

Water-Data Report 2010

06485500 BIG SIOUX RIVER AT AKRON, IA

Big Sioux Basin
Lower Big Sioux Subbasin

LOCATION.--Lat 42°50'15.1", long 96°33'41.8" referenced to North American Datum of 1927, in SW ¼ SE ¼ SW ¼ sec.30, T.93 N., R.48 W., Plymouth County, IA, Hydrologic Unit 10170203, on left bank 15 ft downstream from Iowa Highway 403 bridge, 0.5 mi northwest of Akron, and 2.9 mi upstream from Union Creek (revised).

DRAINAGE AREA.--7,879 mi² of which 883 mi² probably is noncontributing, (revised). Documented runoff occurred during 1994-2002 water years for 213 mi² of the usually noncontributing area.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area. WDR SD-84-1: Drainage area. WDR SD-94-1 only: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,118.90 ft above NGVD of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 0.5 mi downstream at same datum. From Dec. 3, 1934, to Oct. 31, 1985, water-stage recorder at site 0.6 mi downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured with each discharge measurement.

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	421	2,260	1,460	e550	e650	e710	7,940	4,430	2,590	10,800	18,100	2,720
2	458	2,400	e1,350	e500	e630	e710	7,550	4,230	2,590	8,300	17,800	3,690
3	512	2,490	e1,150	e520	e620	e710	7,160	4,030	2,680	7,170	14,600	3,740
4	586	2,500	e1,000	e550	e640	e710	6,800	3,850	2,890	6,690	11,200	3,520
5	638	2,470	e850	e560	e680	e730	6,450	3,700	2,780	6,380	8,920	3,480
6	668	2,430	e800	e560	e730	e770	6,180	3,550	2,600	6,430	8,200	3,480
7	741	2,390	e900	e540	e800	e800	6,120	3,430	2,520	6,840	6,840	3,490
8	930	2,340	e1,300	e500	e750	e850	6,110	3,360	2,600	6,970	5,950	3,620
9	899	2,240	e1,450	e475	e700	e1,000	5,990	3,300	2,660	6,720	5,830	3,970
10	885	2,130	e1,450	e500	e670	e1,200	5,770	3,220	2,740	6,140	5,750	4,270
11	877	2,040	e1,400	e550	e660	e1,800	5,520	3,270	3,340	5,690	6,640	4,620
12	868	1,960	e1,350	e600	e650	e4,000	5,270	3,770	5,580	5,820	8,980	4,600
13	867	1,900	e1,300	e650	e670	e6,000	5,050	4,370	7,280	5,460	9,680	4,280
14	873	1,860	e1,200	e680	e650	e8,000	4,890	4,740	8,160	5,060	8,120	3,960
15	890	1,810	e1,100	e670	e630	e16,000	4,830	4,770	8,930	4,780	6,510	3,710
16	909	1,750	e1,120	e700	e620	e25,000	4,750	4,620	9,390	4,550	5,600	3,750
17	954	1,690	e1,150	e690	e600	30,300	4,650	4,420	9,230	4,360	5,030	4,430
18	954	1,640	e1,100	e670	e620	27,600	4,510	4,220	8,830	4,180	4,620	4,970
19	959	1,600	e1,050	e690	e650	21,100	4,350	4,020	8,530	4,010	4,300	4,980
20	976	1,560	e1,000	e710	e650	17,900	4,190	3,840	8,250	3,830	4,030	4,740
21	1,010	1,540	e980	e740	e630	16,800	4,050	3,670	8,020	3,640	3,880	4,590
22	1,090	1,530	e950	e760	e620	16,000	3,910	3,510	8,000	6,100	3,720	4,590
23	1,310	1,520	e900	e800	e600	14,700	3,790	3,370	12,500	9,900	3,520	6,960
24	1,610	1,530	e800	e770	e570	13,700	3,790	3,240	11,200	13,300	3,410	10,800
25	1,800	1,540	e750	e750	e600	12,900	4,050	3,180	10,000	12,000	3,410	15,300
26	1,870	1,550	e800	e720	e640	12,100	4,490	3,050	9,990	9,560	3,330	22,500
27	1,780	1,550	e790	e680	e690	11,300	4,640	2,960	10,200	7,720	3,140	35,600
28	1,690	1,530	e730	e650	e700	10,300	4,960	2,860	10,100	6,800	2,970	33,500
29	1,630	1,510	e670	e620	---	9,520	4,820	2,770	11,300	6,850	2,810	25,800
30	1,660	1,490	e630	e630	---	8,870	4,630	2,690	12,300	9,840	2,660	21,500
31	1,890	---	e600	e640	---	8,380	---	2,630	---	13,000	2,650	---
Total	33,205	56,750	32,080	19,625	18,320	300,460	157,210	113,070	207,780	218,890	202,200	261,160
Mean	1,071	1,892	1,035	633	654	9,692	5,240	3,647	6,926	7,061	6,523	8,705
Max	1,890	2,500	1,460	800	800	30,300	7,940	4,770	12,500	13,300	18,100	35,600
Min	421	1,490	600	475	570	710	3,790	2,630	2,520	3,640	2,650	2,720
Ac-ft	65,860	112,600	63,630	38,930	36,340	596,000	311,800	224,300	412,100	434,200	401,100	518,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	600	582	409	261	543	2,467	3,453	1,991	2,337	1,568	840	778
Max	4,039	3,022	1,987	1,761	2,399	9,692	20,690	9,499	15,820	21,740	6,523	8,705
(WY)	(1987)	(1980)	(1999)	(2006)	(1966)	(2010)	(1969)	(1993)	(1984)	(1993)	(2010)	(2010)
Min	32.9	47.9	32.1	6.68	12.1	124	139	73.3	100	50.7	45.2	36.4
(WY)	(1959)	(1959)	(1977)	(1977)	(1936)	(1931)	(1931)	(1934)	(1933)	(1931)	(1976)	(1976)

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

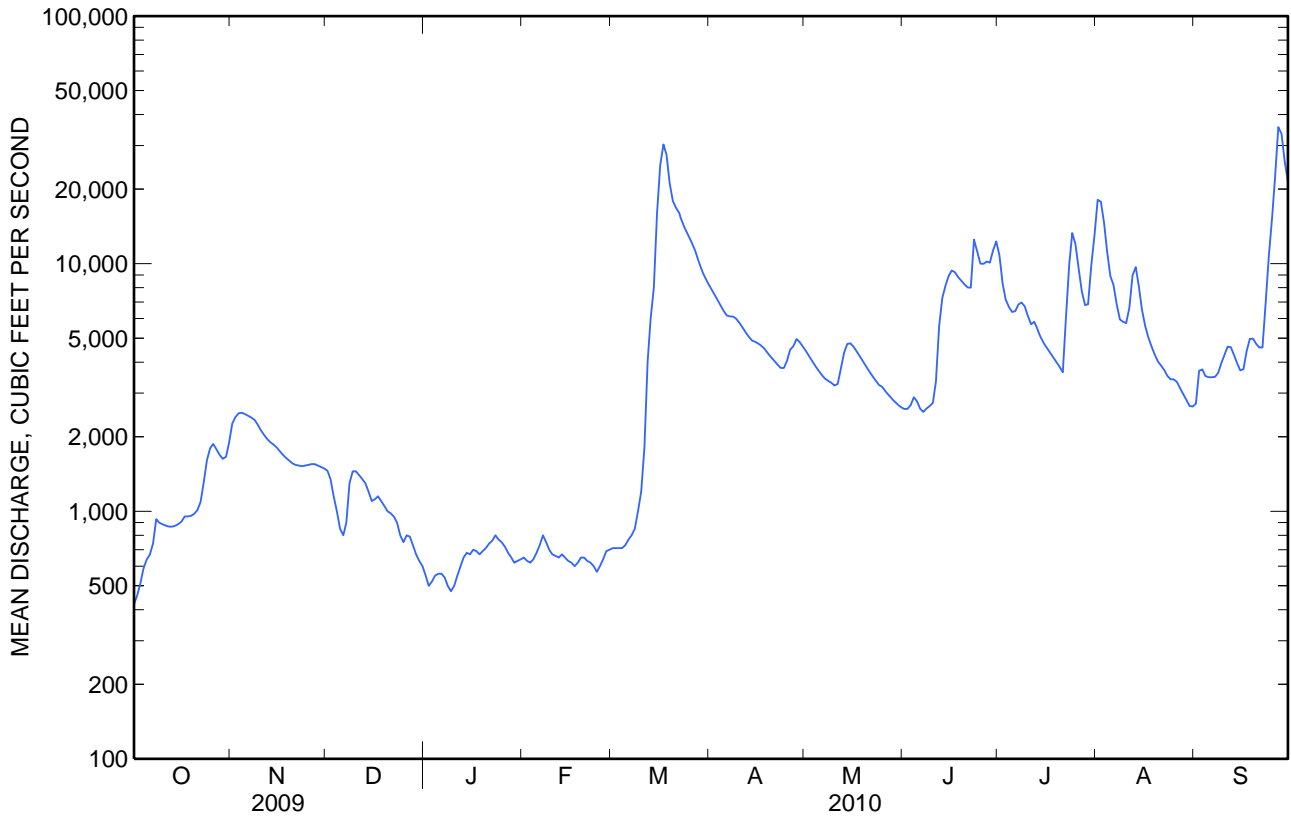
SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1929 - 2010	
Annual total	550,420		1,620,750			
Annual mean	1,508		4,440		^a 1,320	
Highest annual mean					6,271	1993
Lowest annual mean					120	1931
Highest daily mean	4,780	Mar 26	35,600	Sep 27	77,500	Apr 9, 1969
Lowest daily mean	400	Jan 16	421	Oct 1	4.0	Jan 17, 1977
Annual seven-day minimum	427	Sep 19	526	Jan 4	4.4	Jan 15, 1977
Maximum peak flow			38,300	Sep 27	^b 80,800	Apr 9, 1969
Maximum peak stage			22.88	Sep 27	^c 23.38	Apr 26, 2001
Annual runoff (ac-ft)	1,092,000		3,215,000		956,100	
10 percent exceeds	3,000		9,990		3,160	
50 percent exceeds	1,280		3,050		470	
90 percent exceeds	450		650		76	

^a Median of annual mean discharges, 1020 ft³/s.

^b Gage height, 22.99 ft.

^c Discharge, 40,400 ft³/s.



06485500 BIG SIOUX RIVER AT AKRON, IA—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--October 1966 to current year.

REMARKS.--Water-quality sampling discontinued at this site in October 2010.

WATER-QUALITY DATA**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**[ft³/s, cubic feet per second; °C, degrees Celsius; μS/cm, microsiemens per centimeter]

Date	Sample start time	Discharge, instanta- neous, ft³/s (00061)	Specific conduc- tance, water, unfiltered, μS/cm at 25 °C (00095)	Tempera- ture, air, °C (00020)	Tempera- ture, water, °C (00010)
10-07-2009	0702	723	909	5.0	8.0
01-04-2010	1405	555	1,160	0.0	0.0
02-10-2010	1257	667	1,400	-12.0	0.0
03-17-2010	1012	29,600	467	6.0	1.0
03-23-2010	1227	14,600	698	5.0	5.0
03-31-2010	0550	8,500	859	14.0	10.5
04-20-2010	0740	4,070	1,020	21.5	15.0
06-03-2010	0715	2,640	1,040	19.0	19.4
06-16-2010	0807	9,470	958	25.0	20.0
07-13-2010	0900	5,530	1,030	27.0	24.5
08-02-2010	0855	18,300	694	24.5	24.7
09-13-2010	1427	4,210	1,010	24.5	19.0
09-28-2010	0945	33,800	525	23.0	16.0

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)
10-26-2009	1130	734	1,850	10.9	91	7.8	1,020	5.8	84
11-30-2009	1130	729	1,480	12.5	95	8.3	1,100	1.9	E 20
01-13-2010	1215	726	E 650	9.6	69	7.5	1,220	.0	E 6.2
03-18-2010	1330	727	27,300	11.8	92	7.9	513	3.0	120
04-12-2010	1115	733	5,280	10.3	100	8.3	951	12.0	56
05-20-2010	1100	729	3,840	8.8	97	8.4	1,070	17.5	27
06-16-2010	1130	733	9,010	7.2	82	8.0	944	19.3	60
06-24-2010	1115	737	11,200	6.0	74	8.0	949	23.7	61
07-19-2010	1130	728	4,020	6.8	89	8.2	1,090	26.3	68
09-07-2010	1100	732	3,490	8.5	94	8.2	1,050	18.3	64

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Stream width, ft (00004)	Number of sampling points, count (00063)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Carbon (inorganic plus suspended sediment, total, mg/L (00694)	Carbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00452)	Chloride, water, filtered, mg/L (00940)	Inorganic carbon, suspended sediment, total, mg/L (00688)
10-26-2009	220	11	699	273	325	11.0	3.7	34.0	1.29
11-30-2009	210	10	771	305	366	1.97	2.8	33.7	E .07
01-13-2010	200	5	836	315	382	.52	1.2	44.6	< .06
03-18-2010	460	11	337	150	181	8.73	.8	15.8	.22
04-12-2010	240	12	660	258	308	6.38	3.3	23.4	E .09
05-20-2010	245	12	750	282	334	4.10	4.8	26.8	E .04
06-16-2010	250	10	669	239	286	5.72	2.6	21.5	.29
06-24-2010	250	10	665	247	295	6.89	3.1	19.2	.15
07-19-2010	240	12	789	299	353	7.20	5.4	23.7	.38
09-07-2010	245	10	768	254	303	7.15	2.9	24.1	.16

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	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)	Orthophos- phate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphoru s, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)
10-26-2009	17.9	224	.154	5.50	.068	.278	.96	.289	.618
11-30-2009	16.6	243	< .020	6.07	.007	.238	.20	.253	.321
01-13-2010	21.0	271	.151	7.43	.018	.467	.06	.463	.497
03-18-2010	12.9	70.7	.533	5.57	.081	.319	.78	.352	.690
04-12-2010	11.1	231	< .020	3.84	.009	.079	.71	.085	.314
05-20-2010	7.3	277	< .020	5.32	.015	.082	.50	.092	.243
06-16-2010	21.9	218	.037	8.21	.063	.212	.48	.228	.410
06-24-2010	24.5	239	.039	3.86	.043	.237	.91	.248	.407
07-19-2010	24.7	280	E .013	3.42	.010	.331	.67	.312	.550
09-07-2010	23.2	294	< .020	2.81	.006	.252	.85	.270	.546

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)	Esche- richia coli, Defined Substrate Technolog y, water, MPN/100 mL (50468)	Total coliform, Defined Substrate Technolog y, water, MPN/100 mL (50569)	Chloro- phyll a, phytoplank ton, Chromatog raphic- fluorometri c method, μg/L (70953)	Pheo- phytin a, phyto- plankton, μg/L (62360)	2,6- Diethyl- aniline, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82660)	2-Chloro-4- isopropyl- amino-6- amino-s- triazine, water, filtered, recover- able, μg/L (04040)	Acetochlor , water, filtered, recover- able, μg/L (49260)
10-26-2009	6.26	7.46	8,800	49,000	44.4	25.4	< .006	E .034	.033
11-30-2009	6.24	6.45	46	1,200	10.6	5.1	< .006	E .024	.015
01-13-2010	8.07	8.01	93	1,100	E .6	E 1.4	< .006	E .028	E .006
03-18-2010	6.70	7.31	150	2,100	E 2.4	5.6	< .006	E .057	.361
04-12-2010	4.10	4.88	4	340	52.2	11.5	< .006	E .041	.019
05-20-2010	5.96	6.32	17	220	50.5	11.2	< .006	E .052	.179
06-16-2010	8.69	9.53	790	17,000	--	--	< .006	E .348	.529
06-24-2010	4.65	5.39	14,000	57,000	51.6	11.9	< .006	E .326	.248
07-19-2010	4.04	4.56	180	19,000	22.6	11.3	< .006	E .126	.016
09-07-2010	3.35	4.38	200	13,000	64.2	17.3	< .006	E .065	.012

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Alachlor, water, filtered, recover- able, μg/L (46342)	alpha- HCH, water, filtered, recover- able, μg/L (34253)	Atrazine, water, filtered, recover- able, μg/L (39632)	Azinphos- methyl, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82686)	Benfluralin, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82673)	Butylate, water, filtered, recover- able, μg/L (04028)	Carbaryl, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82680)	Carbofuran, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82674)	Chlor- pyrifos, water, filtered, recover- able, μg/L (38933)
10-26-2009	< .008	< .004	.045	< .120	< .014	< .004	< .060	< .060	E .002
11-30-2009	< .008	< .004	.030	< .120	< .014	< .004	< .060	< .060	< .010
01-13-2010	< .008	< .004	.025	< .120	E .001	< .004	< .060	< .060	E .001
03-18-2010	< .008	< .004	.064	< .120	< .014	< .004	< .060	< .060	< .010
04-12-2010	< .008	< .004	.032	< .120	< .014	< .004	< .060	< .060	< .010
05-20-2010	< .008	< .004	.199	< .120	< .014	< .004	< .060	< .060	< .010
06-16-2010	.008	< .004	1.02	< .120	< .014	< .004	< .060	< .060	< .010
06-24-2010	E .006	< .004	.904	< .120	< .014	< .004	< .060	< .060	< .010
07-19-2010	< .008	< .004	.172	< .120	< .014	< .004	< .060	< .060	< .010
09-07-2010	< .008	< .004	.081	< .120	< .014	< .004	< .060	< .060	< .010

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	cis- Permeth- rin, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82687)	Cyanazine, water, filtered, recover- able, μg/L (04041)	DCPA, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82682)	Desulfinyl- fipronil amide, water, filtered, recover- able, μg/L (62169)	Desulfinyl- fipronil, water, filtered, recover- able, μg/L (62170)	Diazinon, water, filtered, recover- able, μg/L (39572)	Dieldrin, water, filtered, recover- able, μg/L (39381)	Disulfoton, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82677)	EPTC, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82668)	Ethal- fluralin, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82663)
10-26-2009	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	E .002	< .006
11-30-2009	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006
01-13-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	E .001	< .006
03-18-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006
04-12-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006
05-20-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	E .002	< .006
06-16-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	E .001	< .006
06-24-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006
07-19-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006
09-07-2010	< .014	< .022	< .008	< .029	< .012	< .005	< .009	< .04	< .002	< .006

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Ethoprop, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82672)	Fipronil sulfide, water, filtered, recover- able, µg/L (62167)	Fipronil sulfone, water, filtered, recover- able, µg/L (62168)	Fipronil, water, filtered, recover- able, µg/L (62166)	Fonofos, water, filtered, recover- able, µg/L (04095)	Lindane, water, filtered, recover- able, µg/L (39341)	Linuron, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82666)	Malathion, water, filtered, recover- able, µg/L (39532)	Methyl parathion, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82667)	Metola- chlor, water, filtered, recover- able, µg/L (39415)
	10-26-2009	< .016	< .013	< .024	E .004	< .004	< .004	< .060	< .016	< .008
11-30-2009	< .016	< .013	< .024	E .003	< .004	< .004	< .060	< .016	< .008	.022
01-13-2010	< .016	< .013	< .024	E .006	< .004	< .004	< .060	< .016	< .008	.016
03-18-2010	< .016	< .013	< .024	< .018	< .004	< .004	< .060	< .016	< .008	.464
04-12-2010	< .016	< .013	< .024	< .018	< .004	< .004	< .060	< .016	< .008	.044
05-20-2010	< .016	< .013	< .024	E .001	< .004	< .004	< .060	< .016	< .008	.050
06-16-2010	< .016	< .013	< .024	E .002	< .004	< .004	< .060	< .016	< .008	.598
06-24-2010	< .016	< .013	< .024	< .018	< .004	< .004	< .060	< .016	< .008	.315
07-19-2010	< .016	< .013	< .024	E .001	< .004	< .004	< .060	< .016	< .008	.045
09-07-2010	< .016	< .013	< .024	< .018	< .004	< .004	< .060	< .016	< .008	.028

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WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Metribuzin , water, filtered, recover- able, µg/L (82630)	Molinate, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82671)	Naprop- amide, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82684)	p,p'-DDE, water, filtered, recover- able, µg/L (34653)	Parathion, water, filtered, recover- able, µg/L (39542)	Pebulate, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82669)	Pendi- methalin, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82683)	Phorate, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82664)	Prometon, water, filtered, recover- able, µg/L (04037)	Propa- chlor, water, filtered, recover- able, µg/L (04024)
	10-26-2009	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.01
11-30-2009	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	E .01	< .006
01-13-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	E .01	< .006
03-18-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	< .01	< .006
04-12-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.02	< .006
05-20-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.01	< .006
06-16-2010	.013	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.02	< .006
06-24-2010	E .010	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.02	< .006
07-19-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	.01	< .006
09-07-2010	< .012	< .003	< .008	< .002	< .020	< .016	< .012	< .020	E .01	< .006

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Propanil, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82679)	Propargite, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82685)	Propyz- amide, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82676)	Simazine, water, filtered, recover- able, µg/L (04035)	Tebu- thiuron, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82670)	Terbacil, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82665)	Terbufos, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82675)	Thioben- carb, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82681)	Triallate, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82678)	Trifluralin, water, filtered (0.7 micron glass fiber filter), recover- able, µg/L (82661)
10-26-2009	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
11-30-2009	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
01-13-2010	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
03-18-2010	< .029	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
04-12-2010	< .010	< .02	< .004	E .003	< .03	< .024	< .02	< .016	< .006	< .018
05-20-2010	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
06-16-2010	< .010	< .02	< .004	.009	< .03	< .024	< .02	< .016	< .006	E .001
06-24-2010	< .010	< .02	< .004	.008	< .03	< .024	< .02	< .016	< .006	< .018
07-19-2010	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .006	< .018
09-07-2010	< .010	< .02	< .005	< .006	< .03	< .024	< .02	< .016	< .006	< .018

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO
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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Date	Organic carbon, suspended sediment, total, mg/L (00689)	Suspended sediment concentration, mg/L (80154)
10-26-2009	9.75	306
11-30-2009	1.90	189
01-13-2010	.51	138
03-18-2010	8.51	252
04-12-2010	6.29	262
05-20-2010	4.07	214
06-16-2010	5.42	191
06-24-2010	6.74	135
07-19-2010	6.83	305
09-07-2010	6.99	178

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 1 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)
10-20-2010	1200	729	4,570	10.3	98	8.5	1,070	11.1	27

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 2 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Stream width, ft (00004)	Number of sampling points, count (00063)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Carbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00452)	Chloride, water, filtered, mg/L (00940)	Inorganic carbon, suspended sediment, total, mg/L (00688)
10-20-2010	245	10	755	310	369	3.00	4.2	23.1	.07

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	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)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)
10-20-2010	17.3	251	< .010	6.04	.007	.142	.34	.134	.243

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 4 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)	Escherichia coli, Defined Substrate Technology, MPN/100 mL (50468)	Total coliform, Defined Substrate Technology, MPN/100 mL (50569)	Chlorophyll a, phytoplankton, chromatographic fluorometric method, μg/L (70953)	Pheophytin a, phytoplankton, μg/L (62360)	2,6-Diethyl-aniline, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82660)	2-Chloro-4-isopropyl-amino-6-triazine, water, filtered, recoverable, μg/L (04040)	Acetochlor, water, filtered, recoverable, μg/L (49260)
10-20-2010	6.47	6.83	140	4,300	20.6	E 4.5	< .006	E .045	.006

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 5 of 10

[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Alachlor, water, filtered, recover- able, μg/L (46342)	alpha- HCH, water, filtered, recover- able, μg/L (34253)	Atrazine, water, filtered, recover- able, μg/L (39632)	Azinphos- methyl, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82686)	Benfluralin, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82673)	Butylate, water, filtered, recover- able, μg/L (04028)	Carbaryl, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82680)	Carbofuran, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82674)	Chlor- pyrifos, water, filtered, recover- able, μg/L (38933)
10-20-2010	< .008	< .004	.062	< .120	< .014	< .004	< .060	< .060	< .004

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	cis- Permeth- rin, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82687)	Cyanazine, water, filtered, recover- able, μg/L (04041)	DCPA, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82682)	Desulfinyl- fipronil amide, water, filtered, recover- able, μg/L (62169)	Desulfinyl- fipronil, water, filtered, recover- able, μg/L (62170)	Diazinon, water, filtered, recover- able, μg/L (39572)	Dieldrin, water, filtered, recover- able, μg/L (39381)	Disulfoton, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82677)	EPTC, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82668)	Ethal- fluralin, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82663)
10-20-2010	< .010	< .022	< .008	< .029	< .012	< .006	< .008	< .04	< .006	< .006

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

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[% , percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Ethoprop, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82672)	Fipronil sulfide, water, filtered, recover- able, μg/L (62167)	Fipronil sulfone, water, filtered, recover- able, μg/L (62168)	Fipronil, water, filtered, recover- able, μg/L (62166)	Fonofos, water, filtered, recover- able, μg/L (04095)	Lindane, water, filtered, recover- able, μg/L (39341)	Linuron, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82666)	Malathion, water, filtered, recover- able, μg/L (39532)	Methyl parathion, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82667)	Metola- chlor, water, filtered, recover- able, μg/L (39415)
	10-20-2010	< .016	< .012	< .024	< .018	< .005	< .004	< .060	< .016	< .008

WATER-QUALITY DATA
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[% , percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Metribuzin , water, filtered, recover- able, μg/L (82630)	Molinate, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82671)	Naprop- amide, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82684)	p,p'-DDE, water, filtered, recover- able, μg/L (34653)	Parathion, water, filtered, recover- able, μg/L (39542)	Pebulate, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82669)	Pendi- methalin, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82683)	Phorate, water, filtered (0.7 micron glass fiber filter), recover- able, μg/L (82664)	Prometon, water, filtered, recover- able, μg/L (04037)	Propa- chlor, water, filtered, recover- able, μg/L (04024)
	10-20-2010	< .012	< .004	< .008	< .002	< .020	< .016	< .012	< .020	.01

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	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)	Propyzamide, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82676)	Simazine, water, filtered, recoverable, μg/L (04035)	Tebu-thiuron, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82670)	Terbacil, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82665)	Terbufos, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82675)	Thioben-carb, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82681)	Triallate, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82678)	Trifluralin, water, filtered (0.7 micron glass fiber filter), recoverable, μg/L (82661)
10-20-2010	< .010	< .02	< .004	< .006	< .03	< .024	< .02	< .016	< .005	< .018

**WATER-QUALITY DATA
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[%, percent; CaCO₃, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Organic carbon, suspended sediment, total, mg/L (00689)	Suspended sediment concentration, mg/L (80154)
10-20-2010	2.93	159