Water-Data Report 2008

# 05430500 ROCK RIVER AT AFTON, WI

Rock Basin
Upper Rock Subbasin

LOCATION.--Lat 42°36′33″, long 89°04′14″ referenced to North American Datum of 1927, in SE ¼ NE ¼ sec.28, T.2 N., R.12 E., Rock County, WI, Hydrologic Unit 07090001, on right bank in Afton, 0.3 mi downstream from highway bridge and 1.1 mi upstream from Bass Creek.

DRAINAGE AREA.--3,340 mi².

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge for January 1914 published in WSP 1308. Unpublished daily discharges for January and February 1914 in District files.

REVISED RECORDS.--WSP 1238: 1916(M), 1919(M), 1933, 1937-38, 1943. WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 742.36 ft above NGVD of 1929. Prior to Aug. 23, 1932, a nonrecording gage 20 ft upstream, and Aug. 23, 1932, to Sept. 30, 1933, water-stage recorder, at same site at datum 1 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair, and periods of discharge below 800 ft³/s, which are poor. Diurnal fluctuation caused by powerplants above station. Gage-height telemeter at station.

**05430500 ROCK RIVER AT AFTON, WI—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
**DAILY MEAN VALUES**

[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,210 | 2,150 | 1,360 | 2,770 | e4,200 | 3,280 | 8,690 | 9,430 | 2,780 | 13,000 | 4,630 | 1,360 |
| 2 | 2,230 | 2,120 | 1,540 | 2,630 | e4,200 | 3,320 | 8,680 | 9,300 | 2,660 | 12,500 | 4,330 | 1,270 |
| 3 | 2,170 | 2,080 | 1,600 | e2,900 | e4,100 | 3,760 | 8,690 | 9,060 | 2,750 | 12,300 | 4,000 | 1,280 |
| 4 | 2,210 | 2,070 | 1,580 | e2,800 | e4,000 | 3,850 | 8,780 | 8,860 | 2,740 | 11,800 | 3,850 | 1,460 |
| 5 | 2,190 | 1,960 | 1,610 | e2,800 | e4,000 | 3,870 | 8,740 | 8,630 | 3,320 | 11,500 | 3,760 | 1,590 |
| 6 | 2,180 | 1,860 | 1,800 | 2,760 | e3,800 | 3,900 | 8,680 | 8,420 | 3,640 | 11,100 | 3,530 | 1,580 |
| 7 | 2,160 | 1,890 | 1,770 | 3,010 | e3,800 | 4,010 | 8,490 | 8,190 | 3,570 | 10,700 | 3,460 | 1,600 |
| 8 | 2,130 | 1,800 | 1,740 | 3,460 | 3,730 | 4,130 | 8,470 | 8,080 | 4,640 | 10,900 | 3,330 | 1,600 |
| 9 | 2,070 | 1,790 | 1,730 | 4,000 | 3,510 | 4,200 | 8,860 | 7,820 | 7,120 | 10,400 | 3,110 | 1,760 |
| 10 | 2,080 | 1,710 | 1,700 | 4,440 | 3,010 | 4,230 | 9,070 | 7,520 | 8,460 | 10,100 | 2,910 | 1,770 |
| 11 | 2,290 | 1,700 | 1,770 | 4,890 | e3,300 | 4,210 | 9,790 | 7,510 | 8,920 | 10,700 | 2,790 | 1,710 |
| 12 | 2,180 | 1,700 | 1,790 | 5,250 | e3,300 | 4,300 | 9,960 | 7,180 | 10,000 | 11,500 | 2,650 | 1,670 |
| 13 | 1,980 | 1,660 | 1,780 | 5,510 | e3,300 | 4,510 | 10,000 | 6,780 | 12,100 | 11,400 | 2,610 | 1,980 |
| 14 | 1,790 | 1,600 | 1,780 | 5,710 | e3,300 | 4,960 | 10,100 | 6,460 | 13,400 | 10,900 | 2,520 | 2,090 |
| 15 | 1,880 | 1,520 | 1,770 | 5,760 | e3,300 | 5,350 | 9,980 | 6,320 | 13,900 | 10,600 | 2,460 | 2,300 |
| 16 | 2,000 | 1,610 | 1,790 | 5,660 | e3,200 | 5,480 | 9,870 | 6,060 | 14,500 | 10,300 | 2,330 | 2,790 |
| 17 | 2,290 | 1,600 | 1,760 | 5,680 | 3,370 | 5,650 | 9,940 | 5,750 | 15,100 | 10,100 | 2,290 | 2,660 |
| 18 | 2,300 | 1,610 | 1,770 | e5,500 | 3,440 | 6,080 | 10,000 | 5,550 | 15,600 | 9,780 | 1,790 | 2,400 |
| 19 | 2,100 | 1,560 | 1,780 | e5,400 | e3,200 | 6,370 | 10,000 | 5,250 | 15,900 | 9,500 | 1,760 | 1,980 |
| 20 | 2,120 | 1,560 | 1,790 | e5,100 | e3,400 | 6,660 | 9,860 | 4,990 | 16,300 | 9,220 | 1,760 | 2,300 |
| 21 | 2,190 | 1,610 | 1,800 | e5,000 | e3,500 | 6,940 | 9,640 | 4,690 | 16,500 | 8,810 | 1,690 | 2,540 |
| 22 | 2,260 | 1,620 | 1,820 | e5,000 | e3,500 | 7,120 | 9,480 | 4,430 | 16,500 | 8,460 | 1,650 | 1,840 |
| 23 | 2,330 | 1,520 | 2,030 | e4,900 | 3,530 | 7,240 | 9,270 | 4,260 | 16,300 | 8,040 | 1,660 | 1,420 |
| 24 | 2,330 | 1,470 | 1,900 | e4,600 | 3,450 | 7,370 | 9,070 | 3,950 | 16,000 | 7,600 | 1,690 | 1,460 |
| 25 | 2,330 | 1,460 | 2,230 | e4,400 | 3,480 | 7,490 | 9,220 | 3,610 | 15,600 | 7,170 | 1,670 | 1,610 |
| 26 | 2,330 | 1,490 | 2,530 | e4,500 | 3,460 | 7,600 | 9,700 | 3,530 | 15,100 | 6,770 | 1,690 | 1,540 |
| 27 | 2,300 | 1,520 | 2,510 | e4,500 | 3,400 | 7,910 | 9,550 | 3,460 | 14,600 | 6,360 | 1,660 | 1,550 |
| 28 | 2,320 | 1,530 | 2,600 | e4,400 | 3,340 | 8,040 | 9,610 | 3,250 | 14,000 | 6,010 | 1,310 | 1,630 |
| 29 | 2,170 | 1,440 | 2,690 | e4,300 | 3,340 | 8,100 | 9,640 | 3,020 | 13,700 | 5,700 | 1,330 | 1,660 |
| 30 | 2,260 | 1,460 | 2,760 | e3,800 | --- | 8,160 | 9,510 | 3,110 | 13,400 | 5,290 | 1,400 | 1,560 |
| 31 | 2,190 | --- | 2,800 | e4,100 | --- | 8,420 | --- | 2,940 | --- | 5,010 | 1,360 | --- |
| **Total** | 67,570 | 50,670 | 59,880 | 135,530 | 102,460 | 176,510 | 281,340 | 187,410 | 329,100 | 293,520 | 76,980 | 53,960 |
| **Mean** | 2,180 | 1,689 | 1,932 | 4,372 | 3,533 | 5,694 | 9,378 | 6,045 | 10,970 | 9,468 | 2,483 | 1,799 |
| **Max** | 2,330 | 2,150 | 2,800 | 5,760 | 4,200 | 8,420 | 10,100 | 9,430 | 16,500 | 13,000 | 4,630 | 2,790 |
| **Min** | 1,790 | 1,440 | 1,360 | 2,630 | 3,010 | 3,280 | 8,470 | 2,940 | 2,660 | 5,010 | 1,310 | 1,270 |
| **Cfsm** | 0.65 | 0.51 | 0.58 | 1.31 | 1.06 | 1.70 | 2.81 | 1.81 | 3.28 | 2.83 | 0.74 | 0.54 |
| **In.** | 0.75 | 0.56 | 0.67 | 1.51 | 1.14 | 1.97 | 3.13 | 2.09 | 3.67 | 3.27 | 0.86 | 0.60 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2008, BY WATER YEAR (WY)**

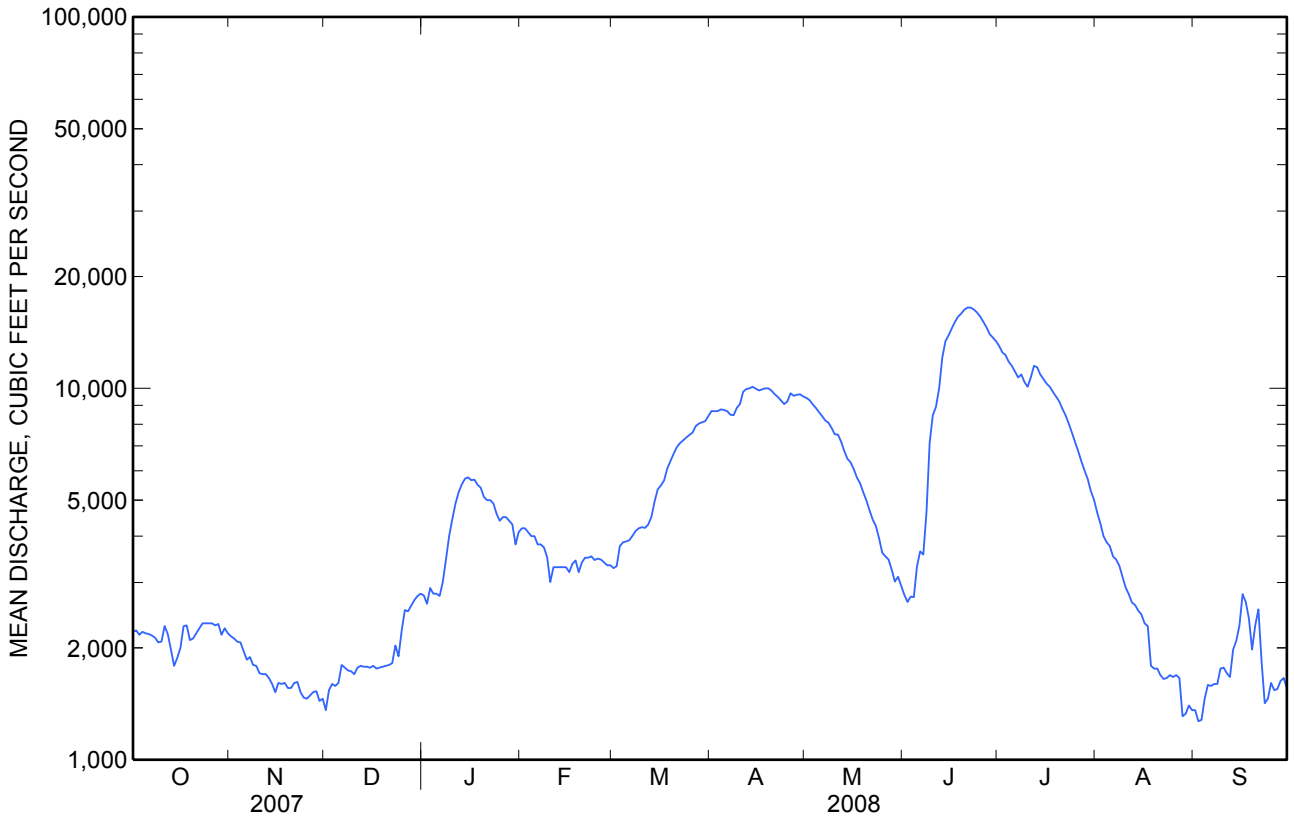
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean** | 1,407 | 1,595 | 1,502 | 1,365 | 1,592 | 3,350 | 4,146 | 2,665 | 2,016 | 1,547 | 1,179 | 1,241 |
| **Max** | 8,219 | 5,884 | 4,395 | 4,372 | 5,647 | 8,958 | 10,010 | 7,911 | 10,970 | 9,468 | 5,376 | 5,088 |
| **(WY)** | (1987) | (1986) | (1986) | (2008) | (1938) | (1918) | (1979) | (1973) | (2008) | (2008) | (1924) | (1938) |
| **Min** | 254 | 397 | 383 | 275 | 327 | 610 | 1,002 | 389 | 314 | 247 | 183 | 212 |
| **(WY)** | (1940) | (1964) | (1940) | (1959) | (1959) | (1940) | (1931) | (1958) | (1934) | (1934) | (1934) | (1939) |

**05430500 ROCK RIVER AT AFTON, WI—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2007 | | Water Year 2008 | | Water Years 1914 - 2008 | |
|---|---|---|---|---|---|---|
| **Annual total** | 1,065,303 | | 1,814,930 | | | |
| **Annual mean** | 2,919 | | 4,959 | | 1,971 | |
| **Highest annual mean** | | | | | 4,959 | 2008 |
| **Lowest annual mean** | | | | | 557 | 1964 |
| **Highest daily mean** | 8,350 | Aug 30 | 16,500 | Jun 21[a] | 16,500 | Jun 21, 2008[a] |
| **Lowest daily mean** | 449 | Jul 23 | 1,270 | Sep 2 | 42 | Aug 25, 1934 |
| **Annual seven-day minimum** | 530 | Jul 20 | 1,330 | Aug 28 | 115 | Aug 24, 1934 |
| **Maximum peak flow** | | | 16,700 | Jun 21 | 16,700 | Jun 21, 2008 |
| **Maximum peak stage** | | | 13.51 | Jun 21 | 13.51 | Jun 21, 2008 |
| **Annual runoff (cfsm)** | 0.874 | | 1.48 | | 0.590 | |
| **Annual runoff (inches)** | 11.87 | | 20.21 | | 8.02 | |
| **10 percent exceeds** | 6,630 | | 10,000 | | 4,140 | |
| **50 percent exceeds** | 2,160 | | 3,470 | | 1,400 | |
| **90 percent exceeds** | 1,050 | | 1,610 | | 491 | |

[a] Also occurred June 22.



**05430500 ROCK RIVER AT AFTON, WI—Continued**

**WATER-QUALITY RECORDS**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 1 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | Time | Instantaneous discharge, ft3/s (00061) | Dissolved oxygen, mg/L (00300) | pH, water, unfltrd field, std units (00400) | Specific conductance, wat unf µS/cm 25 degC (00095) | Temperature, water, deg C (00010) | Ammonia water, fltrd, mg/L as N (00608) | Nitrate + nitrite water fltrd, mg/L as N (00631) | Nitrite water, fltrd, mg/L as N (00613) | Total nitrogen, wat unf by analysis, mg/L (62855) | Orthophosphate, water, fltrd, mg/L as P (00671) | Phosphorus, water, unfltrd mg/L as P (00665) | 1-Methylnaphthalene, water, unfltrd µg/L (81696) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jun** | | | | | | | | | | | | | |
| **14...** | 2010 | 13,700 | 5.0 | 7.8 | 410 | 21.5 | .171 | 1.84 | .093 | 3.08 | .131 | .248 | <.2 |
| **19...** | 1230 | 16,000 | 8.6 | 7.7 | 370 | 21.7 | E.010 | 1.25 | .067 | 2.40 | .160 | .287 | <.2 |
| **Jul** | | | | | | | | | | | | | |
| **08...** | 1345 | 10,900 | 6.8 | 7.9 | 493 | 23.8 | .133 | .54 | .049 | 1.65 | .290 | .36 | <.2 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 2 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | 2,6-Dimethylnaphthalene, water, unfltrd µg/L (62805) | 2-Methylnaphthalene, water, unfltrd µg/L (30194) | 3,4-Dichlorophenyl isocyanate wat unf µg/L (63145) | 3-beta-Coprostanol, water, unfltrd µg/L (62806) | 3-Methyl-1H-indole, water, unfltrd µg/L (62807) | 3-tert-Butyl-4-hydroxyanisole wat unf µg/L (61702) | 4-Cumylphenol, water, unfltrd µg/L (62808) | 4-n-Octylphenol, water, unfltrd µg/L (62809) | 4-Nonylphenol, all isomers wat unf µg/L (62829) | 4-Nonylphenol diethoxylate, wat unf µg/L (61703) | 4-Nonylphenol monoethoxylate, wat unf µg/L (61704) | 4t-Octylphenol diethoxylate, wat flt µg/L (61705) | 4t-Octylphenol monoethoxylate, wat flt µg/L (61706) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jun** | | | | | | | | | | | | | |
| **14...** | <.2 | <.2 | <2.0 | <.8 | <.2 | <.2 | <.2 | <.2 | <2 | <3 | <2.0 | <.32 | <1 |
| **19...** | <.2 | <.2 | -- | <.8 | <.2 | <.2 | <.2 | <.2 | <2 | <3 | <2.0 | M | <1 |
| **Jul** | | | | | | | | | | | | | |
| **08...** | M | <.2 | E.05 | <.8 | M | <.2 | <.2 | <.2 | <2 | <3 | <2.0 | <.32 | <1 |

**05430500 ROCK RIVER AT AFTON, WI—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 3 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | 4-tert-Octylphenol, water, unfltrd µg/L (62810) | 5-Methyl-1H-benzotriazole, wat unf µg/L (61944) | Acetophenone water, unfltrd µg/L (62811) | AHTN, water, unfltrd µg/L (62812) | Anthracene, water, unfltrd µg/L (34220) | 9,10-Anthraquinone water, unfltrd µg/L (62813) | Atrazine, water, unfltrd µg/L (39630) | BDE congenr 47, water, unfltrd µg/L (63147) | Benzo[a]pyrene, water, unfltrd µg/L (34247) | Benzophenone water, unfltrd µg/L (62814) | beta-Sitosterol, water, unfltrd µg/L (62815) | beta-Stigmastanol, water, unfltrd µg/L (61948) | Bis(2-ethylhexyl) phthalate, wat unf µg/L (39100) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jun | | | | | | | | | | | | | |
| 14... | <.2 | <2 | <.3 | <.2 | <.2 | <.2 | 2.7 | <.2 | <.2 | <.2 | <2 | <2 | <2 |
| 19... | <.2 | <2 | <.3 | <.2 | <.2 | <.2 | 3.2 | <.2 | <.2 | <.2 | <.8 | <.8 | <2 |
| Jul | | | | | | | | | | | | | |
| 08... | <.2 | <2 | <.3 | <.2 | <.2 | <.2 | 1.5 | <.2 | <.2 | <.2 | M | <.8 | <2 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 4 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | Bisphenol A, water, unfltrd µg/L (62816) | Bisphenol A -d3, surrog, water, unfltrd % recvy (62839) | Bromacil, water, unfltrd µg/L (30234) | Caffeine, water, unfltrd µg/L (81436) | Caffeine -13C, surrog, water, unfltrd % recvy (62840) | Camphor water, unfltrd µg/L (62817) | Carbaryl, water, unfltrd µg/L (39750) | Carbazole, water, unfltrd µg/L (77571) | Chlorpyrifos water, unfltrd µg/L (38932) | Cholesterol, water, unfltrd µg/L (62818) | Cotinine, water, unfltrd µg/L (61945) | Decafluorobiphenyl, surrog, wat unf % recvy (62841) | DEET, water, unfltrd µg/L (61947) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jun | | | | | | | | | | | | | |
| 14... | <.4 | 79.2 | <.2 | <.2 | 76.1 | <.2 | <.2 | <.2 | <.2 | E2 | <.8 | 56.1 | <.2 |
| 19... | <.4 | 61.1 | <.2 | <.2 | 70.1 | <.2 | <.2 | <.2 | <.2 | E1 | <.8 | 56.8 | <.2 |
| Jul | | | | | | | | | | | | | |
| 08... | <.4 | 69.1 | <.2 | <.2 | 77.8 | M | <.2 | <.2 | <.2 | E2 | <.8 | 56.1 | <.2 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 5 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | Diazinon, water, unfltrd µg/L (39570) | Dichlorvos, water, unfltrd µg/L (30218) | Diethyl phthalate, water, unfltrd µg/L (34336) | D-Limonene, water, unfltrd µg/L (62819) | Fluoranthene water, unfltrd µg/L (34376) | Fluoranthene -d10, surrog, water, unflt % recvy (62842) | HHCB, water, unfltrd µg/L (62823) | Indole, water, unfltrd µg/L (62824) | Isoborneol, water, unfltrd µg/L (62825) | Isophorone water, unfltrd µg/L (34408) | Isoquinoline, water, unfltrd µg/L (62826) | Menthol water, unfltrd µg/L (62827) | Metalaxyl, water, unfltrd µg/L (04254) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jun | | | | | | | | | | | | | |
| 14... | <.2 | <.2 | <.2 | <.2 | <.2 | 72.1 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 |
| 19... | <.2 | <.2 | <.2 | <.2 | <.2 | 69.6 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 |
| Jul | | | | | | | | | | | | | |
| 08... | <.2 | <.2 | <.3 | <.2 | <.2 | 77.7 | <.2 | M | <.2 | M | <.2 | <.2 | <.2 |

**05430500 ROCK RIVER AT AFTON, WI—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 6 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | Methyl salicylate, water, unfltrd µg/L (62828) | Metolachlor, water, unfltrd µg/L (82612) | p-Cresol, water, unfltrd µg/L (77146) | Pentachlorophenol, water, unfltrd µg/L (39032) | Phenanthrene, water, unfltrd µg/L (34461) | Phenol, water, unfltrd µg/L (34694) | Prometon, water, unfltrd µg/L (39056) | Pyrene, water, unfltrd µg/L (34469) | Tributyl phosphate, water, unfltrd µg/L (62832) | Triclosan, water, unfltrd µg/L (61708) | Triethyl citrate water, unfltrd µg/L (62833) | Triphenyl phosphate, water, unfltrd µg/L (62834) | Tris(2-butoxyethyl) phosphate, wat unf µg/L (62830) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jun** | | | | | | | | | | | | | |
| **14...** | <.2 | 2.5 | <.2 | <.8 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 |
| **19...** | <.2 | 2.4 | <.2 | <.8 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 |
| **Jul** | | | | | | | | | | | | | |
| **08...** | <.2 | 1.0 | <.2 | <.8 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**
Part 7 of 7
[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

| Date | Tris(2-chloroethyl) phosphate, wat unf µg/L (62831) | Tris-(diCl-i-Pr) phosphate, wat unf µg/L (61707) | 1,4-Dichlorobenzene water, unfltrd µg/L (34571) | Tribromomethane water, unfltrd µg/L (32104) | Isopropylbenzene water, unfltrd µg/L (77223) | Naphthalene, water, unfltrd µg/L (34696) | Tetrachloroethene, water, unfltrd µg/L (34475) | Sampling method, code (82398) |
|---|---|---|---|---|---|---|---|---|
| **Jun** | | | | | | | | |
| **14...** | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | <.4 | -- |
| **19...** | M | M | <.2 | <.2 | <.2 | <.2 | <.4 | 70 |
| **Jul** | | | | | | | | |
| **08...** | <.2 | <.2 | <.2 | <.2 | <.2 | <.2 | M | 70 |