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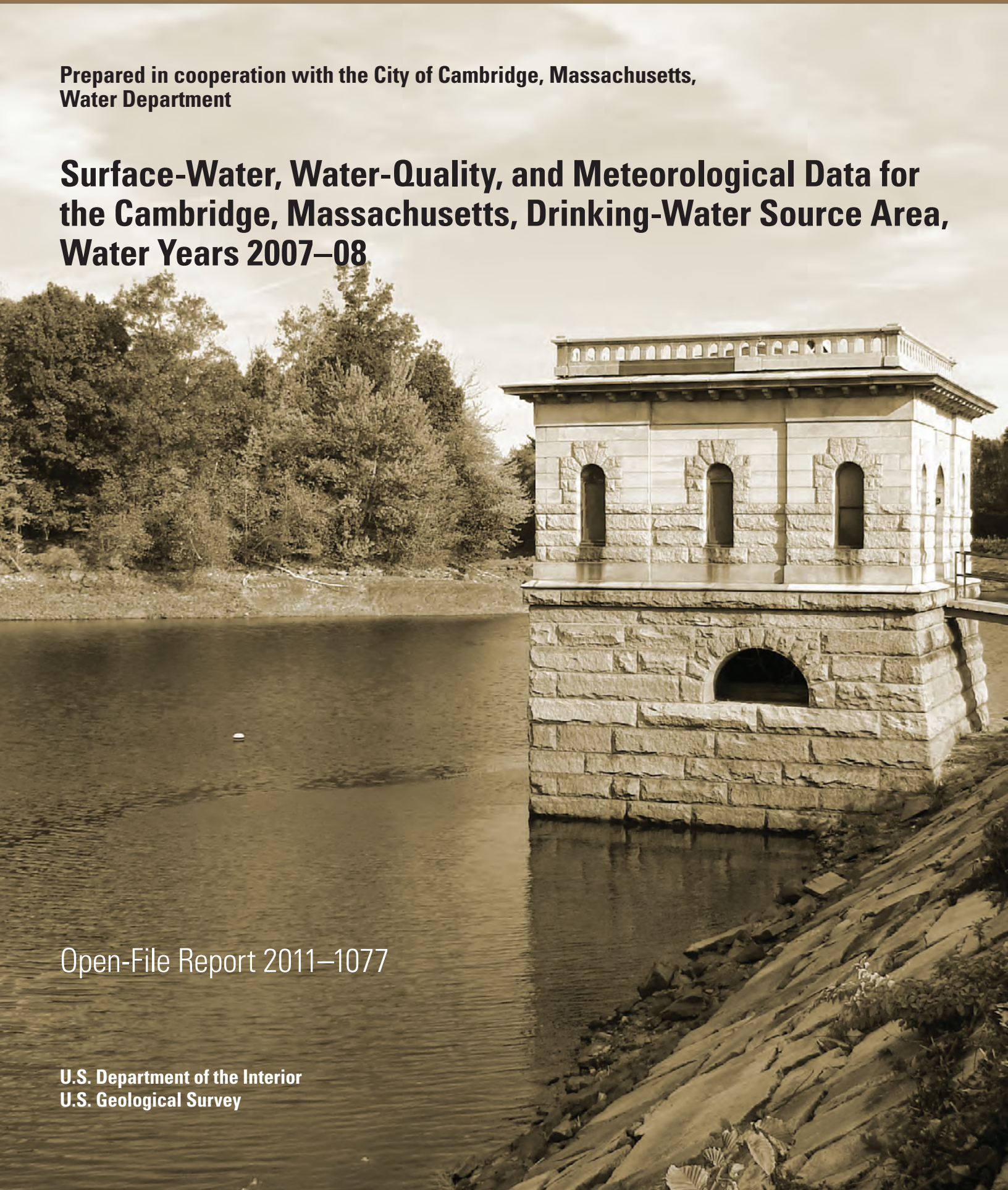
Surface-Water, Water-Quality, and Meteorological Data for the Cambridge, Massachusetts, Drinking-Water Source Area, Water Years 2007–08



Open-File Report 2011–1077

U.S. Department of the Interior
U.S. Geological Survey

Cover. Photograph of the Cambridge Reservoir at about 40 percent capacity, October 2007.

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By Kirk P. Smith

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U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
KEN SALAZAR, Secretary

U.S. Geological Survey
Marcia K. McNutt, Director

U.S. Geological Survey, Reston, Virginia: 2011

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Conversion Factors, Datum, and Abbreviations

Multiply	By	To obtain
	Length	
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
inch (in.)	254	micrometer (µm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
square inch (in^2)	6.452	square centimeter (cm^2)
square mile (mi^2)	2.590	square kilometer (km^2)
	Volume	
gallon (gal)	3.785	liter (L)
	Flow rate	
million gallons per day (Mgal/d)	0.04381	cubic meter per second (m^3/s)
million gallons per day per square mile [(Mgal/d)/mi^2]	1,461	cubic meter per day per square kilometer [(m^3/d)/km^2]

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Altitude, as used in this report, refers to distance above the vertical datum.

Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (µS/cm at 25°C).

Water- and sediment-quality constituents are expressed in milligrams per liter (mg/L), micrograms per liter (µg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water. One thousand milligrams per liter is equivalent to one gram per liter. One thousand micrograms per liter is equivalent to one milligram per liter. For concentrations less than 7,000 mg/L, the numerical value is the same as for concentrations in parts per million (ppm).

Acronyms Used in Report

ASTM	American Society for Testing and Materials
COV	coefficient of variation
CWD	City of Cambridge, Massachusetts, Water Department
HPLC	high-performance liquid chromatography
ISO	International Organization for Standardization
NIST	National Institute of Standards and Technology
NWQL	National Water Quality Laboratory
NTRU	nephelometric turbidity ratio units
RPD	relative percent difference
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

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Surface-Water, Water-Quality, and Meteorological Data for the Cambridge, Massachusetts, Drinking-Water Source Area, Water Year 2007–08

By Kirk P. Smith

Abstract

Records of water quantity, water quality, and meteorological parameters were continuously collected from three reservoirs, two primary streams, and five subbasin tributaries in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08 (October 2006 through September 2008). Water samples were collected during base-flow conditions and storms in the Cambridge Reservoir and Stony Brook Reservoir drainage areas and analyzed for dissolved calcium, sodium, chloride, and sulfate; total nitrogen and phosphorus; and polar pesticides and metabolites. Composite samples of stormwater also were analyzed for concentrations of total petroleum hydrocarbons and suspended sediment in one subbasin in the Stony Brook Reservoir drainage basin. These data were collected to assist watershed administrators in managing the drinking-water source area and to identify potential sources of contaminants and trends in contaminant loading to the water supply.

Monthly reservoir contents for the Cambridge Reservoir ranged from about 30 to 95 percent of capacity during water years 2007–08. Monthly reservoir contents for the Stony Brook Reservoir ranged from about 47 to 91 percent of capacity during water years 2007–08, while the monthly reservoir storage values for Fresh Pond Reservoir were maintained at greater than 92 percent of capacity. If the average water demand by the city of Cambridge is assumed to be 15 million gallons per day, the volume of water released from the Stony Brook Reservoir to the Charles River during water years 2007–08 represents an annual surplus of about 107 and 94 percent, respectively. The annual precipitation total of about 47 in (inches) recorded at the Cambridge reservoir during water year 2007 was about 5 to 21 percent lower than recorded totals for the previous four water years, whereas the annual precipitation total of about 62 in. during water year 2008 was about 5 to 32 percent higher than recorded totals for water years 2002–07.

In general, most monthly mean specific-conductance values for water year 2007 for U.S. Geological Survey (USGS) stations on the two primary streams and four subbasin tributaries in the Cambridge, Massachusetts, drinking-water source area were below the previous median monthly values and often were below the previous minimum monthly values for available data since water year 1997. The annual mean specific-conductance value for Fresh Pond Reservoir during water year 2007 was 483 µS/cm (microsiemens per centimeter), which was lower than the prior three water years. The monthly mean specific-conductance values for streamflow for Hobbs Brook below the Cambridge Reservoir for December through July 2008 were greater than the 75th percentile for historical data since water year 1997. These relatively high values were caused by the inflow of high specific conductance water from the tributaries when the reservoir water level was low at the onset of winter. Increased rainfall in the watershed beginning in February 2008 caused monthly mean specific-conductance values for Hobbs Brook to decrease to about 700 µS/cm by the end of the water year. Monthly mean specific-conductance values for many of the other USGS stations were higher than historical values for several months during the winter of water year 2008. The large amount of rainfall in the watershed also caused the monthly mean specific conductance at these stations to decline to near-median values or to values within the interquartile range for available historical data. The annual mean specific conductance for Fresh Pond Reservoir during water year 2008 was 497 µS/cm, slightly greater than the corresponding value for the prior year.

Water samples were collected in nearly all of the subbasins in the Cambridge drinking-water source area and from Fresh Pond during the study period. Discrete water samples were collected during base-flow conditions with an antecedent dry period of at least 3 days. Composite samples, consisting of as many as 100 subsamples, were collected by automatic samplers during storms. Concentrations of most dissolved constituents were generally lower in samples of stormwater than in samples collected during base-flow conditions; however, the difference between the average concentration of total phosphorus in samples of stormwater and for samples collected during base-flow conditions in the tributaries ranged from 0.10 to 0.23 mg/L (milligrams per liter). Concentrations of dissolved calcium, sodium, chloride,

and sulfate in water samples collected in the drinking-water source area (excluding Fresh Pond Reservoir) ranged from 2.99 to 75.8 mg/L, 7.47 to 534 mg/L, 11.4 to 1,050 mg/L, and 2.85 to 47.2 mg/L, respectively. The concentration of total phosphorus and total nitrogen in water samples for all subbasins ranged from 0.006 to 0.53 mg/L, and 0.42 to 3.14 mg/L, respectively.

In 3 of 81 water samples, measurements of pH were less than the U.S. Environmental Protection Agency (USEPA) secondary drinking-water standard of 6.5 pH units. Concentrations of dissolved chloride in all water samples collected during base-flow conditions from USGS stations 01104410, 01104415, 01104420, 01104433, and 01104455 were near or exceeded the USEPA secondary drinking-water standard of 250 mg/L. All samples collected during base-flow conditions at USGS stations 01104415 and 01104433, and five of six samples collected at USGS station 01104455 exceeded the secondary drinking-water standard for chloride. The concentration of chloride in composite samples of stormwater also exceeded the standard at USGS stations 01104415, 01104433, and 01104455 for a few winter storms. Concentrations of dissolved sulfate in all water samples were below the USEPA secondary drinking-water standard of 250 mg/L. Concentrations of dissolved sodium for all samples collected in the drinking-water source area exceeded the Massachusetts drinking water guideline (20 mg/L) with the exception of three composites samples of stormwater collected at USGS stations 01104455 and 01104475.

Eighteen pesticides and caffeine were detected in water samples collected in the primary streams and tributaries to the Cambridge Reservoir and Stony Brook Reservoir, and in raw water collected from the Cambridge water-treatment facility intake from the Fresh Pond Reservoir during water years 2007–08. Caffeine was detected in 54 percent of 80 water samples at concentrations ranging from 0.004 to 0.557 micrograms per liter. Caffeine was detected in water samples collected at all USGS sampling stations except for 01104390, 01104410, 01104453. Imidacloprid, siduron, and norflurazon were the most frequently detected pesticides, with measureable concentrations in 29 to 32 percent of all water samples collected in the drinking-water source area. Caffeine, 2,4-D, and benomyl were more frequently detected in water samples collected during storms than in water samples collected during base-flow conditions. Imidacloprid, siduron, and 2,4-D were frequently detected in water samples from the tributaries to the Cambridge and Stony Brook Reservoirs. Trace amounts of caffeine, carbaryl, dinoseb, norflurazon, and siduron were also detected in water from the Fresh Pond Reservoir.

Introduction

Hydrologic and water-quality monitoring is important for the effective management and protection of drinking-water supplies. Both the quantity and the quality of water are monitored because these factors determine the physical, chemical, and biological state of the water supply. Without accurate information on the past and current condition of the water supply, effective preservation and remediation programs cannot be implemented or evaluated.

The U.S. Geological Survey (USGS) works closely with municipal water suppliers throughout the Nation to address specific water problems by conducting hydrologic- and water-quality-monitoring programs and detailed investigations (Patterson, 1997). One such program, conducted during 1997–98 by the USGS in cooperation with the city of Cambridge, Massachusetts, Water Department (CWD), was designed to identify sources of contaminants in the drinking-water source area for the city (Waldron and Bent, 2001). Subsequently the USGS, in cooperation with the CWD, designed and implemented a water-monitoring network in the drinking-water source area. Data from this network have been published periodically in various USGS reports (Smith, 2005, 2007 and 2008; Socolow and others, 1999, 2000, 2001, 2002, 2003, and 2004; U.S. Geological Survey, 2009).

The CWD supplies approximately 15 Mgal/d (million gallons per day; Waldron and Bent, 2001) to more than 100,000 customers. Most of this water is obtained from three primary storage reservoirs—Cambridge Reservoir (also known as the Hobbs Brook Reservoir), Stony Brook Reservoir, and Fresh Pond Reservoir—in parts of Lexington, Lincoln, Waltham, Weston, and Cambridge (fig. 1). The watershed for the Cambridge Reservoir includes Hobbs Brook and three unnamed tributaries that discharge directly into the reservoir. Water is discharged from the southern end of the Cambridge Reservoir into Hobbs Brook, which receives additional water from an unnamed tributary about 0.5 mi (miles) below the reservoir. Hobbs Brook joins with Stony Brook about 1.6 mi downstream from the reservoir and flows south to the Stony Brook Reservoir. The area above this confluence is herein referred to as the Hobbs Brook Basin. Two unnamed tributaries flow into Stony Brook about a 0.25 mi north of the Stony Brook Reservoir. In addition to Stony Brook, an unnamed tributary flows directly into the Stony Brook Reservoir on the southwestern side of the reservoir. Additional water enters both reservoirs from other minor tributaries and roadway and parking-lot storm drains. Water from Stony Brook Reservoir is piped through an aqueduct by the CWD directly to Fresh Pond Reservoir, where it is stored prior to treatment. Overflow and controlled discharges from the Stony Brook Reservoir flow into the Charles River in Waltham.

The drainage basin contributing water to these reservoirs has undergone rapid development since the 1990s and encompasses major transportation corridors (Interstate 95, Routes 2, 2A, 20, and 117), as well as large areas of industrial, commercial, and high-density residential land use. Because the city of Cambridge owns less than 5 percent of the land in the basin contributing to its water supply, the CWD relies heavily on monitoring to provide information for optimizing the management of its reservoirs for water quality and

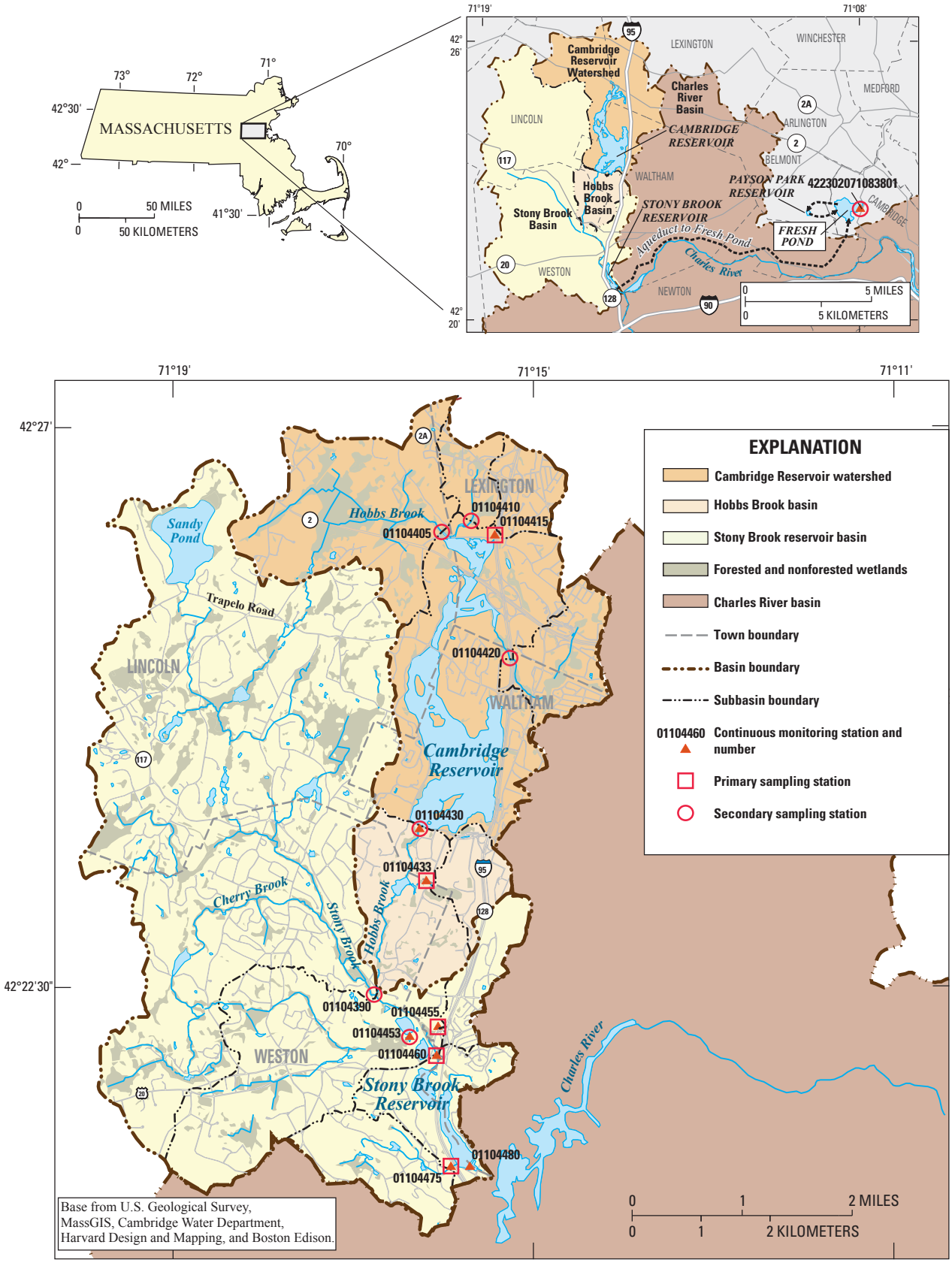

Figure 1. Monitoring network for the Cambridge, Massachusetts, drinking-water source area for water years 2007–08, eastern Massachusetts.

quantity. The USGS monitoring network provides near-real-time information that assists the CWD in responding rapidly to water-quality changes caused by accidental or intentional contamination. This information also benefits the CWD, other municipalities, and State agencies involved with water-resource development and management in the Charles River Basin by enhancing their understanding of the relation between local drinking-water-management practices and regional issues of water supply and hydrologic-system response.

Purpose and Scope

This report presents records of water quantity, water quality, and meteorological parameters collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08 (October 2006 through September 2008). It describes the monitoring network and the data-collection methods for all types of data. It also describes the chemical characteristics of water samples collected during base-flow conditions and during storms from streams and tributaries to Hobbs Brook and Stony Brook in the Stony Brook Reservoir Basin, and of water samples collected from the raw-water intake at the Cambridge water-treatment facility.

Description of Monitoring Network

Stations installed and operated by the USGS in the drinking-water source area continuously monitored various hydrologic, water-quality, and meteorological parameters, including stream stage, stream-water temperature, stream specific conductance, reservoir altitude, air temperature, and precipitation. Stations were selected for continuous monitoring on the basis of the necessity for water-supply regulation by the CWD and of information gained in a previous USGS investigation (Waldron and Bent, 2001) that identified specific areas as potentially important sources of contaminants. Attributes of the monitoring stations are listed in table 1; locations of stations selected for continuous monitoring are shown in figure 1.

Stream-stage measurements were recorded at monitoring stations at the outlet of the Cambridge Reservoir, on an unnamed tributary to Stony Brook, on Stony Brook, and at the outlet of Stony Brook Reservoir (USGS stations 01104430, 01104453, 01104460, and 01104480, respectively). The USGS station 01104453 was decommissioned at the end of water year 2007 as a result of construction activity in the monitoring area. Water temperature and specific conductance measurements were recorded at the outlet of the Cambridge Reservoir and at Stony Brook (USGS stations 01104430 and 01104460). A water temperature and specific conductance monitor was installed at the outlet of the Stony Brook Reservoir (01104480) late in the summer of 2008. Physical parameters monitored at these sites are listed in table 2. These data were recorded at a frequency of 10 minutes and—with the exception of data from USGS station 01104453, which was not equipped with telemetry—were uploaded to a USGS database hourly by phone modem. In addition to measurements made on these streams, stream-stage measurements and water-quality measurements were recorded at monitoring stations on four of the small tributaries (USGS stations 01104415, 01104433, 01104455, and 01104475). The USGS station 01104433 was decommissioned at the end of water year 2007. Because the drainage areas of these sites are small, each less than 1 mi^2 (square mile), and contain many roadways, parking lots, and other impervious surfaces (Waldron and Bent, 2001), the hydrologic responses, and often the water-quality responses, change rapidly. To document these responses effectively, the monitoring stations recorded stream-stage and water-quality measurements at variable frequencies, as often as every minute. These data were uploaded to a USGS database hourly by digital cellular modem.

Measurements of reservoir altitude, precipitation, and air temperature were recorded at the Cambridge, Stony Brook, and Fresh Pond Reservoirs (USGS stations 01104430, 01104480, and 422302071083801). Measurements of reservoir water quality also were recorded at the Fresh Pond Reservoir. Physical parameters monitored at these sites are listed in table 2. These data were recorded at a frequency of 10 to 15 minutes and were uploaded to a USGS database on an hourly basis by phone modem.

Continuous Data Collection

The monitoring network provides near-real-time information used to manage the quantity and quality of water in the CWD drinking-water source area. Available data from each station are available to watershed managers through the USGS Massachusetts-Rhode Island Water Science Center home page (http://ma.water.usgs.gov).

Surface-Water Data

Basic data collected at the monitoring stations include records of stream stage and measurements of discharge of streams, and water altitude and contents of reservoirs. In addition, observations of factors affecting the stage-discharge relation or the altitude-contents relation, weather records, and other information are used to supplement the basic data in determining the daily flow or water in storage. Measurements of discharge are made with a current meter or acoustic Doppler current profiler by standard USGS methods (Buchanan and Somers, 1968, 1969; Carter and Davidian, 1968; Kennedy, 1983 and 1984; Oberg and others, 2005; Rantz and others, 1982). The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

Table 1. Names, locations, drainage areas, and periods of record for U.S. Geological Survey monitoring stations in the drinking-water source area for Cambridge, Massachusetts, water years 2007–08.

[USGS, U.S. Geological Survey; mi^2, square mile; latitude and longitude in degrees, minutes, and seconds]

Station name	USGS station number	Latitude	Longitude	Draingage area (mi^2)	Period of record
Stony Brook at Kendal Green	01104390	42 22 36	71 16 55	10.4	03/07/97–09/17/98; 07/18/05–05/15/07
Hobbs Brook at Mill Street near Lincoln	01104405	42 26 11	71 16 12	2.16	03/05/97–09/16/98; 07/18/05–05/15/07
Cambridge Reservoir, unnamed tributary number 1, near Lexington	01104410	42 26 15	71 15 53	2.10	03/05/97–09/16/98; 07/18/05–05/15/07
Cambridge Reservoir, unnamed tributary number 2, near Lexington	01104415	42 26 09	71 15 38	0.41	03/06/97–09/22/98; 10/01/00–09/30/08
Cambridge Reservoir, unnamed tributary number 3, near Lexington	01104420	42 25 11	71 15 29	0.73	04/09/97–09/16/98; 07/18/05–05/15/07
Hobbs Brook below Cambridge Reservoir near Kendal Green	01104430	42 23 53	71 16 26	6.86	03/06/97–09/30/08
Hobbs Brook, unnamed tributary 1 near Kendal Green	01104433	42 23 28	71 16 18	0.36	10/23/97–09/15/05; 06/28/04–10/16/07
Stony Brook, unnamed tributary 2 near Weston Station	01104453	42 22 17	71 16 31	2.23	11/30/05–10/17/07
Stony Brook, unnamed tributary 1 near Waltham	01104455	42 22 21	71 16 15	0.48	10/22/97–09/22/98; 10/01/00–09/30/08
Stony Brook at Route 20 at Waltham	01104460	42 21 08	71 16 16	22.0	03/07/97–10/28/98; 05/14/02–09/30/08
Stony Brook Reservoir, unnamed tributary 1 near Weston	01104475	42 21 16	71 16 07	0.85	11/06/97–09/17/98; 08/26/04–09/30/08
Stony Brook Reservoir at dam near Waltham	01104480	42 21 20	71 15 56	23.7	01/30/98–09/30/08
Fresh Pond in gate house at Cambridge	422302071083801	42 23 02	71 08 38	0.00	10/01/03–09/30/08

Table 2. Hydrologic, water-quality, and meteorological parameters measured at each continuous-monitoring station during water years 2007–08 in the drinking-water source area for Cambridge, Massachusetts.

[X, indicates parameter is measured]

Parameter	U.S. Geological Survey station number								
	01104415	01104430	01104433	01104453	01104455	01104460	01104475	01104480	422302071083801
Stream water level	X	X	X	X	X	X	X	X	
Reservoir water level		X						X	X
Precipitation		X						X	X
Air temperature		X						X	X
Water temperature	X	X	X		X	X	X	X	X
Specific conductance	X	X	X		X	X	X	X	X

To determine streamflow at each USGS monitoring station in the CWD drinking-water source area, discharge-rating tables for any stage are prepared from stage-discharge curves (Rantz and others, 1982). The daily mean discharge is computed from these stage and rating tables, and then the monthly and yearly mean discharges are computed from these daily values (U.S. Geological Survey, 2009). If the stage-discharge relation for a station is changed temporarily by aquatic growth, scour, or debris in the control section, the daily mean discharge is computed by the shifting-control method (Rantz and others, 1982).

For the USGS monitoring stations at reservoirs in the CWD drinking-water source area, altitude-capacity tables giving the volume for any reservoir water altitude are prepared from water altitude-volume relation curves defined by surveys conducted by the USGS in 2008. From the altitude-capacity tables, the daily, monthly, or yearly changes in volume are computed (U.S. Geological Survey, 2009).

Water-Quality Data

Continuous water-temperature and specific-conductance data were collected from water-quality monitors in each stream, tributary, and from the Fresh Pond reservoir. The accuracy of the water-quality records depends primarily on the rate of sensor drift, sensor fouling, and debris collection. Typically, sensors became fouled by aquatic growth more rapidly in the warmer months. In most cases, corrections for fouling and drift can be applied to the data to improve their accuracy (Wagner and others, 2006a). For parameters other than water temperature, such corrections were made on the basis of the performance of the sensor before and after sensor maintenance, and by noting the response of the clean sensor after placing it in several standardized solutions. The accuracy of water-temperature data is determined by comparing measurements made by the monitoring system and by an independent probe calibrated against a National Institute of Standards and Technology (NIST) traceable thermometer. The daily maximum, minimum, and mean values are computed (U.S. Geological Survey, 2009) from instantaneous measurements of water temperature and specific conductance; monthly statistics are then computed from daily values.

Water samples were collected in nearly all of the subbasins in the Cambridge drinking-water source area and from the raw-water intake to the treatment plant at Fresh Pond Reservoir during water year 2007; a water sample also was collected at USGS station 01104475 and the raw-water intake to the treatment plant at Fresh Pond Reservoir during water year 2008. Six water samples were collected manually during base-flow conditions and six composite samples of stormwater were collected with automatic samplers at most of the primary sampling sites (USGS stations 01104415, 01104433, 01104455, 01104460, and 01104475). Four samples of water from Fresh Pond Reservoir were collected from the raw-water intake at the Cambridge water treatment plant. Water samples also were collected from secondary sampling sites (USGS stations 01104390, 01104405, 01104410, 01104420, 01104430, and 01104453) during two synchronous sampling rounds on December 11–12, 2006, and on May 15, 2007, when samples of base-flow water were collected at primary sampling stations (fig. 1) during the same day. Various quality-assurance samples were also collected to determine bias and precision associated with the sample data. All samples were analyzed for physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, and polar pesticides and metabolites.

Meteorological Data

Precipitation data were collected with heated tipping-bucket precipitation gages that measure the volume of rain or melted snow in increments of 0.01 in. (inch). The precipitation gages at the Cambridge Reservoir and Stony Brook Reservoir include wind screens that reduce bias generated by precipitation missing the instrument. Precipitation data are summed for each day and then for each month

(U.S. Geological Survey, 2009). In general, the accuracy of precipitation data is assured by proper maintenance and calibration of the device. Precipitation measurements are affected by strong winds and are subject to errors, especially when the precipitation is in the form of snow. These errors generally result in underestimation of the total rainfall at a station.

Air-temperature data were collected with thermistors housed in gill radiation shields. The probes are installed approximately 8 ft (feet) above ground surface. The maximum, minimum, and mean temperature values are computed for each day (U.S. Geological Survey, 2009). Monthly statistics are then computed from daily values. The accuracy of air-temperature data is determined by comparing measurements made by the monitoring system and by an independent probe calibrated against a NIST traceable thermometer.

Sample Collection and Analysis

Water samples were collected during base-flow conditions and during rain and mixed precipitation storms in selected streams in the drinking-water source area during water years 2007–08. Samples of water from Fresh Pond Reservoir also were collected from the raw-water intake at the Cambridge water treatment plant. All water samples were analyzed for physical parameters; dissolved calcium, sodium, chloride, and sulfate; total nitrogen and total phosphorus; dissolved caffeine; and 60 pesticides and metabolites. Concentrations of total petroleum hydrocarbons and suspended sediment (including the percentage of particles less than 0.063 mm (millimeters) in diameter) also were measured in composite samples of stormwater collected at USGS station 01104455 to provide baseline information prior to proposed redevelopment activities within the tributary subbasin.

Water samples were collected during base-flow conditions and during storms at five continuously monitored stations in the Hobbs Brook Basin and Stony Brook Reservoir Basin. Four stations are located on small tributaries (USGS monitoring stations 01104415, 01104433, 01104455, and 01104475) and one station is located on Stony Brook (USGS monitoring station 01104460; fig. 1 and table 1). Water samples were collected during base-flow conditions on December 11–12, 2006, and May 15, 2007, at several previously monitored USGS stations (Waldron and Bent, 2001) in the Hobbs Brook Basin and Stony Brook Reservoir Basin. These secondary sampling stations (fig. 1 and table 1) include Stony Brook above the confluence of Hobbs Brook, Hobbs Brook above the Cambridge Reservoir, two unnamed tributaries to the Cambridge Reservoir, Hobbs Brook below the Cambridge Reservoir, and an unnamed tributary to Stony Brook (USGS stations 01104390, 01104405, 01104410, 01104420, 01104430, and 01104453, respectively). Samples of stream water were collected manually (Wilde and others, 1999) under base-flow conditions with an antecedent dry period of at least 3 days. During storms, water samples for chemical analysis were collected with an automatic sampler controlled by a datalogger. The first sample was collected when flow exceeded a preset discharge threshold, and subsequent samples were collected at flow-proportional intervals. The automatic collection of samples continued for a specified amount of time after the final peak rate of flow. The time value for each site was calculated on the basis of the size of each drainage area, except for USGS station 01104460, using the equation

$$T = A^{0.2}, \tag{1}$$

where T is the time value in days, A is the area of the drainage basin in square miles, and 0.2 is a constant (Bedient and Huber, 2002). For USGS station 01104460, the area upstream of the Cambridge Reservoir is subtracted from the total drainage area because the flow from the upper basin is regulated and not affected by stormwater runoff. Each automatic sampler was configured to hold one 20L (liter) glass bottle and fitted with a pre-cleaned 1/2-in. inner diameter Teflon intake and discharge tube, and a short piece of silicon pump-head tube.

A multi-step process was used to clean all wetted parts associated with the automatic sampler and the processing equipment before each sample collection. The initial cleaning consisted of washing the interior and exterior with a phosphate-free laboratory-grade soap and tap water, scrubbing surfaces with a plastic brush, and rinsing with tap water. Circulating the solution through the tubing cleaned the interior of the sampler tubing. Lint-free wipes were forced hydraulically through the tubing to remove internal deposits or films that were difficult to remove by circulating solution alone. After the components dried, they were placed in a large stainless-steel pan in a fume hood and immersed in Optima-grade methanol. A Teflon diaphragm pump was used to circulate the methanol through the sampler tubing. The components were allowed to soak, with occasional agitation, for a minimum period of about 4 hours. After appropriately dispensing the waste solution, all components except the tubing were rinsed with methanol and air-dried in a fume hood over night. Because the rate of cleaning-solution volatilization is limited within the sampler tubing, the tubing was purged with purified air for approximately 20 minutes. All components were thoroughly rinsed with deionized water until the specific conductance of the waste rinse water was less than 1 µS/cm (microsiemen per centimeter).

Water samples were processed in the USGS Massachusetts Water Science Center laboratory in Northborough, Massachusetts, at the conclusion of each sampling round or storm. For water samples collected during base-flow conditions when the flow and depth of water in the streams were small, the water generally was collected in the centroid of the stream in separate bottles designated for whole water, dissolved constituents, and organic compounds; therefore, only limited splitting was

necessary at the laboratory. For water samples collected during storms, subsamples to be analyzed for inorganic and organic constituents were split directly from the 20L glass bottle by transferring the water with a Teflon-diaphragm pump while the contents of the sample bottle were homogenized with a stainless-steel laboratory mixer. Water to be analyzed for dissolved inorganic constituents was filtered through a 600-cm^2 (square centimeter) capsule filter with a 0.45-micrometer pore size. Water to be analyzed for dissolved caffeine, pesticides, and pesticide metabolites was filtered through a 142-mm pre-combusted glass-fiber filter with a nominal 0.7-mm pore diameter to remove suspended particulate matter. After the samples were processed, they were packed in ice and shipped overnight to the USGS National Water Quality Laboratory (NWQL), in Denver, Colorado, where they were analyzed for concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, and polar pesticides and metabolites (American Public Health Association, 1998; Fishman, 1993; Fishman and Friedman, 1989; Furlong and others, 2001; Patton and Kryskalla, 2003).

The reliability of the chemical data was ensured by the preparation and analysis of several types of quality-control samples. These quality-control samples include 1 source-solution blank, 2 field blanks, 9 replicate samples, and 4 field-matrix spike samples and 2 replicate field-matrix spike samples. These analyses provided the basis for the interpretation of chemical data collected in the drinking-water source area.

Source-solution blanks were prepared from deionized water produced by a laboratory-grade water-purification system that uses ion-exchange packs and reverse osmosis. The source-solution water was stored in pre-cleaned glass bottles until it was subsequently used as blank water for the collection of field blanks.

A field blank is used to test for positive bias that can result from contamination during any stage of sample collection, processing, or analysis. One field blank was collected during sampling at base-flow conditions in April 2007 and another field blank was collected in preparation for the sampling of stormwater in July 2007. During collection of base-flow samples, the field blank was collected by transferring blank water from the holding bottle to the sample-collection bottles. It was then processed in a manner consistent with the collection of other environmental samples. The second field blank was collected by the automatic sampler in preparation for storm sampling. These samples were collected by pumping blank water through the automatic sampler tubing and into the collection bottle, and processing it in a manner consistent with the collection of environmental samples of stormwater.

Replicate samples are samples thought to be identical in composition to the environmental samples. Replicate samples provide a measure of bias and variability for the method of sample collection, sample processing (splitting, filtering, and preservation), and laboratory analysis, and for effects such as analyte degradation that can occur prior to laboratory analysis. A total of nine replicate samples were collected during base-flow conditions and during storms. Two replicate samples were collected to test for potential differences between samples collected manually and samples collected concurrently by automatic samplers. Five other replicate samples were collected manually during base-flow conditions. The remaining two replicates were collected during storms by independent automatic samplers that were triggered simultaneously. These replicates were used to test for potential differences between samples collected with the same method during periods of rapidly changing flow and water quality.

Field-matrix spikes are quality-control samples in which known amounts of target compounds are added to environmental replicate-split samples and then measured. The degree of recovery for each target analyte added to the environmental sample is used to determine the bias and variability attributed to the amount of degradation of target analytes during holding and shipment to the laboratory, the analytical method, and interferences contained in the environmental sample that mask or enhance determinations of the target analytes, or matrix effects. Replicate field-matrix spikes were also submitted to the NWQL for analysis. Similarly, known amounts of target compounds are added to replicate field-matrix spike samples. These samples are processed in the same manner as the field-matrix spike such that the samples are expected to be essentially identical in composition. Comparing the recovery of a field-matrix spike replicate to the recovery of the paired field-matrix spike provides a measure of the variability attributed to the aforementioned processes that can affect the concentration of each analyte.

In addition to the quality-assurance samples collected during this project, the NWQL routinely analyzes various quality-control samples, including laboratory reagent blanks, interference check solutions, laboratory control samples, standard reference materials, laboratory reagent spike samples, and laboratory duplicate samples to test and track method performance (Garbarino and others, 2006), and Furlong and others, 2001). The NWQL also adds surrogate compounds to all samples for determinations of pesticides and caffeine. Surrogate compounds, such as 2,4,5-T, caffeine-13C, and barban, are expected to perform similarly to the compounds being analyzed in the laboratory method. Because these compounds are not normally found in the environment, the recovery of the surrogate compounds can be used to qualify the performance of the analysis. When the difference between surrogate recoveries is outside acceptable control limits (usually low) as a result of an identified process failure, the results for the associated analytes are usually flagged by the NWQL with the “E” code (indicating an estimated value), or even deleted if the recovery is poor. Report levels may also be adjusted accordingly under some circumstances.

Data for the Cambridge Drinking-Water Source Area

The data presented in this report can be used by the watershed managers in the city of Cambridge, Massachusetts to optimize the management of the drinking-water-supply reservoirs for water quality and quantity. The data allow clarification of the relation of reservoir management practices and current conditions to trends in the quantity and quality of water in the subbasins of the hydrologic system.

Surface-Water Data

From October 2006 through June 2007, monthly mean discharge from the Cambridge Reservoir accounted for less than 45 percent of the water entering the downstream Stony Brook Reservoir (fig. 2); this estimate was obtained by dividing the monthly mean discharges measured at USGS station 01104430 by the sum of monthly mean discharges measured at USGS stations 01104460, and 01104475 (table 3). During this period, between 2 and 83 percent of the water entering the Stony Brook Reservoir was released to the Charles River (fig. 2); this estimate was obtained by dividing the sum of monthly mean reservoir outflows measured at USGS station 01104480 by the sum of monthly mean discharges measured at USGS stations 01104460 and 01104475 (table 3). From July through October 2007, the amount of water released from the Cambridge Reservoir accounted for about 80–95 percent of the total inflow to the Stony Brook Reservoir. The increase in discharge from the Cambridge Reservoir during the summer months is common as base flow from the upper portion of the Stony Brook Reservoir Basin (above the confluence with Hobbs Brook) diminishes and additional water is needed to meet the water demand for the city of Cambridge. However, low total rainfall (table 4) during this period increased the typical duration of the elevated flow discharged from the Cambridge Reservoir. About 3 percent or less of the water from the Stony Brook Reservoir was released to the Charles River for this period. As a result of increases in precipitation, monthly mean discharge from the Cambridge Reservoir was reduced to less than 45 percent of the water entering Stony Brook Reservoir (fig. 2) from November 2007 through September 2008. Flow released to the Charles River also increased to between 2 and 79 percent (fig. 2).

The volume of water released from the Stony Brook Reservoir to the Charles River during water year 2007 and 2008 represents an annual surplus of about 107 and 94 percent, respectively, of the total annual water demand by the city of Cambridge. During water years 1999–2006, this surplus has ranged from 29 to 155 percent if average demand is assumed to be 15 Mgal/d.

Annual runoff is the total quantity of water that is discharged (runs off) from a drainage basin in a year. The annual runoff for water year 2007 for USGS stations 01104415, 01104453, 01104455, and 01104475, which were unaffected by streamflow regulation, ranged from 0.91 to 1.28 millions of gallons of water per day per square mile (Mgal/d/mi^2; table 3). However, the annual runoff for USGS station 01104433, another station unaffected by streamflow regulation, was 0.52 Mgal/d/mi^2 or about half the amount of the other stations (table 3). The low yield at USGS station 01104433 is likely the result of storm flows diverted to a neighboring intermittent stream caused by a backwater condition from a drainage pipe upstream of the monitoring station that limits the rate of flow. As a result of increases in the annual precipitation total for water year 2008 compared to 2007 (table 4), the annual runoff increased for USGS stations 01104415, 01104455, and 01104475, ranging from 1.04 to 1.50 Mgal/d/mi^2 (table 3).

Monthly reservoir contents for the Cambridge Reservoir varied from about 30 to 95 percent of capacity during water years 2007–08 (fig. 3). The reservoir storage was at the 2007–08 minimum during the month of December 2007 and near the lowest level since water year 2002. The reservoir storage was near capacity in the spring of each water year, but was subsequently drawn down, particularly during the summer and fall of 2007, as additional water was needed to supplement the city of Cambridge water supply when the yield from the upper portion of the Stony Brook Reservoir Basin diminished. Monthly reservoir storage values for the Stony Brook Reservoir varied from about 47 to 91 percent of capacity during water years 2007–08 (fig. 3). Monthly reservoir storage for Fresh Pond Reservoir was maintained at greater than 92 percent of capacity during both water years (fig. 3).

Specific Conductance Data

Measurements of specific conductance for USGS stations in the Cambridge, Massachusetts drinking-water supply area are largely affected by the size of the stream and density of roads in each subbasin (Waldron and Bent, 2001). Monthly minimum and maximum specific-conductance values can vary substantially because of stormwater runoff, particularly in the small subbasins (table 5). Conversely, the monthly specific conductance variation for streamflow immediately downstream of the Cambridge and Stony Brook Reservoirs (table 5) is small because of the large volume of impounded water behind each reservoir.

Monthly mean specific-conductance values for USGS stations for water years 2007–08 were compared to available historical data (Smith, 2005, 2007; Socolow and others, 1999, 2000, 2001, 2002, 2003, 2004; U.S. Geological Survey, 2009). In general, most monthly mean specific-conductance values for all USGS stations were below the median monthly value for prior data, and for water year 2007, often were below the minimum monthly value for prior data (figs. 4–10). Monthly mean specific-conductance values for USGS station 01104415 for most of water year 2008 were within the interquartile

Table 3. Monthly mean discharge for U.S. Geological Survey stations in the drinking-water source area for Cambridge, Massachusetts, for water years 2007–08.

[Units are in millions of gallons; --, no data; Mgal/d/mi^2, millions of gallons of water per day per square mile]

Month	U.S. Geological Survey station name and number							
	Cambridge Reservoir, unnamed tributary 2, near Lexington (01104415)	Hobbs Brook below Cambridge Reservoir near Kendal Green (01104430)	Hobbs Brook, unnamed tributary 1, near Kendal Green (01104433)	Stony Brook, unnamed tributary 2, near Weston Station (01104453)	Stony Brook, unnamed tributary 1, near Waltham (01104455)	Stony Brook at Route 20 at Waltham (01104460)	Stony Brook Reservoir, unnamed tributary 1, near Weston (01104475)	Stony Brook Reservoir at dam near Waltham (01104480)
2007								
October	0.37	7.7	0.18	1.3	0.39	17.3	0.37	1.9
November	1.1	4.8	0.28	3.2	0.77	32.4	1.1	21.5
December	0.54	10.5	0.11	2.4	0.43	31.3	0.76	16.4
January	0.52	10.2	0.12	2.4	0.50	30.5	0.85	17.5
Feburary	0.13	3.9	0.09	0.87	0.16	12.5	0.39	0.32
March	0.90	4.0	0.43	4.0	0.97	41.4	1.6	24.9
April	1.48	19.1	0.37	6.4	1.5	81.4	2.2	69.8
May	0.72	13.4	0.16	3.9	0.81	45.6	1.2	29.9
June	0.28	9.6	0.09	1.8	0.39	22.8	0.58	8.4
July	0.13	14.9	0.16	0.52	0.26	18.4	0.16	0.45
August	0.03	14.0	0.12	0.41	0.12	14.7	0.08	0.45
September	0.05	14.2	0.16	0.28	0.14	15.1	0.06	0.17
Annual statistics								
Mean monthly discharge	0.52	10.6	0.19	2.3	0.54	30.4	0.78	16.0
Runoff (Mgal/d/mi^2)	1.28	--	0.52	1.03	1.12	1.38	0.91	--
10 percent exceeds	1.16	16.2	0.46	5.3	1.23	58.2	1.6	41.4
50 percent exceeds	0.27	10.3	0.12	1.8	0.28	22.6	0.60	8.4
90 percent exceeds	0.01	3.9	0.04	0.23	0.08	12.9	0.06	0.18
2008								
October	0.06	11.3	--	--	0.16	12.7	0.07	0.28
November	0.13	4.1	--	--	0.21	9.0	0.26	0.24
December	0.24	4.3	--	--	0.28	11.4	0.36	0.28
January	0.57	0.69	--	--	0.67	20.2	0.95	4.23
Feburary	1.5	0.72	--	--	1.7	63.1	2.4	51.7
March	1.2	1.4	--	--	1.2	53.1	2.0	41.6
April	0.63	1.9	--	--	0.75	27.5	1.12	11.7

Table 3. Monthly mean discharge for U.S. Geological Survey stations in the drinking-water source area for Cambridge, Massachusetts, for water years 2007–08.—Continued

[Units are in millions of gallons; --, no data; Mgal/d/mi^2, millions of gallons of water per day per square mile]

Month	U.S. Geological Survey station name and number							
	Cambridge Reservoir, unnamed tributary 2, near Lexington (01104415)	Hobbs Brook below Cambridge Reservoir near Kendal Green (01104430)	Hobbs Brook, unnamed tributary 1, near Kendal Green (01104433)	Stony Brook, unnamed tributary 2, near Weston Station (01104453)	Stony Brook, unnamed tributary 1, near Waltham (01104455)	Stony Brook at Route 20 at Waltham (01104460)	Stony Brook Reservoir, unnamed tributary 1, near Weston (01104475)	Stony Brook Reservoir at dam near Waltham (01104480)
2008—Continued								
May	0.34	2.9	--	--	0.47	19.7	0.70	7.9
June	0.50	9.0	--	--	0.48	20.0	0.42	6.0
July	1.0	8.6	--	--	1.2	32.8	0.87	16.6
August	0.48	13.0	--	--	0.48	30.6	0.63	16.1
September	0.72	5.1	--	--	0.78	27.5	0.83	14.5
Annual statistics								
Mean monthly discharge	0.61	5.3	--	--	0.69	27.1	0.89	14.1
Runoff (Mgal/d/mi^2)	1.50	--	--	--	1.44	1.23	1.04	--
10 percent exceeds	1.3	12.9	--	--	1.6	56.2	2.0	40.7
50 percent exceeds	0.32	2.97	--	--	0.39	18.1	0.64	0.36
90 percent exceeds	0.03	0.71	--	--	0.08	9.7	0.09	0.16

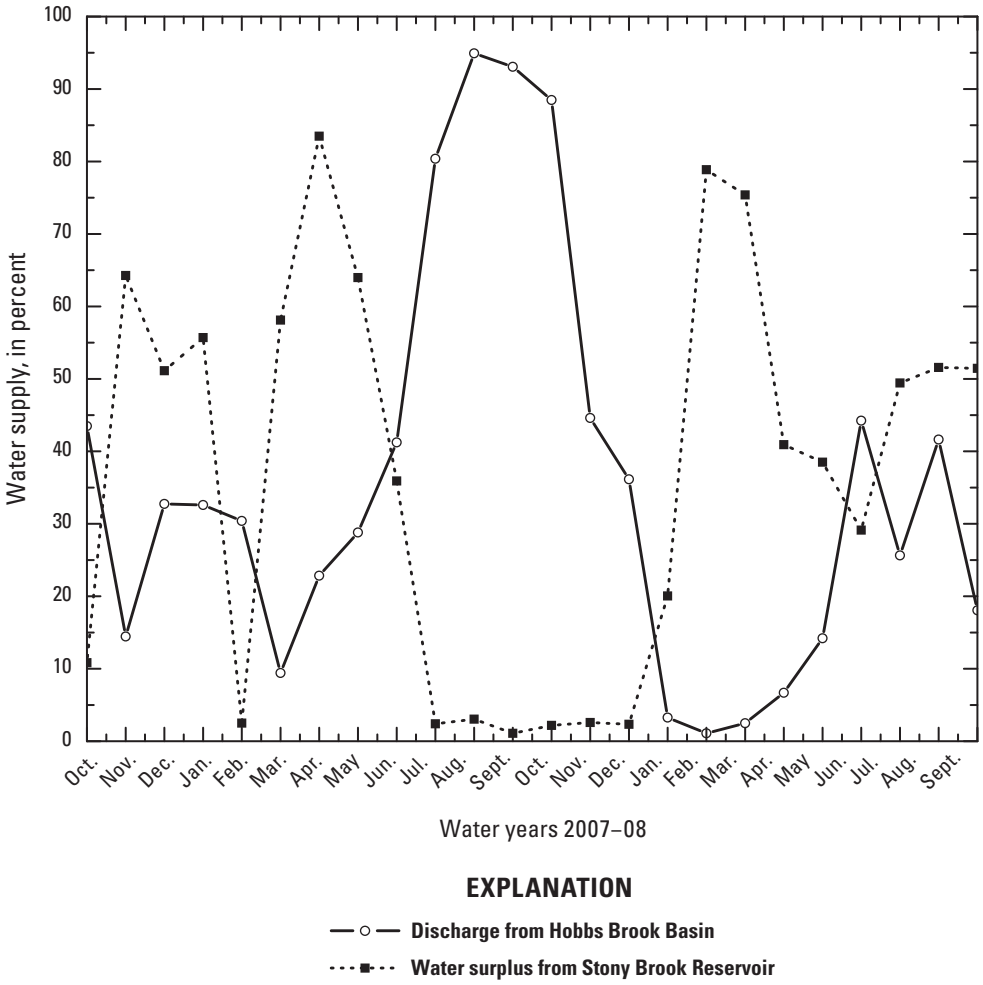

Figure 2. Discharge from the Cambridge Reservoir as a percentage of water entering the Stony Brook Reservoir, and discharge from the Stony Brook Reservoir to the Charles River as a percentage of total inflow to the Stony Brook Reservoir for water years 2007–08.

range (between the 25th and 75th percentile) of monthly specific conductance values for available data for the period from water year 1997 to water year 2007 (fig. 4), except for the month of December, which was greater than the prior maximum value; the month of January, which was between the 75th percentile and maximum value for prior data; and the months of July through September, which were less that the 25th percentile. The monthly mean specific-conductance values for streamflow for Hobbs Brook below the Cambridge Reservoir (USGS station 01104430) for December through February 2008 were greater than the prior maximum values; monthly mean specific-conductance values for March through July 2008 remained above the 75th percentile for prior data; and monthly mean specific-conductance values decreased to within the interquartile range for August and September, 2008 (fig. 5). In part, the extreme specific conductance values were caused by the influx of high specific conductance water from the tributaries to the reservoir (for example, USGS station 01104415) and the low volume of water in the reservoir at the onset of the winter (fig. 11). As a result of nearly 62 in. of rainfall in the Cambridge Reservoir watershed during water year 2008 (table 4), the monthly mean specific-conductance values in streamflow below Cambridge Reservoir decreased to more typical levels (about 700 µs/cm) by the end of the water year (fig. 5). Most monthly mean specific-conductance values for USGS station 01104455 for water year 2008 were within the interquartile range of the monthly mean specific-conductance values for the prior water years, except for the values for December 2007, and May, June, and August 2008, which were greater than the 75th percentile value for prior data, and February 2008, which was below the 25th percentile value (fig. 7). Monthly mean specific-conductance values for the first four months of water year 2008 for USGS station 01104460 were greater that the 75th percentile value for prior data (fig. 8). During this period, streamflow consisted largely of high specific conductance water from the Cambridge

Table 4. Monthly and annual totals for precipitation for U.S. Geological Survey stations in the drinking-water source area for Cambridge, Massachusetts, for water years 2007–08.

[Units are in inches]

Month of year	Hobbs Brook below Cambridge Reservoir near Kendal Green (01104430)	Stony Brook Reservoir at dam near Waltham (01104480)	Fresh Pond gate house at Cambridge (422302071083801)
		2007	
October	5.45	5.51	4.69
November	6.75	6.58	6.32
December	2.38	2.13	1.76
January	2.72	2.69	2.28
Feburary	2.32	2.17	2.08
March	5.25	5.56	4.14
April	7.61	7.89	7.43
May	4.65	4.72	3.55
June	2.56	2.94	1.98
July	4.89	4.48	2.48
August	0.69	0.97	0.71
September	1.62	1.96	1.67
Annual totals	**46.89**	**47.60**	**39.09**
		2008	
October	2.85	3.26	2.71
November	3.54	3.45	2.73
December	5.39	4.86	3.85
January	2.88	2.69	2.5
Feburary	8.94	8.73	7.79
March	5.37	5.16	5.03
April	4.54	4.98	3.98
May	2.39	2.22	2.33
June	5.37	5.14	4.19
July	9.21	9.05	6.49
August	3.32	3.30	4.33
September	7.98	9.41	8.49
Annual totals	**61.78**	**62.25**	**54.42**

Reservoir (USGS station 01104430). For the remainder of water year 2008, most monthly mean specific-conductance values for USGS station 01104460 were less than the median monthly mean specific-conductance values for the prior water years (fig. 8).

Nearly all specific conductance values for USGS station 01104475 for water year 2008 were greater than the median value for 2004–07 data (fig. 9). The streamflow for this station has the lowest specific conductance of all USGS stations in the drinking-water supply area. Monthly mean specific-conductance values for this station ranged from 181 to 410 µs/cm for water years 2004–08.

Most monthly mean specific-conductance values for the Fresh Pond Reservoir (USGS station 422302071083801) for water year 2008 were less than the median monthly mean specific-conductance values for the prior water years (2005–07), except for the values for October 2007, and February, March, and September 2008, which were greater than the prior median values (fig. 10). Monthly mean specific-conductance values for this station ranged from 422 to 733 µs/cm for water years 2005–08. Annual peaks for monthly mean specific-conductance values for the Fresh Pond Reservoir that occur during late summer and fall (fig. 10) are due to a shift in water source. During most of the year, Fresh

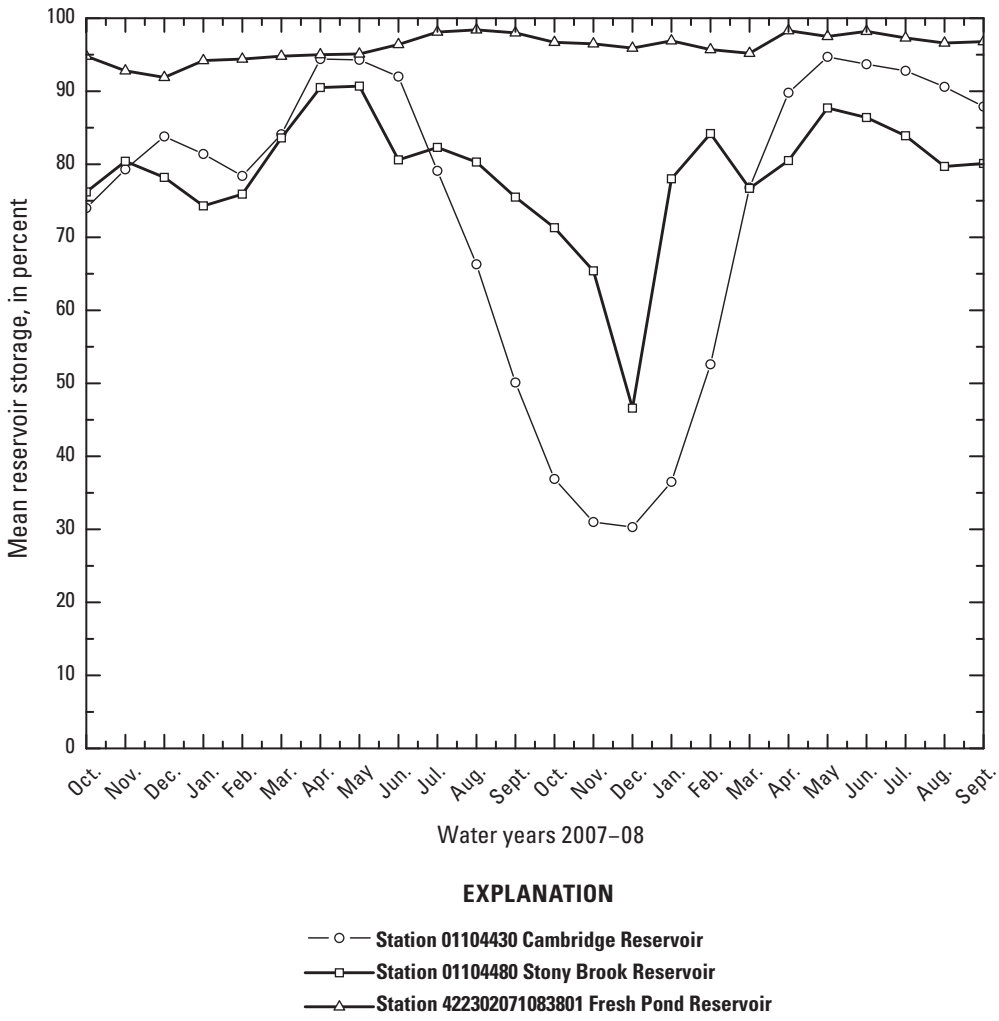

Figure 3. GMonthly mean reservoir storage as a percentage of capacity for water years 2007–08 for the Cambridge Reservoir, Stony Brook Reservoir, and the Fresh Pond Reservoir.

Pond Reservoir receives a mixture of water from sources with dissimilar specific conductances, namely, Hobbs Brook Basin and Stony Brook Reservoir Basin. However, as the water yield from the Stony Brook Reservoir Basin diminishes during the late summer and fall, the Cambridge Reservoir becomes the primary source of water for the Fresh Pond Reservoir. Similar trends in monthly mean specific-conductance values for Stony Brook (USGS station 01104460; fig. 8) often are recorded during the same months. The annual mean specific-conductance values for Fresh Pond Reservoir during water years 2007–08 were 483 and 497 µS/cm, respectively (table 5), which were lower than the annual mean specific-conductance range (514–553 µS/cm; Smith, 2005, 2007, 2008) for the prior three water years (2004–06).

Many of the small tributaries to the reservoirs differ from the primary streams in that both the quantity and quality of water in the tributaries respond more rapidly to stormwater runoff. The daily mean specific-conductance values for USGS stations 01104415, 01104433, and 01104455 differed by as much as 3 orders of magnitude from the annual mean values during water years 2007–08 (table 5). Daily mean specific conductance values for USGS station 01104475 had the smallest range between the minimum and maximum daily value, differing by about 1,300 and 1,900 µS/cm, or about 530 and 595 percent of the mean annual value during water years 2007 and 2008, respectively. Daily mean specific conductance values for USGS station 01104455 had the greatest range, differing by about 34,300 and 98,500 µS/cm, or about 3,150 and 6,480 percent, of the mean annual value during water years 2007 and 2008, respectively. The coefficient of variation (COV; the standard deviation divided by the mean) for monthly mean specific-conductance values for water year 2007 ranged from about 15 percent to about 38 percent (01104455>01104433>01104415>01104475). The COV

Table 5. Monthly and annual statistics for daily mean specific conductance for U.S. Geological Survey stations in the drinking-water source area for Cambridge, Massachusetts, for water years 2007–08.

[Units are in microsiemens per centimeter; E, estimated from less than a full month or year of values; Min, minimum; Max, maximum; --, no data]

Month of year	U.S. Geological Survey station name and number											
	Cambridge Reservoir, unnamed tributary 2, near Lexington (01104415)			Hobbs Brook below Cambridge Reservoir near Kendal Green (01104430)			Hobbs Brook, unnamed tributary 1, near Kendal Green (01104433)			Stony Brook, unnamed tributary 1, near Waltham (01104455)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
2007												
October	2,450	78	1,760	663	633	649	1,680	108	1,010	E1,180	E26	E990
November	1,860	126	1,030	637	596	619	1,520	57	943	1,160	20	798
December	1,950	158	1,220	601	582	589	1,600	184	1,230	2,200	18	898
January	5,920	378	1,380	607	570	580	4,410	258	1,370	16,000	125	873
Feburary	7,430	1,610	2,640	790	290	597	E4,740	E672	E2,450	E34,300	E804	E2,370
March	16,500	349	1,410	645	592	630	5,040	415	1,520	29,500	231	1,160
April	3,810	234	1,170	640	618	629	2,330	222	1,360	E8,580	106	E929
May	1,900	241	1,340	643	623	634	1,910	204	1,390	1,340	64	944
June	2,460	187	1,790	640	615	633	1,900	121	1,460	E1,260	E33	E1,090
July	2,790	118	1,830	637	605	630	1,910	177	1,220	1,230	31	1,030
August	2,630	546	1,820	624	554	598	1,830	509	1,360	1,500	40	1,040
September	E1,920	E213	E1,640	644	598	618	1,900	146	1,510	2,670	26	997
Annual statistics	**16,500**	**78**	**E1,590**	**790**	**290**	**617**	**5,040**	**57**	**E1,402**	**E34,300**	**18**	**E1,090**
2008												
October	E1,980	E172	E1,570	658	630	648	--	--	--	E1,030	E21	E940
November	2,350	135	1,750	E657	E633	E641	--	--	--	996	30	885
December	18,300	1,990	4,260	E1450	E639	E829	--	--	--	98,500	425	4,480
January	14,200	505	2,610	1,780	1,430	1,670	--	--	--	20,000	227	1,770
Feburary	E13,500	E311	E1,930	1,680	1,450	1,580	--	--	--	21,000	85	1,680
March	20,000	328	1,680	1,470	796	1,060	--	--	--	36,000	106	1,530
April	2,240	351	1,420	830	795	808	--	--	--	1,680	53	1,130
May	2,890	244	1,750	835	791	817	--	--	--	1,470	75	1,210
June	3,010	93	1,870	848	815	836	--	--	--	1,930	27	1,230
July	3,460	104	1,710	845	784	818	--	--	--	1,420	30	1,120
August	2,480	177	1,640	808	667	705	--	--	--	1,390	36	1,180
September	E2550	E74	E1,550	719	683	702	--	--	--	1,880	19	1,090
Annual statistics	**20,000**	**E74**	**E1,980**	**1,780**	**630**	**964**	--	--	--	**98,500**	**19**	**E1,520**

Table 5. Monthly and annual statistics for daily mean specific conductance for U.S. Geological Survey stations in the drinking-water source area for Cambridge,—Continued Massachusetts, for water years 2007–08.—Continued

[Units are in microsiemens per centimeter; E, estimated from less than a full month or year of values; Min, minimum; Max, maximum; --, no data]

Month of year	Stony Brook at Route 20 at Waltham (01104460)			Stony Brook Reservoir, unnamed tributary number 1, near Weston (01104475)			Stony Brook Reservoir at dam near Waltham (01104480)			Fresh Pond gate house at Cambridge (422302071083801)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
2007												
October	620	285	513	1,390	71	241	--	--	--	539	476	503
November	467	244	345	241	76	181	--	--	--	534	467	500
December	436	271	399	258	168	234	--	--	--	529	448	480
January	483	313	384	420	191	250	--	--	--	487	436	460
Feburary	976	365	445	E652	E242	E290	--	--	--	489	460	476
March	1,990	292	498	E263	E156	E225	--	--	--	E626	E460	E478
April	553	268	357	264	156	238	--	--	--	464	426	443
May	448	293	392	269	123	209	--	--	--	E444	E420	E429
June	594	253	466	325	82	250	--	--	--	467	422	434
July	629	320	574	421	67	280	--	--	--	505	440	472
August	648	321	609	332	105	292	--	--	--	610	458	539
September	674	433	631	383	86	306	--	--	--	E605	E481	E581
Annual statistics	**1,990**	**244**	**468**	**1,390**	**67**	**E250**	**--**	**--**	**--**	**E626**	**E420**	**E483**
2008												
October	675	430	644	2,020	103	335	--	--	--	612	577	594
November	647	399	511	331	128	288	--	--	--	590	419	479
December	3,670	464	708	754	256	347	--	--	--	458	404	423
January	1,220	451	633	719	290	410	--	--	--	505	434	471
Feburary	1,890	287	427	1,880	228	354	--	--	--	551	500	527
March	2,010	283	403	513	231	338	--	--	--	564	508	541
April	486	305	404	344	251	323	--	--	--	527	441	475
May	530	299	437	366	281	319	--	--	--	E446	E393	E422
June	717	184	528	413	129	340	699	507	582	480	396	432
July	712	192	459	407	79	298	753	337	551	511	426	451
August	664	315	505	434	E136	E288	E599	E387	E493	667	402	542
September	686	201	436	366	92	279	651	366	516	649	441	606
Annual statistics	**3,670**	**184**	**509**	**2,020**	**79**	**E326**	**--**	**--**	**--**	**667**	**E393**	**E497**

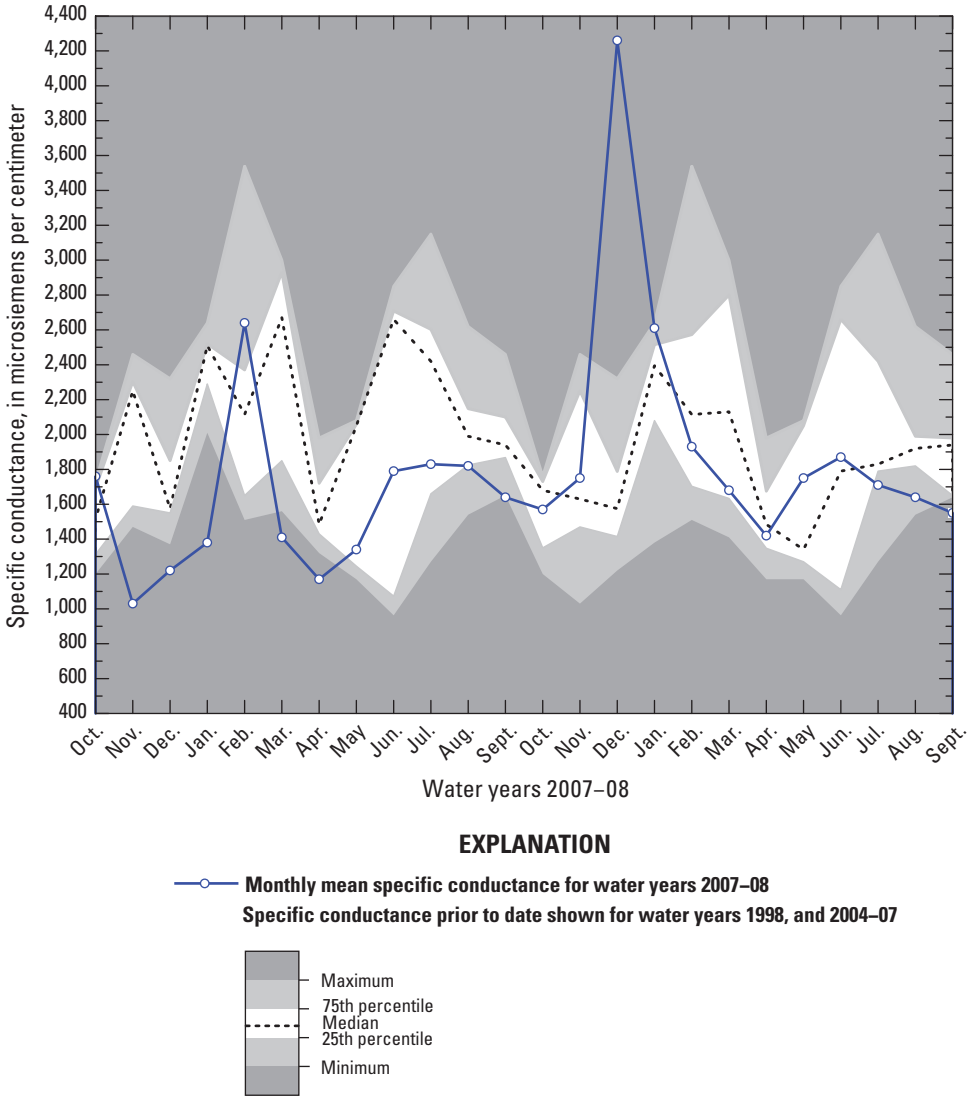

Figure 4. Comparison of specific conductance for water years 2007–08 to prior specific conductance data for U.S. Geological Survey station 01104415, Cambridge Reservoir, unnamed tributary number 2, near Lexington, Massachusetts.

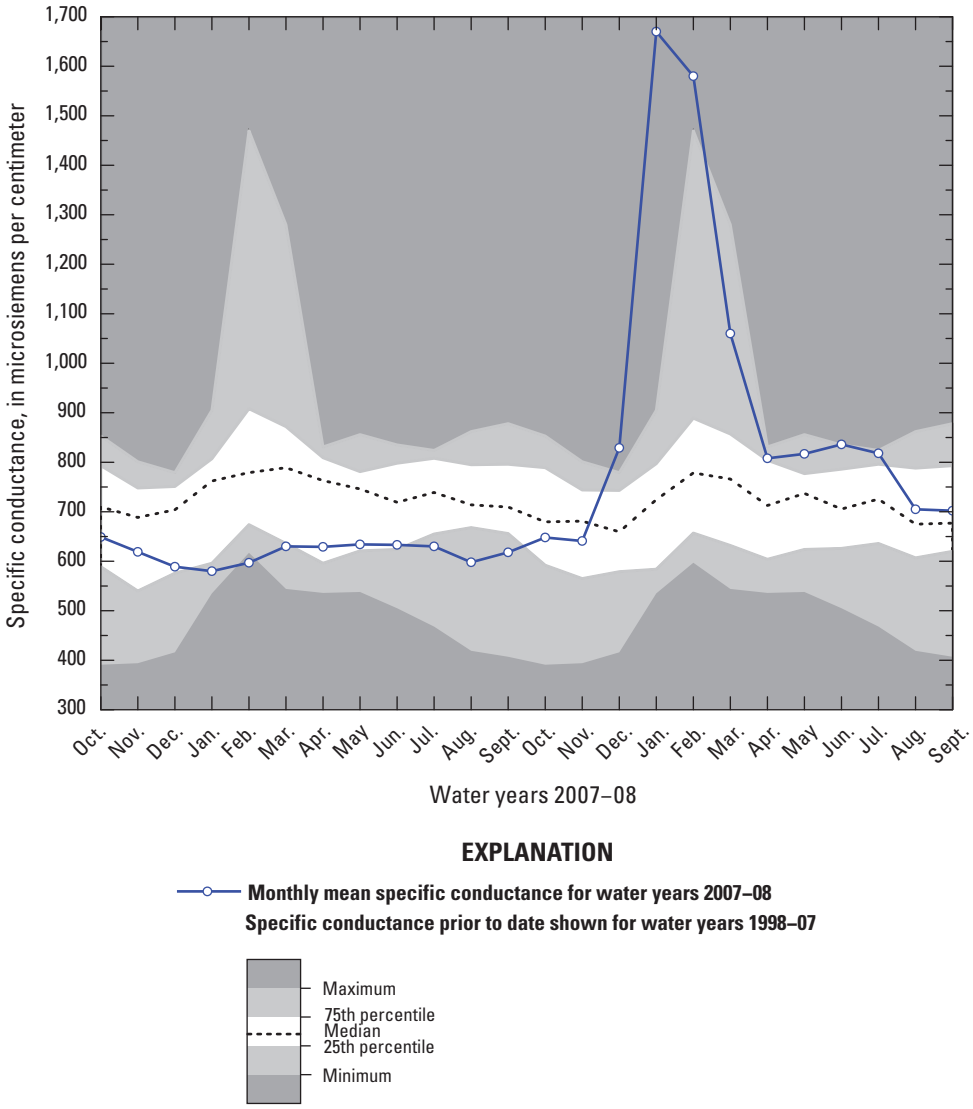

Figure 5. Comparison of specific conductance for water years 2007–08 for U.S. Geological Survey station 01104430, Hobbs Brook below Cambridge Reservoir near Kendal Green, Massachusetts.

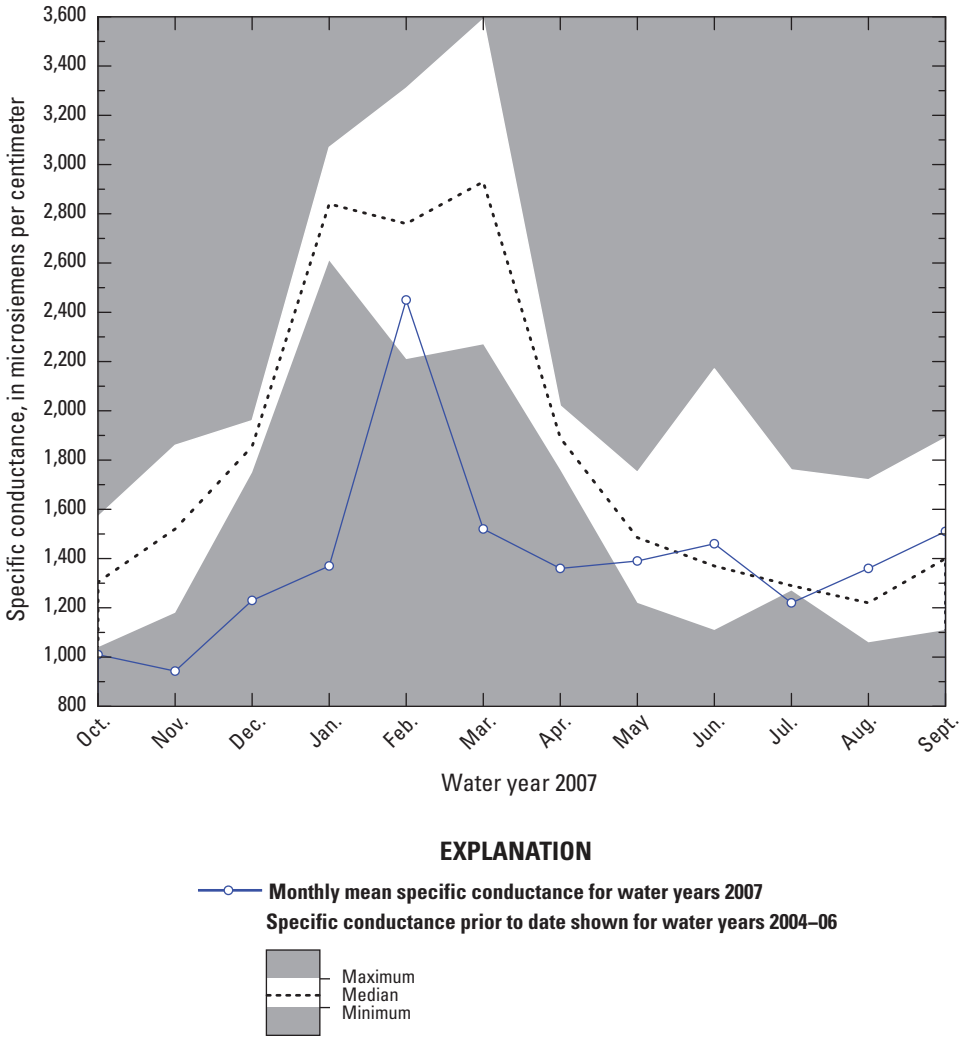

Figure 6. Comparison of specific conductance for water year 2007 for U.S. Geological Survey station 01104433, Hobbs Brook unnamed tributary number 1, near Kendal Green, Massachusetts.

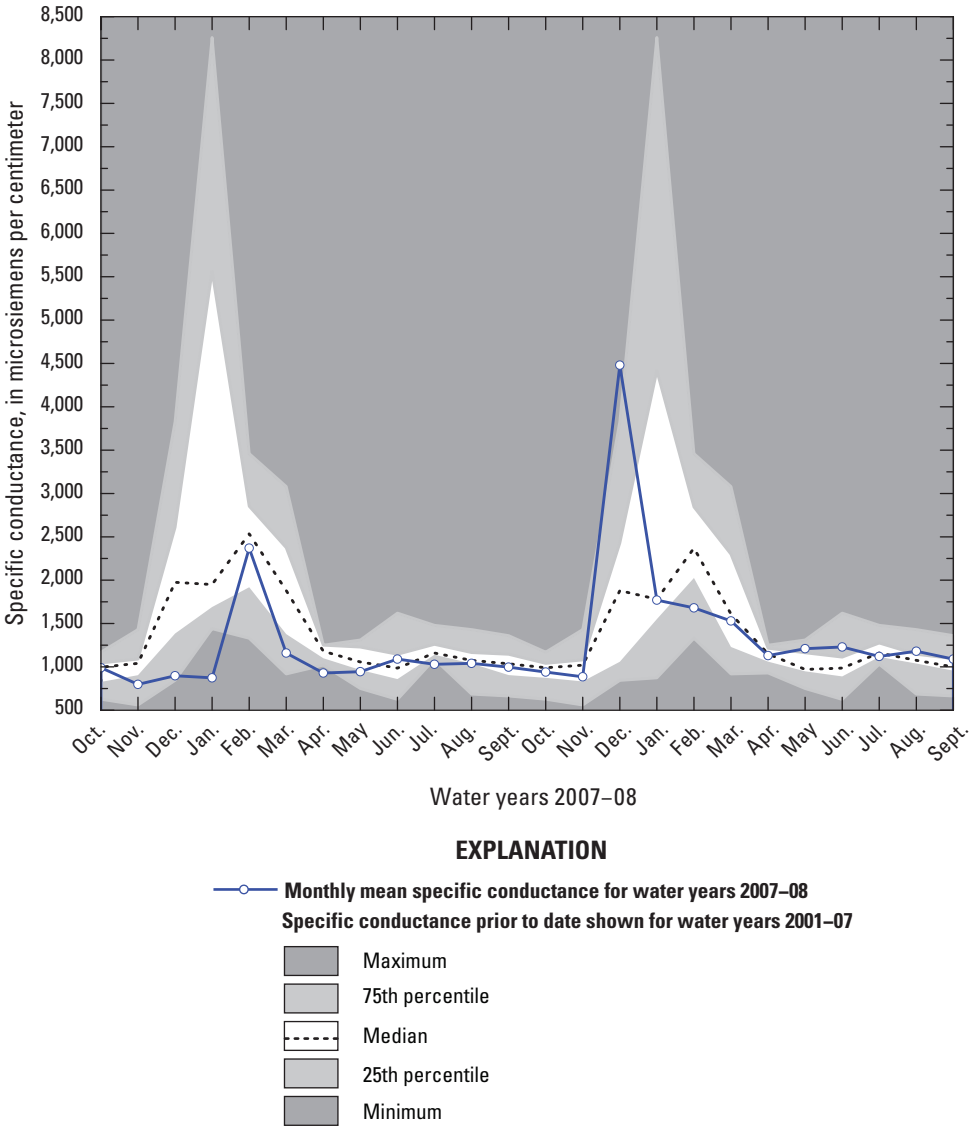

Figure 7. Comparison of specific conductance for water years 2007–08 for U.S. Geological Survey station 01104455, Stony Brook, unnamed tributary number 1, near Waltham, Massachusetts.

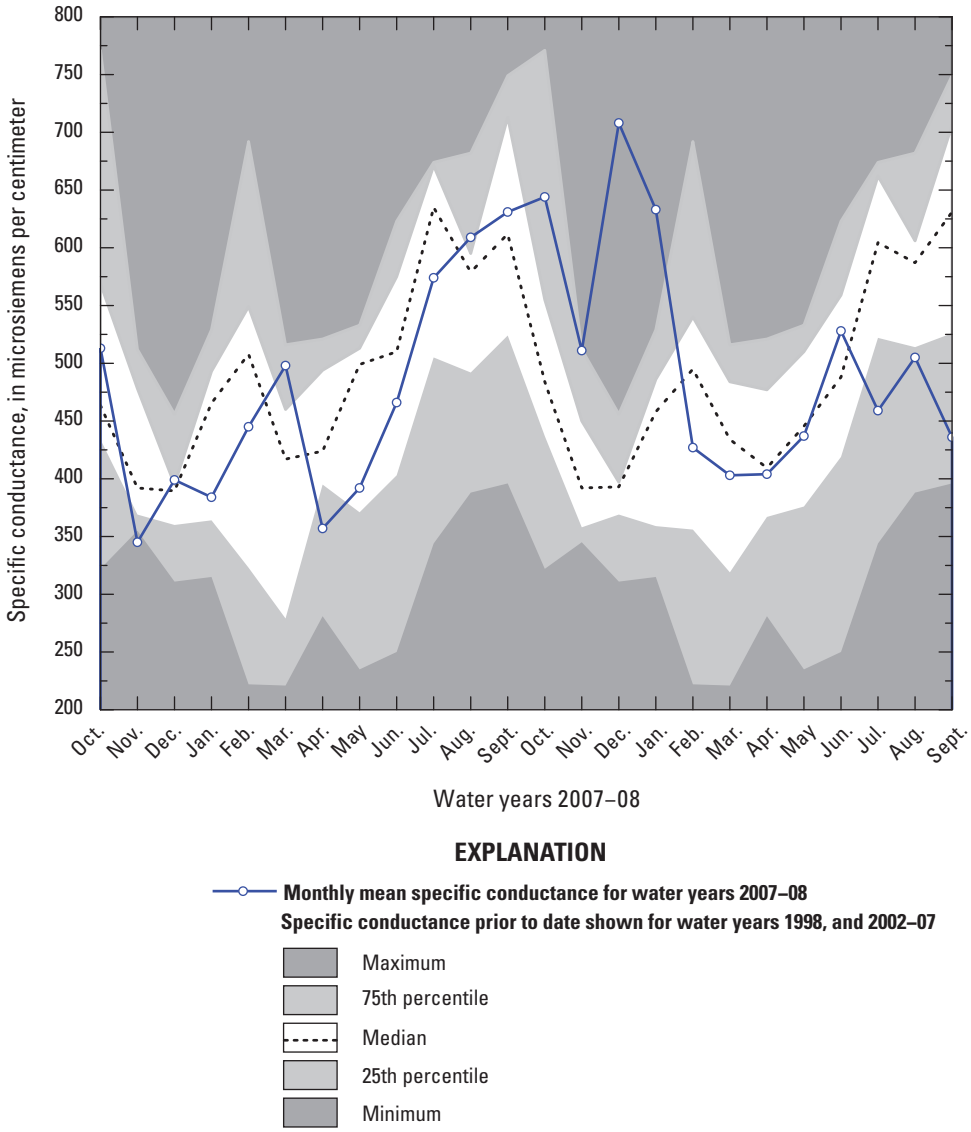

Figure 8. Comparison of specific conductance for water years 2007–08 for U.S. Geological Survey station 01104460, Stony Brook at Route 20 at Waltham, Massachusetts.

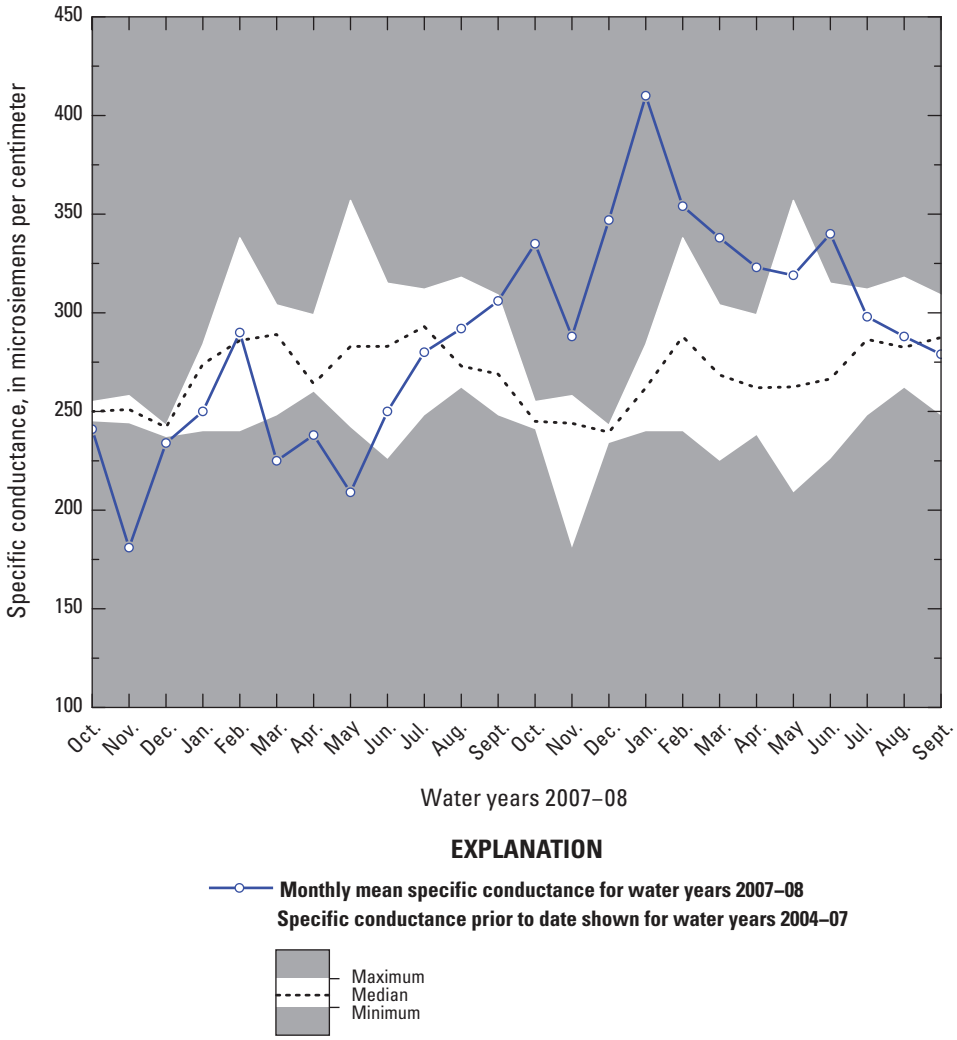

Figure 9. Comparison of specific conductance for water years 2007–08 for U.S. Geological Survey station 01104475, Stony Brook Reservoir, unnamed tributary number 1, near Weston, Massachusetts.

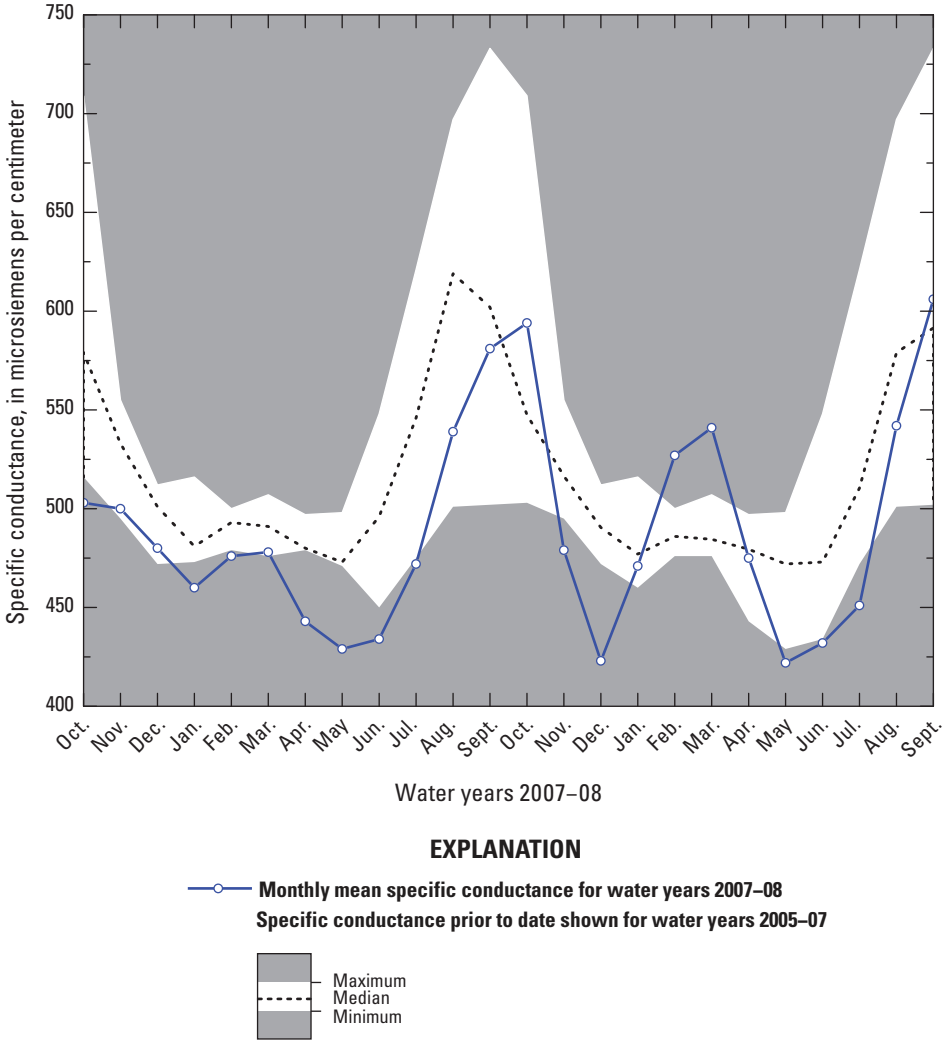

Figure 10. Comparison of specific conductance for water years 2007–08 for U.S. Geological Survey station 422302071083801, Fresh Pond in Gate House at Cambridge, Massachusetts.

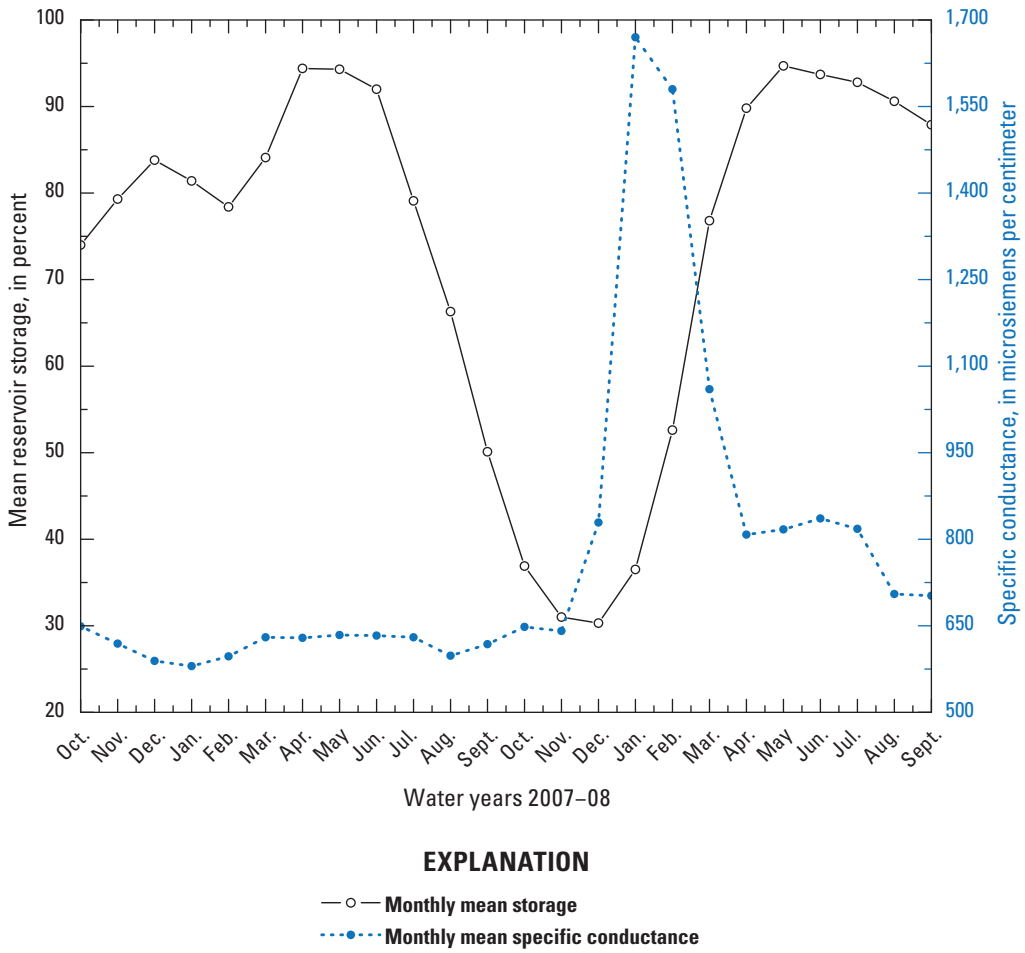

Figure 11. Monthly mean reservoir storage as a percentage of capacity and specific conductance for water years 2007–08 for U.S. Geological Survey station 01104430, Hobbs Brook below Cambridge Reservoir, near Kendal Green, Massachusetts.

for monthly mean specific-conductance values for water year 2008 ranged from about 11 percent to about 64 percent (01104455>01104415>01104475).

Water-Quality Data

The physical properties and chemical concentrations for water samples were compared to the U.S. Environmental Protection Agency (USEPA; U.S. Environmental Protection Agency, 2007) secondary drinking-water standards, where available, and the Massachusetts drinking-water guideline for sodium (Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Department of Environmental Protection, Office of Research and Standards, 2009). Secondary drinking-water regulations are non-mandatory water-quality standards established by the USEPA. They are guidelines designed to assist public water suppliers in managing their drinking water for aesthetic considerations, such as taste, odor, color, foaming, corrosivity, staining, scaling, and sedimentation. These constituents do not present a risk to human health at the secondary maximum contaminant level (U.S. Environmental Protection Agency, 2007). Although these standards are typically applied to finished water, the presence of these constituents in concentrations that exceed the respective standards can damage water equipment or reduce the effectiveness of treatment for other contaminants. Some constituents, such as chloride, sodium, and nitrogen, cannot be effectively removed or reduced by the Cambridge water-treatment facility (Smith, 2007).

In 3 of 81 water samples, measurements of pH were less than the USEPA secondary drinking-water standard of 6.5 pH units. These measurements (each 6.4 pH units) were made in one water sample collected at USGS station 01104420 during base-flow conditions and in two composite samples of stormwater collected at USGS station 01104455 (table 6, at end of report). Concentrations of dissolved chloride in all water samples collected during base-flow conditions from USGS stations 01104410, 01104415, 01104420, 01104433,

and 01104455 were near or exceeded the USEPA secondary drinking-water standard of 250 mg/L (milligrams per liter). The 504-mg/L chloride concentration measured in a water sample collected from the USGS station below the Cambridge Reservoir (01104430) on January 31, 2008, was the highest concentration measured at that station by the USGS between water years 1997–2008 (Smith, 2008). All samples collected during base-flow conditions at USGS stations 01104415 and 01104433, and five of six samples collected at USGS station 01104455 exceeded the secondary drinking-water standard for chloride (table 6). The concentration of chloride in stormwater also exceeded the standard in two of six composite samples at USGS station 01104415, in two of nine composite samples of at USGS 01104455, and for a single composite sample collected at USGS station 01104433 (table 6). Concentrations of dissolved sulfate in all water samples were below the USEPA secondary drinking-water standard of 250 mg/L. Concentrations of dissolved sodium for all samples collected in the drinking-water source area exceeded the Massachusetts drinking water guideline of 20 mg/L, with the exception of three composites samples of stormwater collected at USGS stations 01104455 and 01104475 (table 6).

Concentrations of dissolved calcium, sodium, chloride, and sulfate in water samples collected in the drinking-water source area (excluding Fresh Pond Reservoir) ranged from 2.99 to 75.8 mg/L, 7.47 to 534 mg/L, 11.4 to 1,050 mg/L, and 2.85 to 47.2 mg/L, respectively (table 6). With a few exceptions, the concentrations of these constituents in water samples collected during storms from the tributaries were generally lower than the concentrations observed in water samples collected during base-flow conditions at the primary sampling stations. The highest concentrations of dissolved sodium (534 mg/L), chloride (1,050 mg/L), and sulfate (47.2 mg/L) were found in a water sample collected on March 2, 2007, during a winter storm at USGS station 01104415. The highest concentration of dissolved calcium (75.8 mg/L) was measured in a water sample collected on April 11, 2007, at USGS station 01104433 during base-flow conditions.

The concentration of total nitrogen in water samples for all subbasins ranged from 0.42 to 3.14 mg/L (table 6). Average total nitrogen concentrations in water samples for the tributaries at the primary sampling sites ranged from 1.67 to 2.21 mg/L. For samples collected at USGS station 01104460, the average concentration of total nitrogen in water samples collected during base-flow conditions was similar (within 0.05 mg/L) to the average concentration of total nitrogen in composite samples of stormwater; however, the difference between average concentrations of total nitrogen in samples of base flow and stormwater for the tributaries ranged from -0.57 to 0.53 mg/L. The highest concentration of total nitrogen (3.14 mg/L) was measured in a water sample collected on March 2, 2007, in a composite sample of stormwater at USGS station 01104415, and on September 25, 2007, in a sample of water collected during base-flow conditions at USGS station 01104475. The average concentration of total nitrogen for samples collected during base-flow conditions at all of the sampling locations in the drinking-water source area (fig. 1) ranged from 0.50 mg/L at USGS station 01104410 to 2.07 mg/L at USGS station 01104475 (01104410<01104430<01104405<01104460<01104420<01104390<01104453<01104415<01104433<01104455<01104475).

The concentration of total phosphorus in water samples for all subbasins ranged from 0.006 to 0.53 mg/L (table 6). Average phosphorus concentrations in water samples for the tributaries at the primary sampling sites ranged from 0.087 to 0.125 mg/L. For samples collected at USGS station 01104460, the average concentration of total phosphorus in water samples collected during base-flow conditions was similar (within 0.034 mg/L) to the average concentration of phosphorus in composite samples of stormwater at USGS station 01104460; however, the difference between average concentrations of total phosphorus in samples of base flow and stormwater for the tributaries ranged from about 0.10 to 0.23 mg/L. The highest concentration of total phosphorus (0.53 mg/L) was measured in a composite sample of water collected during a storm on March 2, 2007, at USGS station 01104415 (table 6). The average concentration of total phosphorus for samples collected during base-flow conditions at all of the sampling locations (fig. 1) in the drinking-water source area ranged from 0.008 mg/L at USGS station 01104455 to 0.041 mg/L at USGS station 01104433 (01104455<01104415<01104430<01104475<01104410<01104460<01104390<01104453<01104420<01104405<01104433).

Eighteen pesticides and caffeine were detected in water samples (table 6) collected in the primary streams and tributaries to the Cambridge Reservoir and Stony Brook Reservoir, and in raw water collected from the Cambridge water-treatment facility intake from the Fresh Pond Reservoir in water years 2007–08. Most of these pesticides are found in over-the-counter products used for turf management and the treatment of ornamental shrubs (table 7). Caffeine was detected in 54 percent of 80 water samples at concentrations ranging from 0.004 to 0.557 µg/L (micrograms per liter). Caffeine was detected in water samples collected at all USGS sampling stations except for 01104390, 01104410, and 01104453. Imidacloprid, siduron, and norflurazon were the most frequently detected pesticides (table 8) in samples of water collected in the drinking-water source area, with the number of detections ranging from about 29 to 32 percent. Caffeine and 2,4-D were more frequently detected in water samples collected during storms than in water samples collected during base-flow conditions (table 8). Imidacloprid, siduron, and 2,4-D were the only widespread pesticides detected in water samples collected at primary sampling stations (fig. 1 and table 8). The herbicide norflurazon was detected in nearly all water samples collected at USGS station 01104455. The herbicide siduron; the insecticides carbaryl and imidacloprid; and the fungicides benomyl, metalaxyl, and propiconazole were detected in water samples collected under base-flow and stormflow conditions at USGS station 01104475 at a frequency equal to or greater than 50 percent (table 8).

Table 7. Characteristics of selected pesticides detected in samples of base-flow and stormflow collected in the Hobbs Brook and Stony Brook Reservoir Basins, Massachusetts, water years 2007–08.

[CAS, Chemical Abstracts Service]

Pesticide target analyte	Trade or common name(s)	Type of pesticide	[1]CAS registry number	Use	References
2,4-D	"Agent White," Bladex-B, Brush Killer 64, Dicofur, Dormon, Ipaner, Moxon, Netagrone, Pielik, Verton 38, Mota Maskros, Silvaprop 1, Agricorn D, Acme LV4, Croprider, Fernesta, Lawn-Keep, Pennamine D, Plantgard, Tributon, Weed-B-Gon, Weedatul, Agroxone, Weedar, Salvo, Green Cross Weed-No-More 80, Red Devil Dry Weed Killer, Scott's 4XD, Weed-Rhap LV40, Weedone 100, 2,4-Dichloro-phenoxyacetic acid, Weedon-2,4,-DP	Herbicide	94–74–7	Used for the control of broadleaf weeds in agriculture, and for control of woody plants along roadsides, railways, and utilities rights of way.	U.S. Environmental Protection Agency (2006), Wagner and others (2006b)
2,4-D methyl ester	Aqua Kleen, Weeone, and Emulsamine	Herbicide	1928–38–7	Used for the control of aquatic weeds, cropland and non-crop area weeds.	Wagner and others (2006b), Hornsby and others (1996)
2-Chloro-6-ethylamino-4-amino-s-triazine	Triazine degradation compound	Herbicide metabolite	94–75–7	Parent compound is used to control broadleaf and grassy weeds in crops and non-cropped areas.	Wagner and others (2006b)
Atrazine	Aatrexx	Herbicide	1912–24–9	Used to control broadleaf and grassy weeds in crops and non-crop areas.	Wagner and others (2006b)
Benomyl	Agrocit, Benex, Benlate, Benosan, Fundazol, Fungidice 1991, and Tersan 1991	Fungicide	17804–35–2	Used as a fungicide on vegatables, ornament shrubs, and turf.	U.S. Environmental Protection Agency (2001), Hornsby and others (1996), Extension Toxicology Network (1996)
Caffeine	None	Stimulant	58–08–2	Coffee, tea, cocoa, soft drinks, chocolate, prescription and over-the-counter drugs	Seiler and others (1999)

Table 7. Characteristics of selected pesticides detected in samples of base-flow and stormflow collected in the Hobbs Brook and Stony Brook Reservoir Basins, Massachusetts, water years 2007–08.—Continued

[CAS, Chemical Abstracts Service]

Pesticide target analyte	Trade or common name(s)	Type of pesticide	[1]CAS registry number	Use	References
Carbaryl	Ortho Seven, Sevin	Insecticide	63–25–2	Used as a broad-spectrum insecticide in agriculture, professional turf management and ornamental production, and residential lawns and gardens.	U.S. Environmental Protection Agency (2004a), Hornsby and others (1996)
Dinoseb	Basanite, Caldon, Chemox, Chemsect DNBP, Dinitro, Dynamyte, Elgetol, Gebutox, Hel- Fire, Kiloseb, Nitropone, Premerge, Sinox General, Subitex, and Vertac Weed Killer.	Herbicide	88–85–7	Used in field crops for the selective control of grass and broadleaf weeds in corn; also used as an insecticide in grapes; and as a seed crop drying agent. Sale discontinued in 1986.	Wagner and others (2006b), Hornsby and others (1996), Extension Toxicology Network (1993a)
Diuron	Aguton, DCMU, Di-on, Direx, Karmex, Topsite	Herbicide	330–54–1	Used for the control of weeds and mosses on turf and on many crops.	Wagner and others (2006b), Hornsby and others (1996), Extension Toxicology Network (1993b)
Fenuron	Dybar, Beet-Kleen	Herbicide	101–42–8	Used on leeks, fruits, and nursery trees.	Wagner and others (2006b), Hornsby and others (1996)
Imidacloprid	Admire, Condifor, Gaucho, Premier, Premise, Provado, Marathon, Merit	Insecticide	138261–41–3	Used for the control of sucking insects, including aphids, termites, and turf insects in crops and turf.	Wagner and others (2006b), Extension Toxicology Network (2005)
2-methyl-4-chlorophenoxyacetic acid (MCPA)	Agritox, Agroxone, Border Master, Chiptox, Metaxon, Rhomene, Rhonox, Weed-Rhap, Weedone, Weedar	Herbicide	94–74–6	Used for selective control of broadleaf weeds on turf, lawns, vines, and rights-of-way, and in forestry applications.	Wagner and others (2006b), U.S. Environmental Protection Agency (2004b), Hornsby and others (1996), Extension Toxicology Network (1993c)

Table 7. Characteristics of selected pesticides detected in samples of base-flow and stormflow collected in the Hobbs Brook and Stony Brook Reservoir Basins, Massachusetts, water years 2007–08.—Continued

[CAS, Chemical Abstracts Service]

Pesticide target analyte	Trade or common name(s)	Type of pesticide	[1]CAS registry number	Use	References
Metalaxyl	Ridomil, Apron, Delta-Coat AD, Subdue 2E	Fungicide	57837–19–1	Controls plant diseases caused by water-mold fungi. Used on crops, ornament shrubs and trees, and turf.	Wagner and others (2006b), Hornsby and others (1996), U.S. Environmental Protection Agency (1994), Extension Toxicology Network (1993d)
Norflurazon	Zorial, Solicam, Evital	Herbicide	27314–13–2	Used for the control of germinating annual grasses and broadleaf weeds in agricultural, nonagricultural, and industrial areas.	Wagner and others (2006b), U.S. Environmental Protection Agency (1996), Hornsby and others (1996)
Propiconazole	Alamo, Banner, Benit, Break, Bumper, Desmel, Fidis, Juno, Mantis, Maxx, Novel, Practis, Orbit, Radar, Restore, Spire, Taspa, Tilt, Wocosin	Fungicide	60207–90–1	Used on grasses grown for seed, many crops, conifors, hardwoods, and fruit trees.	Wagner and others (2006b), Extension Toxicology Network (1997), Hornsby and others (1996)
Propoxur	Arprocarb, Bay 9010, Bayer 39007, Baygon, Bifex, Blattanex, Bolfo, Invisigard, Mobay, PHC, Propogon, Propyon, Rhoden, Sendra, Sendran, Suncide, Tendex, UNDEN, Undene	Insecticide	114–26–1	Used to control insects in lawns, turf, and buildings.	Wagner and others (2006b), Hornsby and others (1996), Extension Toxicology Network (1993e)
Siduron	Tupersan, Trey	Herbicide	1982–49–6	Preemergence treatment for turf.	Wagner and others (2006b), Hornsby and others (1996)
Sulfometuron-methyl	Oust Weed Killer and DPX 5648	Herbicide	74222–97–2	Used to control annual and perennial grasses and broad-leaved weeds in non-crop areas; also used to control woody tree species.	Wagner and others (2006b), Hornsby and others (1996), Extension Toxicology Network (1994)
Tebuthiuron	Spike, Brush Bullet, EL-103, Graslan, Perflan, Herbec, Herbic and Reclaim.	Herbicide	34014–18–1	Used for the control of weeds in non-crop areas, rangelands, rights-of-way and industrial sites.	Wagner and others (2006b), Hornsby and others (1996), Extension Toxicology Network (1993f)

[1] This report contains CAS Registry Numbers®, which is a Registered Trademark of the American Chemical Society. CAS recommends the verification of the CASRNs through CAS Client ServicesSM.

Table 8. Frequency of detection and maximum concentration of selected pesticides and caffeine in six samples of base-flow and six samples of stormflow collected in the Hobbs Brook and Stony Brook Basins and in four samples of raw-water collected from the intake of the water-treatment facility at Fresh Pond, Massachusetts, during water years 2007–08.

[E, the recovery or variation in recovery of the analyte was outside the laboratory control range or concentration reported is less than laboratory reporting level and is qualified as estimated; shaded areas indicate where the maxiumun concentration was measured]

Target analyte	U.S. Geological Survey station number or name and sample type										Fresh pond raw-water intake (percent)	Maximum concentration (micrograms per liter)
	01104415		01104433		01104455		01104460		01104475			
	Base flow (percent)	Stormflow (percent)	Base flow (percent)	Stormflow (percent)	Base flow (percent)	[1]Stormflow (percent)	Base flow (percent)	Stormflow (percent)	[2]Base flow (percent)	Stormflow (percent)		
2,4-D methyl ester	0	0	17	0	0	0	0	0	0	0	0	E0.041
2,4-D	0	50	0	67	0	33	0	17	0	33	0	E0.740
2-Chloro-6-ethylamino-4-amino-s-triazine	0	0	0	0	67	11	0	0	0	0	0	E0.01
Atrazine	0	0	0	17	50	11	50	0	14	0	0	E0.017
Benomyl	0	0	0	50	0	0	0	0	71	50	0	E0.017
Caffeine	50	83	67	100	0	100	17	100	0	83	25	0.557
Carbaryl	0	33	0	0	0	0	0	0	71	50	50	0.056
Dinoseb	0	0	0	0	0	0	0	0	0	0	25	E.017
Diuron	67	0	67	0	50	0	33	50	0	0	0	E0.027
Fenuron	0	0	0	0	0	11	0	0	0	0	0	E0.036
Imidacloprid	0	33	17	33	33	0	17	0	100	83	0	1.21
2-methyl-4-chlorophenoxyacetic acid (MCPA)	0	15	0	0	0	11	0	0	0	0	0	E0.015
Metalaxyl	0	0	0	0	0	0	0	0	71	50	0	E0.028
Norflurazon	0	0	0	0	100	78	33	67	0	0	50	0.165
Propoxur	0	0	0	0	0	0	0	0	14	0	0	E0.001
Propiconazole	0	0	0	0	0	0	0	0	67	67	0	0.084
Siduron	17	33	33	17	0	22	33	50	57	50	50	0.114
Sulfometuron-methyl	0	0	0	0	50	0	0	0	0	0	0	E0.005
Tebuthiuron	0	0	0	0	33	17	17	0	0	0	0	E0.01

[1]Percentage calculated from nine samples.

[2]Percentage calculated from seven samples.

Eleven pesticides and caffeine were detected in water samples collected at the secondary sampling stations during water years 2007–08 (table 6). The detections for most pesticides at the secondary sampling stations were limited to samples collected during May, 2007. Atrazine and imidacloprid were the only pesticides detected in water samples from the secondary sampling station on Stony Brook (USGS station 01104390). Atrazine, as well as siduron and caffeine, also were detected in a water sample collected at USGS station 01104405. The pesticides 2-chloro-6-ethylamino-4-amino-s-triazine, diuron, norflurazon, and sulfometuron-methyl were detected in water samples collected at USGS station 01104410. The pesticides 2,4-D, imidacloprid, norflurazon, and siduron, and caffeine were detected in water samples collected at USGS station 01104420. The pesticides diuron, norflurazon, and siduron, and caffeine were detected in water samples collected from Hobbs Brook below the Cambridge Reservoir (USGS station 01104430). With the exception of 2-chloro-6-ethylamino-4-amino-s-triazine, norflurazon, and sulfometuron-methyl, all of the previous pesticides (2,4-D, atrazine, carbaryl, diuron, imidacloprid, metalazyl, and siduron) were measured in water samples collected from USGS station 01104453. Trace amounts of caffeine, carbaryl, dinoseb, norflurazon, and siduron were also detected in water from the Fresh Pond Reservoir (table 4; USGS station 422302071083802).

Quality-Control Samples

Trace amounts of calcium, sodium, and chloride were detected in field blanks (table 9, at end of report). The maximum concentration for these constituents measured in field blanks was one or more orders of magnitude less than the lowest concentration found in all environmental samples, and was within the precision of the laboratory methods (Fishman and Friedman, 1989). No other constituents were detected in either blank.

Field and laboratory concurrent replicate sets were analyzed by comparing the relative percent differences (RPDs) of the results for each pair of samples where the same analyte was detected in both samples. The maximum RPD for measurements of turbidity for replicate sets of water samples was less than about 62 percent, or 3.0 nephelometric turbidity ratio units (NTRUs). Measurements of pH for replicate sets were within 0.1 pH unit of each other. The maximum RPD for both field and laboratory measurements of specific conductance was less than about 3 percent. The RPDs for calcium, sodium, chloride, sulfate, total nitrogen, and total phosphorus were also precise and varied by no more than about 6 percent, except the RPD for total phosphorus in a single replicate set, which was about 29 percent. Large RPDs for total phosphorus between replicate sets of water samples resulted from small differences in samples with low-level concentrations (<0.01 mg/L). The median absolute RPD for total phosphorus was about 5 percent.

Replicate data are not available for many pesticides because they were not detected in the environmental samples. Only 2-Chloro-6-ethylamino-4-amino-s-triazine, atrazine, benomyl, caffeine, carbaryl, diuron, imidacloprid, metalaxyl, norflurazon, propiconazole, siduron, sulfometuron, and tebuthiuron were measured in one or more of the replicate samples. The RPDs for these compounds were less than about 13 percent, except for atrazine (67 percent), diuron (4–40 percent), and siduron (0–29 percent). Concentrations of diuron and siduron were measured in five of the nine replicate samples and were the most frequently detected pesticides.

Laboratory-preparation spiked samples provide a measure of method performance because they are processed and analyzed in the same manner as environmental samples. Laboratory-preparation spiked samples are prepared by adding known concentrations of target analytes to blank water. Field spike recoveries for organic compounds are compared to laboratory-preparation spike recoveries in table 10. During water year 2007, field spike recoveries for 27 out of 59 constituents measured in a water sample collected at USGS station 01104455, and 11 out of 59 constituents measured in a water sample collected at USGS station 01104460 were outside of the lower and upper 99 percent confidence interval for analyte recoveries in laboratory-preparation spikes. The median RPD between the field spike and replicate field spike sample for USGS stations 01104455 and 01104460 was 12 and 3 percent, respectively. These data indicate that the recoveries of the spiked concentrations in the water samples, although poor for many constituents, were relatively precise. For USGS stations 01104475 and 422302071083802 during water year 2008, aldicarb sulfone was the only constituent for which field spike recoveries were outside of the lower and upper 99 percent confidence interval for analyte recoveries in laboratory-preparation spikes.

Meteorological Data

Monthly precipitation totals for the Cambridge drinking-water source area ranged from 0.69 in. to more than 9 in. during water years 2007–08 (table 4). The COVs for monthly precipitation totals for water year 2007 were similar—55 and 54 percent—for USGS station 01104430 at Cambridge Reservoir and 01104480 at Stony Brook Reservoir, respectively. The COVs for monthly precipitation totals for USGS station 422302071083801 at Fresh Pond Reservoir was about 62 percent for water year 2007 and the annual precipitation total was about 8 in. lower than the totals for the gages at the Cambridge and Stony Brook Reservoirs. For water year 2008, the COVs for monthly precipitation totals for all three stations were similar, ranging from about 45 to 49 percent. However, the annual precipitation total for the Fresh Pond Reservoir was about 8 in. lower than the total precipitation measured at the Cambridge and Stony Brook Reservoirs.

Table 10. Recovery statistics for organic compounds in laboratory-spiked preparation samples and recoveries for field-spiked samples for the Cambridge, Massachusetts, drinking water source area during water years 2007–08.

[NWQL, National Water Quality Laboratory; USGS, U.S. Geological Survey; --, no data; NWQL preparation spike recoveries for inorganic compounds were obtained from the NWQL QC data system in 2010; shaded areas indicate value is outside of the lower and upper 99 percent confidence limit for NWQL preparation spike recoveries]

Analyte	NWQL preparation spike recoveries (percent), for water years 2007–08			Field spike recoveries (percent) by USGS station number			
	Median	Upper 99 percent confidence limit	Lower 99 percent confidence limit	01104455	01104460	01104475	422302071083802
2,4-D	86	133	39	100	124	85	88
2,4-D methyl ester	65	170	-79	0	42	--	--
2,4-DB	81	116	47	39	59	62	63
2-Chloro-4-isopropylamino-6-amino-s-triazine	84	132	33	0	16	42	41
2-Chloro-6-ethylamino-4-amino-s-triazine	84	134	26	0	34	51	51
2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine	96	172	23	0	0	85	89
N-(4-Chlorophenyl)-N'-methylurea	93	150	34	23	30	53	53
3-Hydroxy carbofuran	97	156	40	0	31	51	49
Acifluorfen	61	107	16	25	57	31	37
Aldicarb	64	143	-20	15	19	8	8
Aldicarb sulfone	79	144	14	0	9	13	13
Aldicarb sulfoxide	100	171	23	31	41	54	71
Atrazine	95	152	39	26	47	62	61
Bendiocarb	85	159	15	45	47	64	62
Benomyl	111	192	37	76	73	43	44
Bensulfuron-methyl	93	162	29	92	112	116	114
Bentazon	76	134	19	61	84	86	89
Bromacil	99	150	50	6	22	53	50

Table 10. Recovery statistics for organic compounds in laboratory-spiked preparation samples and recoveries for field-spiked samples for the Cambridge, Massachusetts, drinking water source area during water years 2007–08.—Continued

[NWQL, National Water Quality Laboratory; USGS, U.S. Geological Survey; --, no data; NWQL preparation spike recoveries for inorganic compounds were obtained from the NWQL QC data system in 2010; shaded areas indicate value is outside of the lower and upper 99 percent confidence limit for NWQL preparation spike recoveries]

Analyte	NWQL preparation spike recoveries (percent), for water years 2007–08			Field spike recoveries (percent) by USGS station number			
	Median	Upper 99 percent confidence limit	Lower 99 percent confidence limit	01104455	01104460	01104475	422302071083802
Bromoxynil	63	125	4	40	48	75	74
Caffeine	89	146	29	33	38	61	61
Carbaryl	90	136	41	30	43	64	64
Carbofuran	92	141	42	55	60	78	77
Chloramben methyl ester	90	139	40	0	0	65	77
Chlorimuron-ethyl	83	198	-16	44	80	97	95
Clopyralid	68	123	2	0	0	--	--
Cycloate	70	108	33	33	64	64	62
Dacthal monoacid	83	119	43	0	84	80	75
Dicamba	74	116	31	0	45	--	--
Dichlorprop	83	120	47	86	101	90	90
Dinoseb	63	115	14	53	85	85	85
Diphenamid	94	137	52	58	76	86	83
Diuron	97	139	56	0	46	78	76
Fenuron	100	161	38	57	67	54	56
Flumetsulam	94	195	2	38	38	69	65
Fluometuron	97	138	53	41	64	75	74
Imazaquin	114	246	0	22	39	75	74
Imazethapyr	106	200	22	25	35	30	23
Imidacloprid	95	170	25	0	49	78	68
Linuron	91	126	54	37	59	81	78

Table 10. Recovery statistics for organic compounds in laboratory-spiked preparation samples and recoveries for field-spiked samples for the Cambridge, Massachusetts, drinking water source area during water years 2007–08.—Continued

[NWQL, National Water Quality Laboratory; USGS, U.S. Geological Survey; --, no data; NWQL preparation spike recoveries for inorganic compounds were obtained from the NWQL QC data system in 2010; shaded areas indicate value is outside of the lower and upper 99 percent confidence limit for NWQL preparation spike recoveries]

Analyte	NWQL preparation spike recoveries (percent), for water years 2007–08			Field spike recoveries (percent) by USGS station number			
	Median	Upper 99 percent confidence limit	Lower 99 percent confidence limit	01104455	01104460	01104475	422302071083802
2-methyl-4-chlorophenoxyacetic acid (MCPA)	81	119	41	83	86	88	88
4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB)	65	107	19	31	46	54	53
Metalaxyl	93	131	52	64	76	92	89
Methiocarb	88	134	43	42	57	75	72
Methomyl	96	153	32	54	60	73	68
Metsulfuron-methyl	68	180	-43	55	86	83	80
Neburon	87	122	51	38	79	69	72
Nicosulfuron	171	428	-60	80	126	214	202
Norflurazon	95	137	53	39	64	82	82
Oryzalin	81	116	47	0	74	83	80
Oxamyl	94	155	25	0	47	55	67
Picloram	72	155	-9	43	53	0	0
Propham	90	132	46	36	51	78	70
Propiconazole	83	126	41	36	75	74	73
Propoxur	96	146	44	50	62	80	76
Siduron	99	149	53	55	77	90	89
Sulfometuron-methyl	90	164	27	56	71	118	116
Tebuthiuron	106	167	47	27	42	68	67
Terbacil	96	142	49	17	23	58	56
Triclopyr	82	123	37	55	77	80	87

In general, variability between monthly precipitation totals for all stations is attributed to differences in storm tracks, storm-intensity patterns, and storm wind intensity. Additionally, the variability between monthly precipitation totals during the winter months is compounded by the change from rainfall to snowfall because snow is less dense than rain and, therefore, is affected more strongly by wind. Totals are generally lower for the precipitation gage at USGS station 422302071083801 because it does not contain a wind screen and is more susceptible to wind bias than the other gages (table 4).

The annual precipitation total recorded at USGS station 01104430 during water year 2007 (46.89 in.) was about 5 to 21 percent lower than recorded totals for the previous four water years (Smith, 2005 and 2007; Socolow and others, 2003, 2004). Monthly precipitation totals for this station during water year 2007 were generally within the minimum and maximum precipitation totals for water years 2002–06, except for the months of December, August, and September, which were lower (fig. 12). The annual precipitation total of 61.78 in. during water year 2008 was about 5 to 32 percent higher than recorded totals for water years 2002–07 (Smith, 2005, 2007; Socolow and others, 2003, 2004). Monthly precipitation totals during water year 2008 were generally equal to or greater than the median monthly precipitation total for water years 2002–07, except for the months of October, November, May, and August, which were lower than the median monthly value (fig. 12). For the months of February, July, and September, the monthly precipitation totals were substantially greater than prior maximum precipitation totals.

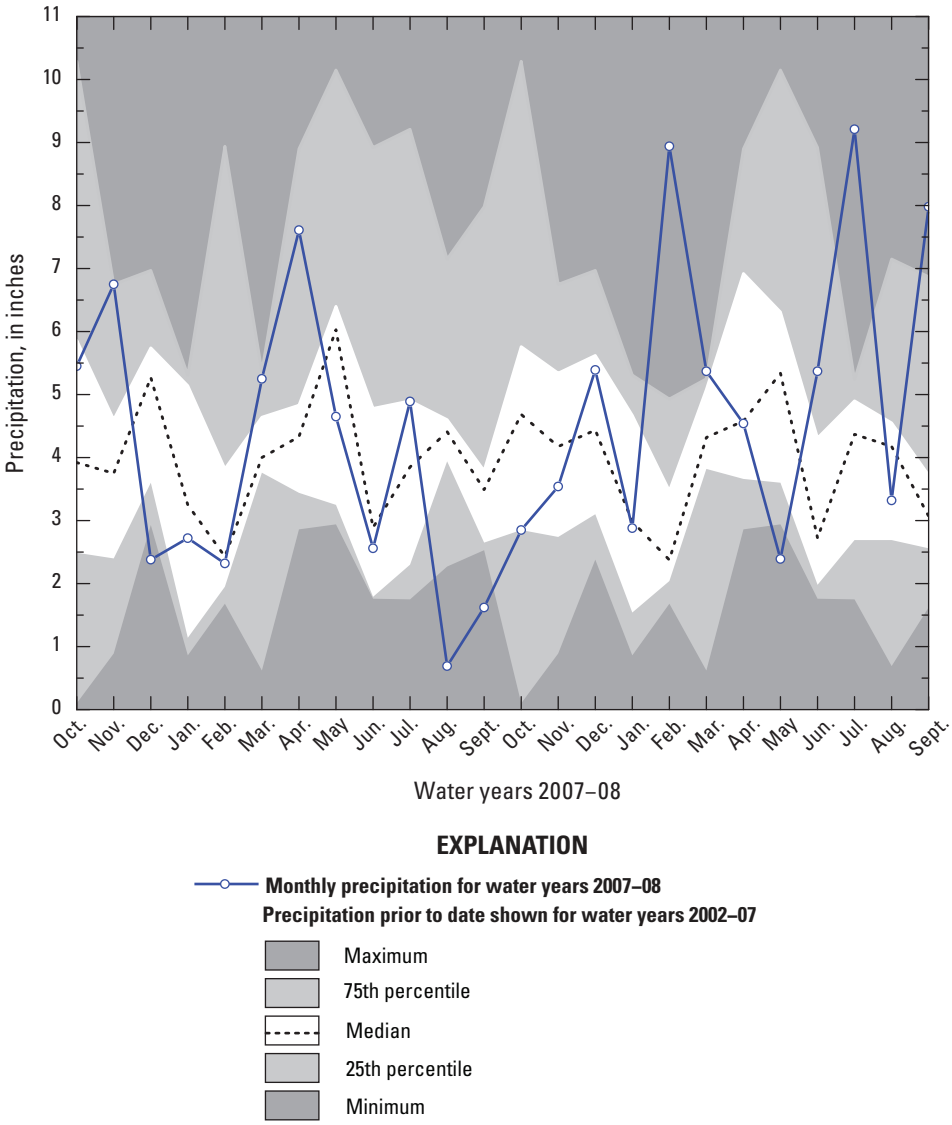

Figure 12. Monthly precipitation for water years 2007–08 for U.S. Geological Survey station 01104430, Hobbs Brook below Cambridge Reservoir, near Kendal Green, Massachusetts.

Mean monthly air-temperature values were similar between the Cambridge and Stony Brook Reservoirs, differing by no more than about 0.5°C (U.S. Geological Survey, 2009). Mean monthly air-temperature values varied most in January and September (U.S. Geological Survey, 2009). During water years 2007–08, mean monthly air-temperature values for USGS station 01104430 were within 3°C of the median values for water years 2002–06 and 2002–07, except for the December 2007, which was about 4°C greater than the median for water years 2002–06, and for February 2008, which was -3.1°C less than the median value for water years 2002–07 (Smith, 2005, 2007; Socolow and others, 2002, 2003; U.S. Geological Survey, 2009).

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Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
01104390	Base flow	12/11/2006	1030	--	--	11	4.5	13.80	7.5	231
01104390	Base flow	05/15/2007	1030	--	--	11	3.7	9.20	7.0	267
01104405	Base flow	12/11/2006	1110	--	--	1.6	3.6	13.70	7.5	248
01104405	Base flow	05/15/2007	0920	--	--	1.6	3.0	9.80	6.8	288
01104410	Base flow	12/11/2006	1125	--	--	0.23	2.8	11.00	7.1	890
01104410	Base flow	05/15/2007	0830	--	--	0.26	3.4	8.50	6.7	990
01104415	Stormflow	12/1/2006	1619	12/2/2006	0044		56		7	390
01104415	Base flow	12/12/2006	0800			0.07	1.4	12.3	7.1	1,550
01104415	Base flow	2/12/2007	1125			0.08	1.5	12.8	7	2,240
01104415	Stormflow	3/2/2007	0542	3/2/2007	1348		180		6.8	3,400
01104415	Base flow	4/11/2007	0710			0.50	2.3	11.3	7.1	1,490
01104415	Stormflow	4/27/2007	0511	4/28/2007	0824		6.4		7.3	788
01104415	Base flow	5/14/2007	1220			0.26	1.5	10.5	7	1,870
01104415	Stormflow	7/5/2007	0225	7/6/2007	1358		29		6.7	906
01104415	Base flow	7/16/2007	1130			0.006	2.5	6.6	7	2,470
01104415	Stormflow	8/6/2007	1612	8/6/2007	2015		8.5		7.4	2,300
01104415	Stormflow	9/11/2007	1258	9/12/2007	0258		33		6.7	356
01104415	Base flow	9/25/2007	1240			<0.01	1.7	5.9	7.1	1,980
01104420	Base flow	12/11/2006	1200	--	--	0.64	2.6	10.10	7.2	889
01104420	Base flow	05/15/2007	0940	--	--	0.43	3.8	4.50	6.4	1,070

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

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USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
01104430	Base flow	12/12/2006	0830	--	--	12	1.8	13.60	7.7	617
01104430	Base flow	05/15/2007	1010	--	--	8.40	1.5	9.40	7.1	630
01104430	Base flow	01/31/2008	1400	--	--	0.65	--	--	7.0	1,680
01104433	Stormflow	12/01/2006	1616	12/02/2006	1541		26	--	7.2	624
01104433	Base flow	12/12/2006	1245	--	--	0.09	4.5	10.10	7.1	1,610
01104433	Base flow	02/12/2007	1220	--	--	0.04	4.8	9.30	7.3	1,850
01104433	Stormflow	03/02/2007	0645	03/03/2007	2318	--	26	--	6.6	998
01104433	Base flow	04/11/2007	0745	--	--	0.14	4.6	9.50	7.0	1,980
01104433	Base flow	05/14/2007	1330	--	--	0.10	2.2	13.20	7.3	1,690
01104433	Stormflow	05/16/2007	1536	05/17/2007	1217	--	16	--	7.1	518
01104433	Stormflow	07/04/2007	2226	07/05/2007	2104	--	30	--	6.8	593
01104433	Base flow	07/16/2007	1200	--	--	0.05	6.9	5.70	7.2	1,820
01104433	Stormflow	08/06/2007	1103	08/07/2007	1055	--	28	--	7.2	786
01104433	Stormflow	09/11/2007	1128	09/12/2007	0315	--	54	--	6.9	436
01104433	Base flow	09/25/2007	1100	--	--	0.13	8.6	6.00	6.8	1,810
01104453	Base flow	12/12/2006	1330	--	--	2.1	2.9	12.90	7.4	438
01104453	Base flow	05/15/2007	1120	--	--	1.9	4.3	8.90	7.0	520
01104455	Stormflow	12/01/2006	1617	12/02/2006	0939	--	21	--	7.0	342
01104455	Base flow	12/12/2006	1300	--	--	0.31	0.4	9.80	6.9	962
01104455	Stormflow	01/08/2007	0508	01/08/2007	2358	--	17	--	6.8	284

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USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
01104455	Base flow	02/12/2007	1240	--	--	0.16	0.5	9.30	7.0	1,030
01104455	Stormflow	03/02/2007	0328	03/03/2007	2328	--	`	--	6.8	1,130
01104455	Stormflow	03/11/2007	0214	03/11/2007	2122	--	31	--	7.1	988
01104455	Base flow	04/11/2007	0800	--	--	0.63	1.1	10.20	6.8	1,000
01104455	Stormflow	04/27/2007	0454	04/27/2007	2246	--	26	--	6.9	383
01104455	Base flow	05/14/2007	1250	--	--	0.30	1.0	9.60	7.0	1,180
01104455	Stormflow	05/16/2007	1532	05/16/2007	2230	--	75	--	6.5	159
01104455	Stormflow	07/04/2007	2236	07/05/2007	0823	--	61	--	6.4	162
01104455	Base flow	07/16/2007	1230	--	--	0.09	0.4	9.90	7.0	1,140
01104455	Stormflow	08/06/2007	1547	08/06/2007	1726	--	38	--	6.4	103
01104455	Stormflow	09/11/2007	1308	09/11/2007	1903	--	36	--	6.6	67
01104455	Base flow	09/25/2007	1130	--	--	0.06	0.4	9.40	7.2	1,050
01104460	Stormflow	12/01/2006	1639	12/03/2006	1413	--	3.3	--	7.2	353
01104460	Base flow	12/12/2006	1315	--	--	27.00	7.7	13.30	7.3	440
01104460	Base flow	02/12/2007	1330	--	--	12.00	12	12.90	7.3	521
01104460	Stormflow	03/02/2007	0457	03/03/2007	0504	--	31	--	7.0	499
01104460	Base flow	04/11/2007	0910	--	--	33.00	2.8	12.10	7.2	404
01104460	Stormflow	04/27/2007	0606	04/29/2007	0526	--	2.1	--	7.3	391
01104460	Base flow	05/15/2007	1100	--	--	20.00	2.1	8.50	6.9	451
01104460	Stormflow	07/05/2007	0206	07/06/2007	1440	--	4.7	--	7.3	558

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USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
01104460	Base flow	07/16/2007	1250	--	--	4.60	2.5	7.80	7.1	597
01104460	Stormflow	08/06/2007	1333	08/08/2007	0705	--	4.0	--	7.3	586
01104460	Stormflow	09/11/2007	1155	09/13/2007	0529	--	5.5	--	7.3	595
01104460	Base flow	09/25/2007	1155	--	--	12.00	1.6	8.10	7.0	643
01104475	Stormflow	12/01/2006	1620	12/02/2006	2004	--	3.0	--	7.5	223
01104475	Base flow	12/12/2006	1345	--	--	0.65	2.0	12.60	7.7	248
01104475	Base flow	02/12/2007	1345	--	--	0.34	3.4	12.90	7.7	281
01104475	Stormflow	03/02/2007	0549	03/02/2007	1829	--	68	--	7.0	270
01104475	Base flow	04/11/2007	0930	--	--	1.20	2.7	12.50	7.5	278
01104475	Stormflow	04/27/2007	0507	04/28/2007	1059	--	3.2	--	7.4	239
01104475	Base flow	05/15/2007	1140	--	--	0.65	2.8	9.70	7.3	273
01104475	Stormflow	07/05/2007	0207	07/06/2007	0128	--	6.5	--	7.1	285
01104475	Base flow	07/16/2007	1310	--	--	0.11	1.8	8.60	7.5	297
01104475	Stormflow	08/06/2007	1545	08/06/2007	2025	--	30	--	7.1	201
01104475	Stormflow	09/11/2007	1138	09/12/2007	1429	--	38	--	7.2	197
01104475	Base flow	09/25/2007	1220	--	--	0.05	2.8	8.90	7.5	321
01104475	Base flow	05/13/2008	1230	--	--	0.63	--	10.40	7.5	--
422302071083802	--	12/14/2006	1230	--	--	--	1.1	--	7.3	491
422302071083802	--	03/27/2007	1200	--	--	--	1.0	--	7.3	462
422302071083802	--	08/15/2007	1500	--	--	--	0.8	--	7.2	499
422302071083802	--	05/13/2008	1100	--	--	--	--	--	7.2	--

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USGS station number	Begin date	Specific conductance, field (µS/cm)	Temperature, water (degrees Celsius)	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
01104390	12/11/2006	233	2.30	15.4	23.7	42.4	12.4	1.20
01104390	05/15/2007	264	13.70	15.9	27.6	50.5	10.5	0.98
01104405	12/11/2006	252	3.00	11.9	30.3	55.0	10.5	0.67
01104405	05/15/2007	284	11.40	12.9	37.0	62.6	8.52	0.75
01104410	12/11/2006	985	5.10	35.4	125	244	11.5	0.46
01104410	05/15/2007	984	11.20	34.8	138	265	10.3	0.53
01104415	12/1/2006	386		10.5	59.3	98.9	7.17	1.54
01104415	12/12/2006	1640	6.5	39.8	240	442	25.7	1.48
01104415	2/12/2007	2150	2.7	53.3	364	653	29.2	1.57
01104415	3/2/2007	3370		61.3	534	1050	47.2	3.14
01104415	4/11/2007	1480	3.3	39.4	227	397	25.3	1.79
01104415	4/27/2007	772		20.8	123	205	14.9	1.35
01104415	5/14/2007	1840	13.4	46.5	286	518	26.6	1.67
01104415	7/5/2007	886		21.6	136	239	16.3	1.82
01104415	7/16/2007	2450	17.7	58.6	377	693	30.4	1.44
01104415	8/6/2007	2270		53	385	666	26.2	2.35
01104415	9/11/2007	345		10.7	48.8	80.4	15.6	2.1
01104415	9/25/2007	1830	16.4	51.3	306	564	30	1.2
01104420	12/11/2006	1020	3.90	31.3	125	234	18.3	0.89
01104420	05/15/2007	1570	12.70	34.5	157	282	11.4	0.82

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USGS station number	Begin date	Specific conductance, field (µS/cm)	Temperature, water (degrees Celsius)	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
01104430	12/12/2006	626	5.10	20.2	86.6	165	11.7	0.50
01104430	05/15/2007	627	14.50	19.6	90.1	163	12.8	0.51
01104430	01/31/2008	1730	5.50	44.9	275	504	27.6	--
01104433	12/01/2006	623		26.0	85.7	155	13.1	1.10
01104433	12/12/2006	1720	7.40	65.9	215	434	30.8	2.03
01104433	02/12/2007	1920	-0.10	72.3	251	524	32.9	1.93
01104433	03/02/2007	986	--	23.5	144	281	11.9	1.10
01104433	04/11/2007	1970	4.10	75.8	266	554	29.5	2.04
01104433	05/14/2007	1800	18.00	65.1	234	459	25.1	1.47
01104433	05/16/2007	512	--	20.1	71.6	132	9.94	1.44
01104433	07/04/2007	578	--	23.4	76.0	148	13.0	1.74
01104433	07/16/2007	1800	20.30	73.2	235	493	29.8	2.00
01104433	08/06/2007	770	--	32.7	112	197	14.5	1.84
01104433	09/11/2007	426	--	19.1	54.2	101	12.4	1.67
01104433	09/25/2007	1670	17.30	75.3	248	486	34.2	1.69
01104453	12/12/2006	440	2.70	16.9	58.8	100	16.5	1.35
01104453	05/15/2007	515	17.90	18.1	69.5	124	14.7	0.99
01104455	12/01/2006	337	--	12.4	46.4	74.8	12.2	1.33
01104455	12/12/2006	1040	10.90	31.8	139	244	30.5	1.70
01104455	01/08/2007	281	--	9.06	39.7	65.0	11.1	0.87

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USGS station number	Begin date	Specific conductance, field (µS/cm)	Temperature, water (degrees Celsius)	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
01104455	02/12/2007	1060	9.00	33.0	150	254	31.8	2.33
01104455	03/02/2007	1100	--	28.6	159	317	12.0	1.40
01104455	03/11/2007	967	--	20.3	151	265	20.4	1.46
01104455	04/11/2007	1000	7.80	34.5	139	253	24.7	1.62
01104455	04/27/2007	368	--	13.1	53.4	93.2	10.2	1.11
01104455	05/14/2007	1280	11.30	38.1	164	307	28.1	2.13
01104455	05/16/2007	152	--	5.99	20.6	32.3	5.88	2.25
01104455	07/04/2007	155	--	5.66	20.4	33.3	6.03	1.93
01104455	07/16/2007	1110	13.20	38.0	156	287	30.4	2.46
01104455	08/06/2007	99	--	4.35	12.4	18.6	4.35	1.58
01104455	09/11/2007	65	--	2.99	7.47	11.4	2.85	1.17
01104455	09/25/2007	1050	13.60	38.8	146	266	30.4	1.93
01104460	12/01/2006	350	--	16.2	44.9	79.2	11.2	0.86
01104460	12/12/2006	438	4.20	18.1	55.6	104	13.1	0.95
01104460	02/12/2007	535	2.90	20.6	68.4	129	15.4	1.20
01104460	03/02/2007	494	--	14.6	65.6	128	11.3	1.60
01104460	04/11/2007	402	4.90	17.0	50.6	91.5	13.5	0.99
01104460	04/27/2007	383	--	15.2	50.8	92.6	11.9	0.71
01104460	05/15/2007	450	14.70	18.8	57.7	105	12.3	0.83
01104460	07/05/2007	383	--	18.8	74.1	138	12.3	0.72

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USGS station number	Begin date	Specific conductance, field (µS/cm)	Temperature, water (degrees Celsius)	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
01104460	07/16/2007	585	21.00	20.8	79.3	149	11.6	0.58
01104460	08/06/2007	575	--	21.0	84.7	150	10.9	0.66
01104460	09/11/2007	578	--	19.4	80.9	150	12.9	0.71
01104460	09/25/2007	644	19.50	20.4	89.8	170	12.7	0.42
01104475	12/01/2006	221	--	15.4	21.0	29.7	17.5	1.77
01104475	12/12/2006	243	6.10	16.6	23.4	35.7	19.8	1.99
01104475	02/12/2007	286	3.20	18.5	28.1	41.9	22.1	2.46
01104475	03/02/2007	267	--	9.89	33.4	59.5	10.4	2.77
01104475	04/11/2007	277	5.80	16.4	28.6	49.4	17.8	1.75
01104475	04/27/2007	232	--	13.8	25.1	38.5	14.8	1.49
01104475	05/15/2007	268	13.30	17.3	27.6	44.8	16.1	1.24
01104475	07/05/2007	279	--	17.1	30.5	47.5	16.9	1.96
01104475	07/16/2007	288	17.30	17.4	30.7	48.0	17.3	1.84
01104475	08/06/2007	198	--	13.1	21.5	29.2	10.8	3.01
01104475	09/11/2007	191	--	13.0	18.0	23.2	18.3	3.06
01104475	09/25/2007	319	15.80	20.7	33.4	46.4	21.9	3.14
01104475	05/13/2008	335	12.90	--	--	--	--	--
422302071083802	12/14/2006	496	--	21.0	61.0	120	12.8	0.65
422302071083802	03/27/2007	458	--	20.4	58.6	110	14.4	0.92
422302071083802	08/15/2007	493	--	19.8	63.9	121	12.7	0.67
422302071083802	05/13/2008	500	--	--	--	--	--	--

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USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery	2,4-D methyl ester, (micrograms per liter)	2,4-D, (micrograms per liter)	2,4-DB, (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958)	P50470	P39732	P38746	P04040	P04038
01104390	12/11/2006	0.019	E49.3	<0.2	<0.04	<0.020	<0.02	<0.08
01104390	05/15/2007	0.027	66.9	<0.2	<0.04	<0.02	<0.02	<0.08
01104405	12/11/2006	0.025	E59.7	<0.2	<0.04	<0.020	<0.02	<0.08
01104405	05/15/2007	0.038	65.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104410	12/11/2006	0.014	E78.7	<0.2	<0.04	<0.020	<0.02	<0.08
01104410	05/15/2007	0.022	55.5	<0.2	<0.04	<0.02	<0.02	E0.01
01104415	12/1/2006	0.31	78.4	<0.2	0.519	<0.020	<0.02	<0.08
01104415	12/12/2006	0.011	64.9	<0.2	<0.04	<0.020	<0.02	<0.08
01104415	2/12/2007	E0.006	59.8	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	3/2/2007	0.53	78	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	4/11/2007	E0.008	68.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	4/27/2007	0.04	59.6	<0.2	0.143	<0.02	<0.02	<0.08
01104415	5/14/2007	0.011	66.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	7/5/2007	0.2	44.6	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	7/16/2007	0.012	60.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	8/6/2007	0.08	52.4	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	9/11/2007	0.28	45.8	<0.2	E0.265	<0.02	<0.02	<0.08
01104415	9/25/2007	0.015	64.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104420	12/11/2006	0.018	E58.2	<0.2	<0.04	<0.020	<0.02	<0.08
01104420	05/15/2007	0.039	62.9	<0.2	E0.018	<0.02	<0.02	<0.08

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery	2,4-D methyl ester, (micrograms per liter)	2,4-D, (micrograms per liter)	2,4-DB, (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958)	P50470	P39732	P38746	P04040	P04038
01104430	12/12/2006	0.011	E54.4	<0.2	<0.04	<0.020	<0.02	<0.08
01104430	05/15/2007	0.014	69.8	<0.2	<0.04	<0.02	<0.02	<0.08
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	0.070	66.1	<0.2	<0.04	<0.020	<0.02	<0.08
01104433	12/12/2006	0.124	52.1	E0.041	<0.04	<0.020	<0.02	<0.08
01104433	02/12/2007	0.018	59.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	03/02/2007	0.090	59.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	04/11/2007	0.015	60.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	05/14/2007	0.022	76.9	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	05/16/2007	0.090	98.5	<0.2	0.17	<0.02	<0.02	<0.08
01104433	07/04/2007	0.200	48.7	<0.2	0.38	<0.02	<0.02	<0.08
01104433	07/16/2007	0.037	64.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	08/06/2007	0.190	91.1	<0.2	0.12	<0.02	<0.02	<0.08
01104433	09/11/2007	0.220	64.4	<0.2	E0.050	<0.02	<0.02	<0.08
01104433	09/25/2007	0.029	70.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104453	12/12/2006	0.019	52.6	<0.2	<0.04	<0.020	<0.02	<0.08
01104453	05/15/2007	0.037	64.0	<0.2	E0.027	<0.02	<0.02	<0.08
01104455	12/01/2006	0.120	58.5	<0.2	<0.04	<0.020	<0.02	<0.08
01104455	12/12/2006	E.006	60.1	<0.2	<0.04	<0.020	<0.02	<0.08
01104455	01/08/2007	0.050	59.8	<0.2	<0.04	<0.02	<0.02	<0.08

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery	2,4-D methyl ester, (micrograms per liter)	2,4-D, (micrograms per liter)	2,4-DB, (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958)	P50470	P39732	P38746	P04040	P04038
01104455	02/12/2007	E.006	72.3	<0.2	<0.04	<0.02	<0.02	E0.01
01104455	03/02/2007	0.240	69.8	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	03/11/2007	0.090	65.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	04/11/2007	E.006	63.9	<0.2	<0.04	<0.02	<0.02	E0.008
01104455	04/27/2007	0.090	61.9	<0.2	<0.04	<0.02	<0.02	E0.006
01104455	05/14/2007	0.011	75.6	<0.2	<0.04	<0.02	<0.02	E0.01
01104455	05/16/2007	0.360	87.7	<0.2	0.14	<0.02	<0.02	<0.08
01104455	07/04/2007	0.330	70.1	<0.2	E0.380	<0.02	<0.02	<0.08
01104455	07/16/2007	0.009	68.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	08/06/2007	0.220	73.6	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	09/11/2007	0.190	62.0	<0.2	E0.189	<0.02	<0.02	<0.08
01104455	09/25/2007	0.009	67.3	<0.2	<0.04	<0.02	<0.02	E0.010
01104460	12/01/2006	0.031	51.0	<0.2	<0.04	<0.020	<0.02	<0.08
01104460	12/12/2006	0.027	66.3	<0.2	<0.04	<0.020	<0.02	<0.08
01104460	02/12/2007	0.041	55.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	03/02/2007	0.176	65.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	04/11/2007	0.015	62.6	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	04/27/2007	0.020	62.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	05/15/2007	0.023	68.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	07/05/2007	0.033	58.7	<0.2	E0.027	<0.02	<0.02	<0.08

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery	2,4-D methyl ester, (micrograms per liter)	2,4-D, (micrograms per liter)	2,4-DB, (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958)	P50470	P39732	P38746	P04040	P04038
01104460	07/16/2007	0.017	64.6	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	08/06/2007	0.030	66.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	09/11/2007	0.046	86.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	09/25/2007	0.012	72.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	12/01/2006	0.040	56.4	<0.2	<0.04	<0.020	<0.02	<0.08
01104475	12/12/2006	0.013	74.0	<0.2	<0.04	<0.020	<0.02	<0.08
01104475	02/12/2007	0.016	60.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	03/02/2007	0.330	77.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	04/11/2007	0.012	65.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	04/27/2007	0.020	61.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	05/15/2007	0.019	66.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	07/05/2007	0.050	57.4	<0.2	E0.013	<0.02	<0.02	<0.08
01104475	07/16/2007	0.026	70.0	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	08/06/2007	0.250	60.9	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	09/11/2007	0.250	66.7	<0.2	E0.740	<0.02	<0.02	<0.08
01104475	09/25/2007	0.019	61.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	05/13/2008	--	84.9	<0.04	<0.02	<0.02	<0.06	<0.08
422302071083802	12/14/2006	E0.006	71.9	<0.2	<0.04	<0.020	<0.02	<0.08
422302071083802	03/27/2007	E0.008	89.0	<0.2	<0.04	<0.02	<0.02	<0.08
422302071083802	08/15/2007	E0.006	74.9	<0.2	<0.04	<0.02	<0.02	<0.08
422302071083802	05/13/2008	--	90.6	<0.04	<0.02	<0.02	<0.06	<0.08

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine, micrograms per liter
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
01104390	12/11/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104390	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104405	12/11/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104405	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.0006
01104410	12/11/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104410	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	12/1/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	2/12/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	3/2/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	4/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	4/27/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	5/14/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	7/5/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	7/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	8/6/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	9/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	9/25/2007	<0.08	<0.02	<0.06	<0.08		<0.04	<0.04
01104420	12/11/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104420	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine, micrograms per liter
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
01104430	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104430	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	02/12/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	03/02/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	04/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	05/14/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	05/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.014
01104433	07/04/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	07/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	08/06/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	09/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	09/25/2007	<0.08	<0.02	<0.06	<0.08		<0.04	<0.04
01104453	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104453	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104455	12/01/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	01/08/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine, micrograms per liter
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
01104455	02/12/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104455	03/02/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	03/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	04/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104455	04/27/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	05/14/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.001
01104455	05/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.017
01104455	07/04/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	07/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	08/06/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	09/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	09/25/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	12/01/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	02/12/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.001
01104460	03/02/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	04/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.0009
01104460	04/27/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.003
01104460	07/05/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine, micrograms per liter
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
01104460	07/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	08/06/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	09/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	09/25/2007	<0.08	<0.02	<0.06	<0.08	--	<0.04	<0.04
01104475	12/01/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	12/12/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	02/12/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	03/02/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	04/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	04/27/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	05/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104475	07/05/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	07/16/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	08/06/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	09/11/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	09/25/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	05/13/2008	<0.04	<0.04	<0.04	<0.08	<0.06	<0.12	<0.04
422302071083802	12/14/2006	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
422302071083802	03/27/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
422302071083802	08/15/2007	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
422302071083802	05/13/2008	<0.04	<0.04	<0.04	<0.08	<0.06	<0.12	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
01104390	12/11/2006	E91.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104390	05/15/2007	92.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104405	12/11/2006	E79.2	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104405	05/15/2007	89.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104410	12/11/2006	E98.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104410	05/15/2007	71.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	12/1/2006	68.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	12/12/2006	E93.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	2/12/2007	74.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	3/2/2007	87.6	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	4/11/2007	88.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	4/27/2007	60.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	5/14/2007	82.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	7/5/2007	11.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	7/16/2007	53.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	8/6/2007	14.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	9/11/2007	7.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	9/25/2007	58.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104420	12/11/2006	E55.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104420	05/15/2007	94.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

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USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
01104430	12/12/2006	E101.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104430	05/15/2007	83.2	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	72.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	12/12/2006	E92.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	02/12/2007	79.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	03/02/2007	82.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	04/11/2007	81.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	05/14/2007	69.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	05/16/2007	59.1	<0.04	E0.005	<0.06	<0.02	<0.04	<0.12
01104433	07/04/2007	51.0	<0.04	E0.007	<0.06	<0.02	<0.04	<0.12
01104433	07/16/2007	64.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	08/06/2007	37.5	<0.04	E0.005	<0.06	<0.02	<0.04	<0.12
01104433	09/11/2007	19.2	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	09/25/2007	50.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104453	12/12/2006	E77.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104453	05/15/2007	67.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	12/01/2006	90.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	12/12/2006	80.2	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	01/08/2007	56.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
01104455	02/12/2007	77.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	03/02/2007	91.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	03/11/2007	92.2	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	04/11/2007	85.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	04/27/2007	74.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	05/14/2007	82.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	05/16/2007	95.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	07/04/2007	14.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	07/16/2007	79.6	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	08/06/2007	17.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	09/11/2007	15.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	09/25/2007	E43.6	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	12/01/2006	94.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	12/12/2006	E60.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	02/12/2007	68.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	03/02/2007	96.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	04/11/2007	89.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	04/27/2007	80.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	05/15/2007	88.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	07/05/2007	71.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
01104460	07/16/2007	77.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	08/06/2007	65.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	09/11/2007	48.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	09/25/2007	70.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	12/01/2006	82.0	<0.04	E0.010	<0.06	<0.02	<0.04	<0.12
01104475	12/12/2006	86.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	02/12/2007	88.4	<0.04	E0.007	<0.06	<0.02	<0.04	<0.12
01104475	03/02/2007	104.0	<0.04	E0.006	<0.06	<0.02	<0.04	<0.12
01104475	04/11/2007	76.7	<0.04	E0.004	<0.06	<0.02	<0.04	<0.12
01104475	04/27/2007	69.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	05/15/2007	79.3	<0.04	E0.010	<0.06	<0.02	<0.04	<0.12
01104475	07/05/2007	75.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	07/16/2007	76.9	<0.04	E0.009	<0.06	<0.02	<0.04	<0.12
01104475	08/06/2007	46.0	<0.04	E0.009	<0.06	<0.02	<0.04	<0.12
01104475	09/11/2007	35.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	09/25/2007	E38.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	05/13/2008	74.6	<0.04	E0.017	<0.06	<0.04	<0.02	<0.12
422302071083802	12/14/2006	105.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
422302071083802	03/27/2007	81.0	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
422302071083802	08/15/2007	92.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
422302071083802	05/13/2008	75.3	<0.04	<0.04	<0.06	<0.04	<0.02	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl, (micrograms per liter)	Carbofuran, (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
01104390	12/11/2006	<0.04	E58.6	<0.02	<0.06	<0.10	<0.08	<0.12
01104390	05/15/2007	<0.04	69.9	<0.02	<0.06	<0.1	<0.08	<0.12
01104405	12/11/2006	E0.084	E53.1	<0.02	<0.06	<0.10	<0.08	<0.12
01104405	05/15/2007	<0.04	67.1	<0.02	<0.06	<0.1	<0.08	<0.12
01104410	12/11/2006	<0.04	E64.9	<0.02	<0.06	<0.10	<0.08	<0.12
01104410	05/15/2007	<0.04	43.2	<0.02	<0.06	<0.1	<0.08	
01104415	12/1/2006	E0.196	E61.5	<0.02	<0.06	<0.10	<0.08	<0.12
01104415	12/12/2006	E0.073	E67.4	<0.02	<0.06	<0.10	<0.08	<0.12
01104415	2/12/2007	<0.04	59.7	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	3/2/2007	0.445	64.8	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	4/11/2007	<0.04	60.1	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	4/27/2007	0.239	47.1	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	5/14/2007	E0.027	51.7	<0.02	<0.06	<0.1	<0.08	
01104415	7/5/2007	<0.04	30.3	0.051	<0.06	<0.1	<0.08	
01104415	7/16/2007	0.234	54.4	<0.02	<0.06	<0.1	<0.08	
01104415	8/6/2007	0.557	27.3	<0.02	<0.06	<0.1	<0.08	
01104415	9/11/2007	E0.368	E33.5	E0.009	<0.06	<0.1	<0.08	
01104415	9/25/2007	<0.04	E33.7	<0.02	<0.06	<0.1	<0.08	
01104420	12/11/2006	<0.04	E43.6	<0.02	<0.06	<0.10	<0.08	<0.12
01104420	05/15/2007	E0.006	65.1	<0.02	<0.06	<0.1	<0.08	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl, (micrograms per liter)	Carbofuran, (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
01104430	12/12/2006	<0.04	E57.9	<0.02	<0.06	<0.10	<0.08	<0.12
01104430	05/15/2007	E0.034	50.0	<0.02	<0.06	<0.1	<0.08	--
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	E0.158	E55.1	<0.02	<0.06	<0.10	<0.08	<0.12
01104433	12/12/2006	<0.04	E52.8	<0.02	<0.06	<0.10	<0.08	<0.12
01104433	02/12/2007	E0.021	49.0	<0.02	<0.06	<0.1	<0.08	<0.12
01104433	03/02/2007	0.17	69.5	<0.02	<0.06	<0.1	<0.08	<0.12
01104433	04/11/2007	0.19	54.2	<0.02	<0.06	<0.1	<0.08	<0.12
01104433	05/14/2007	0.12	E53.1	<0.02	<0.06	<0.1	<0.08	--
01104433	05/16/2007	0.13	46.9	<0.02	<0.06	<0.1	<0.08	<0.12
01104433	07/04/2007	0.21	51.4	<0.02	<0.06	<0.1	<0.08	--
01104433	07/16/2007	0.06	36.8	<0.02	<0.06	<0.1	<0.08	--
01104433	08/06/2007	0.23	56.8	<0.02	<0.06	<0.1	<0.08	--
01104433	09/11/2007	E0.164	E34.5	<0.02	<0.06	<0.1	<0.08	--
01104433	09/25/2007	<0.04	E26.6	<0.02	<0.06	<0.1	<0.08	--
01104453	12/12/2006	<0.04	E64.1	E0.014	<0.06	<0.10	<0.08	<0.12
01104453	05/15/2007	<0.04	59.6	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	12/01/2006	E0.185	E82.6	<0.02	<0.06	<0.10	<0.08	<0.12
01104455	12/12/2006	<0.04	E63.6	<0.02	<0.06	<0.10	<0.08	<0.12
01104455	01/08/2007	E0.104	57.8	<0.02	<0.06	<0.1	<0.08	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl, (micrograms per liter)	Carbofuran, (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
01104455	02/12/2007	<0.04	66.1	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	03/02/2007	0.12	74.2	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	03/11/2007	0.13	74.4	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	04/11/2007	<0.04	63.8	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	04/27/2007	0.17	60.6	<0.02	<0.06	<0.1	<0.08	--
01104455	05/14/2007	<0.04	E60.0	<0.02	<0.06	<0.1	<0.08	--
01104455	05/16/2007	0.08	83.6	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	07/04/2007	0.11	49.6	<0.02	<0.06	<0.1	<0.08	--
01104455	07/16/2007	<0.04	58.9	<0.02	<0.06	<0.1	<0.08	--
01104455	08/06/2007	0.17	67.6	<0.02	<0.06	<0.1	<0.08	--
01104455	09/11/2007	E0.131	E32.1	<0.02	<0.06	<0.1	<0.08	--
01104455	09/25/2007	<0.04	E84.1	<0.02	<0.06	<0.1	<0.08	--
01104460	12/01/2006	E0.005	E56.4	<0.02	<0.06	<0.10	<0.08	<0.12
01104460	12/12/2006	<0.04	E55.3	<0.02	<0.06	<0.10	<0.08	<0.12
01104460	02/12/2007	<0.04	50.5	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	03/02/2007	E0.028	61.0	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	04/11/2007	E0.004	56.4	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	04/27/2007	E0.015	60.9	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	05/15/2007	<0.04	43.8	<0.02	<0.06	<0.1	<0.08	--
01104460	07/05/2007	E0.018	51.3	<0.02	<0.06	<0.1	<0.08	--

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl, (micrograms per liter)	Carbofuran, (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
01104460	07/16/2007	<0.04	43.3	<0.02	<0.06	<0.1	<0.08	--
01104460	08/06/2007	E0.015	38.1	<0.02	<0.06	<0.1	<0.08	--
01104460	09/11/2007	E0.026	E38.8	<0.02	<0.06	<0.1	<0.08	--
01104460	09/25/2007	<0.04	E31.7	<0.02	<0.06	<0.1	<0.08	--
01104475	12/01/2006	<0.04	E55.2	0.06	<0.06	<0.10	<0.08	<0.12
01104475	12/12/2006	<0.04	E68.6	E0.051	<0.06	<0.10	<0.08	<0.12
01104475	02/12/2007	<0.04	60.4	E0.013	<0.06	<0.1	<0.08	<0.12
01104475	03/02/2007	E0.030	63.2	E0.017	<0.06	<0.1	<0.08	<0.12
01104475	04/11/2007	<0.04	57.4	E0.012	<0.06	<0.1	<0.08	<0.12
01104475	04/27/2007	E0.008	61.1	E0.009	<0.06	<0.1	<0.08	<0.12
01104475	05/15/2007	<0.04	56.3	E0.006	<0.06	<0.1	<0.08	<0.12
01104475	07/05/2007	E0.039	50.3	<0.02	<0.06	<0.1	<0.08	--
01104475	07/16/2007	<0.04	53.3	E0.002	<0.06	<0.1	<0.08	--
01104475	08/06/2007	0.06	46.5	<0.02	<0.06	<0.1	<0.08	--
01104475	09/11/2007	E0.042	E34.9	<0.02	<0.06	<0.1	<0.08	--
01104475	09/25/2007	<0.04	E69.5	<0.02	<0.06	<0.1	<0.08	--
01104475	05/13/2008	<0.06	66.2	<0.04	<0.02	<0.1	<0.08	--
422302071083802	12/14/2006	E0.006	E76.9	E0.021	<0.06	<0.10	<0.08	<0.12
422302071083802	03/27/2007	<0.04	43.5	E0.003	<0.06	<0.1	<0.08	<0.04
422302071083802	08/15/2007	<0.04	47.1	<0.02	<0.06	<0.1	<0.08	--
422302071083802	05/13/2008	<0.06	71.1	<0.04	<0.02	<0.1	<0.08	--

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
01104390	12/11/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104390	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104405	12/11/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104405	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104410	12/11/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104410	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	12/1/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	2/12/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	3/2/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	4/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	4/27/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	5/14/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	7/5/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	7/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	8/6/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	9/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	9/25/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104420	12/11/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104420	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
01104430	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104430	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	02/12/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	03/02/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	04/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	05/14/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	05/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	07/04/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	07/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	08/06/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	09/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	09/25/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104453	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104453	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	12/01/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	01/08/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
01104455	02/12/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	03/02/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	03/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	04/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	04/27/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	05/14/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	05/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	07/04/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	07/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	08/06/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	09/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	09/25/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	12/01/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	02/12/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	03/02/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	04/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	04/27/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	07/05/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
01104460	07/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	08/06/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	09/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	09/25/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	12/01/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	12/12/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	02/12/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	03/02/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	04/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	04/27/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	05/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	07/05/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	07/16/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	08/06/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	09/11/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	09/25/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	05/13/2008	<0.06	<0.02	<0.02	<0.04	<0.02	<0.04	<0.04
422302071083802	12/14/2006	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
422302071083802	03/27/2007	<0.06	<0.06	<0.02	<0.08	<0.04	E0.017	<0.04
422302071083802	08/15/2007	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
422302071083802	05/13/2008	<0.06	<0.02	<0.02	<0.04	<0.02	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
01104390	12/11/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104390	05/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.013
01104405	12/11/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104405	05/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104410	12/11/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104410	05/15/2007	E0.016	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	12/1/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	2/12/2007	E0.006	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	3/2/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	4/11/2007	E0.003	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	4/27/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	5/14/2007	E0.018	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	7/5/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.092
01104415	7/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	8/6/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	9/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.178
01104415	9/25/2007	E0.007	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104420	12/11/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104420	05/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.014

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
01104430	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104430	05/15/2007	E0.013	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	02/12/2007	E0.009	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	03/02/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	04/11/2007	E0.005	<0.04	<0.06	<0.04	<0.04	<0.04	E0.036
01104433	05/14/2007	E0.027	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	05/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	07/04/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.18
01104433	07/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	08/06/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.14
01104433	09/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	09/25/2007	E0.012	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104453	12/12/2006	E0.026	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104453	05/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.016
01104455	12/01/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	01/08/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
01104455	02/12/2007	E0.008	<0.04	<0.06	<0.04	<0.04	<0.04	E0.021
01104455	03/02/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	03/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	04/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	04/27/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	05/14/2007	E0.013	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	05/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	07/04/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	07/16/2007	E0.006	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	08/06/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	09/11/2007	<0.04	E0.036	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	09/25/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.020
01104460	12/01/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	02/12/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	03/02/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	04/11/2007	E0.001	<0.04	<0.06	<0.04	<0.04	<0.04	E0.005
01104460	04/27/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	05/15/2007	E0.014	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	07/05/2007	E0.003	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
01104460	07/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	08/06/2007	E0.004	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	09/11/2007	E0.008	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	09/25/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104475	12/01/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.177
01104475	12/12/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.193
01104475	02/12/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.09
01104475	03/02/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E0.051
01104475	04/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.13
01104475	04/27/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.13
01104475	05/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.14
01104475	07/05/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.11
01104475	07/16/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.11
01104475	08/06/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.12
01104475	09/11/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104475	09/25/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E1.21
01104475	05/13/2008	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.09
422302071083802	12/14/2006	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
422302071083802	03/27/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
422302071083802	08/15/2007	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
422302071083802	05/13/2008	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Linuron, (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
01104390	12/11/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104390	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104405	12/11/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104405	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104410	12/11/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104410	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	12/1/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	2/12/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	3/2/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	4/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	4/27/2007	<0.04	E0.012	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	5/14/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	7/5/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	7/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	8/6/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	9/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	9/25/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104420	12/11/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104420	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Linuron, (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
01104430	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104430	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	02/12/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	03/02/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	04/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	05/14/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	05/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	07/04/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	07/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	08/06/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	09/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	09/25/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104453	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104453	05/15/2007	<0.04	<0.06	<0.2	E0.004	<0.04	<0.06	<0.14
01104455	12/01/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	01/08/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Linuron, (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
01104455	02/12/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	03/02/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	03/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	04/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	04/27/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	05/14/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	05/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	07/04/2007	<0.04	E0.015	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	07/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	08/06/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	09/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	09/25/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	12/01/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	12/12/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	02/12/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	03/02/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	04/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	04/27/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	05/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	07/05/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Linuron, (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
01104460	07/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	08/06/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	09/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	09/25/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	12/01/2006	<0.04	<0.06	<0.2	E0.023	<0.04	<0.06	<0.14
01104475	12/12/2006	<0.04	<0.06	<0.2	E0.028	<0.04	<0.06	<0.14
01104475	02/12/2007	<0.04	<0.06	<0.2	E0.024	<0.04	<0.06	<0.14
01104475	03/02/2007	<0.04	<0.06	<0.2	E0.014	<0.04	<0.06	<0.14
01104475	04/11/2007	<0.04	<0.06	<0.2	E0.013	<0.04	<0.06	<0.14
01104475	04/27/2007	<0.04	<0.06	<0.2	E0.016	<0.04	<0.06	<0.14
01104475	05/15/2007	<0.04	<0.06	<0.2	E0.015	<0.04	<0.06	<0.14
01104475	07/05/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	07/16/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	08/06/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	09/11/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	09/25/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	05/13/2008	<0.02	<0.06	<0.06	E0.015	<0.04	<0.12	<0.14
422302071083802	12/14/2006	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
422302071083802	03/27/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
422302071083802	08/15/2007	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
422302071083802	05/13/2008	<0.02	<0.06	<0.06	<0.02	<0.04	<0.12	<0.14

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
01104390	12/11/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104390	05/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104405	12/11/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104405	05/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104410	12/11/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104410	05/15/2007	<0.06	<0.02	<0.1	0.18	<0.04	<0.04	<0.12
01104415	12/1/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104415	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104415	2/12/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	3/2/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	4/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	4/27/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	5/14/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	7/5/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	7/16/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	8/6/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	9/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	9/25/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104420	12/11/2006	<0.06	<0.02	<0.10	E0.037	<0.04	<0.04	<0.12
01104420	05/15/2007	<0.06	<0.02	<0.1	E0.034	<0.04	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
01104430	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104430	05/15/2007	<0.06	<0.02	<0.1	E0.005	<0.04	<0.04	<0.12
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104433	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104433	02/12/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	03/02/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	04/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	05/14/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	05/16/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	07/04/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	07/16/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	08/06/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	09/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	09/25/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104453	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104453	05/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104455	12/01/2006	<0.06	<0.02	<0.10	0.17	<0.04	<0.04	<0.12
01104455	12/12/2006	<0.06	<0.02	<0.10	E0.100	<0.04	<0.04	<0.12
01104455	01/08/2007	<0.06	<0.02	<0.1	E0.078	<0.04	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
01104455	02/12/2007	<0.06	<0.02	<0.1	0.09	<0.04	<0.04	<0.12
01104455	03/02/2007	<0.06	<0.02	<0.1	0.10	<0.04	<0.04	<0.12
01104455	03/11/2007	<0.06	<0.02	<0.1	0.09	<0.04	<0.04	<0.12
01104455	04/11/2007	<0.06	<0.02	<0.1	0.16	<0.04	<0.04	<0.12
01104455	04/27/2007	<0.06	<0.02	<0.1	0.08	<0.04	<0.04	<0.12
01104455	05/14/2007	<0.06	<0.02	<0.1	0.10	<0.04	<0.04	<0.12
01104455	05/16/2007	<0.06	<0.02	<0.1	E0.016	<0.04	<0.04	<0.12
01104455	07/04/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104455	07/16/2007	<0.06	<0.02	<0.1	0.06	<0.04	<0.04	<0.12
01104455	08/06/2007	<0.06	<0.02	<0.1	E0.003	<0.04	<0.04	<0.12
01104455	09/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104455	09/25/2007	<0.06	<0.02	<0.1	E0.040	<0.04	<0.04	<0.12
01104460	12/01/2006	<0.06	<0.02	<0.10	E0.005	<0.04	<0.04	<0.12
01104460	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104460	02/12/2007	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12
01104460	03/02/2007	<0.06	<0.02	<0.1	E0.005	<0.04	<0.04	<0.12
01104460	04/11/2007	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12
01104460	04/27/2007	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12
01104460	05/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	07/05/2007	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
01104460	07/16/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	08/06/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	09/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	09/25/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	12/01/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104475	12/12/2006	<0.06	<0.02	<0.10	<0.04	<0.04	<0.04	<0.12
01104475	02/12/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	03/02/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	04/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	04/27/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	05/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	07/05/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	07/16/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	08/06/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	09/11/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	09/25/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	05/13/2008	<0.12	<0.02	<0.1	<0.02	<0.04	<0.12	<0.12
422302071083802	12/14/2006	<0.06	<0.02	<0.10	E0.006	<0.04	<0.04	<0.12
422302071083802	03/27/2007	<0.06	<0.02	<0.1	E0.003	<0.04	<0.04	
422302071083802	08/15/2007	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
422302071083802	05/13/2008	<0.12	<0.02	<0.1	<0.02	<0.04	<0.12	<0.12

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032
01104390	12/11/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104390	05/15/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104405	12/11/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104405	05/15/2007	<0.06	<0.06	<0.04	E0.003	<0.06	<0.04	<0.04
01104410	12/11/2006	<0.06	<0.06	<0.04	<0.04	E0.047	<0.04	<0.04
01104410	05/15/2007	<0.06	<0.06	<0.04	<0.04	E0.009	<0.04	<0.04
01104415	12/1/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	2/12/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	3/2/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	4/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	4/27/2007	<0.06	<0.06	<0.04	E0.019	<0.06	<0.04	<0.04
01104415	5/14/2007	<0.06	<0.06	<0.04	E0.015	<0.06	<0.04	<0.04
01104415	7/5/2007	<0.06	<0.06	<0.04	0.043	<0.06	<0.04	<0.04
01104415	7/16/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	8/6/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	9/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104415	9/25/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104420	12/11/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104420	05/15/2007	<0.06	<0.06	<0.04	E0.034	<0.06	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032
01104430	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104430	05/15/2007	<0.06	<0.06	<0.04	E0.003	<0.06	<0.04	<0.04
01104430	01/31/2008	--	--	--	--	--	--	--
01104433	12/01/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	02/12/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	03/02/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	04/11/2007	<0.06	<0.06	<0.04	E0.006	<0.06	<0.04	<0.04
01104433	05/14/2007	<0.06	<0.06	<0.04	0.10	<0.06	<0.04	<0.04
01104433	05/16/2007	<0.06	<0.06	<0.04	0.11	<0.06	<0.04	<0.04
01104433	07/04/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	07/16/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	08/06/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	09/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104433	09/25/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104453	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104453	05/15/2007	<0.06	<0.06	<0.04	E0.006	<0.06	<0.04	<0.04
01104455	12/01/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	01/08/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032
01104455	02/12/2007	<0.06	<0.06	<0.04	<0.04	E0.005	<0.04	<0.04
01104455	03/02/2007	<0.06	<0.06	<0.04	<0.04	<0.06	E0.010	<0.04
01104455	03/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	04/11/2007	<0.06	<0.06	<0.04	<0.04	E0.004	E0.003	<0.04
01104455	04/27/2007	<0.06	<0.06	<0.04	0.10	<0.06	<0.04	<0.04
01104455	05/14/2007	<0.06	<0.06	<0.04	<0.04	E0.003	E0.002	<0.04
01104455	05/16/2007	<0.06	<0.06	<0.04	E0.014	<0.06	<0.04	<0.04
01104455	07/04/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	07/16/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	08/06/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	09/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104455	09/25/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	12/01/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	02/12/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	03/02/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	04/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	E0.0003	<0.04
01104460	04/27/2007	<0.06	<0.06	<0.04	E0.006	<0.06	<0.04	<0.04
01104460	05/15/2007	<0.06	<0.06	<0.04	E0.004	<0.06	<0.04	<0.04
01104460	07/05/2007	<0.06	<0.06	<0.04	E0.040	<0.06	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032
01104460	07/16/2007	<0.06	<0.06	<0.04	E0.005	<0.06	<0.04	<0.04
01104460	08/06/2007	<0.06	<0.06	<0.04	E0.006	<0.06	<0.04	<0.04
01104460	09/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104460	09/25/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	12/01/2006	<0.06	E0.044	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	12/12/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	02/12/2007	<0.06	E0.033	E0.001	E0.023	<0.06	<0.04	<0.04
01104475	03/02/2007	<0.06	0.08	<0.04	E0.012	<0.06	<0.04	<0.04
01104475	04/11/2007	<0.06	E0.032	<0.04	E0.009	<0.06	<0.04	<0.04
01104475	04/27/2007	<0.06	E0.025	<0.04	E0.018	<0.06	<0.04	<0.04
01104475	05/15/2007	<0.06	E0.030	<0.04	E0.005	<0.06	<0.04	<0.04
01104475	07/05/2007	<0.06	E0.013	<0.04	E0.003	<0.06	<0.04	<0.04
01104475	07/16/2007	<0.06	E0.017	<0.04	E0.003	<0.06	<0.04	<0.04
01104475	08/06/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	09/11/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	09/25/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
01104475	05/13/2008	<0.04	<0.04	<0.04	<0.02	<0.06	<0.04	<0.04
422302071083802	12/14/2006	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
422302071083802	03/27/2007	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04
422302071083802	08/15/2007	<0.06	<0.06	<0.04	E0.004	<0.06	<0.04	<0.04
422302071083802	05/13/2008	<0.04	<0.04	<0.04	E0.005	<0.06	<0.04	<0.04

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Triclopyr (micrograms per liter)	Petroleum hydrocarbons, silica gel treated-hexane extractable (milligrams per liter)	Suspended sediment, sieve diameter, percent smaller than 0.0625 (millimeters)	Suspended sediment concentration (milligrams per liter)
		P49235	P62172	P70331	P80154
01104390	12/11/2006	<0.04	--	--	--
01104390	05/15/2007	<0.04	--	--	--
01104405	12/11/2006	<0.04	--	--	--
01104405	05/15/2007	<0.04	--	--	--
01104410	12/11/2006	<0.04	--	--	--
01104410	05/15/2007	<0.04	--	--	--
01104415	12/1/2006	<0.04	--	--	--
01104415	12/12/2006	<0.04	--	--	--
01104415	2/12/2007	<0.04	--	--	--
01104415	3/2/2007	<0.04	--	--	--
01104415	4/11/2007	<0.04	--	--	--
01104415	4/27/2007	<0.04	--	--	--
01104415	5/14/2007	<0.04	--	--	--
01104415	7/5/2007	<0.04	--	--	--
01104415	7/16/2007	<0.04	--	--	--
01104415	8/6/2007	<0.04	--	--	--
01104415	9/11/2007	<0.04	--	--	--
01104415	9/25/2007	<0.04	--	--	--
01104420	12/11/2006	<0.04	--	--	--
01104420	05/15/2007	<0.04	--	--	--

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Triclopyr (micrograms per liter)	Petroleum hydrocarbons, silica gel treated-hexane extractable (milligrams per liter)	Suspended sediment, sieve diameter, percent smaller than 0.0625 (millimeters)	Suspended sediment concentration (milligrams per liter)
		P49235	P62172	P70331	P80154
01104430	12/12/2006	<0.04	--	--	--
01104430	05/15/2007	<0.04	--	--	--
01104430	01/31/2008	--	--	--	--
01104433	12/01/2006	<0.04	--	--	--
01104433	12/12/2006	<0.04	--	--	--
01104433	02/12/2007	<0.04	--	--	--
01104433	03/02/2007	<0.04	--	--	--
01104433	04/11/2007	<0.04	--	--	--
01104433	05/14/2007	<0.04	--	--	--
01104433	05/16/2007	<0.04	--	--	--
01104433	07/04/2007	<0.04	--	--	--
01104433	07/16/2007	<0.04	--	--	--
01104433	08/06/2007	<0.04	--	--	--
01104433	09/11/2007	<0.04	--	--	--
01104433	09/25/2007	<0.04	--	--	--
01104453	12/12/2006	<0.04	--	--	--
01104453	05/15/2007	<0.04	--	--	--
01104455	12/01/2006	<0.04	--	--	--
01104455	12/12/2006	<0.04	--	--	--
01104455	01/08/2007	<0.04	--	--	--

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Triclopyr (micrograms per liter)	Petroleum hydrocarbons, silica gel treated-hexane extractable (milligrams per liter)	Suspended sediment, sieve diameter, percent smaller than 0.0625 (millimeters)	Suspended sediment concentration (milligrams per liter)
		P49235	P62172	P70331	P80154
01104455	02/12/2007	<0.04	--	--	--
01104455	03/02/2007	<0.04	6	82	190
01104455	03/11/2007	<0.04	--	91	29
01104455	04/11/2007	<0.04	--	--	--
01104455	04/27/2007	<0.04	<2	81	58
01104455	05/14/2007	<0.04	--	--	--
01104455	05/16/2007	<0.04	5	76	188
01104455	07/04/2007	<0.04	3	70	164
01104455	07/16/2007	<0.04	--	--	--
01104455	08/06/2007	<0.04	--	75	106
01104455	09/11/2007	<0.04	3	66	105
01104455	09/25/2007	<0.04	--	--	--
01104460	12/01/2006	<0.04	--	--	--
01104460	12/12/2006	<0.04	--	--	--
01104460	02/12/2007	<0.04	--	--	--
01104460	03/02/2007	<0.04	--	--	--
01104460	04/11/2007	<0.04	--	--	--
01104460	04/27/2007	<0.04	--	--	--
01104460	05/15/2007	<0.04	--	--	--
01104460	07/05/2007	<0.04	--	--	--

Table 6. Physical properties of and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, petroleum hydrocarbons, and suspended sediment in base-flow and stormflow water samples collected in 11 subbasins and for water samples collected from the Fresh Pond intake structure in the Cambridge, Massachusetts, drinking-water source area in water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; shaded areas indicate samples collected during storms]

USGS station number	Begin date	Triclopyr (micrograms per liter)	Petroleum hydrocarbons, silica gel treated-hexane extractable (milligrams per liter)	Suspended sediment, sieve diameter, percent smaller than 0.0625 (millimeters)	Suspended sediment concentration (milligrams per liter)
		P49235	P62172	P70331	P80154
01104460	07/16/2007	<0.04	--	--	--
01104460	08/06/2007	<0.04	--	--	--
01104460	09/11/2007	<0.04	--	--	--
01104460	09/25/2007	<0.04	--	--	--
01104475	12/01/2006	<0.04	--	--	--
01104475	12/12/2006	<0.04	--	--	--
01104475	02/12/2007	<0.04	--	--	--
01104475	03/02/2007	<0.04	--	--	--
01104475	04/11/2007	<0.04	--	--	--
01104475	04/27/2007	<0.04	--	--	--
01104475	05/15/2007	<0.04	--	--	--
01104475	07/05/2007	<0.04	--	--	--
01104475	07/16/2007	<0.04	--	--	--
01104475	08/06/2007	<0.04	--	--	--
01104475	09/11/2007	<0.04	--	--	--
01104475	09/25/2007	<0.04	--	--	--
01104475	05/13/2008	<0.08	--	--	--
422302071083802	12/14/2006	<0.04	--	--	--
422302071083802	03/27/2007	<0.04	--	--	--
422302071083802	08/15/2007	<0.04	--	--	--
422302071083802	05/13/2008	<0.08	--	--	--

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity, (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
USGS-MA-LAB	Blank water	6/28/2006	1430	--	--	--	--	--	6.8	3
01104455	MFB	20070411	0810	--	--	--	0.2	--	5.9	4
01104415	AFB	20070716	1131	--	--	--	0.3	--	6.3	3
01104415	BFS	20070411	0710	--	--	0.77	2.3	11.3	7.1	1,490
01104415	BFR	20070411	0711	--	--	0.77	2.3	11.3	7.1	1,530
01104433	BFS	20070514	1330	--	--	0.15	2.2	13.2	7.3	1,690
01104433	BFR	20070514	1331	--	--	0.15	2.2	--	7.3	1,680
01104433	ACR	20070514	1332	--	--	0.15	2.6	--	7.3	1,690
01104455	SFS	20061201	1617	20061202	939	--	21	--	7	342
01104455	SFR	20061201	1616	20061202	938	--	24	--	7	342
01104455	BFS	20070514	1250	--	--	0.46	1	9.6	7	1,180
01104455	ACR	20070514	1251	--	--	0.46	--	--	7	--
01104460	SFS	20070427	0606	20070429	526	--	2.1	--	7.3	391
01104460	SFR	20070427	0607	20070429	526	--	2.5	--	7.3	392
01104460	BFS	20070515	1100	--	--	31	2.1	8.5	6.9	451
01104460	BFR	20070515	1101	--	--	31	2.2	--	6.9	452
01104475	BFS	20061212	1345	--	--	1	2	12.6	7.7	248
01104475	BFR	20061212	1346	--	--	1	3.8	12.6	7.7	247
01104475	BFS	20070411	0930	--	--	1.9	2.7	12.5	7.5	278
01104475	BFR	20070411	0931	--	--	1.9	2.7	12.5	7.5	282

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Sample type	Begin date	Begin time	End date	End time	Discharge, instantaneous (millions of gallons per day)	Turbidity, (NTRU)	Dissolved oxygen (milligrams per liter)	pH, field (standard units)	Specific conductance, laboratory (µS/cm)
						P50051	P63676	P00300	P00400	P90095
01104455	BFS	20070911	1308	--	--	--	--	--	--	--
01104455	MS	20070911	1309	--	--	--	--	--	--	--
01104455	MSR	20070911	1310	--	--	--	--	--	--	--
01104460	SFS	20070911	1155	20070913	529	--	--	--	--	--
01104460	MS	20070911	1156	--	--	--	--	--	--	--
01104460	MSR	20070911	1157	--	--	--	--	--	--	--
01104475	BFS	20080513	1230	--	--	--	--	--	--	--
01104475	MS	20080513	1231	--	--	--	--	--	--	--
422302071083802	--	20080513	1100	--	--	--	--	--	--	--
422302071083802	MS	20080513	1101	--	--	--	--	--	--	--

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Specific conductance, field, µS/cm	Temperature, water degrees Celsius	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
USGS-MA-LAB	6/28/2006	0.2	--	<0.02	<0.20	<0.20	<0.18	<0.06
01104455	20070411	0.9	--	E0.01	E0.10	<0.12	<0.18	<0.06
01104415	20070716	2	--	0.07	0.25	E0.11	<0.18	<0.06
01104415	20070411	1480	3.3	39.4	227	397	25.3	1.79
01104415	20070411	1480	3.3	39.8	230	411	25.5	1.81
01104433	20070514	1800	18	65.1	234	459	25.1	1.47
01104433	20070514	1800	--	63.8	230	460	25.4	1.46
01104433	20070514	1800	--	65.2	230	460	25.3	1.44
01104455	20061201	337	--	12.4	46.4	74.8	12.2	1.33
01104455	20061201	338	--	12.2	46.1	75.4	12.3	1.25
01104455	20070514	1280	11.3	38.1	164	307	28.1	2.13
01104455	20070514	1280	--	--	--	--	--	--
01104460	20070427	383	--	15.2	50.8	92.6	11.9	0.71
01104460	20070427	383	--	15.4	50.6	93	12	0.75
01104460	20070515	450	14.7	18.8	57.7	105	12.3	0.83
01104460	20070515	450	--	19.5	59.8	105	12.4	0.85
01104475	20061212	243	6.1	16.6	23.4	35.7	19.8	1.99
01104475	20061212	243	6.1	16.8	23.8	35.5	19.7	1.95
01104475	20070411	277	5.8	16.4	28.6	49.4	17.8	1.75
01104475	20070411	277	5.8	16.7	29.2	47.8	17.9	1.66

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Specific conductance, field, µS/cm	Temperature, water degrees Celsius	Calcium, water, filtered (milligrams per liter)	Sodium, water, filtered (milligrams per liter)	Chloride, water, filtered (milligrams per liter)	Sulfate, water, filtered (milligrams per liter)	Total nitrogen, unfiltered (milligrams per liter)
		P00095	P00010	P00915	P00930	P00940	P00945	P62855
01104455	20070911	65	--	--	--	--	--	--
01104455	20070911	65	--	--	--	--	--	--
01104455	20070911	65	--	--	--	--	--	--
01104460	20070911	578	--	--	--	--	--	--
01104460	20070911	578	--	--	--	--	--	--
01104460	20070911	578	--	--	--	--	--	--
01104475	20080513	335	--	--	--	--	--	--
01104475	20080513	335	--	--	--	--	--	--
422302071083802	20080513	500	--	--	--	--	--	--
422302071083802	20080513	500	--	--	--	--	--	--

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery)	2,4-D methyl ester (micrograms per liter)	2,4-D (micrograms per liter)	2,4-DB (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958	P50470	P39732	P38746	P04040	P04038
USGS-MA-LAB	6/28/2006	<0.004	--	<0.19	<0.038	<0.020	<0.028	<0.08
01104455	20070411	<0.008	71.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	20070716	<0.008	75.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	20070411	E0.008	68.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104415	20070411	E0.006	66.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	20070514	0.022	76.9	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	20070514	0.023	82.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104433	20070514	0.022	69.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	20061201	0.12	58.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	20061201	0.1	66.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104455	20070514	0.011	75.6	<0.2	<0.04	<0.02	<0.02	E0.01
01104455	20070514	--	79.9	<0.2	<0.04	<0.02	<0.02	E0.01
01104460	20070427	0.02	62.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	20070427	0.019	59.7	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	20070515	0.023	68.5	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	20070515	0.022	62.2	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	20061212	0.013	74	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	20061212	0.013	E59.3	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	20070411	0.012	65	<0.2	<0.04	<0.02	<0.02	<0.08
01104475	20070411	0.013	66.9	<0.2	<0.04	<0.02	<0.02	<0.08

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Phosphorus, unfiltered (milligrams per liter)	2,4,5-T, surrogate (percent recovery)	2,4-D methyl ester (micrograms per liter)	2,4-D (micrograms per liter)	2,4-DB (micrograms per liter)	2-Chloro-4-isopropylamino-6-amino-s-triazine (micrograms per liter)	2-Chloro-6-ethylamino-4-amino-s-triazine (micrograms per liter)
		P00665	P99958	P50470	P39732	P38746	P04040	P04038
01104455	20070911	--	62	<0.2	E0.189	<0.02	<0.02	<0.08
01104455	20070911	--	63	<0.2	E0.454	0.102	<0.02	<0.08
01104455	20070911	--	51.9	<0.2	E0.401	0.077	<0.02	<0.08
01104460	20070911	--	86.1	<0.2	<0.04	<0.02	<0.02	<0.08
01104460	20070911	--	82.7	E0.109	E0.323	0.154	0.043	0.09
01104460	20070911	--	84.9	E0.108	E0.344	0.153	0.043	0.09
01104475	20080513	--	84.9	<0.04	<0.02	<0.02	<0.06	<0.08
01104475	20080513	--	87.2	<0.04	0.215	0.157	0.105	E0.13
422302071083802	20080513	--	90.6	<0.04	<0.02	<0.02	<0.06	<0.08
422302071083802	20080513	--	86.1	<0.04	0.222	0.159	0.103	E0.13

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine (micrograms per liter)
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
USGS-MA-LAB	6/28/2006	<0.032	<0.008	<0.028	<0.018	<0.10	<0.15	<0.008
01104455	20070411	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	20070716	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	20070411	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104415	20070411	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	20061201	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	20061201	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	20070514	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.001
01104455	20070514	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.002
01104460	20070427	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	20070427	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	20070515	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	E0.003
01104460	20070515	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	20061212	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	20061212	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	20070411	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104475	20070411	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine (micrograms per liter)	3-Hydroxy carbofuran (micrograms per liter)	Acifluorfen, water, recoverable (micrograms per liter)	Aldicarb sulfone (micrograms per liter)	Aldicarb sulfoxide (micrograms per liter)	Aldicarb (micrograms per liter)	Atrazine (micrograms per liter)
		P50355	P49308	P49315	P49313	P49314	P49312	P39632
01104455	20070911	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104455	20070911	<0.08	<0.02	0.066	<0.08	0.081	E0.04	0.068
01104455	20070911	<0.08	<0.02	E0.024	<0.08	0.062	E0.03	0.062
01104460	20070911	<0.08	<0.02	<0.06	<0.08	<0.04	<0.04	<0.04
01104460	20070911	<0.08	0.08	0.148	0.024	0.108	E0.05	0.122
01104460	20070911	<0.08	0.081	0.128	0.028	0.109	E0.05	0.101
01104475	20080513	<0.04	<0.04	<0.04	<0.08	<0.06	<0.12	<0.04
01104475	20080513	0.216	0.128	0.078	E0.033	E0.136	E0.02	0.157
422302071083802	20080513	<0.04	<0.04	<0.04	<0.08	<0.06	<0.12	<0.04
422302071083802	20080513	0.225	0.125	0.094	E0.034	E0.179	E0.02	0.155

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
USGS-MA-LAB	6/28/2006	--	<0.080	<0.022	<0.018	<0.024	<0.018	<0.044
01104455	20070411	84.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	20070716	85.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	20070411	88.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104415	20070411	87.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	20070514	69	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	20070514	70.3	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104433	20070514	67	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	20061201	90.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	20061201	79.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	20070514	82.8	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	20070514	80.9	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	20070427	80.5	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	20070427	78.7	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	20070515	88.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	20070515	82.6	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	20061212	86.4	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	20061212	84	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104475	20070411	76.7	<0.04	E0.004	<0.06	<0.02	<0.04	<0.12
01104475	20070411	87.3	<0.04	E0.004	<0.06	<0.02	<0.04	<0.12

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Barban, surrogate (percent recovery)	Bendiocarb (micrograms per liter)	Benomyl (micrograms per liter)	Bensulfuron-methyl (micrograms per liter)	Bentazon (micrograms per liter)	Bromacil (micrograms per liter)	Bromoxynil (micrograms per liter)
		P90640	P50299	P50300	P61693	P38711	P04029	P49311
01104455	20070911	15	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104455	20070911	19.8	0.119	0.201	0.242	0.161	E0.016	E0.106
01104455	20070911	12.9	0.11	0.188	0.181	0.12	E0.018	E0.089
01104460	20070911	48.1	<0.04	<0.02	<0.06	<0.02	<0.04	<0.12
01104460	20070911	47.6	0.123	0.191	0.291	0.218	0.057	E0.124
01104460	20070911	41.5	0.129	0.192	0.286	0.225	0.057	E0.128
01104475	20080513	74.6	<0.04	E0.017	<0.06	<0.04	<0.02	<0.12
01104475	20080513	75.1	0.163	0.126	E0.294	0.218	0.135	E0.189
422302071083802	20080513	75.3	<0.04	<0.04	<0.06	<0.04	<0.02	<0.12
422302071083802	20080513	72.5	0.157	0.112	E0.287	0.224	0.127	E0.186

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms (per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl (micrograms (per liter)	Carbofuran (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
USGS-MA-LAB	6/28/2006	<0.018	--	<0.018	<0.016	<0.024	<0.032	--
01104455	20070411	<0.04	96.3	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	20070716	<0.04	84.7	<0.02	<0.06	<0.1	<0.08	--
01104415	20070411	<0.04	60.1	<0.02	<0.06	<0.1	<0.08	<0.12
01104415	20070411	<0.04	60.4	<0.02	<0.06	<0.1	<0.08	<0.12
01104433	20070514	0.122	E53.1	<0.02	<0.06	<0.1	<0.08	--
01104433	20070514	0.109	E50.4	<0.02	<0.06	<0.1	<0.08	--
01104433	20070514	0.113	E49.0	<0.02	<0.06	<0.1	<0.08	--
01104455	20061201	E0.185	E82.6	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	20061201	E0.164	E74.6	<0.02	<0.06	<0.1	<0.08	<0.12
01104455	20070514	<0.04	E60.0	<0.02	<0.06	<0.1	<0.08	--
01104455	20070514	<0.04	E56.9	<0.02	<0.06	<0.1	<0.08	--
01104460	20070427	E0.015	60.9	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	20070427	E0.017	63.5	<0.02	<0.06	<0.1	<0.08	<0.12
01104460	20070515	<0.04	43.8	<0.02	<0.06	<0.1	<0.08	--
01104460	20070515	<0.04	47.5	<0.02	<0.06	<0.1	<0.08	--
01104475	20061212	<0.04	E68.6	E0.051	<0.06	<0.1	<0.08	<0.12
01104475	20061212	<0.04	E64.2	E0.045	<0.06	<0.1	<0.08	<0.12
01104475	20070411	<0.04	57.4	E0.012	<0.06	<0.1	<0.08	<0.12
01104475	20070411	<0.04	58.7	E0.012	<0.06	<0.1	<0.08	<0.12

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Caffeine (micrograms (per liter)	Caffeine-13C, surrogate (percent recovery)	Carbaryl (micrograms (per liter)	Carbofuran (micrograms per liter)	Chloramben methyl ester (micrograms per liter)	Chlorimuron (micrograms per liter)	Chlorodiamino-s-triazine (micrograms per liter)
		P50305	P99959	P49310	P49309	P61188	P50306	P04039
01104455	20070911	E0.131	E32.1	<0.02	<0.06	<0.1	<0.08	--
01104455	20070911	E0.217	E25	0.078	0.145	<0.1	E0.117	--
01104455	20070911	E0.218	E33	0.072	0.137	<0.1	E0.055	--
01104460	20070911	E0.026	E38.8	<0.02	<0.06	<0.1	<0.08	--
01104460	20070911	E0.124	E34.7	0.113	0.156	<0.1	E0.208	--
01104460	20070911	E0.12	E34.7	0.113	0.169	E0.051	E0.193	--
01104475	20080513	<0.06	66.2	<0.04	<0.02	<0.1	<0.08	--
01104475	20080513	0.154	67.1	0.163	0.197	0.164	E0.245	--
422302071083802	20080513	<0.06	71.1	<0.04	<0.02	<0.1	<0.08	--
422302071083802	20080513	0.154	53.4	0.161	0.194	0.195	E0.240	--

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
USGS-MA-LAB	6/28/2006	<0.067	<0.014	<0.028	<0.036	<0.028	<0.038	<0.010
01104455	20070411	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	20070716	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	20070411	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104415	20070411	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	20061201	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	20061201	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	20070514	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	20070514	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	20070427	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	20070427	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	20070515	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	20070515	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	20061212	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	20061212	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	20070411	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104475	20070411	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Clopyralid (micrograms per liter)	Cycloate (micrograms per liter)	Dacthal monoacid, (micrograms per liter)	Dicamba (micrograms per liter)	Dichlorprop (micrograms per liter)	Dinoseb (micrograms per liter)	Diphenamid (micrograms per liter)
		P49305	P04031	P49304	P38442	P49302	P49301	P04033
01104455	20070911	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104455	20070911	<0.06	0.088	<0.02	<0.08	0.226	0.141	0.154
01104455	20070911	<0.06	E0.051	<0.02	<0.08	0.197	0.066	0.144
01104460	20070911	<0.06	<0.06	<0.02	<0.08	<0.04	<0.04	<0.04
01104460	20070911	<0.06	0.168	0.218	0.118	0.263	0.221	0.198
01104460	20070911	<0.06	0.151	0.219	0.097	0.253	0.194	0.199
01104475	20080513	<0.06	<0.02	<0.02	<0.04	<0.02	<0.04	<0.04
01104475	20080513	--	E0.162	0.202	--	0.228	0.214	0.217
422302071083802	20080513	<0.06	<0.02	<0.02	<0.04	<0.02	<0.04	<0.04
422302071083802	20080513	--	E0.157	0.19	--	0.227	0.215	0.209

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
USGS-MA-LAB	6/28/2006	<0.016	<0.10	<0.040	<0.016	<0.036	<0.038	<0.020
01104455	20070411	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	20070716	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	20070411	E0.003	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104415	20070411	E0.002	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	20070514	E0.027	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	20070514	E0.026	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104433	20070514	E0.029	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	20061201	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	20061201	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	20070514	E0.013	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	20070514	E0.015	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	20070427	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	20070427	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	20070515	E0.014	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	20070515	E0.012	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104475	20061212	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E00.193
01104475	20061212	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	E00.174
01104475	20070411	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.129
01104475	20070411	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.134

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Diuron (micrograms per liter)	Fenuron (micrograms per liter)	Flumetsulam (micrograms per liter)	Fluometuron (micrograms per liter)	Imazaquin (micrograms per liter)	Imazethapyr (micrograms per liter)	Imidacloprid (micrograms per liter)
		P49300	P49297	P61694	P38811	P50356	P50407	P61695
01104455	20070911	<0.04	E0.036	<0.06	<0.04	<0.04	<0.04	<0.06
01104455	20070911	<0.04	0.187	0.099	E0.109	E0.059	0.065	<0.06
01104455	20070911	<0.04	0.17	0.093	E0.098	E0.056	0.06	<0.06
01104460	20070911	0.008	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
01104460	20070911	0.12	0.176	0.099	0.168	E0.102	0.091	0.127
01104460	20070911	0.117	0.179	0.099	0.164	E0.101	0.092	0.128
01104475	20080513	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	0.09
01104475	20080513	0.197	0.136	E0.174	0.189	E0.190	0.076	0.288
422302071083802	20080513	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04	<0.06
422302071083802	20080513	0.192	0.141	E0.165	0.186	E0.187	0.058	0.172

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Linuron (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
USGS-MA-LAB	6/28/2006	<0.014	<0.070	<0.10	<0.030	<0.034	<0.070	<0.067
01104455	20070411	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	20070716	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	20070411	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104415	20070411	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	20070514	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	20070514	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104433	20070514	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	20061201	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	20061201	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	20070514	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	20070514	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	20070427	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	20070427	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	20070515	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	20070515	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104475	20061212	<0.04	<0.06	<0.2	E0.028	<0.04	<0.06	<0.14
01104475	20061212	<0.04	<0.06	<0.2	E0.026	<0.04	<0.06	<0.14
01104475	20070411	<0.04	<0.06	<0.2	E0.013	<0.04	<0.06	<0.14
01104475	20070411	<0.04	<0.06	<0.2	E0.013	<0.04	<0.06	<0.14

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Linuron (micrograms per liter)	2-methyl-4-chlorophenoxyacetic acid (MCPA) (micrograms per liter)	4-(4-chloro-2-methylphenoxy) butanoic acid (MCPB) (micrograms per liter)	Metalaxyl (micrograms per liter)	Methiocarb (micrograms per liter)	Methomyl (micrograms per liter)	Metsulfuron (micrograms per liter)
		P38478	P38482	P38487	P50359	P38501	P49296	P61697
01104455	20070911	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104455	20070911	0.098	E0.22	E0.082	0.17	0.11	0.143	E0.144
01104455	20070911	0.081	E0.183	E0.059	0.167	0.09	0.137	E0.119
01104460	20070911	<0.04	<0.06	<0.2	<0.04	<0.04	<0.06	<0.14
01104460	20070911	0.154	E0.225	E0.119	0.199	0.15	0.157	E0.225
01104460	20070911	0.149	E0.229	E0.119	0.201	0.149	0.155	E0.215
01104475	20080513	<0.02	<0.06	<0.06	E0.015	<0.04	<0.12	<0.14
01104475	20080513	0.204	0.222	0.137	0.248	0.19	0.185	E0.209
422302071083802	20080513	<0.02	<0.06	<0.06	<0.02	<0.04	<0.12	<0.14
422302071083802	20080513	0.198	0.223	0.134	0.225	0.182	0.171	0.201

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
USGS-MA-LAB	6/28/2006	<0.036	<0.012	<0.04	<0.020	<0.023	<0.050	<0.032
01104455	20070411	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	20070716	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	20070411	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104415	20070411	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	20070514	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	20070514	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104433	20070514	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104455	20061201	<0.06	<0.02	<0.1	0.165	<0.04	<0.04	<0.12
01104455	20061201	<0.06	<0.02	<0.1	0.148	<0.04	<0.04	<0.12
01104455	20070514	<0.06	<0.02	<0.1	0.099	<0.04	<0.04	<0.12
01104455	20070514	<0.06	<0.02	<0.1	0.095	<0.04	<0.04	<0.12
01104460	20070427	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12
01104460	20070427	<0.06	<0.02	<0.1	E0.004	<0.04	<0.04	<0.12
01104460	20070515	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	20070515	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	20061212	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	20061212	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	20070411	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104475	20070411	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	N-(4-Chlorophenyl)-N′-methylurea (micrograms per liter)	Neburon (micrograms per liter)	Nicosulfuron (micrograms per liter)	Norflurazon (micrograms per liter)	Oryzalin (micrograms per liter)	Oxamyl (micrograms per liter)	Picloram (micrograms per liter)
		P61692	P49294	P50364	P49293	P49292	P38866	P49291
01104455	20070911	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104455	20070911	0.061	0.099	E0.21	0.104	<0.04	<0.04	E0.113
01104455	20070911	E0.056	0.046	E0.23	0.09	<0.04	<0.04	E0.119
01104460	20070911	<0.06	<0.02	<0.1	<0.04	<0.04	<0.04	<0.12
01104460	20070911	0.077	0.206	E0.33	0.168	0.192	0.123	E0.139
01104460	20070911	0.075	0.188	E0.32	0.166	0.172	0.126	E0.135
01104475	20080513	<0.12	<0.02	<0.1	<0.02	<0.04	<0.12	<0.12
01104475	20080513	0.133	0.174	E0.54	0.208	0.211	E0.139	--
422302071083802	20080513	<0.12	<0.02	<0.1	<0.02	<0.04	<0.12	<0.12
422302071083802	20080513	0.133	0.182	0.51	0.208	E0.201	E0.169	--

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole, (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)	Triclopyr (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032	P49235
USGS-MA-LAB	6/28/2006	<0.030	<0.010	<0.008	<0.020	<0.090	<0.026	<0.026	<0.026
01104455	20070411	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104415	20070716	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104415	20070411	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104415	20070411	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.04	0.098	<0.06	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.04	0.099	<0.06	<0.04	<0.04	<0.04
01104433	20070514	<0.06	<0.06	<0.04	0.093	<0.06	<0.04	<0.04	<0.04
01104455	20061201	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104455	20061201	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104455	20070514	<0.06	<0.06	<0.04	<0.04	E0.003	E0.002	<0.04	<0.04
01104455	20070514	<0.06	<0.06	<0.04	<0.04	E0.003	E0.002	<0.04	<0.04
01104460	20070427	<0.06	<0.06	<0.04	E0.006	<0.06	<0.04	<0.04	<0.04
01104460	20070427	<0.06	<0.06	<0.04	E0.008	<0.06	<0.04	<0.04	<0.04
01104460	20070515	<0.06	<0.06	<0.04	E0.004	<0.06	<0.04	<0.04	<0.04
01104460	20070515	<0.06	<0.06	<0.04	E0.004	<0.06	<0.04	<0.04	<0.04
01104475	20061212	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104475	20061212	<0.06	E0.049	<0.04	E0.034	<0.06	<0.04	<0.04	<0.04
01104475	20070411	<0.06	E0.032	<0.04	E0.009	<0.06	<0.04	<0.04	<0.04
01104475	20070411	<0.06	E0.035	<0.04	E0.011	<0.06	<0.04	<0.04	<0.04

Table 9. Physical properties and concentrations of dissolved calcium, sodium, chloride, sulfate, total nutrients, polar pesticides and metabolites, in quality-control samples collected in the Cambridge, Massachusetts, drinking-water source area during water years 2007–08.—Continued

[USGS, U.S. Geological Survey; P50051, National Water Quality Laboratory parameter code; E, estimated; NTRU, nephelometric turbidity ratio units; USGS-MA LAB, U.S. Geological Survey-Massachusetts Water Science Center laboratory; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, concentration is less than value shown; --, no data; MFB, manual field blank; AFB, automatic field blank; BFS, base-flow sample; BFR, base-flow replicate sample; ACR, automatic concurrent replicate; SFS, stormflow sample; SFR, stormflow replicate sample; MS, matrix spike; MSR, matrix spike replicate; shades areas indicate samples collected during storms]

USGS station number	Begin date	Propham (micrograms per liter)	Propiconazole, (micrograms per liter)	Propoxur (micrograms per liter)	Siduron (micrograms per liter)	Sulfometuron (micrograms per liter)	Tebuthiuron (micrograms per liter)	Terbacil (micrograms per liter)	Triclopyr (micrograms per liter)
		P49236	P50471	P38538	P38548	P50337	P82670	P04032	P49235
01104455	20070911	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104455	20070911	0.095	0.096	E0.133	0.145	0.147	0.071	0.044	0.145
01104455	20070911	0.077	E0.046	E0.121	0.109	0.135	0.069	0.041	0.131
01104460	20070911	<0.06	<0.06	<0.04	<0.04	<0.06	<0.04	<0.04	<0.04
01104460	20070911	0.133	0.197	E0.162	0.201	0.185	0.109	0.06	0.201
01104460	20070911	0.127	0.188	E0.163	0.199	0.186	0.105	0.059	0.182
01104475	20080513	<0.04	<0.04	<0.04	<0.02	<0.06	<0.04	<0.04	<0.08
01104475	20080513	0.196	0.187	E0.201	0.228	E0.299	0.172	0.147	0.202
422302071083802	20080513	<0.04	<0.04	<0.04	0.005	<0.06	<0.04	<0.04	<0.08
422302071083802	20080513	0.178	0.185	E0.192	0.225	E0.293	0.169	0.142	0.221

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