Water-Data Report 2012

# 05464420 Cedar River at Blairs Ferry Road at Palo, IA

Iowa Basin
Middle Cedar Subbasin

LOCATION.--Lat 42°04′09″, long 91°47′06″ referenced to North American Datum of 1927, in SE ¼ SE ¼ SW ¼ sec.21, T.84 N., R.8 W., Linn County, IA, Hydrologic Unit 07080205, on right bank 5 ft downstream from bridge on Blairs Ferry Road in Palo, 0.6 mi downstream from Bear Creek, 800 ft upstream from Dry Creek, and 100 mi upstream from mouth.

DRAINAGE AREA.--6,342 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge records from March 2009 to current year.

GAGE.--Water-stage recorder. Datum of gage is 725.71 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.



Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 05464420, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/05464420.2012.pdf

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

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

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,300 | 1,070 | 1,190 | 1,590 | e1,600 | e1,870 | 2,770 | 4,170 | 3,400 | 1,770 | 703 | 585 |
| 2 | 1,280 | 1,080 | 1,180 | e1,570 | e1,740 | 2,360 | 2,630 | 4,190 | 3,270 | 1,690 | 695 | 549 |
| 3 | 1,230 | 1,250 | 1,250 | e1,250 | e1,820 | 2,820 | 2,490 | 4,540 | 3,230 | 1,610 | 675 | 546 |
| 4 | 1,210 | 1,360 | 1,530 | e1,220 | e1,890 | 4,080 | 2,420 | 5,470 | 3,150 | 1,540 | 689 | 580 |
| 5 | 1,250 | 1,290 | 2,070 | e1,560 | e1,940 | 4,140 | 2,310 | 6,460 | 3,060 | 1,450 | 736 | 610 |
| 6 | 1,250 | 1,200 | 2,090 | e1,740 | e1,930 | 3,620 | 2,220 | 6,830 | 2,920 | 1,400 | 743 | 686 |
| 7 | 1,190 | 1,170 | 1,930 | e1,680 | e1,860 | 3,170 | 2,140 | 6,800 | 2,800 | 1,330 | 676 | 705 |
| 8 | 1,150 | 1,160 | 1,740 | 1,420 | e1,650 | 3,120 | 2,090 | 8,000 | 2,680 | 1,260 | 679 | 625 |
| 9 | 1,130 | 1,400 | 1,590 | 1,350 | e1,520 | 3,110 | 2,030 | 9,380 | 2,570 | 1,190 | 691 | 619 |
| 10 | 1,120 | 1,870 | e1,370 | 1,290 | e1,470 | 2,990 | 1,970 | 9,600 | 2,460 | 1,140 | 667 | 573 |
| 11 | 1,120 | 2,180 | e1,270 | 1,270 | e1,330 | 2,840 | 1,910 | 8,750 | 2,360 | 1,090 | 693 | 591 |
| 12 | 1,180 | 2,160 | e1,660 | e973 | e875 | 2,800 | 1,870 | 7,480 | 2,440 | 1,050 | 707 | 561 |
| 13 | 1,250 | 1,990 | e1,870 | e509 | e790 | 2,800 | 1,860 | 6,700 | 2,320 | 1,120 | 705 | 563 |
| 14 | 1,330 | 1,800 | e1,890 | e451 | e1,220 | 2,750 | 1,880 | 6,010 | 2,250 | 1,110 | 739 | 591 |
| 15 | 1,330 | 1,670 | 2,030 | e509 | e1,390 | 2,760 | 2,890 | 5,370 | 2,140 | 1,090 | 736 | 612 |
| 16 | 1,300 | 1,580 | 2,090 | e968 | e1,460 | 2,780 | 4,350 | 4,940 | 2,100 | 1,040 | 747 | 588 |
| 17 | 1,310 | 1,500 | 2,020 | e1,490 | e1,420 | 2,720 | 4,380 | 4,650 | 2,060 | 997 | 742 | 585 |
| 18 | 1,290 | 1,450 | 1,900 | e1,540 | e1,350 | 2,750 | 3,950 | 4,320 | 1,960 | 964 | 713 | 595 |
| 19 | 1,250 | 1,400 | 1,850 | e1,200 | e1,290 | 2,630 | 3,800 | 4,030 | 1,920 | 945 | 673 | 582 |
| 20 | 1,190 | 1,390 | 1,790 | e1,600 | e1,280 | 2,640 | 3,810 | 3,740 | 1,910 | e883 | 649 | 575 |
| 21 | 1,120 | 1,360 | 1,710 | e1,520 | e1,320 | 2,620 | 4,500 | 3,520 | 1,930 | e851 | 635 | 569 |
| 22 | 1,070 | 1,320 | 1,670 | e1,330 | e1,360 | 2,630 | 5,630 | 3,340 | 1,980 | e845 | 632 | 570 |
| 23 | 1,100 | 1,310 | 1,600 | e1,290 | e1,390 | 2,760 | 6,560 | 3,200 | 1,890 | e822 | 616 | 585 |
| 24 | 1,120 | 1,290 | 1,520 | e1,270 | e1,400 | 2,620 | 6,420 | 3,090 | 2,040 | 800 | 611 | 550 |
| 25 | 1,160 | 1,260 | 1,380 | e1,320 | e1,330 | 2,650 | 5,970 | 3,030 | 2,160 | 799 | 588 | 553 |
| 26 | 1,120 | 1,270 | 1,330 | e1,370 | e1,310 | 2,630 | 5,420 | 3,050 | 2,350 | 802 | 685 | 549 |
| 27 | 1,080 | 1,280 | 1,370 | e1,380 | e1,290 | 2,690 | 4,950 | 3,200 | 2,320 | 952 | 666 | 543 |
| 28 | 1,070 | 1,270 | 1,380 | e1,340 | e1,350 | 2,450 | 4,660 | 3,300 | 2,180 | 835 | 627 | 542 |
| 29 | 1,030 | 1,230 | 1,370 | e1,330 | e1,510 | 2,270 | 4,480 | 3,460 | 2,120 | 776 | 615 | 538 |
| 30 | 1,050 | 1,220 | 1,400 | e1,340 | --- | 2,540 | 4,310 | 3,400 | 1,950 | 732 | 594 | 533 |
| 31 | 1,060 | --- | 1,490 | e1,450 | --- | 2,780 | --- | 3,360 | --- | 718 | 586 | --- |
| Total | 36,640 | 42,780 | 50,530 | 40,120 | 42,085 | 87,390 | 106,670 | 157,380 | 71,920 | 33,601 | 20,913 | 17,453 |
| Mean | 1,182 | 1,426 | 1,630 | 1,294 | 1,451 | 2,819 | 3,556 | 5,077 | 2,397 | 1,084 | 675 | 582 |
| Max | 1,330 | 2,180 | 2,090 | 1,740 | 1,940 | 4,140 | 6,560 | 9,600 | 3,400 | 1,770 | 747 | 705 |
| Min | 1,030 | 1,070 | 1,180 | 451 | 790 | 1,870 | 1,860 | 3,030 | 1,890 | 718 | 586 | 533 |
| Ac-ft | 72,680 | 84,850 | 100,200 | 79,580 | 83,480 | 173,300 | 211,600 | 312,200 | 142,700 | 66,650 | 41,480 | 34,620 |
| Cfsm | 0.19 | 0.22 | 0.26 | 0.20 | 0.23 | 0.44 | 0.56 | 0.80 | 0.38 | 0.17 | 0.11 | 0.09 |
| In. | 0.21 | 0.25 | 0.30 | 0.24 | 0.25 | 0.51 | 0.63 | 0.92 | 0.42 | 0.20 | 0.12 | 0.10 |

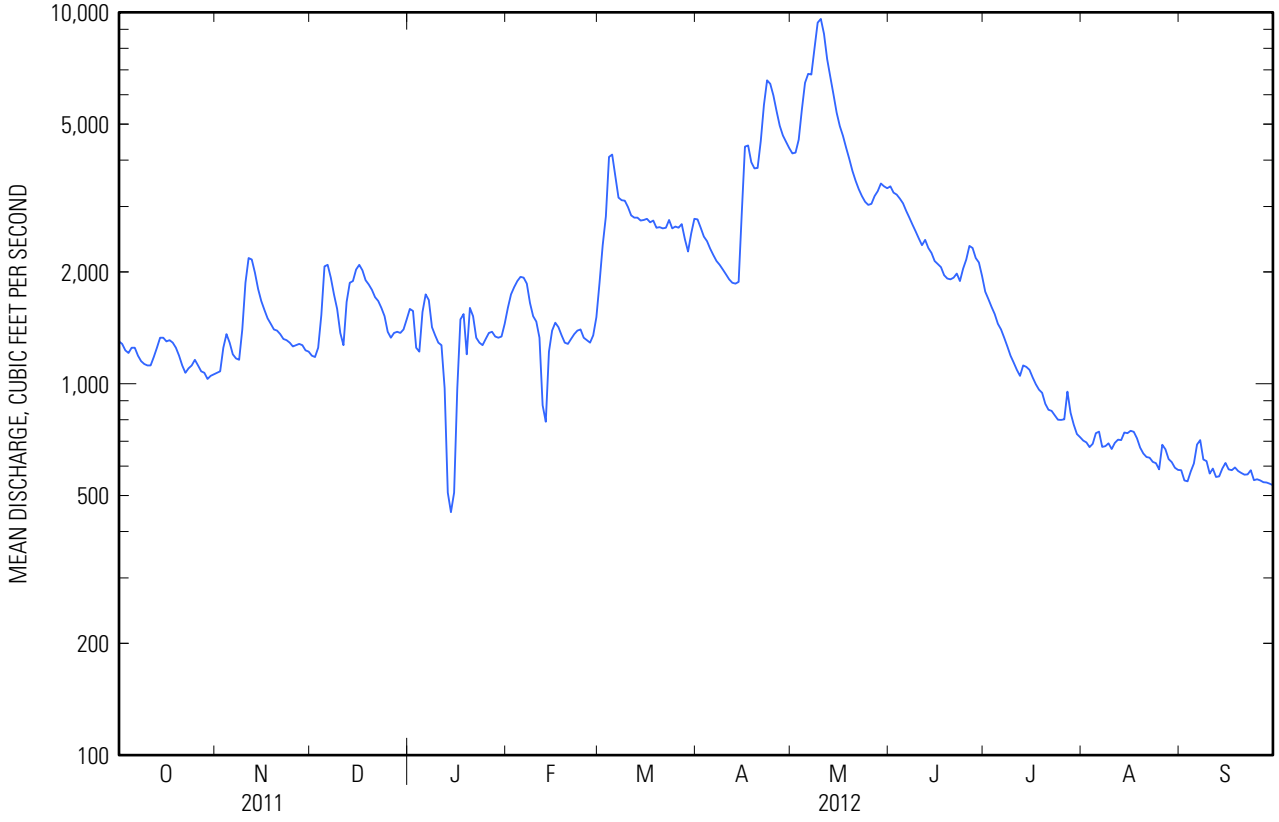
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2009 - 2012, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 4,269 | 4,878 | 2,818 | 2,684 | 3,519 | 11,230 | 7,095 | 8,937 | 9,263 | 7,787 | 4,126 | 2,414 |
| Max | 6,639 | 9,617 | 3,975 | 3,717 | 6,397 | 19,360 | 9,920 | 10,710 | 13,690 | 15,740 | 8,022 | 5,063 |
| (WY) | (2010) | (2010) | (2010) | (2010) | (2011) | (2010) | (2011) | (2009) | (2010) | (2010) | (2010) | (2010) |
| Min | 1,182 | 1,426 | 1,630 | 1,294 | 1,451 | 2,819 | 3,556 | 5,077 | 2,397 | 1,084 | 675 | 582 |
| (WY) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) | (2012) |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2011 | | Water Year 2012 | | Water Years 2009 - 2012 | |
|---|---|---|---|---|---|---|
| **Annual total** | 2,014,120 | | 707,482 | | | |
| **Annual mean** | 5,518 | | 1,933 | | 5,674 | |
| **Highest annual mean** | | | | | 8,975 | 2010 |
| **Lowest annual mean** | | | | | 1,933 | 2012 |
| **Highest daily mean** | 28,900 | Mar 28 | 9,600 | May 10 | 49,000 | Mar 17, 2010 |
| **Lowest daily mean** | 1,030 | Oct 29 | 451 | Jan 14 | 451 | Jan 14, 2012 |
| **Annual seven-day minimum** | 1,060 | Oct 27 | 544 | Sep 24 | 544 | Sep 24, 2012 |
| **Maximum peak flow** | | | 9,760 | May 10 | 49,400 | Mar 17, 2010 |
| **Maximum peak stage** | | | 7.60 | May 10 | 14.18 | Mar 17, 2010 |
| **Annual runoff (ac-ft)** | 3,995,000 | | 1,403,000 | | 4,110,000 | |
| **Annual runoff (cfsm)** | 0.870 | | 0.305 | | 0.895 | |
| **Annual runoff (inches)** | 11.81 | | 4.15 | | 12.16 | |
| **10 percent exceeds** | 11,900 | | 3,760 | | 12,500 | |
| **50 percent exceeds** | 3,080 | | 1,400 | | 3,420 | |
| **90 percent exceeds** | 1,270 | | 623 | | 1,180 | |



**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1992, 2001-2002, 2004, 2011-2012. Period of record includes water-quality data published in USGS annual reports and various project reports.

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

Part 1 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Barometric pressure, mm Hg (00025) | Discharge, instanta-neous, $ft^3/s$ (00061) | Dissolved oxygen, water, unfiltered, mg/L (00300) | Dissolved oxygen, water, unfiltered, % saturation (00301) | pH, water, unfiltered, field, standard units (00400) | pH, water, unfiltered, laboratory, standard units (00403) | Specific conduc-tance, water, unfiltered, laboratory, µS/cm at 25°C (90095) | Specific conduc-tance, water, unfiltered, µS/cm at 25°C (00095) | Tempera-ture, water, °C (00010) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 749 | 551 | 17.3 | 180 | 9.6 | 9.0 | 477 | 382 | 16.4 |

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

Part 2 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676) | Gage height, ft (00065) | Stream width, ft (00004) | alpha-HCH-d6, surrogate, water, filtered (0.7 micron glass fiber filter), percent recovery (91065) | Diazinon-d10, surrogate, water, filtered (0.7 micron glass fiber filter), percent recovery (91063) | Dissolved solids dried at 180°C, water, filtered, mg/L (70300) | Dissolved solids, water, filtered, sum of constit-uents, mg/L (70301) | Hardness, water, mg/L as $CaCO_3$ (00900) | Non-carbonate hardness, water, filtered, field, mg/L as $CaCO_3$ (00904) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 25 | 1.33 | 245 | 100 | 107 | 235 | 210 | 151 | 48 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 3 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Suspended solids, water, unfiltered, mg/L (00530) | Calcium, water, filtered, mg/L (00915) | Magne-sium, water, filtered, mg/L (00925) | Potassium, water, filtered, mg/L (00935) | Sodium adsorption ratio, water, number (00931) | Sodium fraction of cations, water, percent in equiva-lents of major cations (00932) | Sodium, water, filtered, mg/L (00930) | 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) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 63 | 23.5 | 22.3 | 2.82 | 0.77 | 23 | 21.7 | 103 | 107 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 4 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | 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) | Fluoride, water, filtered, mg/L (00950) | Inorganic carbon, suspended sediment, total, mg/L (00688) | Silica, water, filtered, mg/L as $SiO_2$ (00955) | Sulfate, water, filtered, mg/L (00945) | Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623) | Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 14.3 | 9.0 | 36.4 | 0.19 | < .03 | 0.038 | 40.5 | 0.37 | 2.9 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 5 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-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) | Organic nitrogen, water, unfiltered, mg/L (00605) | 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) | Escherichia coli, Defined Substrate Technology, water, MPN/100 mL (50468) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .010 | 0.127 | 0.011 | < 2.9 | 0.007 | 2.09 | 0.031 | 0.394 | 8 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 6 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Total coliform, Defined Substrate Technology, water, MPN/100 mL (50569) | Chlorophyll a, phytoplankton, chromatographic-fluorometric method, µg/L (70953) | Pheophytin a, phytoplankton, µg/L (62360) | Iron, water, filtered, µg/L (01046) | Manganese, water, filtered, µg/L (01056) | 2,6-Diethylaniline, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82660) | 2-[(2-Ethyl-6-methylphenyl)-amino]-2-oxo-ethanesulfonic acid, water, filtered, µg/L (62850) | 2-Chloro-4-isopropylamino-6-amino-s-triazine, water, filtered, recoverable, µg/L (04040) | Acetochlor oxanilic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61030) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 3,300 | 222 | 63.6 | 8.0 | 6.74 | < .0060 | 0.04 | E .049 | 0.02 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 7 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Acetochlor ethane-sulfonic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61029) | Acetochlor sulfynil-acetic acid, water, filtered, µg/L (62847) | Aceto-chlor, water, filtered, recoverable, µg/L (49260) | Alachlor oxanilic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61031) | Alachlor ethane-sulfonic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (50009) | Alachlor sulfynil-acetic acid, water, filtered, µg/L (62848) | Alachlor, water, filtered, recoverable, µg/L (46342) | alpha-HCH, water, filtered, recoverable, µg/L (34253) | Atrazine, water, filtered, recoverable, µg/L (39632) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | 0.05 | < .02 | < .02 | < .02 | 0.33 | < .02 | < .02 | < .0040 | 0.050 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 8 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Azinphos-methyl, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82686) | Benfluralin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82673) | Butylate, water, filtered, recoverable, µg/L (04028) | 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 (82674) | Chlor-pyrifos, water, filtered, recoverable, µg/L (38933) | cis-Permeth-rin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82687) | Cyanazine, water, filtered, recoverable, µg/L (04041) | DCPA, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82682) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .120 | < .014 | < .0040 | < .060 | < .060 | < .0036 | < .010 | < .022 | < .0076 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 9 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Dechloro-aceto-chlor, water, filtered, recover-able, µg/L (63778) | Dechloro-alachlor, water, filtered, recover-able, µg/L (63777) | Dechloro-dimeth-enamid, water, filtered, recover-able, µg/L (63779) | Dechloro-metola-chlor, water, filtered, recover-able, µg/L (63780) | 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) | Dimeth-enamid oxanilic acid, water, filtered, recover-able, µg/L (62482) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .02 | < .02 | < .02 | 0.02 | < .029 | 0.003 | < .0060 | < .008 | < .02 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 10 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Dimeth-enamid ethane-sulfonic acid, water, filtered, recover-able, µg/L (61951) | Dimeth-enamid, water, filtered, recover-able, µg/L (61588) | 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) | 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) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .02 | < .02 | < .040 | < .0056 | < .006 | < .016 | < .012 | < .024 | < .018 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 11 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Flufenacet oxanilic acid, water, filtered, recover-able, µg/L (62483) | Flufenacet ethane-sulfonic acid, water, filtered, recover-able, µg/L (61952) | Flufenacet water, filtered, recover-able, µg/L (62481) | Fonofos, water, filtered, recover-able, µg/L (04095) | Hydroxy-aceto-chlor, water, filtered, recover-able, µg/L (63784) | Hydroxy-alachlor, water, filtered, recover-able, µg/L (63783) | Hydroxy-dimeth-enamid, water, filtered, recover-able, µg/L (64045) | Hydroxy-metola-chlor, water, filtered, recover-able, µg/L (63785) | Lindane, water, filtered, recover-able, µg/L (39341) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .02 | < .02 | < .02 | < .0048 | < .02 | < .02 | < .02 | 0.03 | < .0040 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 12 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | Linuron, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82666) | Malathion, water, filtered, recoverable, µg/L (39532) | Methyl parathion, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82667) | Metolachlor oxanilic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61044) | Metolachlor ethanesulfonic acid, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (61043) | Metolachlor, water, filtered, recoverable, µg/L (39415) | Metribuzin, water, filtered, recoverable, µg/L (82630) | Molinate, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82671) | Napropamide, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82684) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .060 | < .016 | < .008 | 0.08 | 0.47 | 0.07 | < .012 | < .0040 | < .008 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 13 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | p,p'-DDE, water, filtered, recoverable, µg/L (34653) | Parathion, water, filtered, recoverable, µg/L (39542) | Pebulate, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82669) | Pendimethalin, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82683) | Phorate, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82664) | Prometon, water, filtered, recoverable, µg/L (04037) | Propachlor oxanilic acid, water, filtered, (0.7 micron glass fiber filter), recoverable, µg/L (62767) | Propachlor ethanesulfonic acid, water, filtered, (0.7 micron glass fiber filter), recoverable, µg/L (62766) | Propachlor, water, filtered, recoverable, µg/L (04024) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .002 | < .020 | < .0160 | < .012 | < .020 | 0.033 | < .02 | < .05 | < .02 |

**05464420 Cedar River at Blairs Ferry Road at Palo, IA—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 14 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | 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) | Alachlor ethanesulfonic acid secondary amide, water, filtered, µg/L (62849) | Simazine, water, filtered, recoverable, µg/L (04035) | Tebuthiuron, 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) | Thiobencarb, water, filtered (0.7 micron glass fiber filter), recoverable, µg/L (82681) |
|---|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .010 | < .020 | < .0036 | < .02 | 0.009 | < .028 | < .024 | < .018 | < .016 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 15 of 15

[%, percent; $CaCO_3$, calcium carbonate; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; $SiO_2$, silicon dioxide; ft, feet; $ft^3/s$, 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]

| Sample date-time | 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) | 2-Chloro-N-(2,6-diethylphenyl)-acetamide, water, filtered, recoverable, µg/L (63781) | 2-Chloro-N-(2-ethyl-6-methylphenyl)-acetamide, water, filtered, recoverable, µg/L (63782) | Organic carbon, suspended sediment, total, mg/L (00689) | Organic carbon, water, filtered, mg/L (00681) | Suspended sediment concentration, mg/L (80154) | Suspended sediment discharge, tons per day (80155) |
|---|---|---|---|---|---|---|---|---|
| **09-27-2012 1230** | < .0046 | < .018 | < .02 | < .02 | 14.3 | 41.0 | 57 | 85 |