010 m	--	< .0060 m
09-05-2012	0910	--	--	< .0060	< .010	E .009 m	--	< .010 m	--	< .0060 m
09-05-2012	0911	.03 n	< .02	--	--	< .06	< .08	--	< .060	--



## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 5 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	3,5-Di-chloro-aniline, water, filtered, recoverable, μg/L (61627)	3-Hydroxy carbo-furan, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49308)	4-Chloro-2-methyl-phenol, water, filtered, recoverable, μg/L (61633)	Aceto-chlor, water, filtered, recoverable, μg/L (49260)	Acifluor-fen, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49315)	Alachlor, water, filtered, recoverable, μg/L (46342)	Aldicarb sulfone, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49313)	Aldicarb sulfoxide, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49314)	Aldicarb, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49312)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
04-10-2012	0930	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
05-07-2012	0920	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
05-22-2012	0900	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
06-05-2012	0910	< .006	--	< .0080 m	.006 bn	--	< .008	--	--	--
06-19-2012	0850	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
07-10-2012	0840	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
07-10-2012	0841	--	< .060	--	--	< .080 m	--	< .08	< .080 m	< .12 m
07-24-2012	0850	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
08-06-2012	1131	--	< .060	--	--	< .080 m	--	< .08	< .080 m	< .12 m
08-21-2012	0930	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
09-05-2012	0910	< .006	--	< .0080 m	< .010	--	< .008	--	--	--
09-05-2012	0911	--	< .060	--	--	< .080 m	--	< .08	< .080 m	< .12 m

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 6 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	alpha-Endo-sulfan, water, filtered, recoverable, µg/L (34362)	Atrazine, water, filtered, recoverable, µg/L (39632)	Azinphos-methyl oxygen analog, water, filtered, recoverable, µg/L (61635)	Azinphos-methyl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82686)	Bendio-carb, water, filtered, recoverable, µg/L (50299)	Benfluralin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82673)	Benomyl, water, filtered, recoverable, µg/L (50300)	Ben-sulfuron-methyl, water, filtered, recoverable, µg/L (61693)	Bentazon, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38711)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .006	.008 bn	< .042 m	< .120 m	--	< .014	--	--	--
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .006	.006 bn	< .042 m	< .120 m	--	< .014	--	--	--
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
04-10-2012	0930	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
05-07-2012	0920	< .006	.006 bn	< .042 m	< .120 m	--	< .014	--	--	--
05-22-2012	0900	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
06-05-2012	0910	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
06-19-2012	0850	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
07-10-2012	0840	< .006	< .008	< .042 m	< .120 m	--	< .014	--	--	--
07-10-2012	0841	--	< .080	--	--	< .04 m	--	< .060 m	< .06 m	.01 t
07-24-2012	0850	< .006	.009	< .042 m	< .120 m	--	< .014	--	--	--
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .006	.007 bn	< .042 m	< .120 m	--	< .014	--	--	--
08-06-2012	1131	--	< .080	--	--	< .04 m	--	< .060 m	< .06 m	.03 n
08-21-2012	0930	< .006	.005 bn	< .042 m	< .120 m	--	< .014	--	--	--
09-05-2012	0910	< .006	.006 bn	< .042 m	< .120 m	--	< .014	--	--	--
09-05-2012	0911	--	< .080	--	--	< .04 m	--	< .060 m	< .06 m	.02 t

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 7 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Bromacil, water, filtered, recoverable, µg/L (04029)	Bromoxynil, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49311)	Carbaryl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49310)	Carbaryl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82680)	Carbofuran, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49309)	Carbofuran, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82674)	Chloramben methyl ester, water, filtered, recoverable, µg/L (61188)	Chlorimuron-ethyl, water, filtered, recoverable, µg/L (50306)
10-26-2011	1000	--	--	--	--	--	--	--	--
11-14-2011	1000	--	--	--	< .060 m	--	< .060 m	--	--
12-20-2011	1000	--	--	--	--	--	--	--	--
01-23-2012	0950	--	--	--	< .060 m	--	< .060 m	--	--
02-27-2012	1010	--	--	--	--	--	--	--	--
03-20-2012	0830	--	--	--	< .060 m	--	< .060 m	--	--
04-10-2012	0930	--	--	--	< .060 m	--	< .060 m	--	--
05-07-2012	0920	--	--	--	E .006 bmt	--	< .060 m	--	--
05-22-2012	0900	--	--	--	E .008 mt	--	< .060 m	--	--
06-05-2012	0910	--	--	--	E .005 bmt	--	< .060 m	--	--
06-19-2012	0850	--	--	--	E .006 bmt	--	< .060 m	--	--
07-10-2012	0840	--	--	--	E .008 bmt	--	< .060 m	--	--
07-10-2012	0841	< .06	< .12 m	< .04	--	< .040	--	< .20	< .080 m
07-24-2012	0850	--	--	--	E .004 bmt	--	< .060 m	--	--
07-24-2012	0851	--	--	--	--	--	--	--	--
08-06-2012	1130	--	--	--	< .060 m	--	< .060 m	--	--
08-06-2012	1131	< .06	< .12 m	< .04	--	< .040	--	< .20	< .080 m
08-21-2012	0930	--	--	--	< .060 m	--	< .060 m	--	--
09-05-2012	0910	--	--	--	< .060 m	--	< .060 m	--	--
09-05-2012	0911	< .06	< .12 m	< .04	--	< .040	--	< .20	< .080 m

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 8 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Chlorpyrifos oxygen analog, water, filtered, recoverable, µg/L (61636)	Chlorpyrifos, water, filtered, recoverable, µg/L (38933)	cis-Permethrin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82687)	cis-Propiconazole, water, filtered, recoverable, µg/L (79846)	Clopyralid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49305)	Cyanazine, water, filtered, recoverable, µg/L (04041)	Cycloate, water, filtered, recoverable, µg/L (04031)	Cyfluthrin, water, filtered, recoverable, µg/L (61585)	Cypermethrin, water, filtered, recoverable, µg/L (61586)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
04-10-2012	0930	< .08 m	.0110	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
05-07-2012	0920	< .08 m	< .0039	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
05-22-2012	0900	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
06-05-2012	0910	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
06-19-2012	0850	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
07-10-2012	0840	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
07-10-2012	0841	--	--	--	--	< .14 m	--	< .04	--	--
07-24-2012	0850	< .08 m	.1110	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .08 m	.0050 b	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
08-06-2012	1131	--	--	--	--	< .14 m	--	< .04	--	--
08-21-2012	0930	< .08 m	< .0036	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
09-05-2012	0910	< .08 m	.0029 bn	< .010	< .008 m	--	< .022	--	< .016 m	< .020 m
09-05-2012	0911	--	--	--	--	< .14 m	--	< .04	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 9 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Dacthal monoacid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49304)	DCPA, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82682)	Desulfinyl-fipronil amide, water, filtered, recoverable, µg/L (62169)	Desulfinyl-fipronil, water, filtered, recoverable, µg/L (62170)	Diazinon, water, filtered, recoverable, µg/L (39572)	Dicamba, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38442)	Dichlor-prop, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49302)	Dichlor-vos, water, filtered, recoverable, µg/L (38775)	Dicroto-phos, water, filtered, recoverable, µg/L (38454)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
04-10-2012	0930	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
05-07-2012	0920	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
05-22-2012	0900	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
06-05-2012	0910	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
06-19-2012	0850	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
07-10-2012	0840	--	< .0076	< .029 m	< .012	.0880	--	--	< .04 m	< .08 m
07-10-2012	0841	< .04	--	--	--	--	< .06	< .04	--	--
07-24-2012	0850	--	.0016 bt	< .029 m	< .012	.0062 b	--	--	< .04 m	< .08 m
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	--	< .0076	< .029 m	< .012	.0075 b	--	--	< .04 m	< .08 m
08-06-2012	1131	< .04	--	--	--	--	< .06	< .04	--	--
08-21-2012	0930	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
09-05-2012	0910	--	< .0076	< .029 m	< .012	< .0060	--	--	< .04 m	< .08 m
09-05-2012	0911	< .04	--	--	--	--	< .06	< .04	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 10 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Dieldrin, water, filtered, recoverable, μg/L (39381)	Dimethoate, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82662)	Dinoseb, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49301)	Di-phenamid, water, filtered, recoverable, μg/L (04033)	Disulfoton sulfone, water, filtered, recoverable, μg/L (61640)	Disulfoton, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82677)	Diuron, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (49300)	Endosulfan sulfate, water, filtered, recoverable, μg/L (61590)	EPTC, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82668)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
04-10-2012	0930	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
05-07-2012	0920	< .008	E .1300 m	--	--	< .014	< .040 m	--	< .016	< .0056
05-22-2012	0900	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	.0030 bn
06-05-2012	0910	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
06-19-2012	0850	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
07-10-2012	0840	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
07-10-2012	0841	--	--	< .04	< .04	--	--	< .04	--	--
07-24-2012	0850	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
08-06-2012	1131	--	--	< .04	< .04	--	--	.01 t	--	--
08-21-2012	0930	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
09-05-2012	0910	< .008	< .0100 m	--	--	< .014	< .040 m	--	< .016	< .0056
09-05-2012	0911	--	--	< .04	< .04	--	--	< .04	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 11 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Ethion monoxon, water, filtered, recoverable, µg/L (61644)	Ethion, water, filtered, recoverable, µg/L (82346)	Ethoprop, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82672)	Fenami-phos sulfone, water, filtered, recoverable, µg/L (61645)	Fenami-phos sulfoxide, water, filtered, recoverable, µg/L (61646)	Fenami-phos, water, filtered, recoverable, µg/L (61591)	Fenuron, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49297)	Fipronil sulfide, water, filtered, recoverable, µg/L (62167)	Fipronil sulfone, water, filtered, recoverable, µg/L (62168)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
04-10-2012	0930	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
05-07-2012	0920	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
05-22-2012	0900	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
06-05-2012	0910	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
06-19-2012	0850	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
07-10-2012	0840	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
07-10-2012	0841	--	--	--	--	--	--	< .06 m	--	--
07-24-2012	0850	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
08-06-2012	1131	--	--	--	--	--	--	< .06 m	--	--
08-21-2012	0930	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
09-05-2012	0910	< .021 m	< .010	< .016	< .054	< .08 m	< .030	--	< .012	< .024
09-05-2012	0911	--	--	--	--	--	--	< .06 m	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 12 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Fipronil, water, filtered, recoverable, µg/L (62166)	Flumetsulam, water, filtered, recoverable, µg/L (61694)	Fluometuron, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38811)	Fonofos, water, filtered, recoverable, µg/L (04095)	Hexazinone, water, filtered, recoverable, µg/L (04025)	Imazaquin, water, filtered, recoverable, µg/L (50356)	Imazethapyr, water, filtered, recoverable, µg/L (50407)	Imidacloprid, water, filtered, recoverable, µg/L (61695)	Iprodione, water, filtered, recoverable, µg/L (61593)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
04-10-2012	0930	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
05-07-2012	0920	<.018 m	--	--	<.0048	.004 bt	--	--	--	<.014 m
05-22-2012	0900	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
06-05-2012	0910	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
06-19-2012	0850	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
07-10-2012	0840	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
07-10-2012	0841	--	<.08 m	<.04	--	--	<.10 m	<.08 m	<.080 m	--
07-24-2012	0850	<.018 m	--	--	<.0048	.003 bt	--	--	--	<.014 m
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
08-06-2012	1131	--	<.08 m	<.04	--	--	<.10 m	<.08 m	<.080 m	--
08-21-2012	0930	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
09-05-2012	0910	<.018 m	--	--	<.0048	<.012	--	--	--	<.014 m
09-05-2012	0911	--	<.08 m	<.04	--	--	<.10 m	<.08 m	<.080 m	--



## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 13 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Isofen-phos, water, filtered, recoverable, µg/L (61594)	lambda-Cyhalo-thrin, water, filtered, recoverable, µg/L (61595)	Linuron, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38478)	Malaoxon, water, filtered, recoverable, µg/L (61652)	Malathion, water, filtered, recoverable, µg/L (39532)	MCPA, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38482)	MCPB, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38487)	Metalaxyl, water, filtered, recoverable, µg/L (50359)	Metalaxyl, water, filtered, recoverable, µg/L (61596)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
04-10-2012	0930	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
05-07-2012	0920	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
05-22-2012	0900	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
06-05-2012	0910	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
06-19-2012	0850	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
07-10-2012	0840	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
07-10-2012	0841	--	--	< .04	--	--	< .04	< .20	< .04	--
07-24-2012	0850	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
08-06-2012	1131	--	--	< .04	--	--	< .04	< .20	< .04	--
08-21-2012	0930	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
09-05-2012	0910	< .008	< .010 m	--	< .022	< .016	--	--	--	< .014
09-05-2012	0911	--	--	< .04	--	--	< .04	< .20	< .04	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 14 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Methidathion, water, filtered, recoverable, µg/L (61598)	Methiocarb, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38501)	Methomyl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49296)	Methyl parathion, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61664)	Methyl parathion, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82667)	Metolachlor, water, filtered, recoverable, µg/L (39415)	Metribuzin, water, filtered, recoverable, µg/L (82630)	Metsulfuron-methyl, water, filtered, recoverable, µg/L (61697)	Molinate, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82671)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .012	--	--	< .014 m	< .008	.007 bt	< .012	--	< .0040
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
04-10-2012	0930	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
05-07-2012	0920	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
05-22-2012	0900	< .012	--	--	< .014 m	< .008	< .020	.004 bt	--	< .0040
06-05-2012	0910	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
06-19-2012	0850	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
07-10-2012	0840	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
07-10-2012	0841	--	< .040	< .120 m	--	--	--	--	< .14 m	--
07-24-2012	0850	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
08-06-2012	1131	--	< .040	< .120 m	--	--	--	--	< .14 m	--
08-21-2012	0930	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
09-05-2012	0910	< .012	--	--	< .014 m	< .008	< .020	< .012	--	< .0040
09-05-2012	0911	--	< .040	< .120 m	--	--	--	--	< .14 m	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 15 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Myclobutanil, water, filtered, recoverable, µg/L (61599)	N-(4-Chlorophenyl)-N'-methyl-urea, water, filtered, recoverable, µg/L (61692)	Neburon, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49294)	Nicosulfuron, water, filtered, recoverable, µg/L (50364)	Norflurazon, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49293)	Oryzalin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49292)	Oxamyl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38866)	Oxyfluorfen, water, filtered, recoverable, µg/L (61600)	Pendimethalin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82683)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .010	--	--	--	--	--	--	< .010	< .012
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .010	--	--	--	--	--	--	< .010	< .012
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .010	--	--	--	--	--	--	< .010	< .012
04-10-2012	0930	< .010	--	--	--	--	--	--	< .010	< .012
05-07-2012	0920	< .010	--	--	--	--	--	--	< .010	< .012
05-22-2012	0900	< .010	--	--	--	--	--	--	< .010	.007 bn
06-05-2012	0910	< .010	--	--	--	--	--	--	< .010	< .012
06-19-2012	0850	.005 bn	--	--	--	--	--	--	< .010	.005 bt
07-10-2012	0840	.006 bn	--	--	--	--	--	--	< .010	< .012
07-10-2012	0841	--	< .10	< .02	< .32 m	< .04	< .04	< .12 m	--	--
07-24-2012	0850	.005 bn	--	--	--	--	--	--	< .010	< .012
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	.009 n	--	--	--	--	--	--	< .010	< .012
08-06-2012	1131	--	< .10	< .02	< .32 m	< .04	< .04	< .12 m	--	--
08-21-2012	0930	< .010	--	--	--	--	--	--	< .010	< .012
09-05-2012	0910	< .010	--	--	--	--	--	--	< .010	< .012
09-05-2012	0911	--	< .10	< .02	< .32 m	< .04	< .04	< .12 m	--	--

12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 16 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Phorate oxygen analog, water, filtered, recoverable, µg/L (61666)	Phorate, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82664)	Phosmet oxygen analog, water, filtered, recoverable, µg/L (61668)	Phosmet, water, filtered, recoverable, µg/L (61601)	Picloram, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49291)	Prometon, water, filtered, recoverable, µg/L (04037)	Prometryn, water, filtered, recoverable, µg/L (04036)	Propanil, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82679)	Propargite, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82685)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
04-10-2012	0930	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
05-07-2012	0920	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
05-22-2012	0900	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
06-05-2012	0910	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
06-19-2012	0850	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
07-10-2012	0840	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
07-10-2012	0841	--	--	--	--	< .10 m	--	--	--	--
07-24-2012	0850	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
08-06-2012	1131	--	--	--	--	E .53 m	--	--	--	--
08-21-2012	0930	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
09-05-2012	0910	< .027 m	< .020	< .0511 m	< .080 m	--	< .012	< .010	< .010	< .020
09-05-2012	0911	--	--	--	--	E .38 m	--	--	--	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 17 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Propham, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49236)	Propiconazole, water, filtered, recoverable, µg/L (50471)	Propoxur, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (38538)	Propyzamide, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82676)	Siduron, water, filtered, recoverable, µg/L (38548)	Simazine, water, filtered, recoverable, µg/L (04035)	Sulfo-meturon-methyl, water, filtered, recoverable, µg/L (50337)	Tebu-thiuron, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82670)	Tefluthrin, water, filtered, recoverable, µg/L (61606)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	--	--	--	< .0036	--	< .006	--	< .028	< .014 m
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	--	--	--	< .0036	--	.006 b	--	< .028	< .014 m
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	--	--	--	< .0036	--	.006 b	--	< .028	< .014 m
04-10-2012	0930	--	--	--	< .0036	--	.005 bn	--	< .028	< .014 m
05-07-2012	0920	--	--	--	< .0036	--	.005 bn	--	< .028	< .014 m
05-22-2012	0900	--	--	--	< .0036	--	< .006	--	< .028	< .014 m
06-05-2012	0910	--	--	--	< .0036	--	< .006	--	< .028	< .014 m
06-19-2012	0850	--	--	--	< .0036	--	< .006	--	< .028	< .014 m
07-10-2012	0840	--	--	--	< .0036	--	< .006	--	< .028	< .014 m
07-10-2012	0841	< .040	< .038	< .060	--	< .04	--	< .060 m	< .060	--
07-24-2012	0850	--	--	--	< .0036	--	.007 b	--	< .028	< .014 m
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	--	--	--	< .0036	--	.006 b	--	< .028	< .014 m
08-06-2012	1131	< .040	< .038	< .060	--	< .04	--	< .060 m	< .060	--
08-21-2012	0930	--	--	--	< .0036	--	.005 bn	--	< .028	< .014 m
09-05-2012	0910	--	--	--	< .0036	--	.006 bn	--	< .028	< .014 m
09-05-2012	0911	< .040	< .038	< .060	--	< .04	--	< .060 m	< .060	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 18 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	Terbacil, water, filtered, recoverable, µg/L (04032)	Terbufos oxygen analog sulfone, water, filtered, recoverable, µg/L (61674)	Terbufos, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82675)	Terbutyl-azine, water, filtered, recoverable, µg/L (04022)	Thioben-carb, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82681)	trans-Propicon-azole, water, filtered, recoverable, µg/L (79847)	Tribuphos, water, filtered, recoverable, µg/L (61610)	Triclopyr, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (49235)	Trifluralin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82661)
10-26-2011	1000	--	--	--	--	--	--	--	--	--
11-14-2011	1000	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
12-20-2011	1000	--	--	--	--	--	--	--	--	--
01-23-2012	0950	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
02-27-2012	1010	--	--	--	--	--	--	--	--	--
03-20-2012	0830	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
04-10-2012	0930	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
05-07-2012	0920	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
05-22-2012	0900	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
06-05-2012	0910	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
06-19-2012	0850	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
07-10-2012	0840	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
07-10-2012	0841	.035 n	--	--	--	--	--	--	< .08	--
07-24-2012	0850	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
07-24-2012	0851	--	--	--	--	--	--	--	--	--
08-06-2012	1130	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
08-06-2012	1131	.045 n	--	--	--	--	--	--	< .08	--
08-21-2012	0930	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
09-05-2012	0910	--	< .045	< .018	< .008	< .016	< .018 m	< .018 m	--	< .018
09-05-2012	0911	< .046	--	--	--	--	--	--	< .08	--

## 12510500 YAKIMA RIVER AT KIONA, WA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Part 19 of 19

[CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; P, phosphorus; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; b, value extrapolated at low end; m, value is highly variable by this method; n, below the LRL and above the LT-MDL; t, below the long-term MDL]

Date	Sample start time	2,4-D plus 2,4-D methyl ester, sum on a molar basis, microgram s per liter as 2,4-D (66496)	Caffeine, water, filtered, recover- able, µg/L (50305)	Suspended sediment concen- tration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
10-26-2011	1000	--	--	10	67
11-14-2011	1000	--	--	7	39
12-20-2011	1000	--	--	4	21
01-23-2012	0950	--	--	7	51
02-27-2012	1010	--	--	72	1,330
03-20-2012	0830	--	--	85	1,460
04-10-2012	0930	--	--	38	548
05-07-2012	0920	--	--	104	2,750
05-22-2012	0900	--	--	78	2,150
06-05-2012	0910	--	--	--	--
06-19-2012	0850	--	--	--	--
07-10-2012	0840	--	--	--	--
07-10-2012	0841	.02 t	< .080	--	--
07-24-2012	0850	--	--	--	--
07-24-2012	0851	--	--	--	--
08-06-2012	1130	--	--	--	--
08-06-2012	1131	.02 t	< .080	--	--
08-21-2012	0930	--	--	--	--
09-05-2012	0910	--	--	--	--
09-05-2012	0911	.03 n	< .080	--	--