Acetamide Herbicides and Their Degradation Products in Ground Water and Surface Water of the United States, 1993–2003

By Elisabeth A. Scribner, Julie E. Dietze, and E. Michael Thurman

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Conversion Factors, Abbreviated Water-Quality Units, and Datum

Multiply	By	To obtain
acre	0.4047	hectare (ha)
foot (ft)	0.3048	meter (m)
hectare (ha)	2.471	acre
kilogram (kg)	2.205	pound (lb)
kilogram per hectare per year [(kg/ha)/yr]	0.8922	pound per acre per year [(lb/acre)/yr]
liter (L)	2.642×10^{-1}	gallon (gal)
meter (m)	3.281	foot (ft)
microliter (μL)	2.642×10^{-7}	gallon (gal)
micrometer (μm)	3.937×10^{-2}	inch (in.)
millimeter (mm)	0.03937	inch (in.)
pound (lb)	453.6	gram (g)
pound per acre (lb/acre)	1.121	kilogram per hectare (kg/ha)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$$

Abbreviated Water-Quality Units

microgram (μg)
microgram per liter (μg/L)
milligram per liter (mg/L)
milliliter (mL)

Datum

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

Acetamide Herbicides and Their Degradation Products in Ground Water and Surface Water of the United States, 1993–2003

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Abstract

During 1993 through 2003, the U.S. Geological Survey conducted a number of studies to investigate and document the occurrence, fate, and transport of acetamide herbicides and their degradation products in ground and surface water. As part of these studies, approximately 5,100 water samples were collected and analyzed for the acetamide parent herbicides acetochlor, alachlor, dimethenamid, flufenacet, and metolachlor and their degradation products ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid. During this period, various analytical methods were developed to detect and measure concentrations of acetamide herbicides and their degradation products in ground water and surface water. Results showed that the degradation products of acetamide herbicides in ground water were detected more frequently and occurred at higher concentrations than their parent compounds. Further study showed that the acetamide herbicides and their degradation products were detected more frequently in surface water than in ground water. In general, the parent compounds were detected at similar or greater frequencies than the degradation products in surface water. The developed methods and data were valuable for acquiring information about the occurrence, fate, and transport of the herbicides and their degradation products and the importance of analyzing for both parent compounds and their degradation products in water-quality studies.

Introduction

During the 1990s and early 2000s, the occurrence, fate, and transport of herbicides in ground and surface water became a major water-quality issue throughout the United States. Numerous studies were completed by various government agencies, including the U.S. Geological Survey (USGS), academic institutions, and chemical manufacturers. The Organic Geochemistry Research Laboratory (OGRL) was established by the USGS in Lawrence, Kansas, to provide new knowledge of herbicides and their degradation products in both agriculturally affected and natural water. Essential analytical methods have been and continue to be developed to detect and measure

herbicides and degradation-product concentrations from several major classes of organic compounds, including acetamide herbicides and their degradation products identified in this report in environmental waters.

In understanding the fate and transport of parent compounds, methods for the analysis of herbicides and their degradation products are very important (Meyer and others, 1993; Aga and others, 1994; Ferrer and others, 1997; Zimmerman and Thurman, 1999; Hostetler and Thurman, 2000; Kish and others, 2000; Scribner and others, 2000b; Lee and others, 2001; Thurman and others, 2002; Lee and Strahan, 2003; Vargo and others, 2003). More than 15 journal articles and USGS reports have been published describing the occurrence and fate of acetamide herbicides and their degradation products in the environment (Aga and others, 1996; Field and Thurman, 1996; Kolpin and others, 1996, 1998, 2000, in press; Thurman and others, 1996; Kalkhoff and others, 1998, 2003; Scribner and others, 1998, 2000a, 2003; Graham and others, 1999; Phillips and others, 1999; Tauler and others, 2000; Thurman and Cromwell, 2000; Aga and Thurman, 2001; Zimmerman and others, 2002; Battaglin and others, 2003; Schnoebelen and others, 2003; Mills and others, 2004).

Purpose and Scope

The purpose of this report is to present results of analyses for acetamide herbicides and their degradation products in more than 5,100 ground- and surface-water samples collected during the 1990s and early 2000s. The samples were collected as part of various ongoing USGS studies being conducted throughout the United States that include the Midcontinent Agricultural Chemical Research Project, the National Stream Quality Accounting Network (NASQAN), several National Water-Quality Assessments (NAWQA), and USGS studies with Federal-State cooperative agencies. The data included in this report were collected from studies funded, in part or whole, by these programs.

The samples were analyzed at the OGRL, and the data are being used to document the occurrence, distribution, and concentrations of five acetamide herbicides, alachlor, acetochlor, dimethenamid, flufenacet, and metolachlor, and two of their degradation products, ethanesulfonic acid (ESA) and oxanilic

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acid (OXA). In 2001, the OGRL began analyzing concentrations of the acetochlor and alachlor degradation product, sulfinyl acetic acid (SAA). This report also includes a description of acetamide herbicides and documents the sample-collection and processing methods in addition to laboratory and analytical methods.

Description of Study Sites

Water samples were collected and analyzed from four distinct types of studies described as follows:

1. The Midcontinent Agricultural Chemical Research Project (fig. 1) is a study of the occurrence, movement, flux, fate, and effects of agricultural chemicals in 25 States. The study area includes the Midwest Corn Belt, which accounts for about 65 percent of the total harvested cropland and 60 percent of herbicide use in the United States (Buxton, 2000). The Midcontinent Agricultural Chemical Research Project is part of the USGS Toxic Substances Hydrology Program. Studies included in the project have provided the general scientific basis needed to develop agricultural-management practices that protect the quality of the region's water resources (Anderson and others, 1995).
2. National Stream Quality Accounting Network (NASQAN) is the Nation's only large-scale program that measures the amount of chemicals and sediment that flow past streamflow-gaging stations on large rivers throughout the United States. Data are collected from four major river basins—the Colorado, Columbia, Mississippi, and Rio Grande (fig. 2). These data are important in characterizing variations in chemical and sediment concentrations that occur throughout the year, such as during periods of high and low streamflow, during different seasons, and under different conditions of land use (Hooper and others, 1997).
3. The National Water-Quality Assessment (NAWQA) Program includes investigations of 59 study units (fig. 3) that provide the framework for national and regional status and trends in the quality of the Nation's ground- and surface-water resources (U.S. Geological Survey, 2003). Data for acetamide herbicides and their degradation products from 11 of the study units are included in this report.
4. The USGS cooperates with various Federal-State agencies to investigate and study aquatic ecosystems. In some cases, these cooperative studies evaluate agricultural contamination of ground and surface water from nonpoint and distributed point sources. For

Figure 1. Location of area studied as part of the U.S. Geological Survey's Midcontinent Agricultural Chemical Research Project during 1993–2003.

Figure 2. Location of streamflow-gaging stations where samples were collected for study of acetamide herbicides and their degradation products as part of the U.S. Geological Survey's National Stream Quality Accounting Network during 1999–2002.

example, herbicide-related ground- and surface-water-quality data were collected in 1999 in cooperation with the New York State Department of Environmental Conservation (Phillips and others, 2000; Eckhardt and others, 2001).

Description of Acetamide Herbicides and Their Degradation Products

The acetamide herbicides, acetochlor, alachlor, dimethenamid, flufenacet, and metolachlor, constitute a major class of

herbicides used throughout the United States. As shown in table 1, during 1997 the acetamide herbicides accounted for more than 121 million pounds applied in the United States for weed control on crops (Gianessi and Marcelli, 2000). Flufenacet has been used only since 1998; therefore, usage data for flufenacet are not included in table 1.

Acetamide herbicides and their degradation products are just now being realized as important to agricultural chemistry because of their solubility and ease of transport. At this time (2003), they are thought to be of low toxicity (Yokley and others, 2002). Figure 4 shows the structures and degradation

Figure 3. Location of National Water-Quality Assessment study units where samples were collected for study of acetamide herbicides and their degradation products during 1996–2003.

pathways of the acetamide parent compounds to ESA, OXA, and SAA. As shown, the parent compounds acetochlor and alachlor degrade to SAA then to ESA. Acetochlor and alachlor also degrade directly to OXA. Dimethenamid, flufenacet, and metolachlor degrade to ESA and OXA.

Acetochlor has a conditional registration that was granted in 1994 to a partnership composed of Zeneca Agricultural Products (Wilmington, Delaware) and Monsanto Company (St. Louis, Missouri; Meister, 2000). In November 2000, Dow AgroSciences LLC (Indianapolis, Indiana) purchased the acetochlor product line from Zeneca Limited (SeedQuest, 2000). As a preemergent herbicide, acetochlor is rapidly replacing alachlor. It is used for the control of most annual grasses and certain broadleaf weeds in corn. It has a solubility in water of

223 mg/L at 25 °C and generally provides 8 to 12 weeks of weed control, depending on soil type and weather conditions (Meister, 2000). Common herbicides that contain acetochlor are Guardian®, Harness® (Monsanto Company), and Surpass® (Zeneca Agricultural Products/Dow AgroSciences LLC).

Alachlor is a restricted-use herbicide, which means it may be purchased and used only by certified applicators. Alachlor was developed in 1952 by Monsanto Company, first reported in 1966, and then commercialized as Lasso® in 1969 (Vencill, 2002). Alachlor is used mostly to control annual grasses and broadleaf weeds in corn, sorghum, and soybeans as well as dry beans, dry peas, peanuts, and sweet corn. Alachlor breaks down rapidly in natural water primarily due to the action of

Table 1. Acetamide herbicide use for crop production in the United States during 1997.

[All values given in pounds. Source of data: Gianessi and Marcelli (2000). --, not available]

Crop	Acetochlor	Alachlor	Dimethenamid	Metolachlor	Grand total
Cabbage	--	--	--	19,995	
Celery	--	--	--	1,873	
Corn	32,591,175	5,852,526	4,444,113	50,161,543	
Cotton	--	--	--	498,189	
Dry beans	--	281,477	67,350	395,098	
Dry peas	--	4,389	--	48,905	
Green beans	--	--	--	212,298	
Green peas	--	--	--	23,081	
Hot peppers	--	--	--	18,475	
Onions	--	--	--	35,037	
Peanuts	--	18,894	29,311	925,958	
Potatoes	--	--	--	351,488	
Safflower	--	--	--	19,629	
Sod	--	--	--	2,072	
Sorghum	--	1,449,463	416,937	4,599,824	
Soybeans	--	7,233,638	938,327	9,437,847	
Spinach	--	--	--	9,529	
Sweet corn	--	319,254	94,964	542,577	
Sweet peppers	--	--	--	12,140	
Tomatoes	--	--	--	16,459	
Watermelons	--	--	--	4,193	
Total pounds applied	32,591,175	15,159,641	5,991,002	67,336,210	121,078,028

microorganisms. It has a solubility in water of 242 mg/L at 25 °C and is absorbed by germinating shoots and works by interfering with a plant's ability to produce protein and by interfering with root elongation. Common herbicides that contain alachlor include Lasso®, Freedom®, and Lariat® (Meister, 2000).

Dimethenamid was registered for corn in March 1993 and for soybeans in March 1994 by Sandoz Agro, Inc. (Des Plaines, Illinois). It is presently marketed by BASF (Mt. Olive, New Jersey) as the active ingredient in the herbicides Frontier® and Guardsman® (Meister, 2000). In addition to control of broadleaf and annual weeds in corn and soybeans, dimethenamid also is registered for use on dry beans, peanuts, sorghum, and sweet corn. Dimethenamid has a solubility in water of 1,174 mg/L at 25 °C and has a half-life of 1 to 2 weeks in the southern United States and 5 to 6 weeks in the northern United States (Vencill, 2002).

Flufenacet, initially synthesized by Bayer Corporation in 1988, received conditional registration by USEPA in April 1998 (U.S. Environmental Protection Agency, 1998). Flufenacet is in the thiadiazole chemical family but is also an acetamide. It is one of the active ingredients in the herbicides

Axiom®, Define®, and Epic® from Bayer Corporation (Pittsburgh, Pennsylvania). Flufenacet controls most annual grasses and certain small-seeded broadleaf weeds. It is used for the corn and soybean markets under the trade name Axiom®. Application rate of flufenacet ranges from 0.6 to 1.1 (kg/ha)/yr. It has a solubility of 56 mg/L at 25 °C in water (Vencill, 2002). Usage data presently are not available.

Metolachlor was synthesized in 1972 and made available commercially for use on corn in 1977 by Ciba Geigy Ltd (now Syngenta, Basel, Switzerland). Metolachlor is a preemergent selective herbicide used to control certain broadleaf and annual grassy weeds primarily in crops. Its solubility is 488 mg/L at 20 °C (Vencill, 2002). Soil studies of metolachlor oxidation have reported that the major degradation products include metolachlor ESA and OXA (Phillips and others, 1999). Commonly used commercial products that contain metolachlor are Dual Magnum® and Bicep II Magnum®. *S*-metolachlor was registered for use in the United States on March 14, 1977. *S*-metolachlor is physically and chemically equivalent to metolachlor but is more active at the site of application in susceptible plants and allows for lower use rates (Vencill, 2002).

Figure 4. Chemical structures and pathways for degradation of acetochlor, alachlor, dimethenamid, flufenacet, and metolachlor.

Acknowledgments

The authors wish to acknowledge the USGS scientists and field technicians who provided essential support to these projects by identifying candidate stream sites across the United States and in collecting and processing stream samples. In addition, thanks go to Mike Meyer, Kenneth Hostetler, and Edward Lee (current and former OGRL staff members) for their important contributions in developing the analytical methods used on samples in this report.

Methods

Sampling Sites and Schedules

Sampling sites were distributed geographically throughout each study area and represented ground water from wells of various sizes, depths, and open to various aquifers and surface water from various streams and reservoirs. Sampling schedules for the various studies ranged from short-term (about 2 months) synoptic to longer term (multi-year) assessments. Samples for the various studies were collected from 1993 to 2003.

Sample Collection and Processing

Sampling methods capable of collecting water samples that accurately represented the water-quality characteristics of the ground water or surface water at a given time or location were used. Descriptions of sampling methods used by the USGS to obtain representative ground-water samples are given in Hardy and others (1989) and Wilde and others (1998). Descriptions of sampling methods used for obtaining depth- and width-integrated surface-water samples are given in Edwards and Glysson (1988), Ward and Harr (1990), and Wilde and others (1998).

Sample-collection equipment was made of Teflon or stainless-steel material and was free of materials that might leach interfering compounds into water samples or absorb the target analytical compounds from the water samples. Ground-water samples were discharged directly through the filtering device through tubing connected to sample taps at water-supply wells or the discharge outlet on sampling pumps. Water samples from each surface-water site were composited in a single container and filtered through a nominal 0.7- μ m glass-fiber filter using a peristaltic pump. Filters were preconditioned with about 200 mL of sample water prior to collection of the sample. The filtrate for analysis was collected in baked 125-mL amber glass bottles with Teflon-lined lids. Samples were chilled immediately and shipped to the USGS OGRL in Lawrence, Kansas, and received within 3 days of collection. Herbicide bottles received at the laboratory were logged in, assigned identification numbers, and refrigerated at about 4 °C until extracted and analyzed.

Laboratory Methods

Analytical methods for the acetamide herbicide compounds were developed at the USGS OGRL in Lawrence (Scribner and others, 2000b). They include solid-phase extraction (SPE), with gas chromatography/mass spectrometry (GC/MS), high-performance liquid chromatography with diode-array detection (HPLC/DAD), and liquid chromatography/mass spectrometry (LC/MS). The HPLC/DAD method was replaced with the LC/MS method in 1999. Methods of analysis and chemical names are listed in table 2.

Gas Chromatography/Mass Spectrometry

Acetamide parent herbicide samples analyzed by GC/MS were extracted from 125-mL samples using two different instruments. From 1993 to 1999, SPE methods were prepared using the millilab workstation (Waters, Milford, Massachusetts). In 1999, the millilab workstation was replaced with the autotrace workstation (Tekmar-Dohrman, Cincinnati, Ohio) for SPE of GC/MS samples. For both SPE methods, compounds were extracted by passing water samples through a preconditioned C-18 cartridge (Waters, Milford, Massachusetts). The adsorbed compounds were removed from the C-18 cartridge with ethyl acetate. The eluate was evaporated further using a Turbovap (Zymark, Palo Alto, California). The eluate then was transferred to a labeled GC autosampler vial for GC/MS analysis (Meyer and others, 1993; Zimmerman and Thurman, 1999; Kish and others, 2000).

Sample eluates were analyzed using a Hewlett Packard model 5890 gas chromatograph (Wilmington, Delaware) and a 5970B mass-selective detector (Palo Alto, California). The sample components were separated, identified, and quantified by injecting an aliquot of the concentrated extract into a high-resolution, fused-silica capillary column under selected-ion mode. Compounds eluting from the GC column were identified by comparing their measured ions and retention times to reference ions and retention times obtained by the measurement of control standards under the same conditions used for the water samples. The concentration of each identified compound was measured by relating the MS response of the quantitation ion produced by that compound to the MS response of the quantitation ion produced by a compound that was used as the internal standard. Surrogate compounds, whose concentrations are known in every sample, are measured with the same calibration procedure (Meyer and others, 1993; Zimmerman and Thurman, 1999; Kish and others, 2000).

The reporting limit for this method was 0.05 μ g/L. Concentrations of acetamide herbicides were reported from 0.05 to 5.0 μ g/L without dilution. If the concentration was greater than 10 μ g/L, the sample was reextracted and reanalyzed (Zimmerman and others, 1999; Kish and others, 2000).

Table 2. Methods of analysis for acetamide herbicides and their degradation products.

[GC/MS, gas chromatography/mass spectrometry; HPLC/DAD, high-performance liquid chromatography/diode array detection; LC/MS, liquid chromatography/mass spectrometry; X, method used; --, method not used]

Common name	Chemical name	Method of analysis		
		GC/MS	HPLC/DAD	LC/MS
Acetamide herbicides				
Acetochlor	2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methylphenyl) acetamide	X	--	X
Alachlor	2-chloro-N-(2,6-diethylphenyl)-N-(methoxymethyl) acetamide	X	--	X
Dimethenamid	2-chloro-N-(2,4-dimethyl-3-thienyl))-N-(2-methoxy-1-methylethyl) acetamide	X	--	X
Flufenacet	N-(4-fluorophenyl)-N-(1-methylethyl)-2-[[5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl]oxy] acetamide	X	--	X
Metolachlor	2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide	X	--	X
Degradation products				
Acetochlor ethanesulfonic acid	2-[(2-ethyl-6-methylphenyl)(ethoxymethyl)-amino]-2-oxoethane sulfonic acid	--	X	X
Acetochlor oxanilic acid	2-[(2-ethyl-6-methylphenyl)(ethoxymethyl)-amino]-2-oxoacetic acid	--	X	X
Acetochlor sulfinyl acetic acid	2-([N-(ethoxymethyl)-N-(6-ethyl-2-methylphenyl)carbamoyl]methyl)sulfinyl)acetic acid	--	--	X
Alachlor ethanesulfonic acid	2-[(2,6-diethylphenyl)(methoxymethyl)amino]-2-oxoethanesulfonic acid	--	X	X
Alachlor oxanilic acid	2-[(2,6-diethylphenyl)(methoxymethyl)amino]- 2-oxoacetic acid	--	X	X
Alachlor sulfinyl acetic acid	2-([N-(2,6-diethylphenyl)-N-(methoxymethyl)carbamoyl]methyl)sulfinyl)acetic acid	--	--	X
Dimethenamid ethanesulfonic acid	[(2,4-dimethyl-thiophen-3-yl)-(2-methoxy-1-methyl-ethyl)-carbamoyl]-methanesulfonic acid	--	--	X
Dimethenamid oxanilic acid	N-(2,4-dimethyl-thiophen-3-yl)-N-(2-methoxy-1-methyl-ethyl)-oxalamic acid	--	--	X
Flufenacet ethanesulfonic acid	[(4-fluoro-phenyl)-isopropyl-carbamoyl]-methanesulfonic acid	--	--	X
Flufenacet oxanilic acid	N-(4-fluro-phenyl)-N-isopropyl-oxalamic acid	--	--	X
Metolachlor ethanesulfonic acid	2-[(2-ethyl-6-methylphenyl)(2-methoxy-1-methylethyl)amino]-2-oxoethanesulfonic acid	--	X	X
Metolachlor oxanilic acid	2-[(2-ethyl-6-methylphenyl)(2-methoxy-1-methylethyl)amino]-2-oxoacetic acid	--	X	X

High-Performance Liquid Chromatography/Diode Array Detection

Two automated SPE systems were used in the laboratory for HPLC/DAD analysis. As described in the GC/MS section of this report, one SPE method used the automated Waters mil-lilab workstation, and the alternate SPE procedure used the Tekmar autotrace workstation. The same manufacturer of C-18 bonded-silica packing was used for both SPE procedures. The cartridge was rinsed with ethyl acetate. The adsorbed acetamide degradation products then were removed from the cartridge with methanol. The eluted solution was spiked with 2,4-dichlorophenoxyacetic acid (internal standard), and a Turbovap was used to evaporate the sample under a stream of nitrogen (Zimmerman and others, 2000).

The sample components were separated, identified, and measured by injecting 50 μ L of the sample extract into a Hewlett-Packard 1090 HPLC equipped with a diode array detector (Hewlett Packard, Palo Alto, California). The analytical columns consisted of Phenomenex (Torrance, California) 5- μ m, 250 X 3-mm C-18 column coupled to a Keystone (Bellefonte, Pennsylvania) 3- μ m, 250 X 4.6 mm C-18 column. Compounds eluting from the LC columns were identified by comparing their retention times obtained by the measurement of control samples under the same conditions used for the collected samples. The concentration of each identified compound was measured by relating the DAD response produced by that compound to the DAD response produced by the internal standard (Zimmerman and others, 2000).

The reporting limit for this method was 0.20 μ g/L. Concentrations of acetamide degradation products were reported in ranges from 0.20 to 3.0 μ g/L without dilution. If the concentration was greater than 3.0 μ g/L, the sample was reextracted and reanalyzed (Hostetler and Thurman, 2000; Zimmerman and others, 2000).

Liquid Chromatography/Mass Spectrometry

Two automated SPE extraction systems were used in the laboratory for LC/MS analysis. One method used the Tekmar autotrace workstation. This method used vacuum C-18, 6-mL cartridges with bonded silica obtained from Waters Corporation (Milford, Massachusetts). The cartridge was rinsed with ethyl acetate. The adsorbed acetamide degradation products were removed from the cartridge with methanol. The methanolic extract was spiked with 2,4-dichlorophenoxyacetic acid (internal standard) solution, then evaporated in a Turbovap (Lee and others, 2001).

The alternate SPE method used the Prospekt automated online SPE instrument with the Triathlon autosampler (Spark-Holland, The Netherlands). Filtered water samples were measured into 10-mL vials and were spiked with the working surrogate compound. Each sample was acidified with acetic acid. The sample component then was isolated and concentrated using automated online SPE (Lee and Strahan, 2003).

The sample then was separated, identified, and measured by injecting an aliquot into the LC and MS detector operated in selected-ion monitoring mode. Compounds eluting from the LC were identified by comparing the retention times of mass-spectral signals against the retention times of standards analyzed under the same conditions used for the samples. Compounds were identified further by selected fragment ions or isotope ions that were characteristic for each compound. The concentration of each identified compound was calculated by determining the ratio of the MS response produced by that compound to the MS response produced by the internal standard, which was injected into the sample, to the ratio of the MS responses of the primary standard analyzed using the same method (Lee and others, 2001; Lee and Strahan, 2003).

The reporting limit for this method was 0.05 μ g/L when extracted by the Tekmar autotrace workstation. The reporting limit for this method was 0.02 μ g/L when using the Prospekt automated online SPE instrument with the Triathlon autosampler. The acetamide degradation products were reported in concentration ranges from 0.05 to 2.0 μ g/L. If the concentration was greater than 2.0 μ g/L, the sample was reextracted and reanalyzed (Lee and others, 2001; Lee and Strahan, 2003).

Acetamide Herbicide and Degradation Product Results

Analytical results for five acetamide herbicides and their degradation products in water-quality samples collected from various study areas throughout the United States are presented at the end of this report. Ground-water data from the Midcontinent Agricultural Chemical Research Project, NAWQA Program, and Federal-State cooperative studies are presented in table 5. Surface-water data collected from the Midcontinent Agricultural Chemical Research Project, NASQAN, NAWQA Program, and Federal-State studies are presented in table 6.

The percentage of detections in the acetamide herbicides and their degradation products in ground- and surface-water samples collected during these studies is shown in figures 5 and 6, respectively. A statistical summary of the analytical results, which includes the number of samples analyzed, number of samples at or above the method reporting limit (varied with each analytical method), maximum concentrations, median and percentage of detections for both ground- and surface-water samples is shown in tables 3 and 4, respectively. The median concentrations were calculated using only those samples in which the particular compound was detected.

About 2,420 samples were collected from 1994 through 2002 as part of various USGS ground-water studies. Figure 5 shows metolachlor (12 percent) was the most frequently detected acetamide parent compound, followed by acetochlor and alachlor (2 percent each), and dimethenamid (0.18 percent). The acetamide degradation products were detected more frequently than their parent compounds. Figure 5 also shows metolachlor ESA, the most frequently detected degradation

Figure 5. Percentage of detections for acetamide herbicides and their degradation products determined by laboratory methods in ground-water samples collected for selected U.S. Geological Survey studies, 1994–2002.

product, was present in 45 percent of the samples analyzed, followed by alachlor ESA (35 percent) and metolachlor OXA (26 percent).

Overall, the median concentrations of detections for the acetochlor, alachlor, and metolachlor parent compounds were less than their ESA or OXA degradation products (table 3). For example, the median concentration for metolachlor detections in ground water (0.17 µg/L) was less than the median concentrations of detections for its degradation products, metolachlor ESA (0.97 µg/L) and metolachlor OXA (0.70 µg/L). However, the median concentration for the dimethenamid parent compound was greater than either its ESA or OXA degradation product. Flufenacet, its degradation products of ESA and OXA, and the SAAs were not detected in any of the ground-water samples.

About 2,756 samples were collected from 1993 through 2003 as part of various USGS surface-water studies. As shown in figure 6, metolachlor (63 percent) was the most frequently detected acetamide parent compound, followed by acetochlor

(24 percent), dimethenamid (18 percent), alachlor (15 percent), and flufenacet (3 percent). Figure 6 also shows that the acetamide ESA and OXA degradation products were more frequently detected than their parent compounds with the exception of dimethenamid and flufenacet. Metolachlor ESA, the most frequently detected degradation product, was present in 82 percent of the samples analyzed, followed by metolachlor OXA (63 percent) and alachlor ESA (60 percent). In both the ground- and surface-water samples, alachlor ESA, metolachlor ESA, and metolachlor OXA were the most frequently detected compounds (figs. 5 and 6).

As shown in table 4, the median concentrations of detections for the acetochlor, alachlor, and metolachlor parent compounds were less than median concentrations for their ESA or OXA degradation products. The median concentration for the parent compound flufenacet was higher than either of its degradation products. Dimethenamid ESA was lower than dimethenamid, whereas dimethenamid OXA was higher than its parent.

Figure 6. Percentage of detections for acetamide herbicides and their degradation products determined by laboratory methods in surface-water samples collected for selected U.S. Geological Survey studies, 1993–2003.

Summary

Numerous studies have been conducted by the U.S. Geological Survey (USGS) throughout the 1990s and into the 2000s to investigate and document the occurrence, fate, and transport of herbicides and their degradation products in ground and surface water. Approximately 5,100 water samples were collected and analyzed for acetamide herbicides and their degradation products from 1993 through 2003 as part of various USGS studies throughout the United States, including the Mid-continent Agricultural Chemical Research Project, the National Stream Quality Accounting Network, several National Water-Quality Assessments, and individual Federal-State cooperative studies.

From 1993 through 2003, the USGS Organic Geochemistry Research Laboratory in Lawrence, Kansas, developed analytical methods to detect and measure concentrations of acetamide herbicides and their degradation products in ground and surface water. Gas chromatography/mass spectrometry was used for the analysis of the parent compounds acetochlor, alachlor, dimethenamid, flufenacet, and metolachlor. In December 2002, a liquid chromatography/mass spectrometry

method became available for the analysis of the five parent compounds. The degradation products of these parent compounds, ethanesulfonic acid and oxanilic acid, were analyzed using two methods—high-performance liquid chromatography with diode-array detection and liquid chromatography/mass spectrometry. The acetochlor and alachlor degradation product of sulfinyl acetic acid was analyzed by liquid chromatography/mass spectrometry.

Analytical results showed that: (1) the methods were valuable for acquiring information about the fate and transport of the parent acetamide herbicides in water; (2) degradation products of acetamide herbicides in ground water were detected more frequently and occurred at similar or higher concentrations than their parent compounds; (3) the acetamide herbicides and their degradation products were detected more frequently in surface water than in ground water, and in general, the parent compounds were detected at similar or greater frequencies than the degradation products in surface water; and (4) to more fully understand the occurrence, fate, and transport of herbicides and their degradation product, it is important to include both parent compounds and their degradation products in herbicide studies.

Table 3. Statistical summary of concentrations of acetamide herbicides and their degradation products detected in ground-water samples collected as part of selected U.S. Geological Survey studies, 1994–2002.

[MRL, method reporting limit; µg/L, micrograms per liter]

Compound	Number of samples analyzed	Number of samples at or above MRL	Maximum concentration (µg/L)	Median of detections (µg/L)	Percentage of detections
Acetamide herbicide					
Acetochlor	1,715	40	56	0.17	2
Alachlor	1,715	33	6.4	.13	2
Dimethenamid	560	1	.80	.80	.18
Flufenacet	532	0	0	0	0
Metolachlor	1,721	206	86	.18	12
Degradation product					
Acetochlor ethanesulfonic acid	2,420	247	8.2	.61	10
Acetochlor oxanilic acid	2,394	132	198	.37	6
Acetochlor sulfinyl acetic acid	67	0	0	0	0
Alachlor ethanesulfonic acid	2,420	861	40	.60	35
Alachlor oxanilic acid	2,420	240	34	.37	10
Alachlor sulfinyl acetic acid	67	0	0	0	0
Dimethenamid ethanesulfonic acid	685	4	.09	.07	.58
Dimethenamid oxanilic acid	684	1	.05	.05	.15
Flufenacet ethanesulfonic acid	601	0	0	0	0
Flufenacet oxanilic acid	602	0	0	0	0
Metolachlor ethanesulfonic acid	2,419	1,098	43	.97	45
Metolachlor oxanilic acid	2,396	617	36	.70	26

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Table 4. Statistical summary of concentrations of acetamide herbicides and degradation products detected in surface-water samples collected as part of selected U.S. Geological Survey studies, 1993–2003.

[MRL, method reporting limit; µg/L, micrograms per liter]

Compound	Number of samples analyzed	Number of samples at or above MRL	Maximum concentration (µg/L)	Median of detections (µg/L)	Percentage of detections
Acetamide herbicide					
Acetochlor	2,262	545	21	0.24	24
Alachlor	2,274	339	20	.18	15
Dimethenamid	767	141	4.7	.10	18
Flufenacet	681	22	.93	.18	3
Metolachlor	2,274	1,445	124	.23	63
Degradation product					
Acetochlor ethanesulfonic acid	2,756	1,153	22	.45	41
Acetochlor oxanilic acid	2,756	847	37	.39	30
Acetochlor sulfinyl acetic acid	322	86	1.2	.20	27
Alachlor ethanesulfonic acid	2,756	1,662	20	.50	60
Alachlor oxanilic acid	2,756	496	14	.20	18
Alachlor sulfinyl acetic acid	322	18	.76	.10	5
Dimethenamid ethanesulfonic acid	989	132	.95	.09	13
Dimethenamid oxanilic acid	989	80	1.7	.12	8
Flufenacet ethanesulfonic acid	867	9	.29	.08	1
Flufenacet oxanilic acid	867	9	.18	.09	1
Metolachlor ethanesulfonic acid	2,756	2,269	20	.88	82
Metolachlor oxanilic acid	2,756	1,748	17	.41	63

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Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)																			
Illinois monitoring wells (PMI)																			
371512089110601	Pulaski Co., IL	11/02/00	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
371856089081801	Pulaski Co., IL	11/02/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
375121088104401	Gallatin Co., IL	11/01/00	<.05	<.05	<.05	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.66	<.05
375740089400001	Randolph Co., IL	10/31/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
380020088523801	Franklin Co, IL	10/31/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
382725089433001	St. Clair Co., IL	10/26/00	.41	<.05	.12	--	.07	3.4	5.9	--	<.05	<.05	<.05	<.05	<.05	<.05	.86	.66	.26
382803089325201	Washington Co., IL	10/30/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
383412088504701	Marion Co., IL	10/24/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
383632089280101	Clinton Co., IL	10/26/00	<.05	.14	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05
383742088334801	Clay Co., IL	10/25/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
383958087453201	Lawrence Co., IL	10/23/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
384049088374901	Clay Co., IL	10/25/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
384533087364501	Lawrence Co., IL	10/23/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.4	<.05
384623088130001	Richland Co., IL	10/24/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
390018087430701	Crawford Co., IL	10/24/00	<.05	.12	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
390441090245401	Jersey Co., IL	10/30/00	<.05	<.05	<.05	--	<.05	.10	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
390910088243901	Effingham Co., IL	10/23/00	<.05	<.05	.07	--	<.05	1.5	.52	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.3	1.0
391028089280001	Montgomery Co, IL	10/23/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
391545090304001	Greene Co., IL	10/30/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
391820087535301	Clark Co., IL	10/24/00	<.05	<.05	<.05	--	<.05	.08	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	<.05
393635088312701	Moultrie Co., IL	10/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
394750089044701	Macon Co., IL	10/25/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
394926090335701	Morgan Co., IL	10/31/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
395813091165001	Adams Co., IL	10/31/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Illinois monitoring wells (PMI)—Continued																			
400312089165401	Logan Co., IL	10/26/00	<0.05	<0.05	0.09	--	<0.05	0.26	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.63	0.20
401020089231201	Logan Co., IL	10/26/00	<.05	<.05	<.05	--	<.05	.38	.12	--	<.05	<.05	.05	<.05	<.05	<.05	<.05	.94	.46
401256088545001	Dewitt Co., IL	11/02/00	<.05	<.05	<.05	--	<.05	4.7	.27	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.59	.17
401509089540401	Mason Co., IL	10/31/00	<.05	<.05	<.05	--	<.05	.75	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.4	.25
401542090004701	Mason Co., IL	10/31/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.32	.06
402149090065601	Fulton Co., IL	11/02/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
403029091180801	Hancock Co., IL	11/01/00	<.05	<.05	<.05	--	<.05	<.05	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
404453089314801	Woodford Co., IL	10/30/00	<.05	<.05	<.05	--	<.05	.14	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05
405512090573601	Henderson Co., IL	02/21/01	<.05	<.05	.10	--	<.05	1.2	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.49	.11
405536089300401	Peoria Co., IL	11/01/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	<.05
405755089283201	Peoria Co., IL	11/01/00	<.05	.74	.18	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.2	.35
410033089280901	Marshall Co., IL	11/01/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	3.0	<.05
410336087345101	Kankakee Co., IL	10/23/00	<.05	.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
410408088054101	Kankakee Co., IL	10/23/00	<.05	.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
411252087335901	Kankakee Co., IL	10/23/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
411758089095801	Putnam Co., IL	10/30/00	<.05	<.05	.23	--	<.05	.77	.82	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.9	1.8
413957088313001	Kendall Co., IL	10/24/00	<.05	<.05	<.05	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.71	<.05
414128089243701	Lee Co., IL	10/27/00	<.05	<.05	<.05	--	<.05	.92	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	40	12
414152090183701	Rock Island Co., IL	11/02/00	<.05	<.05	<.05	--	<.05	1.4	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	6.8	1.1
414529088264302	Kane Co., IL	10/24/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	<.05
420010090073501	Carroll Co., IL	11/03/00	<.05	<.05	<.05	--	<.05	.98	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	4.0	2.1
420233089242601	Ogle Co., IL	10/27/00	<.05	<.05	<.05	--	<.05	.55	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.29	<.05
420602089185502	Ogle Co., IL	10/21/00	<.05	<.05	<.05	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05
420841089493901	Carroll Co., IL	11/03/00	<.05	<.05	<.05	--	<.05	1.2	<.05	--	<.05	.06	<.05	<.05	<.05	<.05	<.05	14	7.2
421555088520901	Boone Co., IL	10/20/00	<.05	<.05	<.05	--	<.05	.22	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	4.5	.14

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of col- lection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Illinois monitoring wells (PMI)—Continued																			
421806089414401	Stephenson Co., IL	10/26/00	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
421826089374301	Stephenson Co., IL	11/03/00	<.05	<.05	.07	--	<.05	.46	.08	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.74	.17
421834089213501	Winnebago Co., IL	10/26/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
422058090014401	Jo Daviess Co., IL	11/02/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
422716088532001	Boone Co., IL	10/25/00	<.05	<.05	<.05	--	<.05	3.5	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.1	<.05
422723089034001	Winnebago Co., IL	10/25/00	<.05	<.05	<.05	--	<.05	.21	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.77	.05
Iowa monitoring wells (DKE/DKW)																			
402131095221101	Crawford Co., IA	07/24/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
403659094285301	Taylor Co., IA	08/15/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/14/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
403745091174701	Lee Co., IA	08/01/95	<.05	<.20	--	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.05	1.2	--
		07/18/96	<.05	<.20	<.20	--	<.05	.94	.46	--	--	--	--	--	--	--	<.05	.60	<.20
		07/25/97	<.05	<.20	<.20	--	<.05	1.0	.55	--	--	--	--	--	--	--	<.05	.69	.28
		07/22/98	<.05	<.20	<.20	--	<.05	1.9	.72	--	--	--	--	--	--	--	<.05	1.2	.45
		06/16/99	<.05	<.20	<.20	--	<.05	1.1	.69	--	<.05	--	--	<.05	--	--	<.05	.81	.47
		09/06/01	<.05	<.05	.13	--	<.05	.22	.12	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	.37
403906095015001	Page Co., IA	08/16/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
404327095284801	Fremont Co., IA	08/16/95	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/24/98	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<0.20	<.20
		08/13/01	<.05	<.05	<.05	--	<.05	.14	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	<.05	<.05
405500092121501	Wapello Co., IA	07/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405631094560802	Adams Co., IA	08/15/95	<.05	<.20	--	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405632094534401	Adams Co., IA	08/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/13/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
405850095061701	Montgomery Co., IA	08/15/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/13/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
405858093175701	Lucas Co., IA	07/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/15/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
410046091555701	Jefferson Co., IA	09/06/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
410656095380201	Mills Co., IA	08/16/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/09/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
410656095380201	Mills Co., IA	08/27/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.32	<.20
		08/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	.31	<.05
410905092375901	Wapello Co., IA	08/01/95	<.05	<.20	--	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.20	--
		07/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410907092375301	Wapello Co., IA	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/05/01	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05
411501095251301	Pottawattamie Co., IA	08/30/95	<.05	<.20	--	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.38	<.20
		08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.50	<.20
		07/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.33	<.20
		08/13/01	<.05	.10	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	<.05
411622094520901	Cass Co., IA	08/15/95	<.05	<.20	--	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/14/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
411639094521101	Cass Co., IA	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/14/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
411644091110703	Louisa Co., IA	08/07/95	<.05	<.20	--	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		07/15/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
411644091110703	Louisa Co., IA	07/23/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/17/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	--	--	<0.05	--	--	<.05	<.05	<.05
		08/08/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	<.05	<.05
411652091213802	Louisa Co., IA	07/18/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
411727094374001	Adair Co., IA	08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.78	.27
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.72	.23
		08/14/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.78	.22
411820093441201	Warren Co., IA	06/22/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	1.2	<.20
412013091485701	Washington Co., IA	07/19/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/08/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
412138091571501	Keokuk Co., IA	07/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/08/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
412321091034801	Muscatine Co., IA	08/07/95	<.05	<.20	<.20	--	<.05	.80	.27	--	--	--	--	--	--	--	<.05	.70	.33
		07/15/96	<.05	<.20	<.20	--	<.05	.83	.26	--	--	--	--	--	--	--	<.05	.81	.20
412850091342901	Washington Co., IA	07/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/02/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
412852094275101	Adair Co., IA	08/30/95	<0.05	<0.20	<0.20	--	<0.05	3.1	<0.20	--	--	--	--	--	--	--	<0.05	1.2	0.75
		08/16/96	<.05	<.20	<.20	--	<.05	3.3	<.20	--	--	--	--	--	--	--	<.05	.99	<.20
		08/28/97	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	.65	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	.91	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.38	<.20
412924094072203	Dallas Co., IA	06/20/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.8	<.20
		08/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.0	<.20
412938082380201	Mahaska Co., IA	07/17/96	<.05	<.20	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413037093290301	Warren Co., IA	06/22/95	<.05	<.20	<.20	--	<.05	3.5	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
		08/15/96	<.05	<.20	<.20	--	<.05	2.5	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
413040090455001	Scott Co., IA	08/04/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/07/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	<.05	<.05
413040093290501	Warren Co., IA	06/22/95	<.05	<.20	--	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	.74	--
		08/15/96	<.05	<.20	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	<.05	1.3	<.20
		07/21/97	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	.82	<.20
		08/09/99	<.05	<.20	<.20	--	<.05	.56	<.20	--	<.05	--	--	<.05	--	--	<.05	.61	<.20
		07/27/01	<.05	<.05	<.05	--	<.05	1.6	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.38	<.05
413048093062101	Jasper Co., IA	07/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
413049095254501	Shelby Co., IA	08/18/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.11	2.3	<.20
		07/09/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.1	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
413049095254501	Shelby Co., IA	08/25/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	1.2	<0.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	3.5	<.20
		07/12/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	.05	2.1	<.20
		08/17/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	1.0	<.05
413234094552401	Audubon Co., IA	08/16/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.35	<.20
		08/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.29	<.20
		07/31/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.45	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.32	<.20
		08/17/01	<.05	<.05	<.05	--	<.05	.18	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.63	.18
413303094001001	Dallas Co., IA	06/20/95	<.05	<.20	--	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	<.20	--
		08/16/96	<.05	.45	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413418093432403	Polk Co., IA	06/20/95	<.05	<.20	--	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		08/15/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413423092503601	Jasper Co., IA	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413521090511001	Muscatine Co., IA	07/15/96	<.05	<.20	.39	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/07/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
413810095185401	Shelby Co., IA	08/18/95	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.42	.23
		07/09/96	<.05	<.20	<.20	--	<.05	2.3	.23	--	--	--	--	--	--	--	<.05	.26	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
413836094161701	Dallas Co., IA	08/28/97	<0.05	<0.20	<.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		08/15/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
413913093070001	Jasper Co., IA	07/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.98	<.20
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.83	<.20
		06/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
		07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.97	<.20
		09/05/01	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	<.05
413923090350901	Scott Co., IA	08/03/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/06/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
414026091210201	Cedar Co., IA	06/27/96	<.05	<.20	<.20	--	.11	8.5	33	--	--	--	--	--	--	--	9.0	8.6	15
414032091210001	Cedar Co., IA	06/26/97	<.05	<.20	<.20	--	<.05	2.0	7.4	--	--	--	--	--	--	--	1.7	2.5	3.1
		09/19/01	<.05	<.05	.16	--	<.05	.41	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	3.2	.54	3.6
414236096012501	Harrison Co., IA	08/29/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/12/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
041429093145401	Jasper Co., IA	07/17/96	<.05	<.20	<.20	--	<.05	<.20	.28	--	--	--	--	--	--	--	<.05	<.20	<.20

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

[illegible]

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

[illegible]

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
415426092175901	Tama Co., IA	06/26/96	<0.05	<0.20	<0.20	--	<0.05	1.8	<0.20	--	--	--	--	--	--	--	<0.05	3.5	<0.05
415752090485701	Clinton Co., IA	06/20/96	<.05	<.20	<.20	--	<.05	2.0	2.5	--	--	--	--	--	--	--	<.05	.26	.60
415753092350201	Tama Co., IA	06/27/95	<.05	<.20	--	--	.15	2.5	<.20	--	--	--	--	--	--	--	.12	1.8	--
		06/24/96	<.05	<.20	<.20	--	<.05	.71	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/24/97	<.05	<.20	<.20	--	<.05	.54	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/02/98	<.05	<.20	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	<.05	.31	<.20
		07/15/99	<.05	<.20	<.20	--	<.05	.58	<.20	--	<0.05	--	--	<0.05	--	--	.05	.36	<.05
420005091431201	Linn Co., IA	09/04/01	<.05	<.05	<.05	--	<.05	.33	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	.17	<.05
		06/19/96	<.05	.20	<.20	--	<.05	2.1	.20	--	--	--	--	--	--	--	.08	3.6	.89
		06/12/97	<.05	.62	.23	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.23	3.3	.77
		08/25/98	<.05	1.2	.28	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.07	4.0	.66
		07/12/99	<.05	.93	.48	--	<.05	.69	<.20	--	<.05	--	--	<.05	--	--	.14	2.6	.68
420020092465001	Marshall Co., IA	08/02/01	<.05	.71	.25	--	<.05	.77	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.05	2.0	.32
		06/24/96	<.05	.60	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	<.05	.59	<.20
420131095221101	Crawford Co., IA	08/17/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420156093562401	Boone Co., IA	06/27/95	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.42	<.20
		08/14/96	<.05	<.20	<.20	--	<.05	.70	<.20	--	--	--	--	--	--	--	<.05	.85	<.20
420241095422001	Monona Co., IA	08/12/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/10/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	<.05	<.05

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

[illegible]

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
420613092593601	Marshall Co., IA	06/25/96	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.50	<0.20
420955095475601	Monona Co., IA	08/29/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/02/01	<.05	<.05	<.05	--	<.05	.10	<.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.11	<.05
420959094001901	Boone Co., IA	06/09/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	<.05	<.05
		07/26/01	<.05	<.05	<.05	--	<.05	.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
421025094063001	Boone Co., IA	06/27/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/14/96	<.05	<.20	<.20	--	<.05	<.20	1.1	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/97	<.05	<.20	<.20	--	<.05	.25	1.7	--	--	--	--	--	--	--	<.05	<.20	<.20
421028094061201	Boone Co., IA	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421135092275002	Tama Co., IA	06/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/04/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
421322092522001	Grundy Co., IA	06/28/95	<.05	<.20	--	--	.15	1.4	<.20	--	--	--	--	--	--	--	.12	.26	--
		06/25/97	<.05	<.20	<.20	--	.16	1.0	2.4	--	--	--	--	--	--	--	.09	.36	.27
		07/13/99	<.05	<.20	<.20	--	<.05	.57	1.0	--	<.05	--	--	<.05	--	--	.09	.25	.26
		09/05/01	<.05	<.05	<.05	--	.17	.23	1.6	--	<.05	<.05	<.05	<.05	<.05	<.05	.10	.12	.35
4213366092524400	Grundy Co. IA	06/28/95	<.05	<.20	--	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	<.20	--
		06/25/96	<.05	<.20	<.20	--	<.05	.93	<.20	--	--	--	--	--	--	--	.05	<.20	<.20
421442091120001	Jones Co., IA	08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.23	<.20
		09/19/01	<.05	<.05	<.05	--	<.05	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
421617095051001	Sac Co., IA	07/24/95	<.05	<.20	<.20	--	<.05	4.4	9.7	--	--	--	--	--	--	--	.17	1.2	2.6

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
421617095051001	Sac Co., IA	08/12/96	<0.05	<0.20	<0.20	--	<0.05	5.8	9.8	--	--	--	--	--	--	--	0.17	1.7	2.3
		06/30/97	<.05	<.20	.24	--	<.05	2.6	6.2	--	--	--	--	--	--	--	.27	1.0	2.1
		06/23/98	<.05	.49	.25	--	<.05	5.0	9.5	--	--	--	--	--	--	--	.32	2.3	2.8
		06/07/99	<.05	.48	.66	--	<.05	3.6	12	--	<0.05	--	--	<0.05	--	--	.36	1.6	3.0
		07/23/01	<.05	<.05	.64	--	<.05	3.6	4.2	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	.41	2.0	2.5
421826095025101	Sac Co., IA	07/24/95	<.05	<.20	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/12/96	<.05	<.20	<.20	--	<.05	.61	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422106095280201	Ida Co., IA	07/24/96	<.05	<.20	<.20	--	<.05	<.20	.36	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		08/01/01	<.05	<.05	<.05	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	<.05
422109095275401	Ida Co., IA	07/24/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.48	<.20
422148092461801	Grundy Co., IA	06/28/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422611092552501	Grundy Co., IA	06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/18/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
422819092212701	Black Hawk Co., IA	08/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/29/01	<.05	<.05	<.05	--	<.05	.28	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	<.05
422831095465102	Woodbury Co., IA	07/27/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
		07/12/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.79	<.20
		07/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.43	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
422831095465102	Woodbury Co., IA	06/25/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		06/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.24	<.20
		08/01/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
422834091281601	Delaware Co., IA	08/21/95	<.05	<.20	--	--	.63	4.7	2.7	--	--	--	--	--	--	--	.49	5.2	--
		08/16/96	<.05	<.20	<.20	--	.39	3.6	2.4	--	--	--	--	--	--	--	.19	8.0	1.7
422852092040101	Buchanan Co., IA	08/21/95	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/12/96	<.05	<.20	<.20	--	<.05	.29	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/20/97	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	<.05	.25	<.20
		08/16/99	<.05	<.20	<.20	--	<.05	.28	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/29/01	<.05	<.05	<.05	--	<.05	1.3	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	<.05
422915095323504	Ida Co., IA	07/27/95	<.05	<.20	<.20	--	.09	1.5	1.4	--	--	--	--	--	--	--	2.5	5.7	3.4
		07/09/96	<.05	.42	<.20	--	.05	.27	.29	--	--	--	--	--	--	--	1.4	2.5	2.2
		06/30/97	<.05	<.20	<.20	--	<.05	<.20	.94	--	--	--	--	--	--	--	1.4	4.6	4.4
		06/09/99	<.05	<.20	.35	--	<.05	.31	.27	--	<.05	--	--	--	--	--	.15	.97	.85
		08/02/01	.58	1.1	2.1	--	<.05	<.05	.27	--	.80	<.05	<.05	<.05	<.05	<.05	1.8	2.4	2.9
422929096254501	Woodbury Co., IA	07/28/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/31/01	<.05	<.05	.12	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	.12
423020091273701	Delaware Co., IA	08/21/95	<.05	<.20	--	--	<.05	3.0	<.20	--	--	--	--	--	--	--	.17	2.3	--
		08/20/97	<.05	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.38	3.5	.47
		08/16/99	<.05	<.20	<.20	--	<.05	.39	<.20	--	<.05	--	--	<.05	--	--	.21	<.20	<.20
		08/29/01	<.05	<.05	<.05	--	<.05	2.5	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.08	2.9	.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
423028094115101	Webster Co., IA	06/29/95	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/10/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	--	--	--	--	--	<.05	<.05	<.05
		07/25/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
423033095250501	Ida Co., IA	07/24/95	.77	.25	<.20	--	<.05	.58	.59	--	--	--	--	--	--	--	3.0	3.0	2.5
		07/09/96	.60	.93	.80	--	.08	1.4	2.9	--	--	--	--	--	--	--	2.3	5.4	5.1
423135090383201	Dubuque Co., IA	09/06/95	<.05	<.20	<.20	--	<.05	.59	<.20	--	--	--	--	--	--	--	<.05	.52	.22
		08/16/96	<.05	<.20	<.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	<.05	.69	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	.30	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
		08/26/98	<.05	<.20	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
		08/10/99	<.05	<.20	<.20	--	<.05	.53	<.20	--	<.05	--	--	<.05	--	--	<.05	.34	<.20
		09/11/01	<.05	.10	.10	--	<.05	.31	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.34	.10
423537095583901	Plymouth Co., IA	07/28/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.50	<.20
		07/12/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.92	<.20
		07/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.52	<.20
		06/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.48	<.20
		07/31/01	<.05	.07	<.05	--	<.05	.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.36	.06
423602090595201	Dubuque Co., IA	09/06/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/11/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
423744095383301	Cherokee Co., IA	07/27/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
423744095383301	Cherokee Co., IA	06/09/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	--	--	--	<0.05	<0.20	<0.20
		08/01/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
423954093535801	Wright Co., IA	06/29/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/13/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
423958093535701	Wright Co, IA	06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
424026091321502	Clayton Co., IA	08/30/95	<.05	<.20	<.20	--	<.05	2.7	2.2	--	--	--	--	--	--	--	<.05	2.6	.37
		08/16/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.20	2.2	<.20
424319092283401	Bremer Co., IA	08/12/96	<.05	<.20	<.20	--	<.05	3.5	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
424341095331301	Cherokee Co., IA	07/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/01/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
424705092320803	Chickasaw Co., IA	08/13/96	<.05	<.20	<.20	--	<.05	2.6	<.20	--	--	--	--	--	--	--	<.05	2.4	.31
424708094570801	Buena Vista Co., IA	07/25/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/23/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
424921095581501	Plymouth Co., IA	07/27/95	<.05	<.20	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	<.05	.55	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
425719091483301	Fayette Co., IA	08/30/95	<0.05	<0.20	<0.20	--	<0.05	2.0	<0.20	--	--	--	--	--	--	--	<0.05	2.3	<0.20
		08/15/96	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	2.1	<.20
425731094270801	Palo Alto Co., IA	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/23/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
425948096295401	Sioux Co., IA	07/26/95	<.05	.20	.20	--	<.05	.43	.25	--	--	--	--	--	--	--	<.05	1.5	.45
		07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.0	.22
		07/11/96	<.05	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	<.05	1.1	.32
430015093360501	Hancock Co., IA	08/13/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	<.05	<.05
		07/24/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05
430015093360502	Hancock Co., IA	08/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
430017096285301	Sioux Co., IA	07/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/31/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	<.05
430922095193501	Clay Co., IA	07/26/95	<.05	<.20	<.20	--	<.05	1.9	3.6	--	--	--	--	--	--	--	.05	1.2	1.7
		07/11/96	<.05	<.20	<.20	--	<.05	2.9	8.1	--	--	--	--	--	--	--	.10	1.7	2.7
043112092213901	Black Hawk Co., IA	08/12/96	<.05	<.20	<.20	--	<.05	.84	<.20	--	--	--	--	--	--	--	<.05	.43	<.20
431151095505101	O'Brien Co., IA	07/26/95	<.05	.53	--	--	<.05	.35	<.20	--	--	--	--	--	--	--	<.05	2.7	--
		07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	3.0	.21

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
431151095505101	O'Brien Co., IA	07/02/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	2.2	0.52
		06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.8	<.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	2.0	<.20
		07/31/01	<.05	.19	.17	--	<.05	.13	<.05	--	<.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	1.5	.26
431303092052002	Howard Co., IA	09/05/95	<.05	<.20	<.20	--	<.05	5.7	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
		08/14/96	<.05	.28	<.20	--	<.05	6.4	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
431429094450601	Palo Alto Co., IA	07/25/95	<.05	.83	--	--	<.05	.47	<.20	--	--	--	--	--	--	--	.22	2.4	--
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.9	<.20
431443092261401	Howard Co., IA	08/13/96	<.05	<.20	<.20	--	<.05	1.7	.54	--	--	--	--	--	--	--	.06	1.9	<.20
431556093375401	Winnebago Co., IA	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/24/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
431638091282902	Allamakee Co., IA	08/25/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/11/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/12/01	<.05	<.05	<.05	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
431654092484501	Mitchell Co., IA	08/26/97	<.05	<.20	<.20	--	<.05	.54	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
		09/13/01	<.05	<.05	<.05	--	<.05	.45	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.32	.11
431828091473201	Winneshiek Co., IA	08/25/95	<.05	<.20	<.20	--	<.05	.74	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
		08/14/96	<.05	.24	<.20	--	<.05	.66	<.20	--	--	--	--	--	--	--	<.05	.53	<.20
		08/25/97	<.05	<.20	<.20	--	<.05	.40	<.20	--	--	--	--	--	--	--	<.05	.52	<.20
		08/26/98	<.05	.25	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	<.05	.46	<.20
		08/11/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Herbicide Project (fig. 1)—Continued																			
Iowa monitoring wells (DKE/DKW)—Continued																			
431828091473201	Winneshiek Co., IA	09/12/01	<0.05	<0.05	<0.05	--	<0.05	0.23	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.20	<0.05
432030096175401	Lyon Co., IA	07/26/95	<.05	<.20	<.20	--	.24	2.5	5.5	--	--	--	--	--	--	--	1.0	1.5	3.2
432150092332401	Howard Co., IA	08/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/13/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
432241092550802	Mitchell Co., IA	08/13/96	<.05	<.20	<.20	--	<.05	.67	<.20	--	--	--	--	--	--	--	<.05	.96	<.20
		08/26/97	<.05	<.20	<.20	--	<.05	.57	<.20	--	--	--	--	--	--	--	<.05	1.0	<.20
		08/12/99	<.05	<.20	<.20	--	<.05	.25	<.20	--	<.05	--	--	<.05	--	--	<.05	.64	<.20
		09/14/01	<.05	<.05	<.05	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	<.05
432349094285201	Emmet Co., IA	07/25/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	<.05	<.05
432608096201503	Lyon Co., IA	07/24/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		07/26/95	<.05	<.20	<.20	--	<.05	.57	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/11/96	<.05	<.20	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/02/97	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/24/98	<.05	<.20	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
432650092170401	Howard Co., IA	06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	1.7	.27
		07/31/01	<.05	<.05	<.05	--	<.05	.39	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.1	.26
432650092170401	Howard Co., IA	08/26/97	<.05	<.20	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

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Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delaware River Basin (DELR/BET/DCG)—Continued																			
401705075313001	Montgomery Co., PA	11/15/99	--	0.15	<0.05	--	--	0.06	<0.05	--	--	--	--	--	--	--	--	<0.05	<0.05
401734074470301	Mercer Co., NJ	10/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
401811075462501	Berks Co., PA	09/28/99	--	<.05	<.05	--	--	.14	<.05	--	--	--	--	--	--	--	--	2.1	0.66
402027075072901	Bucks Co., PA	09/08/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.08	<.05
402119075173701	Bucks Co., PA	09/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
402151074525301	Hunterdon Co., NJ	07/21/99	--	.43	<.05	--	--	1.4	<.05	--	--	--	--	--	--	--	--	5.5	1.1
402315075052701	Bucks Co., PA	10/13/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
402337075290001	Montgomery Co., PA	06/30/99	--	<.05	<.05	--	--	.60	<.05	--	--	--	--	--	--	--	--	1.4	.32
402517076014701	Berks Co., PA	06/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	--	--	--	<.05	<.05
402555075114701	Bucks Co., PA	06/15/99	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.90	.13
402622076120201	Berks Co., PA	06/20/00	--	<.05	<.05	--	--	.21	.21	--	--	<.05	<.05	--	--	--	--	<.05	<.05
402939076062701	Berks Co., PA	07/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.08	<.05
403002075250201	LeHigh Co., PA	09/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
403003075000001	Hunterdon Co., NJ	08/19/99	--	<.05	<.05	--	--	.28	<.05	--	--	--	--	--	--	--	--	.20	.10
403140075052901	Bucks Co., PA	07/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
403156074583901	Hunterdon Co., NJ	06/17/99	--	<.05	<.05	--	--	.62	<.05	--	--	--	--	--	--	--	--	.09	<.05
403237075185301	Bucks Co., PA	06/16/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
403342075485901	Berks Co., PA	05/08/00	--	<.05	<.05	--	--	.28	<.05	--	--	<.05	<.05	--	--	--	--	1.4	.08
040352907054201	Schuylkill Co., PA	04/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
403640075530001	Berks Co., PA	05/23/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
403803075591401	Berks Co., PA	07/18/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
403944076045901	Schuylkill Co., PA	06/21/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
404150075371901	Northampton Co., PA	05/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.42	.12
404212075425401	LeHigh Co., PA	05/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.06	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delaware River Basin (DELR/BET/DCG)—Continued																			
404306076031101	Schuylkill Co., PA	06/19/00	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	<0.05	<0.05
404624075232001	Northampton Co., PA	05/09/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
404708076070701	Schuylkill Co., PA	04/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.37	<.05
404734075491601	Carbon Co., PA	07/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	<.05	<.05
404740075562301	Schuylkill Co., PA	04/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
404935075100201	Northampton Co., PA	06/14/00	--	<.05	<.05	--	--	.26	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405046075341901	Carbon Co., PA	05/10/00	--	<.05	<.05	--	--	.47	<.05	--	--	<.05	<.05	--	--	--	--	.59	<.05
405118075464101	Carbon Co., PA	06/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405414075174001	Monroe Co., PA	06/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405453075522601	Carbon Co., PA	07/10/00	--	<.05	<.05	--	--	.15	<.05	--	--	<.05	<.05	--	<.05	<.05	--	10	2.5
405459074451201	Sussex Co., NJ	07/17/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405501075155401	Monroe Co., PA	07/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405552075091901	Northampton Co., PA	05/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405605075240901	Monroe Co., PA	05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405702074585201	Warren Co., NJ	05/17/00	--	<.05	<.05	--	--	.36	<.05	--	--	<.05	<.05	--	--	--	--	1.4	.60
405754075470401	Carbon Co., PA	06/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
405934075242001	Monroe Co., PA	05/16/00	--	<.05	<.05	--	--	.21	<.05	--	--	<.05	<.05	--	--	--	--	.22	<.05
410125074570701	Warren Co., NJ	05/18/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.48	<.05
410422074575101	Warren Co., NJ	06/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
410612074591501	Pike Co., PA	07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
411117074480401	Sussex Co., NJ	06/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
411252074522001	Pike Co., PA	07/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
411401074452901	Sussex Co., NJ	06/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
411930074431401	Sussex Co., NJ	07/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
411957074462601	Pike Co., PA	07/11/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delaware River Basin (DELR/BET/DCG)—Continued																			
412522074441301	Pike Co., PA	07/10/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
412722074354501	Orange Co., NY	08/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
415040075070301	Wayne, Co. PA	07/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
415429074501101	Sullivan Co., NY	07/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
420125075064801	Sullivan Co., NY	08/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
420207075020401	Delaware Co., NY	07/30/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.67	<.05
420244075251101	Broome Co., NY	07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	<.05
421052075004501	Delaware Co., NY	08/11/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
042140974355701	Delaware Co., NY	07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	<.05
421747074332301	Delaware Co., NY	08/14/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421758074524101	Delaware Co., NY	07/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	<.05
Delmarva Peninsula (DLMV/JMD)																			
19-D-R	Sussex Co., DE	10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
22-D-R	Sussex Co., DE	10/30/01	--	<.05	<.05	--	--	.92	.11	--	--	<.05	<.05	--	<.05	<.05	--	3.4	1.4
26D-R	Somerset Co., MD	11/01/01	--	<.05	<.05	--	--	.15	<.05	--	--	<.05	<.05	--	<.05	<.05	--	6.4	.06
63 F 28	Northampton Co., VA	10/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	2.4	<.05
63 F 29	Northampton Co., VA	10/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	3.2	<.05
63 F 30	Northampton Co., VA	10/18/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.64	.35
63 F 44	Northampton Co., VA	10/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	3.2	<.05
63 F 45	Northampton Co., VA	10/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	1.1	<.05
63 F 47	Northampton Co., VA	10/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	1.0	<.05
63 F 60	Northampton Co., VA	10/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.39	<.05
63 F 81	Northampton Co., VA	10/21/99	--	<.05	<.05	--	--	.24	<.05	--	--	--	--	--	--	--	--	4.6	.21
63 F 82	Northampton Co., VA	10/21/99	--	<.05	<.05	--	--	.20	<.05	--	--	--	--	--	--	--	--	.51	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
63 F 86	Northampton Co., VA	10/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	2.1	<.05
64J28	Accomack Co., VA	07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
64J29	Accomack Co., VA	07/31/01	--	<.05	<.05	--	--	.47	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.0	.38
64J30	Northampton Co., VA	07/30/01	--	<.05	<.05	--	--	.11	<.05	--	--	<.05	<.05	--	<.05	<.05	--	35	19
64J31	Northampton Co., VA	07/30/01	--	<.05	<.05	--	--	.26	<.05	--	--	<.05	<.05	--	<.05	<.05	--	10	4.9
66L11	Accomack Co., VA	08/01/01	--	<.05	<.05	--	--	.33	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
66L12	Accomack Co., VA	08/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
Cd31-19	New Castle Co., DE	08/06/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Cd52-15	New Castle Co., DE	08/08/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
CECe86	Cecil Co., MD	07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
CODe15	Caroline Co., MD	08/22/01	--	<.05	<.05	--	--	4.8	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.2	.17
COEc25	Caroline Co., MD	08/27/01	--	<.05	<.05	--	--	1.3	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.9	.41
Db11-27	New Castle Co., DE	08/07/00	--	<.05	<.05	--	--	.12	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.18
Db11-28	New Castle Co., DE	08/07/00	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.13	<.05
Db11-48	New Castle Co., DE	08/09/00	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	.06
DC31-15	New Castle Co., DE	08/08/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.41	.05
DOCb8	Dorchester Co., MD	08/07/01	--	<.05	<.05	--	--	.60	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.57	<.05
Ec42-15	New Castle Co., DE	07/05/01	--	.74	<.05	--	--	.35	.05	--	--	<.05	<.05	--	<.05	<.05	--	17	4.1
Gc14-03	New Castle Co., DE	07/17/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Hc34-03	New Castle Co., DE	10/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Ib32-05	Kent Co., DE	08/23/01	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
Ie42-03	Kent Co., DE	08/29/00	--	<.05	<.05	--	--	.68	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.9	.09
JC 43-05	Kent Co., DE	10/26/00	--	<.05	<.05	--	--	.44	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	<.05
Jc52-04	Kent Co., DE	07/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
Jc55-03	Kent Co., DE	06/28/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
Je41-08	Kent Co., DE	10/26/00	--	<0.05	<0.05	--	--	0.10	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.29	<0.05
Ke Bd 42	Kent Co., MD	07/03/01	--	<.05	<.05	--	--	.49	<.05	--	--	<.05	<.05	--	<.05	<.05	--	14	.78
KEBe46	Kent Co., DE	07/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Ke Be 52	Kent Co., MD	09/07/99	--	<.05	<.05	--	--	1.4	<.05	--	--	--	--	--	--	--	--	5.2	.18
Ke Be 59	Kent Co., MD	09/02/99	--	<.05	<.05	--	--	.51	<.05	--	--	--	--	--	--	--	--	<.05	<.05
KEBe 59	Kent Co., DE	07/12/01	--	.88	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.3	.14
Ke Be 61	Kent Co., MD	09/07/99	--	<.05	<.05	--	--	1.2	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Ke Be 62	Kent Co., MD	09/08/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	7.0	.82
Ke Be 159	Kent Co., MD	09/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Ke Be 160	Kent Co., MD	09/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Ke Be 161	Kent Co., MD	09/01/99	--	<.05	<.05	--	--	1.2	<.05	--	--	--	--	--	--	--	--	1.8	<.05
Ke Be 162	Kent Co., MD	09/08/99	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	.39	<.05
Ke Be 163	Kent Co., MD	09/08/99	--	<.05	<.05	--	--	.95	<.05	--	--	--	--	--	--	--	--	.87	<.05
Ke Be 164	Kent Co., MD	09/02/99	--	1.6	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	4.7	.33
Ke Be 170	Kent Co., MD	09/09/99	--	<.05	<.05	--	--	.92	<.05	--	--	--	--	--	--	--	--	2.9	.41
Le24-11	Kent Co., DE	07/11/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Le35-11	Kent Co., DE	06/27/01	--	<.05	<.05	--	--	.52	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.1	<.05
LE55-09	Sussex Co., DE	09/07/00	--	<.05	<.05	--	--	.22	.27	--	--	<.05	<.05	--	<.05	<.05	--	.87	.06
MD 11-04	Kent Co., DE	08/23/00	--	<.05	<.05	--	--	.49	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.14	<.05
Nc 25-37	Sussex Co., DE	09/12/00	--	<.05	<.05	--	--	.75	.28	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.07
Ng21-03	Sussex Co., DE	09/06/00	--	<.05	<.05	--	--	1.6	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.79	<.05
Ng25-04	Sussex Co., DE	09/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Nh53-01	Sussex Co., DE	10/24/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Ni 51-32	Sussex Co., DE	08/17/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.74	.11

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
Oc 15-11	Sussex Co., DE	09/13/00	--	<0.05	<0.05	--	--	0.82	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.19	<0.05
Oc21-02	Sussex Co., DE	07/25/01	--	<.05	<.05	--	--	.33	<.05	--	--	<.05	<.05	--	<.05	<.05	--	4.4	<.05
OC21-03	Sussex Co., DE	07/25/01	--	<.05	<.05	--	--	.16	<.05	--	--	<.05	<.05	--	<.05	<.05	--	6.9	3.0
Oe44-01	Sussex Co., DE	07/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.13
Oe44-02	Sussex Co., DE	07/24/01	--	<.05	<.05	--	--	.34	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	<.05
Oi 25-18	Sussex Co., DE	09/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Oi 25-19	Sussex Co., DE	11/01/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
Pc 33-44	Sussex Co., DE	09/12/00	--	<.05	<.05	--	--	.37	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.32	<.05
Pe 23-185	Sussex Co., DE	09/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Ph 13-03	Sussex Co., DE	08/16/99	--	2.4	.56	--	--	<.05	<.05	--	--	--	--	--	--	--	--	10	5.3
Ph 13-04	Sussex Co., DE	08/10/99	--	.22	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	24	8.0
Ph 13-07	Sussex Co., DE	11/05/99	--	3.5	<.05	--	--	.16	<.05	--	--	--	--	--	--	--	--	31	11
Ph 13-13	Sussex Co., DE	08/18/99	--	<.05	<.05	--	--	.18	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Ph 13-14	Sussex Co., DE	08/18/99	--	<.05	<.05	--	--	.08	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Ph 13-15	Sussex Co., DE	08/18/99	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	.49	.08
Ph 13-16	Sussex Co., DE	11/04/99	--	2.4	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	12	1.8
Ph 13-17	Sussex Co., DE	08/17/99	--	.61	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	27	1.7
Ph 13-18	Sussex Co., DE	08/17/99	--	<.05	<.05	--	--	.23	<.05	--	--	--	--	--	--	--	--	5.0	.94
Ph 13-23	Sussex Co., DE	08/11/99	--	<.05	<.05	--	--	1.4	<.05	--	--	--	--	--	--	--	--	19	4.9
Ph 13-24	Sussex Co., DE	08/11/99	--	<.05	<.05	--	--	1.5	.08	--	--	--	--	--	--	--	--	15	4.0
Ph 13-25	Sussex Co., DE	08/16/99	--	.85	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.23	.39
Ph 13-26	Sussex Co., DE	08/11/99	--	<.05	<.05	--	--	1.5	<.05	--	--	--	--	--	--	--	--	1.5	1.3
Ph 13-28	Sussex Co., DE	11/05/99	--	<.05	<.05	--	--	.71	<.05	--	--	--	--	--	--	--	--	17	1.9
Ph 13-30	Sussex Co., DE	08/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.32	<.05
Ph 13-31	Sussex Co., DE	08/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.86	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
Ph 14-13	Sussex Co., DE	11/18/99	--	<0.05	<0.05	--	--	0.11	<0.05	--	--	--	--	--	--	--	--	0.36	<0.05
Ph 23-08	Sussex Co., DE	08/19/99	--	.90	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	12	3.4
Ph 23-10	Sussex Co., DE	08/10/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	35	19
Ph 23-12	Sussex Co., DE	08/10/99	--	<.05	<.05	--	--	.33	.32	--	--	--	--	--	--	--	--	16	11
Ph 23-18	Sussex Co., DE	08/19/99	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	11	2.8
Ph 23-19	Sussex Co., DE	08/19/99	--	<.05	<.05	--	--	.17	<.05	--	--	--	--	--	--	--	--	.65	.12
Pi12-08	Sussex Co., DE	10/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
Pi-31-02	Sussex Co., DE	08/17/00	--	<.05	<.05	--	--	.29	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.5	<.05
Pot Nets#1	Sussex Co., DE	10/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
QADb-40	Sussex Co., DE	08/29/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	<.05
QADf54	Queen Annes Co., MD	07/26/01	--	<.05	<.05	--	--	.94	<.05	--	--	<.05	<.05	--	<.05	<.05	--	6.5	2.1
QADf55	Queen Annes Co., MD	07/26/01	--	<.05	<.05	--	--	.67	<.05	--	--	<.05	<.05	--	<.05	<.05	--	17	4.8
Qc22-04	Queen Annes Co., MD	08/28/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.45	<.05
QD21-12	Sussex Co., DE	08/22/00	--	<.05	<.05	--	--	.41	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.8	.70
QD52-09	Sussex Co., DE	08/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
Rd 22-01	Sussex Co., DE	08/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		08/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Ri22-03	Sussex Co., DE	09/05/01	--	<.05	<.05	--	--	.16	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
RI 23-04	Sussex Co., DE	08/21/00	--	<.05	<.05	--	--	.42	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.96	.26
SODe44	Sussex Co., DE	08/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Wi Bh 4	Wicomico Co., MD	10/06/99	--	<.05	<.05	--	--	6.9	<.05	--	--	--	--	--	--	--	--	6.5	3.5
Wi Bh 5	Wicomico Co., MD	10/06/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Wi Bh 8	Wicomico Co., MD	10/05/99	--	<.05	<.05	--	--	.10	<.05	--	--	--	--	--	--	--	--	.38	.16
Wi Bh 9	Wicomico Co., MD	10/05/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
Wi Bh 12	Wicomico Co., MD	10/05/99	--	<0.05	<0.05	--	--	0.18	<0.05	--	--	--	--	--	--	--	--	.26	.16
Wi Cg 56	Wicomico Co., MD	10/07/99	--	<.05	<.05	--	--	.21	<.05	--	--	--	--	--	--	--	--	4.8	.84
Wi Ch50	Wicomico Co., MD	09/24/01	--	1.1	<.05	--	--	<.05	2.2	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
WI Ch 51	Wicomico Co., MD	08/21/01	--	<.05	<.05	--	--	1.2	2.0	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05
WI Ch 55	Wicomico Co., MD	10/06/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Wi Ch 57	Wicomico Co., MD	10/07/99	--	<.05	<.05	--	--	7.4	12	--	--	--	--	--	--	--	--	25	36
WOCc2	Worcester Co., MD	08/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
WOCc3	Worcester Co., MD	08/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
WOCg76	Worcester Co., MD	08/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
WOCg78	Worcester Co., MD	08/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
WOFc46	Worcester Co., MD	09/06/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Eastern Iowa Basin (EIWA/SKI)																			
405405091335001	Henry Co., IA	07/02/97	<0.05	.28	<.20	--	<0.05	4.5	<.20	--	--	--	--	--	--	--	<0.05	.56	<.20
		08/02/99	<.05	<.20	<.20	--	<.05	.43	<.20	--	<0.05	--	--	--	--	--	<.05	5.7	<.20
405601091551901	Jefferson Co., IA	07/10/97	<.05	<.20	<.20	--	<.05	.98	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
410513091430401	Jefferson Co., IA	07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
410956091135601	Louisa Co., IA	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
411511091155101	Louisa Co., IA	06/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
411622091193401	Louisa Co., IA	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.3	<.20
411843092105101	Keokuk Co., IA	07/14/97	<.05	<.20	<.20	--	<.05	.29	<.20	--	--	--	--	--	--	--	<.05	.26	<.20
412030091113801	Muscatine Co., IA	06/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
412711091122401	Muscatine Co., IA	06/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	<.20	<.20
412748091285101	Johnson Co., IA	06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
412755091114101	Muscatine Co., IA	06/25/97	<.05	<.20	<.20	--	<.05	3.4	.63	--	--	--	--	--	--	--	<.05	1.7	<.20
		08/19/02	--	2.0	1.3	<0.05	--	.89	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	3.7	.37

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
412808091345001	Washington Co., IA	06/17/98	<0.05	<0.20	<0.20	--	<0.05	7.7	<0.20	--	--	--	--	--	--	--	<0.05	20	<0.20
412831091205601	Muscatine Co., IA	06/16/98	<.05	.42	<.20	--	<.05	.90	<.20	--	--	--	--	--	--	--	<.05	.55	<.20
412855091421601	Washington Co., IA	06/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
412916091405101	Washington Co., IA	06/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
412927092575201	Marion Co., IA	07/14/97	<.05	<.20	<.20	--	.37	<.20	<.20	--	--	--	--	--	--	--	.15	1.6	.20
		07/19/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	1.4	<.20
413248092011301	Iowa Co., IA	07/07/97	<.05	<.20	<.20	--	<.05	7.6	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.20	<.20	--	<.05	5.1	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
413338091045601	Muscatine Co., IA	07/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.27	<.20
413414091095501	Muscatine Co., IA	06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
413438091341201	Johnson Co., IA	06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/21/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
413523092050501	Iowa Co., IA	06/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.85	<.20
413560091341201	Johnson Co., IA	06/10/97	<.05	<.20	<.20	--	<.05	.79	<.20	--	--	--	--	--	--	--	<.05	.72	<.20
413634091484301	Johnson Co., IA	06/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413652092035801	Iowa Co., IA	06/12/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413705091392701	Johnson Co., IA	06/11/98	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	.05	2.6	<.20
413823091322301	Johnson Co., IA	06/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
413933091304701	Johnson Co., IA	06/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414036090460001	Scott Co., IA	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414056091325201	Johnson Co., IA	06/05/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414153090350801	Scott Co., IA	06/06/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414208092312601	Poweshiek Co., IA	08/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.73	<.05
414430093220001	Polk Co., IA	07/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.5	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
414430093220001	Polk Co., IA	07/14/98	<0.05	0.52	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	3.1	1.7
		08/28/02	--	1.2	.45	<0.05	--	.23	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	3.1	1.1
414752092053201	Iowa Co., IA	08/19/98	<.05	<.20	<.20	--	<.05	7.5	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414752092053202	Iowa Co., IA	08/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414752092053203	Iowa Co., IA	08/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414816092053401	Iowa Co., IA	07/31/96	<.05	<.20	<.20	--	<.05	1.4	.26	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/03/98	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414816092053402	Iowa Co., IA	07/31/96	<.05	.34	.46	--	<.05	.46	.41	--	--	--	--	--	--	--	<.05	.48	<.20
		08/03/98	<.05	<.20	<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414816092053403	Iowa Co., IA	07/31/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.66	.25
		08/03/98	<.05	.29	.36	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.40	<.20
414818092055401	Iowa Co., IA	08/06/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.30	<.20
414818092055402	Iowa Co., IA	08/06/96	<.05	<.20	<.20	--	<.05	.28	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/20/98	<.05	.57	.34	--	<.05	.86	<.20	--	--	--	--	--	--	--	<.05	2.5	.76
414818092055403	Iowa Co., IA	08/05/96	<.05	<.20	<.20	--	<.05	.65	.30	--	--	--	--	--	--	--	<.05	.32	<.20
		08/20/98	<.05	.53	.51	--	<.05	1.1	.28	--	--	--	--	--	--	--	<.05	2.8	.82
		08/20/02	--	.12	.07	<.05	--	.18	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.73	.18
414828092014201	Iowa Co., IA	08/14/96	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414860092073801	Madison Co., IA	08/01/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.05	.27	<.20
		08/13/98	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	.83	.25
414907092083001	Iowa Co., IA	07/30/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/06/98	<.05	<.20	<.20	--	<.05	.92	3.6	--	--	--	--	--	--	--	<.05	<.20	<.20
414907092083002	Iowa Co., IA	07/30/96	<.05	<.20	<.20	--	<.05	34	14	--	--	--	--	--	--	--	<.05	4.8	<.20
414907092083003	Iowa Co., IA	07/30/96	<.05	<.20	<.20	--	<.05	5.3	1.8	--	--	--	--	--	--	--	<.05	1.8	.71
		08/06/98	<.05	<.20	<.20	--	<.05	6.5	2.7	--	--	--	--	--	--	--	<.05	1.2	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
414907092083004	Iowa Co., IA	08/06/98	<0.05	0.47	<0.20	--	<0.05	1.5	<0.20	--	--	--	--	--	--	--	<0.05	0.98	0.22
414912093284201	Polk Co., IA	07/15/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.9	.93
414914092024001	Iowa Co., IA	07/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414930092093801	Iowa Co., IA	08/01/96	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/13/98	<.05	<.20	<.20	--	<.05	4.2	<.20	--	--	--	--	--	--	--	<.05	.20	<.20
414944090470901	Clinton Co., IA	07/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414958090230301	Clinton Co., IA	06/12/97	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	43	5.1
415020092094001	Iowa Co., IA	08/04/98	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/25/96	<.05	<.20	<.20	--	<.05	4.2	<.20	--	--	--	--	--	--	--	<.05	.22	<.20
415020092094002	Iowa Co., IA	08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415020092094003	Iowa Co., IA	07/29/96	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/05/98	<.05	.83	.36	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	.67	.28
415020092094004	Iowa Co., IA	08/04/98	<.05	.74	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.40	<.20
415020092094005	Iowa Co., IA	08/04/98	<.05	1.0	.21	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.55	<.20
415020092094010	Iowa Co., IA	07/29/96	<.05	<.20	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/05/98	<.05	<.20	<.20	--	<.05	1.3	.48	--	--	--	--	--	--	--	<.05	<.20	<.20
415039092164001	Iowa Co., IA	08/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/13/96	<.05	<.20	<.20	--	<.05	.54	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
415045092145601	Iowa Co., IA	08/08/96	<.05	<.20	<.20	--	<.05	4.6	<.20	--	--	--	--	--	--	--	<.05	.57	<.20
		08/21/98	<.05	<.20	<.20	--	<.05	6.1	<.20	--	--	--	--	--	--	--	<.05	1.3	<.20
415052092120301	Iowa Co., IA	08/07/96	<.05	<.20	<.20	--	<.05	2.6	<.20	--	--	--	--	--	--	--	<.05	.30	<.20
		08/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415053093282401	Polk Co., IA	07/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.62	<.20
415057093304801	Polk Co., IA	07/13/98	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	4.0	.85
415105092132501	Iowa Co., IA	08/07/96	<.05	<.20	<.20	--	<.05	7.5	.35	--	--	--	--	--	--	--	<.05	3.2	<.20
		08/11/98	<.05	<.20	<.20	--	<.05	7.1	.35	--	--	--	--	--	--	--	<.05	2.2	.36

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
415105092132501	Iowa Co., IA	08/18/98	<0.05	<0.20	<0.20	--	<0.05	6.1	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
415139092190801	Poweshiek Co., IA	06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415147092115301	Benton Co., IA	06/30/98	<.05	.48	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	<.05	.28	<.20
415147092115301	Benton Co., IA	08/20/02	--	<.05	<.05	<0.05	--	1.4	<.05	<0.05	--	0.05	<0.05	--	<0.05	<0.05	--	1.0	.37
415211092164101	Benton Co., IA	07/23/96	<.05	<.20	<.20	--	<.05	2.3	.26	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/17/98	<.05	<.20	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415211092164102	Benton Co., IA	07/23/96	<.05	<.20	<.20	--	<.05	3.3	.38	--	--	--	--	--	--	--	<.05	.71	<.20
		08/17/98	<.05	<.20	<.20	--	<.05	7.1	.36	--	--	--	--	--	--	--	<.05	<.20	<.20
415231092295301	Tama Co., IA	06/19/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415600091033701	Cedar Co., IA	06/17/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415637091581001	Benton Co., IA	06/30/98	<.05	<.20	<.20	--	<.05	5.9	3.3	--	--	--	--	--	--	--	<.05	<.20	<.20
415825091405601	Linn Co., IA	07/17/97	<.05	<.20	<.20	--	<.05	.52	<.20	--	--	--	--	--	--	--	<.05	.78	.23
415827091392401	Linn Co., IA	06/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
415850090572201	Jones Co., IA	06/11/97	<.05	<.20	<.20	--	<.05	.45	.20	--	--	--	--	--	--	--	<.05	1.0	.31
415859090563901	Jones Co., IA	06/23/98	<.05	<.20	<.20	--	<.05	.98	<.20	--	--	--	--	--	--	--	<.05	.29	<.20
420117092505601	Marshall Co., IA	07/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.41	<.20
420206091244901	Linn Co., IA	06/20/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420219093361301	Story Co., IA	07/15/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
420240092535001	Marshall Co., IA	07/16/97	<.05	<.20	<.20	--	<.05	.93	1.5	--	--	--	--	--	--	--	<.05	.70	.58
420347092541601	Marshall Co., IA	07/16/97	<.05	<.20	<.20	--	<.05	.84	<.20	--	--	--	--	--	--	--	<.05	3.2	.57
420424092175101	Benton Co., IA	06/19/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420936092005701	Benton Co., IA	07/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421012092020101	Benton Co., IA	07/21/97	<.05	<.20	<.20	--	.06	1.1	5.4	--	--	--	--	--	--	--	.54	.72	.54
421030092340001	Tama Co., IA	06/25/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
421115091250501	Tama Co., IA	06/24/96	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/24/97	<.05	<.20	<.20	--	<.05	7.4	<.20	--	--	--	--	--	--	--	<.05	1.7	<.20
		08/26/02	--	<.05	<.05	<0.05	--	.13	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	.31	<.05
421157091554201	Benton Co., IA	06/18/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421657092081801	Benton Co., IA	07/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421705092142501	Benton Co., IA	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.42	<.20
422329091455101	Buchanan Co., IA	06/27/96	<.05	<.20	<.20	--	<.05	.62	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422426092272401	Black Hawk Co., IA	06/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422518092144701	Black Hawk Co., IA	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.39	<.20
422524092353101	Grundy Co., IA	06/25/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422555092135201	Black Hawk Co., IA	07/01/98	<.05	<.20	<.20	--	<.05	.63	.24	--	--	--	--	--	--	--	<.05	.80	<.20
422629092345001	Grundy Co., IA	07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/26/99	<.05	<.20	<.20	--	<.05	20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	22	2.8
422631092454801	Grundy Co., IA	07/02/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422723092470701	Grundy Co., IA	07/02/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422754092375301	Grundy Co., IA	07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
422913092192501	Black Hawk Co., IA	06/18/97	<.05	<.20	<.20	--	<.05	.63	<.20	--	--	--	--	--	--	--	<.05	.60	.30
422918092183901	Black Hawk Co., IA	06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423018092200901	Black Hawk Co., IA	08/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423056092054601	Black Hawk Co., IA	06/26/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423208091562101	Buchanan Co., IA	07/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423328092464901	Butler Co., IA	07/01/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423409092283001	Black Hawk Co., IA	07/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423419093172401	Franklin Co., IA	07/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.36	<.20
		08/21/02	--	<.05	<.05	<0.05	--	.14	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.1	.13

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
423459092523701	Butler Co., IA	07/28/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
423459092530501	Butler Co., IA	07/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423557091560501	Buchanan Co., IA	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423639092350901	Butler Co., IA	06/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.56	<.20
423749092260801	Black Hawk Co., IA	07/07/98	<.05	<.20	<.20	--	<.05	4.1	<.20	--	--	--	--	--	--	--	<.05	.32	<.20
		08/27/02	--	.38	<.05	<0.05	--	2.6	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	.33	<.05
423930093294901	Franklin Co., IA	07/08/97	<.05	<.20	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	2.9	.49
423940092102801	Bremer Co., IA	06/26/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
424034091553401	Fayette Co., IA	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
424203092551301	Butler Co., IA	07/31/97	<.05	<.20	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	<.05	.20	<.20
424322092283901	Bremer Co., IA	06/17/97	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	<.05	.24	<.20
424539093372001	Wright Co., IA	05/05/98	<.05	.53	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.21	7.2	.63
		08/04/98	<.05	<.20	<.20	--	<.05	4.1	<.20	--	--	--	--	--	--	--	.88	9.2	<.20
		09/01/98	<.05	<.20	<.20	--	<.05	.55	<.20	--	--	--	--	--	--	--	.75	1.1	.32
		08/07/01	--	<.05	<.05	<.05	--	1.7	<.05	<.05	--	.09	<.05	--	<.05	<.05	--	7.3	1.1
424548092101701	Bremer Co., IA	08/26/97	<.05	<.20	<.20	--	<.05	6.0	<.20	--	--	--	--	--	--	--	<.05	.40	<.20
425158092402301	Butler Co., IA	07/03/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425401093135201	Franklin Co., IA	07/31/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.90	<.20
425756092162401	Chickasaw Co., IA	08/21/97	<.05	<.20	<.20	--	<.05	18	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425757092503001	Butler Co., IA	07/03/96	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	<.05	.44	.86
430159093403201	Hancock Co., IA	07/29/97	<.05	<.20	<.20	--	<.05	.66	.31	--	--	--	--	--	--	--	<.05	<.20	<.20
430216093142901	Cerro Gordo Co., IA	07/09/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430255093083301	Cerro Gordo Co., IA	07/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430414092405801	Floyd Co., IA	08/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430442092402201	Floyd Co., IA	08/19/97	<.05	<.20	<.20	--	<.05	1.9	.38	--	--	--	--	--	--	--	<.05	12	3.6

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
430525093023501	Cerro Gordo	07/30/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	3.3	<0.20
430532092305401	Chickasaw Co., IA	07/08/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430549092272301	Chickasaw Co., IA	07/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430549092272301	Chickasaw Co., IA	08/23/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
430947092590101	Floyd Co., IA	07/09/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
431222093313301	Hancock Co., IA	07/29/97	<.05	1.4	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	.07	11	.47
		07/28/99	<.05	.87	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	2.8	<.20
431339093155901	Cerro Gordo Co., IA	07/30/97	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	15	12	2.5
		08/21/02	--	.48	<.05	<.05	--	.40	<.05	<.05	--	<.05	<.05	--		<.05	--	11	.11
431438092262201	Howard Co., IA	08/20/97	<.05	<.20	<.20	--	<.05	.39	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
431614092275401	Howard Co., IA	07/17/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
431725093310801	Winnebago Co., IA	07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
432946093161901	Worth Co., IA	08/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433109093004001	Mower Co., MN	07/10/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433317093175601	Freeborn Co., MN	07/16/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433323092383201	Mower Co., MN	07/11/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433815093000001	Mower Co., MN	08/04/97	<.05	1.2	.63	--	<.05	3.8	.43	--	--	--	--	--	--	--	.15	4.2	1.5
		07/27/99	<.05	1.0	.38	--	<.05	1.7	.47	--	<0.05	--	--	<0.05	--	--	<.05	1.2	.40
433855093222401	Freeborn Co., MN	08/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433944092583501	Mower Co., MN	08/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
434003092575401	Mower Co., MN	08/06/97	<.05	<.20	<.20	--	<.05	.45	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
434012093243601	Freeborn Co., MN	07/16/96	<.05	<.20	<.20	--	<.05	.92	.62	--	--	--	--	--	--	--	<.05	<.20	<.20
434023093214201	Freeborn Co., MN	08/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
434556093003501	Mower Co., MN	07/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
434732092545001	Mower Co., MN	07/15/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
435221093001901	Dodge Co., MN	08/05/97	<.05	<.20	<.20	--	<.05	7.0	<.20	--	--	--	--	--	--	--	<.05	.58	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET/MIG)																			
390832084133300	Clermont Co., OH	07/08/99	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	--	--	--	<0.05	<0.05
391444084474600	Hamilton Co., OH	07/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
391544084474200	Hamilton Co., OH	07/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
391636084452800	Hamilton Co., OH	08/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
391843084383200	Butler Co., OH	07/07/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
391858084364600	Butler Co., OH	06/08/99	--	.21	.18	--	--	.31	.15	--	--	--	--	--	--	--	--	.96	.66
392018084371800	Clermont Co., OH	08/02/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392034084352700	Butler Co., OH	06/08/99	--	.44	.37	--	--	.50	.20	--	--	--	--	--	--	--	--	1.3	1.1
392134084563200	Franklin Co., OH	08/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
392544084290300	Butler Co., OH	07/07/99	--	<.05	<.05	--	--	.11	<.05	--	--	--	--	--	--	--	--	.06	.07
392756084300900	Butler Co., OH	08/02/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392756084330100	Butler Co., OH	06/07/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
392944084343000	Butler Co., OH	06/02/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
393206084240800	Butler Co., OH	06/23/99	--	.06	<.05	--	--	.05	<.05	--	--	--	--	--	--	--	--	.41	.11
393254084205500	Warren Co., OH	05/18/99	--	<.05	<.05	--	--	<.05	.06	--	--	--	--	--	--	--	--	.91	<.05
393330084204500	Warren Co., OH	06/23/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.05	<.05
393421084003300	Greene Co., OH	07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
393421084003301	Greene Co., OH	07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.13	<.05
393455084180600	Warren Co., OH	07/08/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
393505084173100	Warren Co., OH	05/18/99	--	<.05	<.05	--	--	.06	.22	--	--	--	--	--	--	--	--	.91	<.05
393512084594500	Union Co., IN	07/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
393605084013400	Union Co., IN	06/22/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
393702084224200	Montgomery Co., OH	06/09/99	--	<.05	<.05	--	--	.12	<.05	--	--	--	--	--	--	--	--	.33	<.05
393815084174100	Montgomery Co., OH	05/26/99	--	<.05	<.05	--	--	.20	<.05	--	--	--	--	--	--	--	--	.52	.32
393831085043500	Fayette Co., IN	08/09/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET/MIG)—Continued																			
394016084411300	Preble Co., OH	06/01/99	--	0.58	0.96	--	--	0.18	0.35	--	--	--	--	--	--	--	--	0.92	0.44
394233083576000	Greene Co., OH	07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
394254084003000	Greene Co., OH	05/27/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
394302084032700	Greene Co., OH	05/27/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
394312084002600	Greene Co., OH	05/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
394420084463001	Preble Co., OH	08/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
394650084320300	Preble Co., OH	07/17/00	--	.05	.60	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.18	.79
394654084160800	Montgomery Co., OH	05/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.43	<.05
394745085051300	Wayne Co., IN	08/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
394759085071000	Wayne Co., IN	08/10/00	--	<.05	<.05	--	--	2.1	1.2	--	--	<.05	<.05	--	<.05	<.05	--	.10	.09
394759085071001	Wayne Co., IN	08/10/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
394918084100100	Montgomery Co., OH	06/22/99	--	<.05	<.05	--	--	.37	<.05	--	--	--	--	--	--	--	--	.60	.20
395102084020900	Clark Co., OH	05/19/99	--	<.05	<.05	--	--	.20	<.05	--	--	--	--	--	--	--	--	1.2	<.05
395125084154800	Montgomery Co., OH	05/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
395127083551300	Clark Co., OH	06/10/99	--	<.05	<.05	--	--	.32	<.05	--	--	--	--	--	--	--	--	.07	.06
395134084160700	Clark Co., OH	05/26/99	--	<.05	<.05	--	--	.48	<.05	--	--	--	--	--	--	--	--	.52	.40
395135085070000	Wayne Co., IN	08/09/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.24	<.05
395135085070001	Wayne Co., IN	08/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
395213085052200	Wayne Co., IN	08/24/00	--	.06	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.40
395149084592900	Wayne Co., IN	06/03/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
395235083445700	Clark Co., OH	06/24/99	--	<.05	<.05	--	--	.08	<.05	--	--	--	--	--	--	--	--	.16	<.05
395248084010900	Clark Co., OH	06/29/99	--	<.05	<.05	--	--	.07	<.05	--	--	--	--	--	--	--	--	<.05	<.05
395248084491600	Wayne Co., IN	08/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
395407083553400	Greene Co., OH	06/10/99	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	<.05	.22
395528083414400	Clark Co., OH	05/13/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET/MIG)—Continued																			
395635083445900	Clark Co., OH	06/24/99	--	<0.05	<0.05	--	--	0.06	<0.05	--	--	--	--	--	--	--	--	0.16	<0.05
395706084035400	Miami Co., OH	06/28/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
395734084085800	Miami Co., OH	05/25/99	--	<.05	<.05	--	--	.52	<.05	--	--	--	--	--	--	--	--	.37	.16
395839083491500	Clark Co., IN	05/25/99	--	<.05	<.05	--	--	.51	<.05	--	--	--	--	--	--	--	--	.55	.17
395849083494501	Clark Co., OH	07/12/00	--	<.05	<.05	--	--	.06	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.33	<.05
395911084422700	Darke Co., OH	07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
400019083412000	Clark Co., OH	07/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.24
400049084125300	Miami Co., OH	06/23/99	--	<.05	<.05	--	--	.09	<.05	--	--	--	--	--	--	--	--	<.05	<.05
400113085051300	Randolph Co., IN	06/03/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
400142083423900	Champaign Co., OH	05/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.39	<.05
400145084106000	Miami Co., OH	08/01/00	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.84	<.05
400319084213100	Miami Co., OH	06/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
400320084402400	Darke Co., OH	08/08/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
400409083464500	Champaign Co., OH	06/29/99	--	<.05	<.05	--	--	.16	<.05	--	--	--	--	--	--	--	--	<.05	<.05
400542083420900	Champaign Co., OH	06/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
400850083404700	Champaign Co., OH	07/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
400850083404701	Champaign Co., OH	07/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401040084154000	Miami Co., OH	07/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401200083443100	Champaign Co., OH	06/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
401237083485800	Champaign Co., OH	06/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
401238084144400	Shelby Co., OH	07/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
401238084144401	Shelby Co., OH	07/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401240083492600	Champaign Co., OH	07/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401240083492601	Champaign Co., OH	07/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401307083450600	Champaign Co., OH	07/18/00	--	<.05	.06	--	--	3.6	.06	--	--	<.05	<.05	--	<.05	<.05	--	.21	.10

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET/MIG)—Continued																			
401307083450601	Champaign Co., OH	07/18/00	--	<0.05	0.09	--	--	3.3	.12	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
401359083493100	Champaign Co., OH	07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
401359083493101	Champaign Co., OH	07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
401837083492900	Logan Co., OH	07/20/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
High Plains Regional Ground Water Study (HPGW/HPC)																			
344800101324901	Armstrong Co., TX	07/14/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
345826100580501	Donley Co., TX	06/28/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
351656101161101	Carson Co., TX	05/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
351914101204401	Carson Co., TX	07/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
352035100293301	Wheeler Co., TX	07/13/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
352249100425401	Gray Co., TX	06/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
352513101372101	Potter Co., TX	05/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
352909101084001	Carson Co., TX	07/01/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
353110100550401	Gray Co., TX	06/29/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
353941102350201	Hartley Co., TX	07/15/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354248100501501	Dallam Co., TX	07/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354331102183601	Hartley Co., TX	06/23/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354348102543601	Hartley Co., TX	07/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354656099480301	Roger Mills Co., OK	05/17/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354728102295901	Hartley Co., TX	07/16/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
354918102020901	Moore Co., TX	06/23/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
355701100313001	Hamphill Co., TX	05/18/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
355852101274101	Hutchinson Co., TX	07/02/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
355916103215201	Union Co., NM	06/25/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
360159103044401	Union Co., NM	09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
High Plains Regional Ground Water Study (HPGW/HPC)—Continued																			
360703102361901	Dallam Co., TX	06/22/99	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	--	--	--	<0.05	<0.05
360838102560301	Dallam Co., TX	06/24/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
360944100162101	Lipscomb Co., TX	04/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
361014100221001	Lipscomb Co., TX	04/08/99	--	.07	<.05	--	--	.19	<.05	--	--	--	--	--	--	--	--	.14	.07
361049100564901	Ochiltree Co., TX	05/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
361054101393601	Sherman Co., TX	06/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
361114099420501	Ellis Co., OK	07/22/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
361517102065301	Sherman Co., TX	05/26/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
362115101173901	Hansford Co., TX	05/26/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
362134102035101	Sherman Co., TX	05/26/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
362615100435801	Ochiltree Co., TX	05/24/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
362744102334901	Dallam Co., TX	07/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363057101384701	Texas Co., OK	05/27/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363104100035501	Beaver Co., OK	04/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363154099310401	Woodward Co., OK	07/22/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363157102565601	Cimarron Co., OK	04/16/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363239100301801	Beaver Co., OK	04/06/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363427102440401	Cimarron Co., OK	04/15/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
363518101515101	Texas Co., OK	03/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
364219101394101	Texas Co., OK	06/11/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
364411102321201	Cimarron Co., OK	06/10/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
364846102161201	Cimarron Co., OK	09/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
365223102113001	Cimarron Co., OK	04/14/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
365422101083701	Texas Co., OK	06/11/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
High Plains Regional Ground Water Study (HPGW/HPC)—Continued																			
365821101375301	Texas Co., OK	05/28/99	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	--	--	--	<0.05	<0.05
365934101573001	Texas Co., OK	04/13/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
370033100534204	Seward Co., KS	09/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
370130101180904	Stevens Co., KS	09/14/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
370358100510301	Steward Co., KS	04/15/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
370458101514401	Morton Co., KS	04/22/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
370724100281601	Meade Co., KS	04/23/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
370941101540001	Morton Co., KS	09/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
371303102003001	Morton, KS	09/14/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
371728101311401	Stevens Co., KS	09/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
371738101220301	Stevens Co., KS	04/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
371909101413101	Morton Co., KS	09/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
372511100155601	Meade Co., KS	09/27/00	--	1.8	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.47	<.05
372534100443501	Haskell Co., KS	04/16/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
372649101344701	Stanton Co., KS	04/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
372956099512201	Ford Co., KS	05/26/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373229101193201	Grant Co., KS	04/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373234099430201	Ford Co., KS	09/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
373345101070801	Grant Co., KS	04/06/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373346100005701	Ford Co., KS	09/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
373507102162001	Baca Co., CO	06/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373527100312701	Gray Co., KS	04/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373559102314901	Baca Co., CO	06/09/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373732099291201	Kiowa Co., KS	05/19/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
373904099545701	Ford Co., KS	09/28/00	--	<.05	<.05	--	--	.52	.06	--	--	<.05	<.05	--	<.05	<.05	--	.92	.62

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
High Plains Regional Ground Water Study (HPGW/HPC)—Continued																			
383936101120801	Wichita Co., KS	07/12/00	--	<0.05	<0.05	--	--	0.07	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
384422101434201	Wallace Co., KS	07/14/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
385210100164501	Beaver Co., OK	06/07/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
385904099522201	Trego Co., KS	05/24/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.14	<.05
390622101003201	Logan Co., KS	05/23/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.19	.15
390830102052001	Kit Carson Co., CO	04/30/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
390838100411701	Sheridan Co., KS	05/21/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
391044100051001	Graham Co., KS	05/25/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
391921101385501	Sherman Co., KS	05/20/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
Lake Erie/Lake St. Clair Drainage (LERI/EAR)																			
413148084472200	Williams Co., OH	06/10/98	<0.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
413229084471600	Williams Co., OH	06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413520084460500	Williams Co., OH	07/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413521084460300	Williams Co., OH	08/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413719084361000	Williams Co., OH	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413721084361000	Williams Co., OH	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413746084341400	Williams Co., OH	06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413923084472000	Williams Co., OH	06/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
413924084471600	Williams Co., OH	08/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414111084363200	Williams Co., OH	08/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414125084360800	Williams Co., OH	07/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414320084161200	Lenawee Co., MI	07/08/98	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	4.2	3.3
414323084161100	Lenawee Co., MI	08/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414519084161600	Lenawee Co., MI	07/24/98	<.05	<.20	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414519084374700	Hillsdale Co., MI	08/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414520084374800	Hillsdale Co., MI	06/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lake Erie/Lake St. Clair Drainage (LERI/EAR)—Continued																			
414604084264600	Hillsdale Co., MI	08/11/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
414611084262000	Hillsdale Co., MI	06/19/98	<.05	<.20	<.20	--	<.05	.55	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
414728084390400	Hillsdale Co., MI	06/16/98	<.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	<.05	1.5	<.20
414746084394800	Hillsdale Co., MI	08/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
414907084243100	Hillsdale Co., MI	07/10/98	<.05	<.20	.81	--	<.05	<.20	.97	--	--	--	--	--	--	--	<.05	<.20	<.20
415026084220000	Hillsdale Co., MI	07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415028084220400	Hillsdale Co., MI	08/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415456084095500	Lenawee Co., MI	07/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
415516084061200	Lenawee Co., MI	08/06/98	<.05	<.20	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	<.05	.59	<.20
420022084024200	Lenawee Co., MI	08/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420047084234900	Hillsdale Co., MI	07/09/98	<.05	3.5	1.0	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420049084235000	Hillsdale Co., MI	08/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420054084024000	Lenawee Co., MI	07/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
420303084040300	Lenawee Co., MI	07/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421124083534000	Washtenaw Co., MI	08/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421125083533800	Washtenaw Co., MI	06/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421212083593000	Washtenaw Co., MI	08/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421225083593300	Washtenaw Co., MI	06/26/98	<.05	<.20	<.20	--	<.05	.57	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421237083523500	Washtenaw Co., MI	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421244083492000	Washtenaw Co., MI	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
421624083515600	Washtenaw Co., MI	08/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423032083295700	Oakland Co., MI	09/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423044083503600	Livingston Co., MI	08/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423559083420700	Livingston Co., MI	08/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
424159082493200	Macomb Co., MI	09/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lake Erie/Lake St. Clair Drainage (LERI/EAR)—Continued																			
424301083092400	Oakland Co., MI	09/02/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
424658083270600	Oakland Co., MI	08/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425033083080900	Oakland Co., MI	09/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425152083001000	Macomb Co., MI	08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425204083011600	Macomb Co., MI	07/13/98	<.05	<.20	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	<.05	6.0	1.1
425758083040100	Lapeer Co., MI	07/13/98	<.05	<.20	<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425843083042400	Lapeer Co., MI	09/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430313083085300	Lapeer Co., MI	08/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430336083012700	Lapeer Co., MI	07/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430349083014700	Lapeer Co., MI	08/31/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430845082462500	St.Clair Co., MI	08/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
430847082462000	St.Clair Co., MI	07/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
431240082511400	Sanilac Co., MI	08/31/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
431730082492900	Sanilac Co., MI	07/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433501082452500	Sanilac Co., MI	08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)																			
395553088441401	Piatt Co., IL	05/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
395626089024901	Macon Co., IL	07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
395853088364401	Piatt Co., IL	09/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.40	34	11
400009088484601	Macon Co., IL	06/03/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
400033088300301	Piatt Co., IL	09/10/97	<.05	<.05	<.05	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
400057088550101	Macon Co., IL	06/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
400111088550501	Macon Co., IL	08/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.22	<.20
400345088444901	DeWitt Co., IL	10/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
040042208857101	DeWitt Co., IL	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
400512089022601	DeWitt Co., IL	08/21/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
400601088553401	DeWitt Co., IL	10/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.48	<.20
400603088300901	Piatt Co., IL	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
400736088344701	Piatt Co., IL	07/31/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
400805088531501	Dewitt Co., IL	05/30/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
400817088593401	DeWitt Co., IL	04/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
400846088491001	DeWitt Co., IL	08/25/97	<.05	<.20	<.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	<.05	.99	<.20
400919088331501	Piatt Co., IL	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401020089252801	Logan Co., IL	10/29/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401041088242901	Champaign Co., IL	06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401058088521001	DeWitt Co., IL	06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401100089004701	DeWitt Co., IL	05/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401151088423401	DeWitt Co., IL	10/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401152088454801	DeWitt Co., IL	09/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.86	<.20
401203089203201	Logan Co., IL	10/29/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401226088234101	Champaign Co., IL	09/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401246088585101	DeWitt Co., IL	06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
401322089153901	Logan Co., IL	08/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	11	<.20
401327089025201	DeWitt Co., IL	09/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.5	.39
401508088293201	Piatt Co., IL	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401601089154401	Logan Co., IL	10/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401751088214101	Champaign, IL	09/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401805088361801	McLean Co., IL	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
401810089010101	McLean Co., IL	09/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
040181308916560	Logan Co., IL	10/28/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
402029088172001	Champaign Co., IL	06/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/05/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
402059088571701	McLean Co., IL	09/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
402122088161101	Champaign Co., IL	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
402210088215701	Champaign Co., IL	09/15/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
402248088150501	Champaign Co., IL	05/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
402250088551201	McLean Co., IL	08/27/97	<.05	<.20	.21	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
402304089032601	McLean Co., IL	08/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	32	3.0
402727088464201	McLean Co., IL	08/05/97	<.05	<.20	.65	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404737089093201	Woodford Co., IL	08/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404849088281001	Livingston Co., IL	08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405100089214701	Woodford Co., IL	07/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405145087044701	Jasper Co., IN	07/07/99	<.05	<.20	<.20	--	<.05	.51	<.20	--	--	--	--	--	--	--	<.05	.51	<.20
405145087044702	Jasper Co., IN	08/29/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
405343087091501	Jasper Co., IN	09/09/99	<.05	.21	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	.82	.31
405345087100601	Jasper Co., IN	08/21/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405357087495001	Iroquois Co., IL	09/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405458087484601	Iroquois Co., IL	09/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405524087152701	Jasper, IN	07/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405627087142101	Jasper Co., IN	09/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405732087282301	Newton Co., IN	07/19/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405823087313101	Newton Co., IN	08/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
405832088592001	LaSalle Co., IL	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405837089033701	Marshall, IL	05/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
410025087280701	Newton Co., IN	10/03/00	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
410030087263101	Newton Co., IN	07/19/99	<0.05	<.20	<.20	--	<0.05	.32	<.20	--	--	--	--	--	--	--	<0.05	.63	<.20
		06/17/02	--	.05	<.05	<0.05	--	.10	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.44	.06
410030087263102	Newton Co., IN	09/11/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	5.2	3.1
410123087385601	Kankakee Co., IL	07/21/99	<.05	<.20	<.20	--	.92	<.20	<.20	--	--	--	--	--	--	--	.53	<.20	<.20
410253087280701	Newton Co., IN	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
410309087381501	Kankakee Co., IL	07/14/99	<.05	.30	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410407087200201	Newton Co., IN	10/05/00	--	<.05	.06	--	--	.96	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.4	.95
410422088000001	Kankakee, IL	07/13/99	<.05	.23	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410502089392501	Stark Co., IL	07/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410505087201201	Newton Co., IN	07/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410510087224201	Newton Co., IN	06/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410511087295201	Newton Co., IN	08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410533087232601	Newton Co., IN	10/04/00	--	<.05	<.05	--	--	.27	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
410541087313701	Newton Co., IN	09/27/00	--	<.05	<.05	--	--	3.6	<.05	--	--	<.05	<.05	--	<.05	<.05	--	5.2	2.6
410600087113501	Jasper Co., IN	06/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410625088443101	Livingston Co., IL	08/14/97	<.05	<.20	.37	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410656087092901	Jasper Co., IN	10/10/00	--	<.05	<.05	--	--	.37	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.34	.08
410700087305801	Newton Co., IN	09/21/00	--	<.05	<.05	--	--	<.05	1.0	--	--	<.05	<.05	--	<.05	<.05	--	<.05	.05
410702087310201	Newton Co., IN	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410715087072001	Jasper Co., IN	10/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
410715087072301	Jasper Co., IN	06/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410748087060901	Jasper Co., IN	06/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
410812087423401	Kankakee Co., IL	08/23/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
410841087040801	Jasper Co., IN	09/14/00	--	<.05	<.05	--	--	.25	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
410857089442301	Stark Co., IL	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	3.8	<.20
410859087370001	Kankakee Co., IL	07/13/99	<.05	.48	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	.81	<.20
		06/06/02	--	.06	<.05	<0.05	--	.11	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.15	<.05
410925087333201	Kankakee Co., IL	06/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	3.6
410940087101001	Jasper Co., IN	08/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
410947087050501	Jasper Co., IN	06/15/99	<.05	1.5	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410947089044101	LaSalle Co., IL	08/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410958087050601	Jasper Co., IN	09/13/00	--	<.05	<.05	--	--	2.3	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.76	.14
411029087172401	Newton Co., IN	06/01/99	<.05	1.9	1.0	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	8.7	4.5
411029087172402	Newton Co., IN	10/18/00	--	<.05	<.05	--	--	3.4	.20	--	--	<.05	<.05	--	<.05	<.05	--	2.1	1.6
411041087281101	Lake Co., IN	09/26/00	--	<.05	<.05	--	--	1.1	.06	--	--	<.05	<.05	--	<.05	<.05	--	1.3	1.4
411100088074001	Kankakee Co., IL	08/28/00	--	.09	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	.08
411116087141401	Jasper Co., IN	10/17/00	--	<.05	<.05	--	--	1.7	.19	--	--	<.05	<.05	--	<.05	<.05	--	3.8	2.8
411119087143601	Jasper Co., IN	06/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
		06/19/02	--	.17	<.05	<.05	--	.13	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.77	.21
411123088061201	Kankakee Co., IL	08/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
411248087304901	Lake Co., IN	07/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.56	<.20
		06/18/02	--	.22	<.05	<.05	--	.69	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.75	<.05
411329087121201	Jasper Co., IN	06/15/99	<.05	<.20	<.20	--	<.05	3.1	3.1	--	--	--	--	--	--	--	<.05	<.20	<.20
411409087104701	Jasper Co., IN	08/23/00	--	<.05	<.05	--	--	3.8	.30	--	--	<.05	<.05	--	<.05	<.05	--	.95	1.3
411511087214501	Lake Co., IN	06/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
411511087214502	Lake Co., IN	08/31/00	--	<.05	.05	--	--	1.3	.08	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
411719087171301	Lake Co., IN	06/01/99	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	9.1	1.6

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
411719087171302	Lake Co., IN	09/12/00	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
412136088571001	LaSalle Co., IL	07/17/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		07/12/99	<.05	.28	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.3	<.20
415752088244001	Kane Co., IL	05/24/00	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.65	<.05
		06/24/02	--	<.05	<.05	<0.05	--	.06	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.43	<.05
420012088191101	Kane Co., IL	05/11/00	--	<.05	.36	--	--	.53	.43	--	--	<.05	<.05	--	<.05	<.05	--	1.3	1.7
420114088141801	Cook Co., IL	06/20/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
421052088184101	McHenry Co., IL	05/23/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421228088160701	McHenry Co., IL	04/18/00	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421301088191501	McHenry Co., IL	06/08/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421324088105301	McHenry Co., IL	03/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421402088173501	McHenry Co., IL	04/20/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421422088174001	McHenry Co., IL	05/15/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421545087564301	Lake Co., IN	05/10/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421633088125801	McHenry Co., IL	04/19/00	--	.06	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.31	<.05
		06/25/02	--	<.05	<.05	<0.05	--	.23	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.26	<.05
421651088190601	McHenry Co., IL	05/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
421850088252301	McHenry Co., IL	04/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422002088263001	McHenry Co., IL	05/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422050088194001	McHenry Co., IL	03/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422111088154901	McHenry Co., IL	05/23/00	--	<.05	<.05	--	--	.21	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422146088124301	McHenry Co., IL	04/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	<.05
422252087553001	Lake Co., IN	05/10/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422314088140001	McHenry Co., IL	05/09/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422917088132901	McHenry Co., IL	04/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
423007088305501	Walworth Co., WI	03/27/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
423048088105001	Kenosha Co., WI	03/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423149088151101	Kenosha Co., WI	03/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423423088233201	Walworth Co., WI	04/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423454088303101	Walworth Co., WI	03/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423508088162701	Kenosha Co., WI	04/10/01	--	<.05	<.05	--	--	.18	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423508088162701	Kenosha Co., WI	04/10/01	--	<.05	<.05	--	--	.17	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423523088244901	Walworth Co., WI	05/09/00	--	<.05	<.05	--	--	.22	.07	--	--	<.05	<.05	--	<.05	<.05	--	.53	.25
		06/27/02	--	<.05	<.05	<0.05	--	.17	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.49	.12
423741088252201	Walworth Co., WI	05/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423808088203801	Walworth Co., WI	04/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424052088180101	Racine Co., WI	05/04/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.9	.62
424127088135601	Racine Co., WI	05/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424404088134601	Racine Co., WI	04/05/01	--	.13	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424657088132001	Racine Co., WI	04/03/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.60	<.05
		05/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.44	<.05
424756088194201	Walworth Co., WI	04/10/01	--	<.05	<.05	--	--	1.3	.06	--	--	<.05	<.05	--	<.05	<.05	--	3.2	.64
424955088130901	Racine Co., WI	05/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425352088240101	Waukesha Co., WI	04/04/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425402088241601	Waukesha Co., WI	05/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425536088180901	Waukesha Co., WI	04/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425656088124401	Waukesha Co., WI	05/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
425755088210901	Waukesha Co., WI	04/04/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
425816088231401	Waukesha Co., WI	05/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425913088133801	Waukesha Co., WI	04/13/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower and Upper Illinois River Basin (LIRB/UIRB/KWI)—Continued																			
425913088133801	Waukesha Co., WI	06/26/02	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
430003088164601	Waukesha Co., WI	04/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430155088114701	Waukesha Co., WI	05/08/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430239088164001	Waukesha Co., WI	04/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430353088095901	Waukesha Co., WI	05/02/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430407088075901	Waukesha Co., WI	04/11/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430728088132801	Waukesha Co., WI	05/01/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.29	<.05
		06/26/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
430846088123201	Waukesha Co., WI	04/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430923088141601	Waukesha Co., WI	04/11/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Mississippi Embayment (MISE/GAG)																			
320017091405501	Franklin Parish, LA	08/20/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
320240091243701	Tensas Parish, LA	08/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
321547091443401	Franklin Parish, LA	05/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
322358091110701	Madison Parish, LA	05/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
322644091420901	Richland Parish, LA	08/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
322934090493901	Warren Co., MS	05/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
324355090391801	Yazoo Co., MS	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
325355090513701	Sharkey Co., MS	08/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
032572309100190	Issaquena Co., MS	05/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
330142091000801	Washington Co., MS	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
330309090394301	Sharkey Co., MS	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
330657090190101	Chicot Co., AR	08/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
331536090281001	Humphreys Co., MS	07/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Mississippi Embayment (MISE/GAG)—Continued																			
331624090533801	Washington Co., MS	07/21/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
332233090562301	Washington Co., MS	06/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332304090201001	LeFlore Co., MS	06/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332730090280501	LeFlore Co., MS	07/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
333013090394601	Sunflower Co., MS	07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
334358091164701	Desha Co., AR	07/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
334802091213001	Desha Co., AR	07/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
334906090164401	Tallahatchie Co., MS	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
335318090303001	Sunflower Co., MS	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
335442091163901	Desha Co., AR	07/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
335707090403901	Boliver Co., MS	07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
335800091370301	Lincoln Co., AR	07/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
335917090460501	Bolivar Co., MS	08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
341233090393601	Coahoma Co., MS	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
341453091502701	Jefferson Co., AR	07/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
341556091103401	Arkansas Co., AR	07/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
341703090113001	Quitman Co., MS	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
342304091500001	Jefferson Co., AR	07/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
342457090195001	Quitman Co., MS	07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
342849091570701	Jefferson Co., AR	07/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
343534090260501	Tunica Co., MS	08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
343710090174501	Tunica Co., MS	06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
344232091103001	Monroe Co., AR	06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
345628090295701	St. Francis Co., AR	07/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
345631090522000	St. Francis Co., AR	07/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Mississippi Embayment (MISE/GAG)—Continued																			
345647091024500	St. Francis Co., AR	07/06/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
350435090260901	St. Francis Co., AR	07/15/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
352104090182301	Crittenden Co., AR	07/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
352934090265401	Poinsett Co., AR	07/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
354341091120801	Jackson Co., AR	06/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
354455091443401	Jackson Co., AR	06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
355516090285600	Craighead Co., AR	06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
355839090515001	Lawrence Co., AR	07/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
360148090023801	Dunklin Co., MO	07/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
361412090150301	Clay Co., AR	06/30/98	<.05	<.20	<.20	--	<.05	.47	<.20	--	--	--	--	--	--	--	<.05	.94	.20
Santee Basin and Coastal Drainages (SANT/SCN)																			
332310080423102	Orangeburg, Co., SC	11/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332310080423103	Orangeburg, Co., SC	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	<.20	<.20
332311080422902	Orangeburg, Co., SC	11/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332311080422903	Orangeburg, Co., SC	11/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332311080422904	Orangeburg, Co., SC	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332311080422905	Orangeburg, Co., SC	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332313080422602	Orangeburg, Co., SC	11/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332313080422603	Orangeburg, Co., SC	11/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332313080422604	Orangeburg, Co., SC	11/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Santee Basin and Coastal Drainages (SANT/SCN)—Continued																			
332320080422202	Orangeburg, Co., SC	11/06/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
332320080422203	Orangeburg, Co., SC	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.24	<.20
332324080421402	Orangeburg, Co., SC	11/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	14	1.0
332324080421404	Orangeburg, Co., SC	11/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	6.9	.20
332331080420701	Orangeburg, Co., SC	11/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	10	.42
332331080420703	Orangeburg, Co., SC	11/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	11	<.20
332331080420704	Orangeburg, Co., SC	11/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.88	<.20
332335080420001	Orangeburg, Co., SC	11/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.8	<.20
332335080420002	Orangeburg, Co., SC	11/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.25	9.5	.50
332335080420003	Orangeburg, Co., SC	11/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.1	<.20
332335080420004	Orangeburg, Co., SC	11/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
332335080420101	Orangeburg, Co., SC	11/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
Federal-State Cooperative Studies																			
Iowa Cedar Rapids study (BBI)																			
420012091442802	Linn Co., IA	06/03/98	.17	2.1	1.7	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.33	5.5	1.2
		07/22/98	<.05	2.9	1.1	--	<.05	2.4	.20	--	--	--	--	--	--	--	.07	6.8	1.4
		08/20/98	<.05	1.6	.26	--	<.05	2.2	<.20	--	--	--	--	--	--	--	<.05	5.9	.88
420012091442803	Linn Co., IA	06/03/98	<.05	2.0	1.2	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.11	5.2	1.2
		07/22/98	<.05	3.3	1.8	--	<.05	2.2	.31	--	--	--	--	--	--	--	.16	6.5	1.7
		08/20/98	<.05	2.5	.67	--	<.05	2.2	.29	--	--	--	--	--	--	--	.08	6.5	1.0
420012091442805	Linn Co., IA	06/03/98	.07	1.7	1.0	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.14	5.3	1.2
		07/22/98	<.05	2.5	1.3	--	<.05	2.0	.25	--	--	--	--	--	--	--	.08	5.6	1.4
		08/20/98	<.05	1.1	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	.08	4.8	.59

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Iowa Cedar Rapids study (BBI)—Continued																			
420013091442801	Linn Co., IA	06/03/98	<0.05	0.99	0.66	--	<0.05	1.4	<0.20	--	--	--	--	--	--	--	0.11	4.2	0.78
		07/22/98	.09	2.1	1.2	--	<.05	2.1	<.20	--	--	--	--	--	--	--	.23	6.4	1.2
420014091442701	Linn Co., IA	06/11/98	<.05	.71	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	3.1	.77
		07/22/98	<.05	1.1	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	.18	5.6	.89
		08/20/98	<.05	1.4	<.20	--	<.05	2.5	<.20	--	--	--	--	--	--	--	.13	6.5	.81
420014091442702	Linn Co., IA	07/22/98	<.05	1.4	.69	--	<.05	1.7	.29	--	--	--	--	--	--	--	.19	4.5	1.3
		08/20/98	<.05	1.6	.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	.15	5.5	.69
420019091442501	Linn Co., IA	06/02/98	<.05	1.3	.85	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.10	4.8	1.2
		08/19/98	<.05	1.5	.61	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.06	4.1	.87
420019091442502	Linn Co., IA	06/02/98	<.05	.39	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	<.05	2.3	.45
		07/22/98	<.05	.85	.28	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	3.9	.76
		08/19/98	<.05	1.1	.35	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	3.8	.82
420031091441801	Linn Co., IA	06/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.38	<.20
		08/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
Iowa wells monitoring study (KIA)																			
11415	Floyd Co., IA	04/17/00	--	1.2	<.05	--	--	.52	<.05	--	--	<.05	<.05	--	--	--	--	2.0	<.05
11485	Floyd Co., IA	04/17/00	--	<.05	<.05	--	--	.53	.24	--	--	<.05	<.05	--	--	--	--	.26	<.05
11690	Floyd Co., IA	04/17/00	--	<.05	<.05	--	--	.94	.08	--	--	<.05	<.05	--	--	--	--	5.6	1.6
11817	Floyd Co., IA	04/17/00	--	<.05	<.05	--	--	.90	<.05	--	--	<.05	<.05	--	--	--	--	2.1	<.05
20155	Mitchell Co., IA	04/17/00	--	.51	<.05	--	--	.49	<.05	--	--	<.05	<.05	--	--	--	--	4.8	1.2
20318	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	.48	.07	--	--	<.05	<.05	--	--	--	--	1.6	.49

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Iowa wells monitoring study (KIA)—Continued																			
20320	Mitchell Co., IA	04/17/00	--	<0.05	<0.05	--	--	0.79	<0.05	--	--	<0.05	<0.05	--	--	--	--	2.0	0.09
20334	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	.40	.06	--	--	<.05	<.05	--	--	--	--	1.2	.93
20392	Mitchell Co., IA	04/17/00	--	1.6	2.3	--	--	.99	.34	--	--	<.05	<.05	--	--	--	--	2.3	.50
20428	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	--	--	--	.70	<.05
20483	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.05	<.05
20531	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	8.1	<.05	--	--	<.05	<.05	--	--	--	--	8.1	.91
20581	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	2.0	<.05	--	--	<.05	<.05	--	--	--	--	2.7	.31
20651	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	.68	<.05	--	--	<.05	<.05	--	--	--	--	.09	<.05
20663	Mitchell Co., IA	04/17/00	--	.38	<.05	--	--	.34	<.05	--	--	<.05	<.05	--	--	--	--	8.0	.09
20696	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	3.7	<.05	--	--	<.05	<.05	--	--	--	--	3.2	.47
20699	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	.67	<.05	--	--	<.05	<.05	--	--	--	--	4.2	.40
20817	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
21068	Mitchell Co., IA	04/17/00	--	.39	<.05	--	--	.37	.51	--	--	<.05	<.05	--	--	--	--	19	14
21270	Mitchell Co., IA	04/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
21305	Sweeney Co., IA	04/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
Fm 1-1	Floyd Co., IA	04/18/00	--	.54	.24	--	--	.84	.25	--	--	<.05	<.05	--	--	--	--	5.6	.99
Fm 1-2	Floyd Co., IA	04/18/00	--	.40	.22	--	--	.46	.24	--	--	<.05	<.05	--	--	--	--	1.8	.40
Fm 1-3	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.79	.25	--	--	<.05	<.05	--	--	--	--	3.2	1.1
Fm 1-4	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.45	<.05	--	--	<.05	<.05	--	--	--	--	.47	.25
Fm 3-1	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.97	.25	--	--	<.05	<.05	--	--	--	--	4.8	3.7
Fm 3-2	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.28	<.05	--	--	<.05	<.05	--	--	--	--	1.2	.55
Fm 3-3	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.31	<.05	--	--	<.05	<.05	--	--	--	--	1.3	.61
Fm 3-4	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.46	.24	--	--	<.05	<.05	--	--	--	--	3.2	1.0
Fm 3-T	Floyd Co., IA	04/18/00	--	.66	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.60	<.05
Olson well	Floyd Co., IA	04/18/00	--	<.05	<.05	--	--	.29	<.05	--	--	<.05	<.05	--	--	--	--	1.1	.30

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Iowa wells monitoring study (KIA)—Continued																			
Schmidt well	Floyd Co., IA	04/18/00	--	<0.05	<0.05	--	--	0.51	<0.05	--	--	<0.05	<0.05	--	--	--	--	4.0	<0.05
Minnesota hydrologic study (FRG)																			
441625093444201	Le Seuer Co., MN	11/04/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
443050093544601	Sibley Co., MN	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
443204093521401	Le Seuer Co., MN	06/04/98	<.05	2.3	.95	--	<.05	.51	<.05	--	--	--	--	--	--	--	<.05	1.2	.52
		03/30/99	<.05	.87	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.41	<.20
		05/11/99	<.05	2.5	.24	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	.51	<.20
		06/06/00	<.05	.34	<.05	--	<.05	.05	<.05	--	<0.05	<.05	<.05	<0.05	--	--	<.05	.42	<.05
		07/10/00	<.05	.15	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<0.05	<0.05	<.05	.13	<.05
443204093521404	Le Seuer Co., MN	04/09/98	<.05	.99	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
		04/09/98	<.05	.93	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	<.05	.73	<.20
443205093525801	Le Seuer Co., MN	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.23	<.20
443206093521101	Le Seuer Co., MN	04/09/98	<.05	.79	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.6	<.20
		06/04/98	<.05	1.4	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.88	2.3	<.20
		05/11/99	<.05	1.2	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
		06/17/99	<.05	2.2	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.4	<.20
		06/06/00	<.05	.23	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.66	<.05
		07/09/99	<.05	1.5	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.2	<.20
		07/09/99	<.05	.73	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.58	<.20
		07/10/00	<.05	.15	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.61	<.05
443206093521501	Le Seuer Co., MN	04/09/98	<.05	.77	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	2.4	2.2	2.1
		04/01/99	<.05	.55	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.0	<.20
		04/01/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.25	<.05
		03/24/99	<.05	.41	.34	--	<.05	1.4	<.20	--	<.05	--	--	<.05	--	--	<.05	.67	.25
		03/30/99	<.05	.21	<.20	--	<.05	.83	<.20	--	--	--	--	--	--	--	<.05	1.4	.23

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (FRG)—Continued																			
443206093521501	Le Seuer Co., MN	05/11/99	<0.05	0.55	<0.20	--	<0.05	1.4	<0.20	--	<0.05	--	--	<0.05	--	--	0.08	2.7	1.0
		06/17/99	<.05	.80	<.20	--	<.05	1.4	<.20	--	<.05	--	--	<.05	--	--	.14	4.4	1.4
		06/17/99	<.05	.85	<.20	--	<.05	1.5	<.20	--	<.05	--	--	<.05	--	--	.15	4.5	1.4
		07/09/99	<.05	.61	<.20	--	<.05	.79	<.20	--	<.05	--	--	<.05	--	--	.12	3.3	.62
		07/09/99	<.05	.62	<.20	--	<.05	.78	<.20	--	<.05	--	--	<.05	--	--	.12	3.3	.61
		07/09/99	<.05	.59	<.20	--	<.05	.79	<.20	--	<.05	--	--	<.05	--	--	.10	3.4	.58
		07/09/99	<.05	.61	<.20	--	<.05	.80	<.20	--	<.05	--	--	<.05	--	--	.10	3.3	.63
		06/06/00	<.05	.78	1.6	--	<.05	.60	.26	--	<.05	<0.05	<0.05	<.05	--	--	<.05	2.9	.40
		07/06/00	<.05	.08	<.05	--	<.05	.54	<.05	--	<.05	<.05	<.05	<.05	<0.05	<0.05	<.05	.79	.06
		11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
443233093524701	Le Seuer Co., MN	11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
450305094262201	Meeker Co., MN	11/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
450456094232901	Meeker Co., MN	11/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
450457094233601	Meeker Co., MN	11/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
450459094233501	Meeker Co., MN	07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
451316094271801	Meeker Co., MN	11/7/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
452046092513001	Chisago Co., MN	11/8/97	<.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		04/21/98	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
452046092543001	Chisago Co., MN	11/8/97	<.05	<.20	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
452901093002001	Chisago Co., MN	11/3/97	<.05	<.20	<.20	--	<.05	.36	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		04/21/98	<.05	<.20	<.20	--	<.05	.82	<.20	--	--	--	--	--	--	--	<.05	1.7	<.20
		04/21/98	<.05	<.20	<.20	--	<.05	.48	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
452903093001701	Chisago Co., MN	11/03/97	<.05	<.20	<.20	--	<.05	.40	<.20	--	--	--	--	--	--	--	<.05	1.8	<.20
453139093372201	Sherburne CO., MN	01/08/98	<.05	<.20	<.20	--	.36	4.4	.20	--	--	--	--	--	--	--	<.05	<.20	<.20
453144093370501	Sherburne CO., MN	01/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (FRG)—Continued																			
462151093552701	Crow Wing Co., MN	06/11/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462316093575401	Crow Wing Co., MN	06/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462318093575401	Crow Wing Co., MN	07/05/99	<.05	<.20	<.20	--	<.05	.34	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/12/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		06/13/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		07/10/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
462326093574901	Crow Wing Co., MN	06/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462327093575801	Crow Wing Co., MN	06/07/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
		08/13/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		10/09/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
462327093580601	Crow Wing Co., MN	11/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462328093575101	Crow Wing Co., MN	07/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462328093580601	Crow Wing Co., MN	06/29/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
462328093575201	Crow Wing Co., MN	05/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/04/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/12/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		07/10/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
462330093580901	Crow Wing Co., MN	11/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/12/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
462331093581301	Crow Wing Co., MN	07/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/04/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		06/12/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		07/10/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
462331093581901	Crow Wing Co., MN	11/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
462335093575601	Crow Wing Co., MN	06/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (FRG)—Continued																			
462335093575601	Crow Wing Co., MN	05/13/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		06/14/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	<0.05	<0.05	<0.05	--	--	<.05	<.05	<.05
		06/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/04/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		06/12/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		07/10/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
462338093575602	Crow Wing Co., MN	07/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
464813096084201	Becker Co., MN	11/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
464816096083901	Becker Co., MN	11/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
465804095494901	Becker Co., MN	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
465821095494801	Becker Co., MN	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
473841096063201	Polk Co., MN	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
473928096053501	Polk Co., MN	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
473928096053501	Polk Co., MN	11/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
Minnesota hydrologic study (MLM)																			
433318096105901	Rock Co., MN	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433345086110002	Rock Co., MN	07/23/97	<.05	.37	.31	--	<.05	.25	<.20	--	--	--	--	--	--	--	.05	2.5	.56
433345096105801	Rock Co., MN	06/02/97	.07	.27	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	.16	2.8	.44
433345096110001	Rock Co., MN	04/09/97	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	2.3	.35
		06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.5	.26
433345096110002	Rock Co., MN	06/02/97	<.05	.20	<.20	--	<.05	.28	<.20	--	--	--	--	--	--	--	.05	3.0	.59
		08/27/97	<.05	.39	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.06	2.2	.47
433345096113501	Rock Co., MN	06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.39	<.20
433347096003501	Rock Co., MN	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.24	<.20
433347096113801	Rock Co., MN	04/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.3	.48
433354096105301	Rock Co., MN	07/23/97	<.05	.71	.67	--	<.05	.32	<.20	--	--	--	--	--	--	--	.28	3.2	.76

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (MLM)—Continued																			
433354096105801	Rock Co., MN	04/09/97	0.13	0.39	0.26	--	<0.05	0.29	<0.20	--	--	--	--	--	--	--	0.32	2.4	0.64
		08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	1.9	<.20
433413096111701	Rock Co., MN	08/28/97	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	1.9	.20
433422096120801	Rock Co., MN	06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	3.4	.32
433424096120901	Rock Co., MN	08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.6	.36
433750096123201	Rock Co., MN	06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.69	<.20
433812096115601	Rock Co., MN	08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433912096113501	Rock Co., MN	04/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433920096114901	Rock Co., MN	04/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	1.3	.23
		06/03/97	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	.08	2.5	.28
		07/23/97	<.05	.38	.53	--	<.05	.26	<.20	--	--	--	--	--	--	--	.11	2.1	.43
		08/27/97	<.05	.27	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.07	1.7	.29
433928096120801	Rock Co., MN	08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433929096113601	Rock Co., MN	04/08/97	<.05	<.20	<.20	--	<.05	.34	<.20	--	--	--	--	--	--	--	<.05	.80	<.20
		08/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
433929096114701	Rock Co., MN	06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.71	<.20
		08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.76	<.20
433929096114702	Rock Co., MN	06/02/97	<.05	.50	<.20	--	<.05	.30	<.20	--	--	--	--	--	--	--	<.05	3.7	.52
		08/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
433934096113501	Rock Co., MN	04/08/97	<.05	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	<.05	.84	<.20
		08/27/97	<.05	<.20	<.20	--	<.05	.42	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
433952096113101	Rock Co., MN	06/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	<.20	<.20
		08/28/97	<.05	.21	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.9	.32
Gene Fusco	Benton Co., MN	04/30/97	<.05	<.20	<.20	--	<.05	2.9	<.20	--	--	--	--	--	--	--	<.05	1.5	.32
Jeffers #1	Cottonwood Co., MN	05/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
Nick Weis	Benton Co., MN	04/30/97	<.05	<.20	<.20	--	<.05	7.4	<.20	--	--	--	--	--	--	--	<.05	1.5	.43

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (MLM)—Continued																			
Perham #6	Otter Tail Co., MN	05/06/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
Sutton	Benton Co., MN	04/30/97	<.05	<.20	<.20	--	<.05	.53	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
Windom #81	Cottonwood Co., MN	05/08/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
Minnesota hydrologic study (TCM)																			
435008095060301	Jackson Co., MN	08/31/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
		05/09/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	<.05	<.05
		06/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435014095060201	Jackson Co., MN	06/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435054095045801	Cottonwood Co., MN	06/28/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435145095051701	Cottonwood Co., MN	07/09/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	.19	<.05
435026095055601	Cottonwood Co., MN	07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
435203095070101	Cottonwood Co., MN	06/28/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435205095065302	Cottonwood Co., MN	06/29/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435211095063701	Cottonwood Co., MN	07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
435217095063401	Cottonwood Co., MN	07/26/00	<.05	<.05	<.05	--	<.05	.52	.30	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.28	.14
435218095062801	Cottonwood Co., MN	07/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
		09/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/09/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		07/26/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435239095074801	Cottonwood Co., MN	07/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
435310095082501	Cottonwood Co., MN	07/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
435311095061801	Cottonwood Co., MN	06/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435315095091601	Cottonwood Co., MN	07/26/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	<.05
435320095094901	Cottonwood Co., MN	07/06/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
		08/31/99	56	<.20	<.20	--	--	<.20	<.20	--	--	--	--	--	--	--	--	<.20	<.20
		05/08/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (TCM)—Continued																			
435320095094901	Cottonwood Co., MN	04/27/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		06/29/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	<.05
435417095101001	Cottonwood Co., MN	06/28/00	<.05	.42	.06	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.53	.06
435500095105701	Cottonwood Co., MN	07/13/99	<.05	.27	.19	--	<.05	.19	.08	--	<.05	--	--	<.05	--	--	<.05	2.8	.48
435500095112401	Cottonwood Co., MN	07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
435514095112201	Cottonwood Co., MN	07/27/00	<.05	<.05	.07	--	<.05	1.2	.16	--	<.05	.08	<.05	<.05	<.05	<.05	<.05	.55	.06
435515095093601	Cottonwood Co., MN	07/07/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
435533095111601	Cottonwood Co., MN	06/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435605095121201	Cottonwood Co., MN	07/26/00	<.05	<.05	<.05	--	<.05	.09	1.3	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435647095122201	Cottonwood Co., MN	07/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.17	<.05
435748095122901	Cottonwood Co., MN	07/07/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	.19	<.05
		09/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/09/00	<.05	.21	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.25	<.05
		06/29/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	<.05
435842095132001	Cottonwood Co., MN	06/28/00	<.05	.06	.31	--	<.05	.69	.38	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
435934095134701	Cottonwood Co., MN	07/13/99	<.05	<.05	<.05	--	<.05	.13	<.05	--	<.05	--	--	<.05	--	--	<.05	1.1	<.05
440426095112401	Cottonwood Co., MN	07/25/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	<.05
Minnesota Pollution Control Agency (JMM)																			
0010	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.38	<.20	--	<.05	--	--	<.05	--	--	<.05	.47	<.20
0017	Stearns Co., MN	11/00/99	<.05	.74	.61	--	<.05	.80	.55	--	<.05	--	--	<.05	--	--	<.05	.43	.37
0021	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0024	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	<.20	.34	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0026	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0030	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	3.1	.27	--	<.05	--	--	<.05	--	--	<.05	.66	<.20
0034	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	1.2	<.20	--	<.05	--	--	<.05	--	--	<.05	.34	.26
0036	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	2.6	.38	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0039	Stearns Co., MN	07/00/99	<0.05	<0.20	<0.20	--	<0.05	2.0	0.37	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
0040	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	2.2	.40	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0042	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0043	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	7.5	1.2	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0048	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.2	<.20	--	<.05	--	--	<.05	--	--	<.05	1.6	1.3
0050	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.31	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0052	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.1	<.20	--	<.05	--	--	<.05	--	--	<.05	.34	.26
0054	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0055	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0059	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.3	.41	--	<.05	--	--	<.05	--	--	.06	.65	.69
0062	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.3	.43	--	<.05	--	--	<.05	--	--	.06	.67	.75
0064	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	.18	1.2	.65	--	<.05	--	--	<.05	--	--	<.05	.60	.47
0066	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0069	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.4	.29	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0071	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0073	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.20	<.20	<.20
0075	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0076	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0080	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	1.8	1.2	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0083	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	2.8	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0089	Stearns Co., MN	07/00/99	<.05	<.20	<.20	--	<.05	3.1	.30	--	<.05	--	--	<.05	--	--	<.05	.36	<.20
0096	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0098	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.9	<.20	--	<.05	--	--	<.05	--	--	<.05	1.7	1.2
0099	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.1	<.20	--	<.05	--	--	<.05	--	--	<.05	.81	<.20
0102	Stearns Co., MN	04/18/99	<.05	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0103	Stearns Co., MN	04/14/99	<0.05	<0.20	<0.20	--	<0.05	2.0	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
0104	Stearns Co., MN	04/08/99	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0105	Stearns Co., MN	04/11/99	<.05	<.20	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0106	Stearns Co., MN	04/05/99	<.05	<.20	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0107	Stearns Co., MN	04/02/99	<.05	<.20	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0108	Stearns Co., MN	03/29/99	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0109	Stearns Co., MN	03/22/99	<.05	<.20	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0211	Stearns Co., MN	08/00/99	<.05	<.20	<.20	--	<.05	.29	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.44	<.20
0214	Stearns Co., MN	08/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0226	Stearns Co., MN	08/00/99	<.05	<.20	<.20	--	<.05	3.0	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0230	Stearns Co., MN	08/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0233	Stearns Co., MN	08/00/99	<.05	.82	<.20	--	<.05	.53	<.20	--	<.05	--	--	<.05	--	--	<.05	.47	<.20
0237	Stearns Co., MN	08/00/99	<.05	1.0	<.20	--	<.05	.63	<.20	--	<.05	--	--	<.05	--	--	<.05	.85	.32
0239	Stearns Co., MN	08/00/99	<.05	2.9	1.3	--	<.05	.48	<.20	--	<.05	--	--	<.05	--	--	<.05	5.0	1.5
0244	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.0	.45	--	<.05	--	--	<.05	--	--	<.05	<.20	.31
0245	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0290	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
0291	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.73	.30	--	<.05	--	--	--	--	--	<.05	<.20	.20
0294	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.3	.76	--	<.05	--	--	--	--	--	<.05	.28	.51
0296	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.9	.91	--	<.05	--	--	--	--	--	<.05	<.20	<.20
0300	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	6.2	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
0301	Stearns Co., MN	05/24/99	<.05	<.20	<.20	--	<.05	4.3	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0302	Stearns Co., MN	05/21/99	<.05	<.20	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0303	Stearns Co., MN	05/14/99	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0304	Stearns Co., MN	05/17/99	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0305	Stearns Co., MN	05/17/99	<0.05	<0.20	<0.20	--	<0.05	0.31	<0.20	--	--	--	--	--	--	--	<0.05	0.34	<0.20
0306	Stearns Co., MN	05/17/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0307	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
0310	Stearns Co., MN	05/18/99	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0327	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0328	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0329	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0330	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0331	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0332	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0333	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0334	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0335	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0336	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0337	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0338	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0339	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0340	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0347	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	<.05	.72	1.6
0349	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	.91	<.20	--	--	--	--	--	--	--	<.05	.72	.32
0350	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0355	Stearns Co., MN	04/29/99	<.05	2.8	2.2	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	4.3	3.4
0358	Stearns Co., MN	04/29/99	<.05	3.1	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	1.1	.95
0359	Stearns Co., MN	04/29/99	<.05	1.1	<.20	--	<.05	2.9	<.20	--	--	--	--	--	--	--	<.05	1.3	<.20
0362	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0365	Stearns Co., MN	04/29/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
0366	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0378	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0380	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0382	Stearns Co., MN	04/29/99	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0390	Stearns Co., MN	03/03/99	<.05	2.8	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	1.1	.63
0391	Stearns Co., MN	03/03/99	<.05	1.4	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	.56	<.20
0395	Stearns Co., MN	03/03/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0401	Stearns Co., MN	03/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0406	Stearns Co., MN	03/02/99	<.05	2.2	.39	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	7.3	2.8
0408	Stearns Co., MN	03/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0409	Stearns Co., MN	03/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	.23
0414	Stearns Co., MN	03/01/99	<.05	<.20	<.20	--	<.05	3.1	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0416	Stearns Co., MN	03/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0420	Stearns Co., MN	03/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0451	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
0454	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	2.5	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0461	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0472	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.29	<.20	--	<.05	--	--	<.05	--	--	<.05	.40	<.20
0473	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0474	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.25	<.20	--	<.05	--	--	<.05	--	--	<.05	.40	<.20
0480	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0481	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.33	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0482	Stearns Co., MN	11/00/99	<.05	.77	.97	--	<.05	.82	.75	--	<.05	--	--	<.05	--	--	<.05	.45	.35
0483	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0484	Stearns Co., MN	05/02/00	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
0485	Stearns Co., MN	05/02/00	<.05	<.20	<.20	--	<.05	.47	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0486	Stearns Co., MN	05/02/00	<.05	<.20	.46	--	<.05	.21	.34	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0487	Stearns Co., MN	05/02/00	<.05	<.20	<.20	--	<.05	.31	<.20	--	<.05	--	--	<.05	--	--	<.05	.44	<.20
0488	Stearns Co., MN	05/02/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0489	Stearns Co., MN	05/02/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0490	Stearns Co., MN	05/02/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0491	Stearns Co., MN	05/18/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0492	Stearns Co., MN	06/08/00	.05	.93	1.4	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.32
0493	Stearns Co., MN	06/08/00	.09	1.0	1.4	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.64	<.20
0495	Stearns Co., MN	06/08/00	.06	1.4	2.1	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.1	<.20
0496	Stearns Co., MN	06/08/00	.12	.33	1.3	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0505	Stearns Co., MN	05/18/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0506	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.72
0507	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0508	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	2.0
0509	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0510	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0511	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.40	2.0
0512	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0513	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0514	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0524	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.29	<.20
0525	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.31	<.20
0529	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0530	Stearns Co., MN	11/00/99	<0.05	<0.20	<0.20	--	<0.05	0.46	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	0.43	0.86
0531	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	2.6	<.20
0532	Stearns Co., MN	11/00/99	<.05	.91	<.20	--	<.05	.46	<.20	--	<.05	--	--	<.05	--	--	<.05	.62	<.20
0533	Stearns Co., MN	11/00/99	<.05	.80	<.20	--	<.05	.56	<.20	--	<.05	--	--	<.05	--	--	<.05	.61	.22
0537	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0544	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	1.3	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0545	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0549	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0555	Stearns Co., MN	11/00/99	<.05	<.20	.33	--	<.05	<.20	.32	--	<.05	--	--	<.05	--	--	<.05	3.0	<.20
0556	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	3.0	<.20
0557	Stearns Co., MN	11/00/99	<.05	.99	<.20	--	<.05	.65	<.20	--	<.05	--	--	<.05	--	--	<.05	.84	.28
0558	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0560	Stearns Co., MN	11/00/99	<.05	1.5	<.20	--	<.05	.55	<.20	--	<.05	--	--	<.05	--	--	<.05	.41	<.20
0563	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.22	.22	--	<.05	--	--	<.05	--	--	<.05	.26	<.20
0564	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.24	<.20	--	<.05	--	--	<.05	--	--	<.05	.45	<.20
0570	Stearns Co., MN	11/00/99	<.05	<.05	.10	--	<.05	.39	.07	--	<.05	--	--	<.05	--	--	<.05	.47	.09
0571	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	.92	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.71
0572	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	.24	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0573	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.74	<.20
0574	Stearns Co., MN	08/00/00	<.05	1.2	<.20	--	<.05	.46	<.20	--	<.05	--	--	<.05	--	--	<.05	.43	<.20
0575	Stearns Co., MN	08/00/00	<.05	.88	<.20	--	<.05	.61	<.20	--	<.05	--	--	<.05	--	--	<.05	.66	<.20
0578	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0579	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0580	Stearns Co., MN	06/08/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0581	Stearns Co., MN	06/08/00	<.05	.35	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.42	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
0583	Stearns Co., MN	11/00/00	<0.05	<0.05	0.09	--	<0.05	0.33	0.08	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.44	0.09
0593	Stearns Co., MN	08/00/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0606	Stearns Co., MN	08/00/00	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.27	<.20
0620	Stearns Co., MN	08/00/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0625	Stearns Co., MN	08/00/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0626	Stearns Co., MN	08/00/00	<.05	<.20	<.20	--	<.05	.93	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0817	Stearns Co., MN	11/00/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05
0818	Stearns Co., MN	11/00/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
0819	Stearns Co., MN	11/00/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
0820	Stearns Co., MN	11/00/00	<.05	<.05	<.05	--	<.05	2.8	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.17	<.05
0824	Stearns Co., MN	11/00/00	<.05	1.1	<.05	--	<.05	.59	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.66	<.05
0892	Stearns Co., MN	03/03/99	<.05	.88	<.20	--	<.05	.71	.34	--	--	--	--	--	--	--	<.05	.42	.28
0997	Stearns Co., MN	03/03/99	<.05	.21	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
0998	Stearns Co., MN	03/03/99	<.05	<.20	<.20	--	<.05	.59	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
9000	Stearns Co., MN	04/23/01	<.05	<.05	<.05	--	<.05	1.8	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	<.05
9001	Stearns Co., MN	04/23/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9002	Stearns Co., MN	04/23/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9003	Stearns Co., MN	04/23/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9004	Stearns Co., MN	04/24/01	<.05	.19	.15	--	<.05	.24	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.09
9006	Stearns Co., MN	04/24/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9007	Stearns Co., MN	04/24/01	<.05	.45	<.05	--	<.05	.32	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	<.05
9008	Stearns Co., MN	04/24/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9009	Stearns Co., MN	04/24/01	<.05	<.05	<.05	--	<.05	.08	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.54	.06
9010	Stearns Co., MN	04/24/01	<.05	.76	<.05	--	<.05	.31	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.34	.11
9011	Stearns Co., MN	04/24/01	<.05	.19	.14	--	<.05	.26	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	.10

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
9012	Stearns Co., MN	05/30/01	<0.05	0.46	0.13	--	<0.05	0.16	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	<0.05
9013	Stearns Co., MN	05/30/01	<.05	.64	.23	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.55	<.05
9014	Stearns Co., MN	05/30/01	<.05	.35	.14	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.21	<.05
9016	Lincoln Co., MN	05/30/01	<.05	<.05	<.05	--	<.05	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9019	Lincoln Co., MN	05/30/01	<.05	.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.48	<.05
9020	Lincoln Co., MN	05/30/01	<.05	<.05	<.05	--	<.05	.15	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	<.05
9021	Lincoln Co., MN	05/30/01	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.72	<.05
9022	Lincoln Co., MN	05/30/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	<.05
9024	Hubbard Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9025	Hubbard Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9026	Hubbard Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9027	Hubbard Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9028	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.28	<.05
9029	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	<.05
9030	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	.36	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	<.05
9031	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	.35	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	<.05
9032	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	.38	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	4.7	.31
9033	Ottertail Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.96	<.05
9034	Ottertail Co., MN	06/12/01	<.05	.13	.11	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.85	<.05
9035	Grant Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9036	Grant Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9037	Grant Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9038	Todd Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	1.1	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.0	<.05
9039	Todd Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9040	Todd Co., MN	06/12/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metol-lachlor (μg/L)	Metol-lachlor ESA (μg/L)	Metol-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
9041	Todd Co., MN	06/19/01	<0.05	<0.05	<0.05	--	<0.05	0.57	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.81	0.17
9042	Todd Co., MN	06/19/01	<.05	<.05	<.05	--	<.05	.66	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.99	.19
9043	Morrison Co., MN	06/19/01	<.05	<.05	<.05	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9044	Morrison Co., MN	06/19/01	<.05	.07	<.05	--	<.05	.43	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	<.05
9045	Isanti Co., MN	06/19/01	<.05	<.05	<.05	--	<.05	.24	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.30	.14
9046	Wabasha Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	1.9	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.35	<.05
9047	Wabasha Co., MN	06/27/01	<.05	<.05	.05	--	<.05	4.9	.24	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	3.1	.81
9048	Fillmore Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	1.1	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.99	.24
9049	Fillmore Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9050	Fillmore Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
9051	Nobles Co., MN	06/27/01	<.05	.07	.06	--	<.05	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.07	3.7	1.7
9052	Pipestone Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.31	<.05
9053	Redwood Co., MN	06/27/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
5124	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.0	.68	--	<.05	--	--	<.05	--	--	<.05	.21	.21
5164	Stearns Co., MN	03/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5165	Stearns Co., MN	03/02/98	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5166	Stearns Co., MN	03/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5167	Stearns Co., MN	03/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5168	Stearns Co., MN	03/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5169	Stearns Co., MN	03/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5181	Stearns Co., MN	03/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5182	Stearns Co., MN	03/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5183	Stearns Co., MN	03/04/98	<.05	1.4	.25	--	<.05	.81	<.20	--	--	--	--	--	--	--	<.05	6.3	2.0
5184	Stearns Co., MN	03/04/98	<.05	2.5	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	<.05	.85	<.20
5185	Stearns Co., MN	03/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
5186	Stearns Co., MN	03/05/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
5187	Stearns Co., MN	03/05/98	<.05	.91	<.20	--	<.05	.47	<.20	--	--	--	--	--	--	--	<.05	.46	.22
5407	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5409	Stearns Co., MN	05/12/98	<.05	6.1	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
5417	Stearns Co., MN	05/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5527	Stearns Co., MN	09/29/98	<.05	.87	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	<.05	11	1.3
5528	Stearns Co., MN	09/09/98	<.05	1.7	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	12	1.6
5531	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
5537	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	3.6	1.8	--	<.05	--	--	<.05	--	--	<.05	1.1	1.1
5542	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5543	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5546	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	3.3	.20	--	--	--	--	--	--	--	<.05	.24	.33
5547	Stearns Co., MN	10/00/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5553	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5554	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	.66	<.20	--	--	--	--	--	--	--	<.05	.78	<.20
5555	Stearns Co., MN	10/28/98	<.05	5.6	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	<.05	2.1	.91
5556	Stearns Co., MN	10/28/98	<.05	.42	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	15	1.6
5558	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
5596	Stearns Co., MN	09/29/98	<.05	<.20	<.20	--	<.05	.61	<.20	--	--	--	--	--	--	--	<.05	.68	<.20
5784	Stearns Co., MN	03/04/98	<.05	<.20	<.20	--	.35	<.20	<.20	--	--	--	--	--	--	--	.33	<.20	<.20
5785	Stearns Co., MN	03/04/98	<.05	<.20	<.20	--	6.4	<.20	<.20	--	--	--	--	--	--	--	5.9	<.20	<.20
5954	Stearns Co., MN	09/09/98	<.05	<.20	<.20	--	<.05	.83	<.20	--	--	--	--	--	--	--	<.05	.49	<.20
5955	Stearns Co., MN	08/04/98	<.05	.27	.24	--	<.05	.65	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
5956	Stearns Co., MN	08/04/98	<.05	.45	.20	--	<.05	.67	<.20	--	--	--	--	--	--	--	<.05	.80	<.20
5995	Stearns Co., MN	10/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
5997	Stearns Co., MN	10/28/98	<0.05	0.26	<0.20	--	<0.05	0.70	<0.20	--	--	--	--	--	--	--	<0.05	0.60	0.29
6283	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
6287	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
6291	Stearns Co., MN	11/00/99	<.05	.77	<.20	--	<.05	.60	<.20	--	<.05	--	--	<.05	--	--	<.05	.75	.25
6292	Stearns Co., MN	11/00/99	<.05	<.20	<.20	--	<.05	.64	<.20	--	<.05	--	--	<.05	--	--	<.05	5.3	.64
6605	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
6606	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	5.7	.25	--	--	--	--	--	--	--	<.05	.40	<.20
6607	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	.44	.46	--	--	--	--	--	--	--	<.05	<.20	<.20
6608	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
6609	Stearns Co., MN	08/04/98	<.05	2.5	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	15	1.5
6610	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
6611	Stearns Co., MN	08/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
6612	Stearns Co., MN	08/04/98	<.05	8.2	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.05	1.1	<.20
6627	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.3	.93	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7185	Stearns Co., MN	03/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
7313	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
7314	Stearns Co., MN	05/12/98	<.05	3.0	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	9.5	3.6
7315	Stearns Co., MN	05/12/98	<.05	1.2	<.20	--	<.05	.49	<.20	--	--	--	--	--	--	--	<.05	.68	.36
7318	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
7319	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
7320	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
7321	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.64	<.20
7322	Stearns Co., MN	05/12/98	<.05	<.20	<.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	<.05	.77	<.20
7368	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.6	.28	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7371	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.9	1.1	--	<.05	--	--	<.05	--	--	<.05	<.20	.35

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
7373	Stearns Co., MN	06/00/99	<0.05	<0.20	<0.20	--	<0.05	0.64	0.37	--	<0.05	--	--	<0.05	--	--	<0.05	0.21	0.28
7376	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.7	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7378	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	7.1	1.7	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7381	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7382	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	3.6	2.1	--	<.05	--	--	<.05	--	--	<.05	1.6	1.9
7385	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	.06	1.1	.81	--	<.05	--	--	<.05	--	--	<.05	.66	.63
7390	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.1	<.20	--	<.05	--	--	<.05	--	--	<.05	.35	.26
7391	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.06	<.20	<.20
7393	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.21	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7399	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7401	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.50	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7402	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.4	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7404	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.0	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.27
7406	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7409	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	2.5	.48	--	<.05	--	--	<.05	--	--	<.05	.39	.47
7411	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7412	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7415	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7417	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.31	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7418	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.1	<.20	--	<.05	--	--	<.05	--	--	<.05	.34	.25
7421	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.67	<.20	--	<.05	--	--	<.05	--	--	<.05	.36	.25
7423	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	1.3	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7424	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.28	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7427	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.26	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
7428	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	.35	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota Pollution Control Agency (JMM)—Continued																			
7431	Stearns Co., MN	06/00/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	0.29	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	3.5
7433	Stearns Co., MN	06/00/99	<.05	<.20	<.20	--	<.05	<.20	.56	--	<.05	--	--	<.05	--	--	<.05	.63	6.9
Nebraska Platte River study (IVL)																			
410322096191701	Sarpy Co., NE	05/27/96	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	<.20	<.20
		05/28/96	.17	<.20	<.20	--	.05	<.20	<.20	--	--	--	--	--	--	--	.36	<.20	<.20
		06/03/96	1.2	<.20	<.20	--	.48	<.20	<.20	--	--	--	--	--	--	--	2.8	<.20	<.20
		04/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.26	<.20
		06/01/97	.19	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.41	.26	<.20
		06/26/97	.17	.34	.34	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.59	.28	.23
		08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.24	<.20
		05/04/98	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	.08	.42	<.20
		05/20/98	.20	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.69	.39	<.20
		05/21/98	.19	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.52	.39	<.20
410322096191701	Sarpy Co., NE	05/30/98	.37	.38	.49	--	.09	.34	.25	--	--	--	--	--	--	--	1.7	.44	.27
		05/31/98	.33	.30	.39	--	.09	.34	.21	--	--	--	--	--	--	--	1.8	.45	.29
		06/01/98	.09	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.33	<.20	<.20
		06/02/98	<.05	.42	.48	--	<.05	.43	.26	--	--	--	--	--	--	--	<.05	.60	.47
		06/03/98	.18	.46	.51	--	<.05	.48	.29	--	--	--	--	--	--	--	1.4	.62	.48
410254096185501	Sarpy Co., NE	06/16/95	.13	<.20	<.20	--	.08	<.20	<.20	--	--	--	--	--	--	--	.59	<.20	<.20
		04/14/97	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	.10	.27	<.20
		06/01/97	.46	<.20	.37	--	.11	.24	.21	--	--	--	--	--	--	--	1.2	.32	.24
		06/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	<.20	.35

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Nebraska Platte River study (IVL)—Continued																			
410254096185501	Sarpy Co., NE	06/26/97	0.49	<0.20	<0.20	--	0.10	<0.20	<0.20	--	--	--	--	--	--	--	1.3	<0.20	<0.20
		08/04/97	.06	<.20	.39	--	<.05	<.20	.23	--	--	--	--	--	--	--	.50	.22	.27
		05/04/98	<.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.11	.46	<.20
		05/20/98	.19	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	.69	.41	<.20
		05/21/98	.16	<.20	<.20	--	<.05	.29	<.20	--	--	--	--	--	--	--	.48	.51	<.20
		05/21/98	.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	<.20	<.20
		05/22/98	.23	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.64	.33	<.20
		05/23/98	.15	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	.64	.29	<.20
		05/24/98	.14	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.70	.35	<.20
		05/30/98	.35	.25	.43	--	.08	.32	.21	--	--	--	--	--	--	--	1.6	.39	.24
		05/31/98	.06	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.29	<.20	<.20
		06/01/98	.29	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.28	<.20	<.20
		06/03/98	.16	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	1.2	<.20	<.20
		06/09/99	1.0	.51	1.3	--	.24	.27	.39	--	--	--	--	--	--	--	2.1	.43	.42
New Jersey public supply wells (ABN/PSG)																			
393104075122201	Cumberland Co., NJ	06/12/97	<.05	<.20	<.20	--	<.05	.45	<.20	--	--	--	--	--	--	--	.99	2.6	.70
		06/12/97	<.05	<.20	<.20	--	<.05	.53	<.20	--	--	--	--	--	--	--	.98	3.0	.81
		06/24/97	<.05	<.20	<.20	--	<.05	.40	<.20	--	--	--	--	--	--	--	.79	3.4	.86
		06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/04/97	<.05	<.20	<.20	--	<.05	.99	.37	--	--	--	--	--	--	--	.08	5.7	1.6
393104075122204	Cumberland Co., NJ	09/04/97	<.05	<.20	<.20	--	<.05	.65	<.20	--	--	--	--	--	--	.89	9.4	2.0	
393532075101201	Salem Co., NJ	06/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	<.20	<.20	
393946074582901	Gloucester Co., NJ	05/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	<.20	<.20	
394243075051401	Cumberland Co., NJ	05/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	<.20	<.20	
		05/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	<.20	<.20	

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New Jersey public supply wells (ABN/PSG)—Continued																			
394256075101001	Gloucester Co., NJ	09/16/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
404936073032601	Suffolk Co., NJ	06/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
CU 1	Gloucester Co., NJ	08/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 1	Camden Co., NJ	07/31/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 2	Camden Co., NJ	07/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 3	Camden Co., NJ	07/29/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 4	Gloucester Co., NJ	08/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	<.20	<.20
DB 5	Gloucester Co., NJ	07/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 6	Gloucester Co., NJ	08/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 7	Camden Co., NJ	08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
DB 9	Camden Co., NJ	08/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
392337075022302	Cumberland Co., NJ	03/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
392415075014601	Cumberland Co., NJ	03/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392439075124501	Cumberland Co., NJ	03/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392523075151901	Cumberland Co., NJ	03/01/01	--	<.05	<.05	--	--	.48	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392640075132801	Cumberland Co., NJ	03/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392640075132801	Cumberland Co., NJ	02/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392650075133101	Cumberland Co., NJ	03/02/01	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392744075015801	Cumberland Co., NJ	03/07/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392811075023601	Cumberland Co., NJ	03/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392816075012101	Cumberland Co., NJ	03/07/01	--	.06	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
392853075005801	Cumberland Co., NJ	03/07/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
393208075024501	Cumberland Co., NJ	03/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)																			
403920073353001	Nassau Co., NY	08/02/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
404016073371901	Nassau Co., NY	07/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404131073211301	Suffolk Co., NY	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404132073383302	Nassau Co., NY	08/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404149073383201	Nassau Co., NY	07/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404158073225802	Suffolk Co., NY	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404237073420401	Nassau Co., NY	08/12/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404318073055001	Suffolk Co., NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404319073055001	Suffolk Co., NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404319073055101	Suffolk Co., NY	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404319073055102	Suffolk Co., NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404320073305602	Nassau Co., NY	07/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404339073090501	Suffolk Co., NY	07/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404339073090502	Suffolk Co., NY	07/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404339073090601	Suffolk Co., NY	07/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404339073090602	Suffolk Co., NY	11/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.27
404339073090901	Suffolk Co., NY	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404340073090401	Suffolk Co., NY	07/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404345073273101	Nassau Co., NY	07/20/99	<.05	.31	.59	--	<.05	.26	<.20	--	<.05	--	--	<.05	--	--	<.05	.56	.46
		11/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404418073095001	Suffolk Co., NY	06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404433073244905	Suffolk Co., NY	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404442073240503	Suffolk Co., NY	12/02/99	<.05	<.20	<.20	--	<.05	<.20	2.5	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
404532073420901	Nassau Co., NY	07/28/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
404534073163101	Suffolk Co., NY	09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404555073240501	Suffolk Co., NY	07/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404620073383401	Nassau Co., NY	07/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404707073234201	Suffolk Co., NY	05/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404716073131602	Suffolk Co., NY	06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404717073201301	Suffolk Co., NY	05/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404719073205701	Suffolk Co., NY	06/03/98	<.05	<.20	<.20	--	<.05	.46	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404739073392101	Nassau Co., NY	08/11/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404804073411301	Nassau Co., NY	07/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404832073333203	Nassau Co., NY	08/09/99	<.05	<.20	<.20	--	<.05	.28	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404900072451701	Suffolk Co., NY	06/29/98	<.05	<.20	<.20	--	.13	40	23	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404908073278102	Suffolk Co., NY	07/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404922072451701	Suffolk Co., NY	06/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.5	1.7
404922073292501	Nassau Co., NY	07/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
404936073032601	Suffolk Co., NY	06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404945073174501	Suffolk Co., NY	06/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404953073170501	Suffolk Co., NY	06/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
040495307317050	Suffolk Co., NY	06/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404953073170503	Suffolk Co., NY	06/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
404955073170401	Suffolk Co., NY	08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.22
404955073170403	Suffolk Co., NY	02/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
404955073170901	Suffolk Co., NY	02/02/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
405005073233701	Suffolk Co., NY	06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
405010073414401	Nassau Co., NY	07/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405011073355901	Nassau Co., NY	07/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405030073180601	Suffolk Co., NY	05/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405111072485401	Suffolk Co., NY	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405111073065801	Suffolk Co., NY	06/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405122073420401	Nassau Co., NY	07/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405124072353603	Suffolk Co., NY	01/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	<.05	--	--	<.05	<.20	<.20
		08/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.80	.28
405128073370504	Nassau Co., NY	07/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405205073363401	Nassau Co., NY	07/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405243073102301	Suffolk Co., NY	06/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405259073010301	Suffolk Co., NY	06/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405311072263001	Suffolk Co., NY	12/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405349072234801	Suffolk Co., NY	06/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405400072263901	Suffolk Co., NY	12/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405411072232701	Suffolk Co., NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	4.0	3.5
405413072232901	Suffolk Co., NY	08/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.43	3.0	2.2
405413072232902	Suffolk Co., NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405419072232901	Suffolk Co., NY	02/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405507072382101	Suffolk Co., NY	08/03/99	<.05	<.20	<.20	--	<.05	.27	<.20	--	<.05	--	--	<.05	--	--	<.05	1.3	<.20
405512072395202	Suffolk Co., NY	06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
405516072183401	Suffolk Co., NY	07/02/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
405519073190701	Suffolk Co., NY	02/03/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.65	<.20
405520072380001	Suffolk Co., NY	08/25/99	<.05	.23	.36	--	<.05	<.20	.60	--	<.05	--	--	<.05	--	--	<.05	.81	.49
405522072381001	Suffolk Co., NY	08/03/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.44	<.20
405522072381002	Suffolk Co., NY	08/03/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405535072000002	Suffolk Co., NY	06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405535072000003	Suffolk Co., NY	06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.3	2.1
405535072000004	Suffolk Co., NY	06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.75	6.2	5.2
		09/08/99	<.05	<.20	<.20	--	<.05	1.0	<.20	--	<.05	--	--	<.05	--	--	86	<.20	<.20
405547072365001	Suffolk Co., NY	07/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405554072352201	Suffolk Co., NY	07/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405607073021301	Suffolk Co., NY	08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405626072442701	Suffolk Co., NY	05/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405640072200501	Suffolk Co., NY	08/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.9	.90
405652072590001	Suffolk Co., NY	08/24/99	<.05	<.20	<.20	--	.55	3.8	5.1	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405655072334702	Suffolk Co., NY	05/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.86	30	25
		08/31/99	<.05	<.20	<.20	--	<.05	20	<.20	--	<.05	--	--	<.05	--	--	.64	13	<.20
405656072443201	Suffolk Co., NY	05/14/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.0	.91
405701072531101	Suffolk Co., NY	02/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/24/99	<.05	.24	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.84	<.20
405701072531102	Suffolk Co., NY	02/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405715072360201	Suffolk Co., NY	05/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/12/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405715072360202	Suffolk Co., NY	08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
405715072360203	Suffolk Co., NY	08/18/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
405716072413301	Suffolk Co., NY	06/10/98	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.10	6.0	3.7
		08/31/99	<.05	<.20	<.20	--	<.05	.72	<.20	--	<.05	--	--	<.05	--	--	1.6	2.5	2.6
405720072103001	Suffolk Co., NY	12/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405720072122701	Suffolk Co., NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405720072122702	Suffolk Co., NY	02/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405720072122703	Suffolk Co., NY	02/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
405720072122704	Suffolk Co., NY	07/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
4057200721227050	Suffolk Co., NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405730072364101	Suffolk Co., NY	06/25/98	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	<.05	1.4	.53
		09/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
405805072403701	Suffolk Co., NY	06/04/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	7.4	6.4
		06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.17	8.6	7.6
405807072121001	Suffolk Co., NY	09/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.22	<.20
405924072303401	Suffolk Co., NY	08/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.24	17	13
405935072305601	Suffolk Co., NY	08/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.66	7.1	5.8
405937072342801	Suffolk Co., NY	12/07/99	<.05	<.20	<.20	--	<.05	1.0	<.20	--	<.05	--	--	<.05	--	--	<.05	1.3	<.20
405942072341001	Suffolk Co., NY	12/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	2.4	2.4
405944072340701	Suffolk Co., NY	12/07/99	<.05	<.20	<.20	--	<.05	.78	<.20	--	<.05	--	--	<.05	--	--	<.05	1.9	3.0
410126072273301	Suffolk Co., NY	10/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410126072273601	Suffolk Co., NY	10/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410127072273501	Suffolk Co., NY	10/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410150072285101	Suffolk Co., NY	11/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
410152072284901	Suffolk Co., NY	11/22/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
410208072242501	Suffolk Co., NY	01/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410222072310001	Suffolk Co., NY	08/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	2.1	14	10
410226072295901	Suffolk Co., NY	08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410226072295902	Suffolk Co., NY	08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410226072295903	Suffolk Co., NY	08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.16	.55	.46
410252072275001	Suffolk Co., NY	08/13/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
410337072264401	Suffolk Co., NY	05/21/98	<.05	<.20	<.20	--	.11	<.20	<.20	--	<.05	--	--	--	--	--	.79	3.2	2.9
		01/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	3.8	2.2
		08/26/99	<.05	<.20	<.20	--	<.05	1.0	<.20	--	<.05	--	--	<.05	--	--	.60	4.6	<.20
410337072264402	Suffolk Co., NY	01/27/99	<.05	<.20	<.20	--	.08	<.20	<.20	--	--	--	--	--	--	--	.55	2.9	2.2
410338072264401	Suffolk Co., NY	01/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.1	.89
		08/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
410403072263701	Suffolk Co., NY	01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	2.0	1.6
410414072265001	Suffolk Co., NY	01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410415072260701	Suffolk Co., NY	05/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.36	19	15
		01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.26	13	15
		08/26/99	<.05	<.20	<.20	--	<.05	<.20	.33	--	<.05	--	--	<.05	--	--	.35	8.9	16
410415072260702	Suffolk Co., NY	01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.31	<.20
410430072260901	Suffolk Co., NY	01/27/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.16	3.8	2.4
410728072210601	Suffolk Co., NY	01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
410730072213401	Suffolk Co., NY	01/06/00	<.05	<.20	198	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	1.5	3.4
410904072171201	Suffolk Co., NY	01/26/99	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	2.8	2.0
		08/26/99	<.05	<.20	<.20	--	<.05	.91	<.20	--	<.05	--	--	<.05	--	--	<.05	1.8	1.9

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Long Island, New York hydrologic study (LIN)—Continued																			
410904072171202	Suffolk Co., NY	01/26/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		08/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
410918072143001	Suffolk Co., NY	08/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
New York hydrologic study (PPN)																			
400000076000002	Orange Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
400000076000003	Sullivan Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	1.5	<.05
410659074093701	Rockland Co., NY	08/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
411301073515401	Westchester Co., NY	08/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
412815175235901	Wayne Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.15	3.6	1.4
		02/09/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.46	3.0	1.0
		02/07/01	--	<.05	<.05	--	--	.06	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	2.9	1.0
		04/24/01	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.2	1.0
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.1	1.1
413520073511201	Dutchess Co., NY	08/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
420406078241701	Cattaraugus Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.38	<.05
420647075584201	Broome Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
420850077030701	Steuben Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.24	<.05
420926079360001	Chautauqua Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
421820075235901	Delaware Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
422328073413304	Columbia Co., NY	08/04/99	<.05	<.05	<.05	--	<.05	1.4	<.05	--	--	--	--	--	--	--	<.05	2.3	.85
422633076020801	Cortland Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
422937076531401	Schyuler Co., NY	08/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
423001077300801	Steuben Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	.31	--	--	--	--	--	--	--	<.05	.63	1.9
		02/06/01	--	<.05	<.05	--	--	.12	.40	--	--	<.05	<.05	--	<.05	<.05	<.05	1.0	2.7
		04/24/01	--	<.05	<.05	--	--	.14	.30	--	--	<.05	<.05	--	<.05	<.05	<.05	1.0	3.0
		07/30/01	--	<.05	<.05	--	--	<.05	.12	--	--	<.05	<.05	--	<.05	<.05	<.05	.72	2.2
		10/30/01	--	<.05	<.05	<.05	--	.13	.24	<.05	--	<.05	<.05	--	<.05	<.05	--	.83	3.1

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
423001077300801	Steuben Co., NY	01/29/02	--	<0.05	<0.05	<0.05	--	0.10	0.23	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.80	2.7
423001078565401	Erie Co., NY	08/03/99	<0.05	<.05	<.05	--	<0.05	<.05	<.05	--	--	--	--	--	--	--	<0.05	<.05	<.05
423331076358501	Cayuga Co., NY	07/28/98	<.05	<.05	<.05	--	<.05	.52	<.05	--	--	--	--	--	--	--	<.05	.35	.34
423454076124001	Cortland Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
423919073553801	Albany Co., NY	08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
424025076321001	Cayuga Co., NY	01/11/00	<.05	.28	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	1.6	<.05
		02/07/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.78	.08
		04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.22	<.05
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.8	.35
424710073473801	Saratoga Co., NY	07/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		10/21/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
424724073472301	Saratoga Co., NY	02/05/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/10/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		10/21/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
424742074453201	Ostego Co., NY	02/05/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05
		04/24/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	<.05	.06	<.05
		08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.35	<.05
424909073591601	Saratoga Co., NY	02/05/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
424912073591801	Schenectady Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
425030074393901	Montgomery Co., NY	04/24/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	10	3.1
		05/22/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	9.5	2.8
		05/28/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.8	2.6

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425030074393901	Montgomery Co., NY	06/04/97	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	<0.05	11	3.6
		06/11/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	11	3.4
		06/11/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	12	3.9
		06/18/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	13	4.1
		06/19/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	10	2.9
		07/01/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	17	4.2
		07/16/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.08	17	5.6
		11/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	23	13
		11/10/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	13	3.3
		02/11/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	7.0	2.5
		03/05/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.2	3.7
		04/09/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.5	3.4
		05/14/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	7.7	2.7
		05/20/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	11	3.7
		05/26/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.2	4.2
		06/01/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.21	9.2	4.1
		06/02/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.05	16	3.8
		06/03/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.63	17	5.8
		06/08/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	10	3.1
		06/12/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	15	3.8
		06/14/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.08	12	4.1
		06/15/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.09	13	4.5
		06/23/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.8	2.5
		06/30/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	15	3.9
		07/01/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	19	6.7

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metol-lachlor (μg/L)	Metol-lachlor ESA (μg/L)	Metol-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425030074393901	Montgomery Co., NY	07/07/98	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	<0.05	14	3.8
		10/15/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.05	1.7	.53
		04/06/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.2	2.3
		07/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.24	8.0	3.7
		07/06/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.05	4.3	4.0
		07/07/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.10	6.5	1.8
		09/17/99	<.05	<.05	<.05	--	<.05	.72	<.05	--	--	--	--	--	--	--	.06	9.5	7.7
		09/18/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.6	3.0
		09/19/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.1	2.8
		09/20/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.0	2.4
425031074402302	Montgomery Co., NY	09/28/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.6	2.8
		10/01/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	9.1	2.8
		07/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	15	5.8
		07/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.57	<0.05
		04/24/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	6.0	1.4
		05/22/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.0	1.1
		05/28/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.7	1.2
		06/04/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.2	2.0
		06/11/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.9	1.3
		06/18/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	8.6	1.9
425033074400001	Montgomery Co., NY	06/19/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	10	2.1
		07/01/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	10	2.9
		11/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	3.3	1.1
		11/10/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	6.4	1.6
		02/06/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	4.6	1.0
		02/11/98	<.05	<.05	<.05	--	<.05	.22	<.05	--	--	--	--	--	--	--	<.05	3.6	.78

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425041074393201	Montgomery Co., NY	03/05/98	<0.05	<0.05	<0.05	--	<0.50	<0.05	<0.05	--	--	--	--	--	--	--	<0.05	2.5	0.72
		04/09/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	4.2	1.0
		05/14/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	4.5	1.0
		05/20/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	6.6	1.4
		05/26/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.2	1.8
		06/01/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.15	6.4	1.6
		06/02/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.05	5.5	1.1
		06/03/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	7.5	6.3	3.9
		06/08/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.14	5.5	1.1
		06/15/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	21	17	11
		06/23/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.23	6.3	2.0
		06/30/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.52	.74	<.05
		07/01/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.08	10	2.9
		07/22/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.09	12	2.2
		04/06/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	3.9	1.4
		07/04/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.26	5.9	.30
		09/17/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.33	6.1	2.5
		09/18/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.09	6.2	2.7
		09/19/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	5.6	1.9
425045074394401	Montgomery Co., NY	07/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.09	11	3.2
425048074393401	Montgomery Co., NY	07/09/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.19	.75	<.05
425056076412201	Cayuga Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	.67	<.05
425142078020802	Genesee Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	1.5	.30
430503078104201	Genesee Co., NY	08/03/99	<.05	<.05	<.05	--	<.05	.44	<.05	--	--	--	--	--	--	--	<.05	1.3	.61

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)	
Federal-State Cooperative Studies—Continued																				
New York hydrologic study (PPN)—Continued																				
430527076453401	Wayne Co., NY	08/02/99	<0.05	<0.05	<0.05	--	<0.05	0.75	<0.05	--	--	--	--	--	--	--	<0.05	0.50	<0.05	
430647076552901	Village of Clyde public supply well, Wayne Co., NY	10/29/01	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05	
		10/30/01	--	<.05	<.05	<.05	--	.07	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	2.9	1.0	
431815076234001	Fulton Co., NY	01/29/02	--	<.05	<.05	<.05	--	.08	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	2.8	.96	
		06/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05	
		07/12/99	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	--	<.05	--	--
		08/02/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05	<.05
		09/14/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05	<.05
		10/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05	<.05
		10/18/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05	<.05
433418077353401	Steuben Co., NY	01/11/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05	
		08/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05	
		New York ground-water hydrologic study (PPG)																		
404237073420401	Nassau Co., NY	05/29/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
		09/03/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
410659074093701	Rockland Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
411301073515401	Westchester Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
411736074275101	Orange Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.30	<.05	
413119074150801	Orange Co., NY	06/27/00	--	<.05	<.05	--	--	.35	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.48	
413520073511201	Dutchess Co., NY	06/27/00	--	.31	<.05	--	--	<.05	<.05	--	--	--	--	--	<.05	<.05	--	.30	<.05	
414504074355301	Sullivan Co., NY	07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.62	.06	
420406078241701	Cattaraugus Co., NY	06/26/00	--	<.05	<.05	--	--	.23	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.42	<.05	
420647075584201	Broome Co., NY	06/26/00	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.33	<.05	
420850077030701	Steuben Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.06	
420926079360001	Steuben Co., NY	06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	<.05	

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York ground-water hydrologic study (PPG)—Continued																			
421404078023001	Allegheny Co., NY	06/26/00	--	<0.05	<0.05	--	--	0.29	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	2.9	0.17
421851075235901	Delaware Co., NY	06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	<.05
422328073413301	Columbia Co., NY	06/27/00	--	<.05	<.05	--	--	1.5	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.4	.82
422633076020801	Cortland Co., NY	06/26/00	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.37	.06
422937076531401	Schuyler Co., NY	06/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423001077300801	Steuben Co., NY	06/27/00	--	<.05	<.05	--	--	.22	.26	--	--	<.05	<.05	--	<.05	<.05	--	.62	1.7
		05/07/02	--	<.05	<.05	<0.05	--	.13	.38	<0.05	--	<.05	<.05	--	<.05	<.05	--	.95	3.6
		09/04/02	--	<.05	<.05	<.05	--	.10	.14	<.05	--	<.05	<.05	--	<.05	<.05	--	.69	1.9
		12/10/02	--	<.05	<.05	<.05	--	.10	.20	<.05	--	<.05	<.05	--	<.05	<.05	--	.92	.56
423001078565401	Erie Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
423418077353401	Steuben Co., NY	06/27/00	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.31	<.05
423454076124001	Cortland Co., NY	06/26/00	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.34	<.05
423919073553801	Albany Co., NY	06/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424025076321001	Cayuga Co., NY	05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	<.05	<.05	--	.72	.22
		06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.40	<.05
		07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.89	.25
		08/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.2	.52
		09/27/00	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.5	.53
		05/08/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.24	<.05
		09/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.1	.23
		12/10/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.3	.12
424710073473801	Saratoga Co., NY	06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	<.05	<.05	--	.56	<.05
		08/29/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		08/29/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)		
Federal-State Cooperative Studies—Continued																					
New York ground-water hydrologic study (PPG)—Continued																					
424710073473801	Saratoga Co., NY	09/26/00	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.08	<0.05		
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		10/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05		
		02/12/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		08/28/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.05	<.05		
424724073472301	Saratoga Co., NY	06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	<.05	<.05	--	<.05	<.05		
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		08/29/00	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		09/26/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
424742074453001	Otsego Co., NY	10/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05		
		02/12/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05		
		06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.36	<.05		
		424748073503401	Schenectady Co., NY	08/26/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		424836074005501	Schenectady Co., NY	09/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424909073591601	Schenectady Co., NY	05/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.31	<.05		
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05		
		08/29/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	<.05		
		09/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	.05		
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05		
424909073591603	Schenectady Co., NY	11/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05		
		02/12/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05		
		05/21/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.16	<.05		
		08/21/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.10	<.05		
		05/17/00	--	<.05	<.05	--	--	.21	<.05	--	--	--	--	--	--	--	--	.29	.05		
		06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	<.05	<.05	--	.09	<.05		

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York ground-water hydrologic study (PPG)—Continued																			
424909073591603	Schenectady Co., NY	06/26/00	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	--	--	--	<0.05	<0.05	--	0.35	<0.05
424918073591001	Schenectady Co., NY	08/21/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<0.05	<0.05	--	<.05	<.05	--	.09	<.05
425052073585102	Schenectady Co., NY	08/26/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425056076412201	Cayuga Co., NY	06/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.71	.06
425111074010501	Schenectady Co., NY	08/26/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
425142078020802	Genesee Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.88	.10
425211074021605	Schenectady Co., NY	08/21/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
425342075382601	Madison Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.21	<.05
425550074330701	Mongomery Co., NY	09/09/02	--	<.05	<.05	<.05	--	.12	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.93	.92
425553075283601	Madison Co., NY	09/25/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425747075144501	Oneida Co., NY	09/25/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425824075140101	Oneida Co., NY	09/25/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
425853077240801	Ontario Co., NY	06/26/00	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	<.05
425916074175101	Montgomery Co., NY	09/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425957074412101	Montgomery Co., NY	09/09/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430047075003001	Herkimer Co., NY	09/11/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430107074591301	Herkimer Co., NY	09/11/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.08	.10
430503078104201	Genesee Co., NY	06/27/00	--	<.05	<.05	--	--	.61	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	.56
430212075034901	Herkimer Co., NY	09/11/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430527076453401	Wayne Co., NY	06/27/00	--	<.05	<.05	--	--	.72	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.46	.05
430647076552901	Wayne Co., NY	05/15/00	--	<.05	<.05	--	--	.24	<.05	--	--	--	--	--	--	--	--	2.6	1.0
		06/30/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.5	.89
		07/25/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.6	1.1
		08/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.1	1.1
		09/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.0	1.1

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York ground-water hydrologic study (PPG)—Continued																			
430655075240001	Oneida Co., NY	09/04/02	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
		09/23/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
430848074581301	Herkimer Co., NY	09/16/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
431353075041801	Herkimer Co., NY	09/16/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
431815076234001	Oswego Co., NY	06/27/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.23	<.05
431832075083501	Oneida Co., NY	09/18/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
432004075105101	Oneida Co., NY	09/18/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
Wisconsin Department of Agriculture (WDA)																			
13C-1	Dane Co., WI	10/18/99	--	6.4	<.05	--	--	7.2	.55	--	--	--	--	--	--	--	--	17	13
13J-1	Dane Co., WI	10/06/99	--	3.0	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	2.0	<.05
23I-3	Green Co., WI	10/07/99	--	<.05	.52	--	--	<.05	.14	--	--	--	--	--	--	--	--	40	22
27B2	Juneau Co., WI	10/11/99	--	2.5	1.0	--	--	.75	<.05	--	--	--	--	--	--	--	--	14	.24
29L1	Juneau Co., WI	10/14/99	--	2.8	<.05	--	--	1.2	<.05	--	--	--	--	--	--	--	--	25	12
29L2	Juneau Co., WI	10/14/99	--	3.6	1.3	--	--	9.6	1.5	--	--	--	--	--	--	--	--	21	14
29L3	Juneau Co., WI	10/14/99	--	5.6	<.05	--	--	13	<.05	--	--	--	--	--	--	--	--	19	11
70G-1	Waushara Co., WI	10/20/99	--	<.05	<.05	--	--	33	15	--	--	--	--	--	--	--	--	.55	.28
AP729 PW	Juneau Co., WI	12/20/99	--	<.05	<.05	--	--	4.7	34	--	--	--	--	--	--	--	--	18	23
AP938 PW	Iowa Co., WI	11/10/99	--	<.05	<.05	--	--	3.5	.74	--	--	--	--	--	--	--	--	7.4	4.7
AR650, Well #10	Marathon Co., WI	04/18/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
AY376, Ellesworth Well #2	Pierce Co., WI	04/20/00	--	<.05	<.05	--	--	.55	1.3	--	--	<.05	<.05	--	--	--	--	.67	.57
AY379	Fond Du La Co., WI	04/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
BF366 Lodi	Columbia Co., WI	04/13/00	--	<.05	<.05	--	--	1.8	1.4	--	--	<.05	<.05	--	--	--	--	<.05	<.05
BF522 Madison	Dane Co., WI	04/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
BF597 Beaver Dam	Dodge Co., WI	04/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05

Table 5. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in ground-water samples, 1994–2002.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
Wisconsin Department of Agriculture (WDA)—Continued																			
FB394 PW	Dane Co., WI	01/11/00	--	3.4	1.9	--	--	1.8	1.5	--	--	--	--	--	--	--	--	7.3	5.6
FC326 ES	Columbia Co., WI	11/04/99	--	<.05	.19	--	--	5.7	.46	--	--	--	--	--	--	--	--	<.05	<.05
FC345 PW	Sauk Co., WI	01/26/00	--	<.05	<.05	--	--	.40	.37	--	--	--	--	--	--	--	--	2.8	2.4
FF907 PW	Dane Co., WI	11/18/99	--	<.05	<.05	--	--	2.3	.95	--	--	--	--	--	--	--	--	.57	<.05
FY106 PW	Adams Co., WI	01/26/00	--	<.05	<.05	--	--	9.0	1.5	--	--	--	--	--	--	--	--	2.8	2.4
GQ165 PW	Rock Co., WI	01/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	5.4	2.1
Hartland	Waukesha Co., WI	04/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.25	.27
IW1-4 MW	Iowa Co., WI	10/26/99	--	<.05	<.05	--	--	1.9	.22	--	--	--	--	--	--	--	--	12	.40
IW1-6 MW	Iowa Co., WI	10/26/99	--	<.05	<.05	--	--	.78	.38	--	--	--	--	--	--	--	--	21	14
IW1-7 MW	Iowa Co., WI	10/26/99	--	.69	<.05	--	--	5.9	1.8	--	--	--	--	--	--	--	--	42	32
IW2-1 MW	Iowa Co., WI	11/01/99	--	<.05	<.05	--	--	1.1	<.05	--	--	--	--	--	--	--	--	7.4	2.6
IW614 PW	Dodge Co., WI	11/18/99	--	<.05	<.05	--	--	.10	.16	--	--	--	--	--	--	--	--	.83	.35
IW616 PW	Dodge Co., WI	11/18/99	--	<.05	<.05	--	--	2.3	3.1	--	--	--	--	--	--	--	--	1.1	.57
IY461 PW	Columbia Co., WI	01/13/00	--	<.05	<.05	--	--	.12	<.05	--	--	--	--	--	--	--	--	1.1	.90
IY836 PW	Adams Co., WI	01/26/00	--	<.05	<.05	--	--	6.9	<.05	--	--	--	--	--	--	--	--	5.7	1.9
Janesville	Rock Co., WI	05/03/00	--	<.05	<.05	--	--	2.9	<.05	--	--	<.05	<.05	--	--	--	--	.67	<.05
Janesville Reservoir	Rock Co., WI	07/11/00	--	<.05	<.05	--	--	.80	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	<.05
JN1-2 MW	Juneau Co., WI	10/27/00	--	<.05	<.05	--	--	8.2	1.8	--	--	<.05	<.05	--	--	--	--	13	11
KP156 Adams	Adams Co., WI	04/14/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
LG796 Stevens Point	Portage Co., WI	04/12/00	--	<.05	<.05	--	--	.52	<.05	--	--	<.05	<.05	--	--	--	--	.29	.06
MC041 PW	Sauk Co., WI	01/26/00	--	<.05	<.05	--	--	3.8	<.05	--	--	--	--	--	--	--	--	<.05	<.05
SK5-1 MW	Sauk Co., WI	10/26/99	--	<.05	<.05	--	--	.12	.07	--	--	--	--	--	--	--	--	8.7	.61
Well #1	Chippewa Co., WI	04/20/00	--	<.05	<.05	--	--	4.4	<.05	--	--	<.05	<.05	--	--	--	--	4.6	.44
Well #2	Sauk Co., WI	04/18/00	--	<.05	<.05	--	--	.87	<.05	--	--	<.05	<.05	--	--	--	--	1.2	.22

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)																			
Sulfonylurea reconnaissance study (DBD)																			
04186500	Auglaize River near Fort Jennings, OH	06/17/98	1.3	4.0	4.2	--	0.14	2.2	<0.20	--	--	--	--	--	--	--	4.7	6.2	3.8
		07/08/98	.19	1.9	1.9	--	<.05	2.0	<.20	--	--	--	--	--	--	--	1.5	5.0	3.5
		05/28/02	.24	.44	.30	<0.05	<.05	.13	<.05	<0.05	0.08	0.06	<0.05	<0.05	<0.05	<0.05	.75	1.2	.33
		07/23/02	<.05	2.2	2.9	.57	<.05	.66	.71	.27	<.05	.14	.13	<.05	<.05	<.05	.17	1.3	.83
		10/30/02	<.05	.08	.08	<.05	<.05	.13	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	.25	.23
06882000	Big Blue River at Barneston, NE	05/15/98	1.0	<.20	<.20	--	2.8	.26	<.20	--	--	--	--	--	--	--	3.8	.38	.21
		06/09/98	.57	.61	1.2	--	8.0	2.7	4.3	--	--	--	--	--	--	--	10	1.6	1.8
		05/07/02	4.2	.44	.54	.27	.38	.17	.10	<.05	.72	<.05	<.05	.80	<.05	<.05	4.3	.40	.31
		06/15/02	.20	.23	.50	.19	.11	.29	.28	.07	.16	<.05	<.05	.08	<.05	.13	1.6	.34	.35
		10/04/02	<.05	.08	.08	<.05	<.05	.16	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	.10
06887000	Big Blue River near Manhattan, KS	06/04/98	.16	<.20	<.20	--	.35	.36	<.20	--	--	--	--	--	--	--	.74	.52	.33
		07/29/98	.27	.56	.79	--	.65	1.3	2.0	--	--	--	--	--	--	--	2.4	.96	1.4
03230500	Big Darby Creek at Darbyville, OH	06/03/02	.83	.26	.48	.22	<.05	.05	<.05	<.05	.48	.10	.09	<.05	<.05	<.05	3.8	.91	.46
		08/01/02	.05	.71	.92	.29	<.05	.11	<.05	<.05	<.05	.10	.06	<.05	<.05	<.05	.24	1.4	.68
		10/01/02	<.05	.57	.76	.28	<.05	.13	.07	<.05	<.05	.15	.14	<.05	<.05	<.05	.16	1.4	.90
06815000	Big Nemaha River at Falls City, NE	05/26/98	.36	<.20	<.20	--	.20	.30	<.20	--	--	--	--	--	--	--	1.5	.52	.42
		06/08/98	1.3	.46	.69	--	.85	.42	.42	--	--	--	--	--	--	--	3.1	.58	.43
		05/06/02	7.6	1.1	1.9	.77	.98	.19	.16	<.05	.29	.20	.23	.47	.06	.05	.98	.10	.07
		07/12/02	.07	.47	1.1	<.05	<.05	.13	.14	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	.26	.25
		10/04/02	<.05	.11	.14	<.05	<.05	.09	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	.08
06885500	Black Vermillion River near Frankfort, KS	05/05/98	<.05	<.20	<.20	--	.05	.22	<.20	--	--	--	--	--	--	--	.11	.35	.21
		06/09/98	<.05	<.20	<.20	--	1.1	1.2	1.4	--	--	--	--	--	--	--	8.8	1.2	1.3
		05/07/02	1.0	.10	.12	.07	1.8	.24	.17	.10	<.05	<.05	<.05	<.05	<.05	<.05	2.8	.41	.31
		08/17/02	<.05	<.05	<.05	<.05	<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	.14
		10/03/02	.28	.13	.25	<.05	.71	.29	.49	<.05	.08	<.05	<.05	<.05	<.05	<.05	.11	.10	.16

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																	
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)	
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																				
Sulfonylurea reconnaissance study (DBD)—Continued																				
03302800	Blue River at Fredricksburg, IN	05/27/98	0.40	0.49	0.28	--	<0.05	0.24	<0.20	--	--	--	--	--	--	--	1.1	1.0	0.26	
		07/08/98	.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.59	<.20	
		06/06/02	.82	.37	.69	0.26	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.1	.57	.32	
		08/21/02	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.07	
		09/27/02	<.05	.06	.09	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	.16	.11
03378000	Bonpas Creek at Browns, IL	05/23/98	8.4	1.5	2.3	--	.39	.50	<.20	--	--	--	--	--	--	--	14	1.2	1.1	
		07/07/98	.08	1.2	.92	--	<.05	.91	<.20	--	--	--	--	--	--	--	.93	2.6	1.9	
		06/06/02	.12	.09	.06	<.05	<.05	.12	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	1.1	.19	
		06/25/02	1.5	.87	1.6	.59	<.05	.05	<.05	<.05	.07	<.05	<.05	.77	.08	.18	5.4	1.5	1.2	
		09/25/02	.07	.29	.45	.16	<.05	.06	<.05	<.05	<.05	.06	<.05	.13	.08	.13	.28	.47	.58	
06609500	Boyer River at Logan, IA	05/22/98	3.9	2.1	2.6	--	.41	.70	<.20	--	--	--	--	--	--	--	10	1.7	1.9	
		06/09/98	.64	.68	.82	--	<.05	.20	<.20	--	--	--	--	--	--	--	2.0	.76	.53	
		05/29/02	4.5	.56	.92	<.05	<.05	.06	<.05	<.05	<.05	3.6	.07	.08	.08	<.05	<.05	3.0	.48	.28
		06/11/02	1.3	.41	.86	.20	<.05	<.05	<.05	<.05	.75	.09	.09	.25	<.05	<.05	9.5	.87	.80	
		11/01/02	<.05	.06	.06	<.05	<.05	.09	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	.59	.17	
06904010	Chariton River near Rathburn, IA	06/04/98	.13	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.15	.81	.38	
		06/29/98	.23	.33	.25	--	<.05	.22	<.20	--	--	--	--	--	--	--	.34	.76	.51	
03157000	Clear Creek near Rockbridge, OH	06/10/98	<.05	.50	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.16	.91	.28	
		06/30/98	.19	4.2	3.9	--	<.05	.81	<.20	--	--	--	--	--	--	--	1.1	3.7	2.3	
		06/05/02	.83	.87	.93	.40	<.05	<.05	<.05	<.05	.05	.14	.06	<.05	<.05	<.05	.24	.81	.24	
		07/29/02	<.05	.13	.07	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.38	.07	
		10/26/02	<.05	.11	.07	<.05	<.05	.08	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.49	.12	
05317000	Cottonwood River near New Ulm, MN	05/26/98	.09	.40	<.20	--	<.05	.48	<.20	--	--	--	--	--	--	--	.07	1.3	.36	
		07/21/98	<.05	.65	.28	--	<.05	.79	<.20	--	--	--	--	--	--	--	.20	1.6	.46	
		07/21/98	<.05	.63	<.20	--	<.05	.78	<.20	--	--	--	--	--	--	--	.20	1.4	.43	
		05/30/02	.06	.21	.11	<.05	<.05	.17	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.83	.09	
		06/25/02	.24	1.3	1.1	.32	<.05	.15	<.05	<.05	.18	.22	.11	<.05	<.05	<.05	.13	.93	.22	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
05317000	Cottonwood River near New Ulm, MN	10/04/02	<0.05	0.12	0.08	<0.05	<0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.06
06890100	Delaware River near Muscotah, KS	05/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.38	<.20
		06/10/98	.09	.36	<.20	--	.41	.37	<.20	--	--	--	--	--	--	--	1.5	.83	.61
		05/07/02	2.2	.83	1.1	.52	.51	.27	.32	.21	.70	.09	<.05	.25	<.05	<.05	2.5	.59	.51
		06/27/02	.84	1.1	1.9	.85	.20	.30	.30	.23	.27	.16	.17	.16	.13	.18	.85	.64	.59
		09/19/02	.28	.08	.13	<.05	<.05	.08	.07	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	.15	.14
05480500	Des Moines River at Fort Dodge, IA	05/16/98	12	1.8	<.20	--	<.05	.52	<.20	--	--	--	--	--	--	--	5.1	2.1	1.3
		06/12/98	.11	1.5	.65	--	<.05	.58	<.20	--	--	--	--	--	--	--	.22	4.4	.86
		05/17/02	.29	.28	.21	<.05	<.05	.11	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	1.8	.16
		06/13/02	.47	.66	.95	.22	<.05	.08	<.05	<.05	.05	<.05	<.05	.06	<.05	<.05	.52	1.8	.35
		10/30/02	<.05	.27	.15	<.05	<.05	.21	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	2.0	.20
05476000	Des Moines River at Jackson, MN	05/26/98	.39	.71	.66	--	<.05	.37	<.20	--	--	--	--	--	--	--	.07	2.0	.49
		08/01/98	<.05	1.5	1.2	--	<.05	.93	<.20	--	--	--	--	--	--	--	.13	5.0	1.2
		05/31/02	.05	.20	.19	<.05	<.05	.13	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.6	.14
		06/25/02	.08	.35	.34	.10	<.05	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.6	.14
		10/08/02	<.05	.14	.10	<.05	<.05	.25	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.55	.09
05540500	Dupage River near Shorwood, IL	06/09/98	.06	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.19	<.20	<.20
		07/29/98	<.05	1.4	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	.44	.36
		05/15/02	1.3	.21	.20	<.05	<.05	.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	.43	.35	.14
		06/27/02	<.05	.38	.34	.08	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.4	.61	.30
		09/25/02	<.05	.07	<.05	<.05	<.05	.10	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	.06
03371500	East Fork White River near Bedford, IN	05/28/98	4.4	1.7	1.9	--	.73	.67	.40	--	--	--	--	--	--	--	4.7	1.5	1.0
		07/06/98	.15	.88	.60	--	.16	.51	<.20	--	--	--	--	--	--	--	.74	1.2	.82
		06/06/02	1.2	.33	.66	.20	.18	.17	.10	.07	<.05	<.05	<.05	<.05	<.05	<.05	3.0	.50	.28
		07/23/02	<.05	.27	.24	<.05	<.05	.11	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.43	.28
		10/01/02	<.05	.11	.11	.05	<.05	.09	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	.29	.22

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
03328500	Eel River near Logansport, IN	05/21/98	2.8	<0.20	<0.20	--	0.06	0.53	<0.20	--	--	--	--	--	--	--	2.5	1.3	1.3
		06/30/98	.22	2.2	2.1	--	.86	1.2	.61	--	--	--	--	--	--	--	.52	1.4	.96
		06/05/02	.13	.16	.10	<0.05	<.05	.21	.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.10	.42	.11
		07/30/02	<.05	.09	.08	<.05	<.05	.19	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	.07
		12/10/02	<.05	<.05	<.05	<.05	<.05	.11	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	.06
05461390	Flood Creek near Powersville, MO	06/03/98	<.05	1.6	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	.18	9.9	1.7
05543500	Illinois River at Marseilles, IL	06/12/98	.98	1.7	1.6	--	.05	1.0	.61	--	--	--	--	--	--	--	1.2	1.8	1.5
		07/09/98	.13	1.6	1.5	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.50	2.1	1.1
05586100	Illinois River at Valley City, IL	06/18/98	.98	2.3	2.2	--	.06	.74	<.20	--	--	--	--	--	--	--	1.6	1.9	1.4
		08/12/98	<.05	.47	.30	--	<.05	.96	<.20	--	--	--	--	--	--	--	.09	1.5	.57
05465500	Iowa River at Wapello, IA	05/27/98	.43	.88	.43	--	.05	1.1	<.20	--	--	--	--	--	--	--	.65	4.0	.85
		06/19/98	.38	1.7	1.3	--	<.05	.98	<.20	--	--	--	--	--	--	--	1.4	2.7	1.2
05449500	Iowa River near Rowan, IA	06/02/98	.05	.76	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.15	7.0	1.1
		06/23/98	.63	1.5	1.3	--	<.05	.88	<.20	--	--	--	--	--	--	--	1.6	3.2	1.4
05526000	Iroquois River near Chebanse, IL	06/10/98	.22	.90	.55	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.75	4.6	1.4
		07/08/98	.09	1.2	.89	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.91	2.9	1.5
		06/06/02	.15	.54	.21	.06	<.05	.97	.09	.10	.05	.07	<.05	<.05	<.05	<.05	.09	2.4	.56
		06/28/02	.17	1.0	.94	.29	<.05	.42	.05	<.05	.21	.21	.15	<.05	<.05	<.05	.25	2.1	.64
		09/25/02	<.05	.63	.25	<.05	<.05	1.8	.17	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	2.3	.83
05592100	Kaskaskia River near Cowden, IL	05/20/98	.33	1.1	.34	--	<.05	.36	<.20	--	--	--	--	--	--	--	.41	2.5	.79
		07/08/98	.77	1.7	1.5	--	<.05	.63	<.20	--	--	--	--	--	--	--	1.2	2.5	1.2
		05/29/02	5.3	.58	.57	.43	<.05	<.05	<.05	<.05	.37	<.05	<.05	<.05	<.05	<.05	4.6	.75	.30
		06/25/02	.89	.64	.66	.32	<.05	.05	<.05	<.05	.08	<.05	<.05	<.05	<.05	<.05	1.1	.92	.39
		09/25/02	.23	.37	.54	.18	<.05	.05	.05	<.05	.05	.07	<.05	<.05	<.05	<.05	.44	.47	.30

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
03240000	Little Miami River near Oldtown, OH	06/10/98	<0.05	0.24	<0.20	--	<0.05	0.31	<0.20	--	--	--	--	--	--	--	0.10	1.1	0.28
		06/30/98	<.05	.78	.33	--	<.05	.51	<.20	--	--	--	--	--	--	--	.23	1.7	.58
		06/05/02	.94	.14	.10	<0.05	<.05	.15	<.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.13	.88	.18
		07/17/02	<.05	.10	<.05	<.05	<.05	.17	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	.80	.19
		10/27/02	<.05	.28	.30	.06	<.05	.19	.08	.07	<.05	<.05	<.05	<.05	<.05	<.05	.25	1.3	.70
06606600	Little Sioux River at Correctionville, IA	05/27/98	.39	.68	.53	--	<.05	.32	<.20	--	--	--	--	--	--	--	.36	1.7	.53
		06/18/98	.23	1.2	1.2	--	<.05	.33	<.20	--	--	--	--	--	--	--	.37	1.5	.51
		05/17/02	.32	.21	.13	<.05	<.05	.13	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	1.1	.10
		06/11/02	.26	.28	.54	.12	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.67	<.05	<.05	.59	.71	.22
		10/31/02	<.05	.11	.05	<.05	<.05	.17	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.79	.11
05584500	La Moine River at Colmar, IL	05/21/98	9.8	.75	.55	--	.05	.20	<.20	--	--	--	--	--	--	--	1.4	.75	.29
		06/29/98	.36	1.6	1.5	--	<.05	.61	<.20	--	--	--	--	--	--	--	.78	1.2	.95
06884000	Little Blue River near Fairbury, NE	05/12/98	.05	<.20	<.20	--	.13	<.20	<.20	--	--	--	--	--	--	--	.13	<.20	<.20
		06/08/98	<.05	<.20	<.20	--	<.05	.52	.69	--	--	--	--	--	--	--	.14	.40	.34
		05/07/02	6.4	.19	.28	.12	.98	.07	.07	<.05	4.7	.11	.11	.27	<.05	<.05	5.8	.24	.20
		06/13/02	.99	.47	1.1	.39	1.7	.23	.29	.19	1.0	.05	.08	<.05	<.05	<.05	5.4	.78	.87
		10/02/02	.06	.30	.48	.16	<.05	.09	.06	.06	<.05	<.05	.05	<.05	<.05	<.05	.21	.28	.41
05320270	Little Cobb River near Beauford, MN	05/18/98	2.1	1.9	<.20	--	.13	.99	<.20	--	--	--	--	--	--	--	.55	3.5	.99
		08/17/98	<.05	2.0	.59	--	<.05	2.0	.24	--	--	--	--	--	--	--	<.05	4.7	.76
		06/06/02	.38	1.4	1.5	.29	<.05	.70	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	1.9	.26
		06/27/02	.12	1.5	1.1	.36	<.05	.30	.05	<.05	.06	.07	<.05	<.05	<.05	<.05	.05	1.8	.23
		10/02/02	<.05	.78	.51	<.05	<.05	.54	.20	<.05	<.05	.08	.06	<.05	<.05	<.05	<.05	1.2	.31
03381495	Little Wabash River at Carmi, IL	05/23/98	3.8	.78	.65	--	3.8	.61	.51	--	--	--	--	--	--	--	14	.94	.86
		07/09/98	.08	.88	.86	--	.30	1.4	<.20	--	--	--	--	--	--	--	1.7	2.8	2.8
		06/06/02	.18	.09	.14	<.05	<.05	.11	<.05	<.05	.22	<.05	<.05	<.05	<.05	<.05	1.3	.68	.28
		06/25/02	1.3	.76	1.4	.75	<.05	.07	<.05	<.05	.16	<.05	.06	<.05	<.05	<.05	4.0	1.4	1.3
		09/25/02	<.05	.17	.33	.07	<.05	.08	.05	<.05	<.05	.08	.05	<.05	<.05	<.05	.16	.32	.39

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
05587000	Macoupin Creek near Kane, IL	06/06/02	0.36	0.37	0.26	0.13	<0.05	0.05	<0.05	<0.05	0.31	0.09	0.05	<0.05	<0.05	<0.05	0.27	0.76	0.16
		07/29/02	.14	.54	.98	.30	<.05	.05	<.05	<.05	.12	.08	.08	<.05	<.05	<.05	.74	.61	.50
		09/24/02	.05	.28	.49	.13	<.05	.05	<.05	<.05	.05	.10	.06	<.05	<.05	<.05	.27	.42	.44
03267900	Mad River at Eagle City, OH	06/10/98	<.05	<.20	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	<.05	.63	<.20
		06/30/98	<.05	.44	.22	--	<.05	.44	<.20	--	--	--	--	--	--	--	<.05	1.3	.50
		06/05/02	<.05	.10	.07	<.05	<.05	.18	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	.41	.10
		07/17/02	<.05	<.05	<.05	<.05	<.05	.18	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.31	.06
		10/27/02	<.05	.06	<.05	<.05	<.05	.17	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.39	.12
06800000	Maple Creek near Nickerson, NE	05/21/98	21	1.2	1.7	--	8.8	.38	.50	--	--	--	--	--	--	15	.50	.40	
		06/08/98	2.1	1.7	2.6	--	.05	.47	<.20	--	--	--	--	--	--	--	4.6	.59	.67
06607200	Maple River at Mapleton, IA	05/29/98	2.4	.45	.51	--	<.05	.24	<.20	--	--	--	--	--	--	--	1.9	.85	.67
		06/09/98	.19	.34	<.20	--	<.05	.30	<.20	--	--	--	--	--	--	--	2.3	1.4	.39
		05/29/02	<.05	.07	.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.29	.51	.12
		06/11/02	.17	.09	.18	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.1	.54	.22
		10/31/02	<.05	.07	.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.64	.16
05330000	Minnesota River near Jordan, MN	05/19/98	1.2	.95	.65	--	.07	.70	<.20	--	--	--	--	--	--	--	.36	1.8	.62
		06/26/98	.24	1.8	1.3	--	.09	1.5	.43	--	--	--	--	--	--	--	.41	2.7	.83
03327000	Mississinewa River at Peoria, IN	06/09/98	.45	.61	.50	--	<.05	.51	<.20	--	--	--	--	--	--	--	1.2	2.1	.82
		07/09/98	.74	1.6	1.6	--	.08	.70	<.20	--	--	--	--	--	--	--	2.5	2.2	1.5
05420500	Mississippi River at Clinton, IA	05/27/98	.25	.31	<.20	--	<.05	.42	<.20	--	--	--	--	--	--	--	.12	.73	.29
		07/01/98	.10	.65	.43	--	<.05	.66	<.20	--	--	--	--	--	--	--	.20	.86	.31
05331580	Mississippi River at Hastings, MN	05/20/98	.32	<.20	<.20	--	.05	.45	<.20	--	--	--	--	--	--	--	.14	.99	.34
		05/20/98	.38	<.20	<.20	--	.06	.46	<.20	--	--	--	--	--	--	--	.17	1.0	.32
		08/11/98	<.05	<.20	<.20	--	<.05	.62	<.20	--	--	--	--	--	--	--	<.05	.53	<.20
05587455	Mississippi River below Grafton, IL	06/02/98	.79	.82	.71	--	<.05	.64	<.20	--	--	--	--	--	--	--	1.1	2.0	.73
		06/15/98	.44	1.9	1.3	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.84	2.6	1.0

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
06770195	North Dry Creek at Kearney, NE	05/22/98	5.6	0.65	0.59	--	0.14	0.28	<0.20	--	--	--	--	--	--	--	3.0	0.51	0.34
		06/08/98	.18	1.3	1.5	--	.05	.53	<.20	--	--	--	--	--	--	--	.82	.56	.56
05472500	North Skunk River near Sigourney, IA	05/21/98	15	1.5	.95	--	<.05	.52	<.20	--	--	--	--	--	--	--	2.4	2.9	1.0
		05/13/02	3.1	.90	.94	0.62	.05	.19	.06	<0.05	1.5	0.31	0.26	<0.05	<0.05	<0.05	8.7	2.0	1.1
		07/08/02	.07	.63	.59	<.05	<.05	.07	<.05	<.05	.09	.12	.08	<.05	<.05	<.05	.39	.79	.28
		10/29/02	<.05	.22	.13	<.05	<.05	.32	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	1.8	.27
06817700	Nodaway River near Graham, MO	06/17/98	.12	.95	.63	--	<.05	.38	<.20	--	--	--	--	--	--	--	.93	1.6	.75
		08/19/98	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.05	.91	<.20
		05/14/02	.65	.34	.39	.27	<.05	.06	<.05	<.05	1.6	.23	.28	.21	<.05	<.05	3.0	.96	.57
		07/29/02	.08	.11	.17	<.05	<.05	.11	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.25	.34	.18
		10/04/02	.06	.12	.14	<.05	<.05	.12	.08	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	.25	.12
05472500	North Skunk River near Sigourney, IA	06/10/98	.35	1.4	1.3	--	.10	.91	<.20	--	--	--	--	--	--	--	2.4	3.9	1.6
		05/13/02	3.1	.90	.94	.62	.05	.19	.06	<.05	1.5	.31	.26	.06	<.05	<.05	8.7	2.0	1.1
		07/08/02	.07	.59	.63	.13	<.05	.07	<.05	<.05	.09	.12	.08	<.05	<.05	<.05	.39	.79	.28
		10/29/02	<.05	.17	.11	<.05	<.05	.23	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.5	.33
03303280	Ohio River at Cannelton Dam, OH	06/04/98	.14	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.23	<.20	<.20
		07/07/98	.06	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.30	<.20	.38
05455100	Old Man's Creek near Iowa City, IA	06/10/98	.57	2.0	1.5	--	.21	1.1	<.20	--	--	--	--	--	--	--	1.2	3.2	1.4
		06/30/98	.28	2.0	1.4	--	<.05	.80	<.20	--	--	--	--	--	--	--	.98	2.7	1.4
		05/13/02	2.2	1.0	.86	.44	.17	.33	<.05	<.05	.53	.10	.10	<.05	<.05	<.05	1.6	1.5	.33
		06/27/02	.05	.54	.32	.11	<.05	.29	<.05	<.05	<.05	.10	<.05	<.05	<.05	<.05	.25	1.4	.28
		10/30/02	<.05	.25	.06	<.05	<.05	.55	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.4	.15
03223000	Olentangy River at Claridon, OH	06/09/98	<.05	<.20	<.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	.67	1.9	.58
		06/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/04/02	.67	.59	.55	.17	<.05	.24	<.05	<.05	.07	.05	<.05	<.05	<.05	<.05	1.1	2.8	.72
		07/31/02	<.05	.27	.32	<.05	<.05	.23	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	.86	.30
		10/26/02	<.05	.18	.18	<.05	<.05	.20	.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	.06	.69	.33

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
03225500	Olentangy River near Delaware, OH	06/09/98	0.20	0.58	<0.20	--	<0.05	0.75	<0.20	--	--	--	--	--	--	--	1.5	3.2	1.2
		07/01/98	.53	2.9	3.2	--	<.05	1.3	<.20	--	--	--	--	--	--	--	4.1	5.3	4.8
		07/01/98	.41	2.4	2.9	--	<.05	1.1	.25	--	--	--	--	--	--	--	3.3	4.7	4.3
06805500	Platte River at Louisville, NE	05/22/98	2.8	1.2	1.6	--	2.2	.83	1.1	--	--	--	--	--	--	--	6.8	.92	1.1
		06/09/98	.65	1.1	1.5	--	.74	.72	.61	--	--	--	--	--	--	--	2.7	.92	1.1
05484500	Raccoon River at Van Meter, IA	05/17/98	.94	<.20	<.20	--	<.05	.49	<.20	--	--	--	--	--	--	--	2.9	2.3	1.2
		06/10/98	.32	1.5	1.2	--	<.05	.60	<.20	--	--	--	--	--	--	--	1.2	3.4	1.3
		05/17/02	.38	.47	.43	<0.05	<.05	.07	<.05	<0.05	0.13	0.06	<0.05	<0.05	<0.05	<0.05	.61	2.4	.47
05430500	Rock River at Afton, WI	06/12/02	.27	.49	.65	.17	<.05	<.05	<.05	<.05	.19	.07	.06	.20	<.05	<.05	.92	1.4	.35
		10/30/02	<.05	.20	.05	<.05	<.05	.10	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	2.5	.23
		06/17/98	.11	.60	<.20	--	<.05	.85	<.20	--	--	--	--	--	--	--	.07	.93	.41
		07/21/98	<.05	.76	.74	--	<.05	1.2	.25	--	--	--	--	--	--	--	<.05	.76	.42
		06/04/02	.08	.11	.08	<.05	<.05	.43	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	.80	.48	.23
06483000	Rock River at Luverne, MN	07/11/02	<.05	.36	.41	<.05	<.05	.70	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.59	.24
		09/20/02	<.05	.10	.10	<.05	<.05	.67	<.05	<.05	<.05	.07	<.05	<.05	<.05	<.05	<.05	.37	.10
		06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	1.7	<.20
		06/25/98	.05	<.20	.50	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.24	1.3	<.20
		04087240	Root River at Racine, WI	06/01/98	.14	<.20	<.20	--	<.05	<.20	.38	--	--	--	--	--	--	1.8	.69
08/04/98	<.05	<.20		<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20	
06/03/02	<.05	<.05		<.05	<.05	<.05	.10	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	.06	.64	.13	
07/26/02	<.05	.07		.05	<.05	<.05	.08	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	.51	.20	
09/03/02	<.05	<.05		<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	.26	.11	
06803000	Salt Creek at Roca, NE	05/15/98	.18	<.20	<.20	--	18	.59	<.20	--	--	--	--	--	--	--	124	1.5	1.0
		06/10/98	.81	1.3	2.2	--	1.6	2.8	1.0	--	--	--	--	--	--	--	12	5.2	6.4

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
05572000	Sangamon River at Monticello, IL	05/23/98	0.54	1.6	0.91	--	<0.05	0.72	<0.20	--	--	--	--	--	--	--	2.6	4.0	1.8
		08/05/98	<.05	1.6	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	.11	3.9	.71
05576500	Sangamon River at Riverton, IL	05/26/98	1.5	1.2	.95	--	.13	.46	<.20	--	--	--	--	--	--	--	1.7	1.6	1.0
		07/09/98	.07	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.33	<.20	<.20
03234500	Scioto River at Higby, OH	05/29/02	1.1	.66	.49	0.33	.13	.19	.08	<0.05	1.8	0.34	0.19	<0.05	<0.05	<0.05	.91	.91	.31
		07/17/02	<.05	.60	.26	<.05	<.05	.16	.10	<.05	.08	.10	.06	<.05	<.05	<.05	.13	.84	.14
		09/25/02	<.05	.23	.25	.06	<.05	.16	.09	<.05	<.05	.13	.05	<.05	<.05	<.05	.06	.43	.23
		06/04/98	.90	.57	.49	--	.05	.04	<.20	--	--	--	--	--	--	--	2.0	1.6	.59
		07/08/98	.22	1.1	1.1	--	<.05	.99	<.20	--	--	--	--	--	--	--	1.7	2.5	1.6
		06/04/02	.49	.48	.57	.24	<.05	.09	<.05	<.05	.18	.06	.05	<.05	<.05	<.05	.97	.86	.43
		07/30/02	.17	.58	.78	.25	<.05	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.35	.67	.34
03219500	Scioto River near Prospect, OH	10/28/02	<.05	.19	.22	.05	<.05	.09	.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	.59	.37	.25
		06/02/98	.83	2.4	.49	--	<.05	4.5	<.20	--	--	--	--	--	--	--	2.8	2.4	3.2
		06/29/98	.20	1.5	1.1	--	<.05	2.1	.21	--	--	--	--	--	--	--	4.2	5.1	3.3
		06/04/02	1.4	1.3	1.6	.80	<.05	.17	.06	<.05	.25	.13	.11	.09	<.05	<.05	2.6	2.2	.89
		07/31/02	<.05	.33	.25	<.05	<.05	.30	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	.55	.22
05594000	Shoal Creek near Breese, IL	10/01/02	.05	1.2	1.7	.67	<.05	.29	.17	.10	<.05	.10	.11	<.05	.07	.05	.44	2.3	1.8
		05/22/98	9.5	.77	.75	--	.21	.41	.33	--	--	--	--	--	--	--	7.6	.87	.66
		07/08/98	1.1	1.5	.80	--	<.05	.83	<.20	--	--	--	--	--	--	--	1.7	2.6	.95
		06/06/02	.52	.05	.08	<.05	.06	.13	<.05	<.05	.23	<.05	<.05	<.05	<.05	<.05	.97	.82	.27
		07/29/02	<.05	.10	.14	<.05	<.05	.20	.07	<.05	<.05	<.05	.05	<.05	<.05	<.05	.39	.83	.41
05474000	Skunk River at Augusta, IA	09/24/02	<.05	.09	.11	<.05	<.05	.09	.05	<.05	<.05	.08	<.05	<.05	<.05	<.05	.21	.48	.38
		06/18/98	.90	2.9	2.4	--	.06	1.0	<.20	--	--	--	--	--	--	--	2.9	4.6	2.1
		05/13/02	4.8	1.7	2.2	1.2	<.05	<.05	<.05	<.05	3.2	.45	.48	<.05	.09	.09	4.6	1.3	.93
		06/27/02	.32	.77	.90	.27	<.05	.19	<.05	<.05	.08	.08	.05	<.05	<.05	<.05	.20	1.3	.27
		10/29/02	<.05	.22	.13	<.05	<.05	.32	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	1.8	.27

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
05439500	South Branch Kishwaukee at Fairdale, IL	05/20/98	13	2.8	1.1	--	0.37	1.2	<0.20	--	--	--	--	--	--	--	9.6	5.0	2.1
		07/29/98	<.05	1.5	.39	--	<.05	3.0	<.20	--	--	--	--	--	--	--	.05	5.6	.81
		05/14/02	2.4	1.9	1.2	<0.05	<.05	.34	.11	<0.05	1.8	0.13	0.09	<0.05	<0.05	<0.05	4.1	3.1	.99
		08/02/02	<.05	.33	.16	<.05	<.05	.71	.08	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	1.5	.13
		09/25/02	<.05	.25	.12	<.05	<.05	.56	.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.1	.15
05569500	Spoon River at London Mills, IL	05/20/98	4.1	1.5	1.4	--	.20	.32	.27	--	--	--	--	--	--	--	4.3	1.9	.58
		07/01/98	.14	.86	.51	--	<.05	.35	<.20	--	--	--	--	--	--	--	.68	2.9	.79
		05/14/02	2.8	.78	.86	.54	<.05	<.05	<.05	<.05	2.4	.33	.28	.16	<.05	<.05	10	2.2	1.7
		07/30/02	<.05	.27	.26	.08	<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	.17	1.4	.27
		09/24/02	<.05	.09	.05	<.05	<.05	.21	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	1.4	.15
05340500	St. Croix River at St Croix Falls, WI	06/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/20/02	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		06/27/02	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		09/03/02	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
03362500	Sugar Creek near Edinburgh, IN	05/26/98	3.4	1.7	1.6	--	.12	.63	<.20	--	--	--	--	--	--	--	4.0	2.6	1.3
		07/20/98	.07	.64	.43	--	<.05	.39	<.20	--	--	--	--	--	--	--	4.1	1.5	1.0
		06/07/02	1.4	.30	.50	.15	<.05	.08	<.05	<.05	.63	.09	.08	<.05	<.05	<.05	1.3	.74	.29
		06/26/02	2.1	.41	.48	.16	<.05	.05	<.05	<.05	.09	<.05	<.05	<.05	<.05	<.05	6.7	.84	.66
		10/26/02	<.05	.19	.26	<.05	<.05	.11	.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.29	.17
04185000	Tiffin River at Stryker, OH	06/01/98	.24	1.3	1.0	--	.13	.70	<.20	--	--	--	--	--	--	--	.41	2.2	.79
		07/07/98	<.05	.32	<.20	--	<.05	.54	<.20	--	--	--	--	--	--	--	.10	.66	.33
		05/29/02	.33	.35	.24	<.05	<.05	.30	.05	<.05	.11	.05	<.05	<.05	<.05	<.05	.32	.60	.20
		07/23/02	<.05	.19	.17	<.05	<.05	.54	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.79	.24
		11/06/02	<.05	.06	<.05	<.05	<.05	.23	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.08

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
05411850	Turkey River near Eldorado, IA	05/14/02	0.27	0.75	0.17	<0.05	<0.05	1.1	<0.05	<0.05	0.11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	0.08
		06/24/02	.11	1.6	.76	.46	<.05	.99	<.05	<.05	.21	.22	.09	<.05	<.05	<.05	.06	1.2	.20
		10/29/02	<.05	.27	<.05	<.05	<.05	1.3	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.80	.06
05411600	Turkey River at Spillville, IA	06/02/98	.24	1.2	.40	--	<.05	2.1	<.20	--	--	--	--	--	--	--	.10	2.1	1.1
		06/12/98	1.3	5.0	4.3	--	.25	3.0	.96	--	--	--	--	--	--	--	.14	1.6	<.20
03338890	Vermilion River at Danville, IL	06/10/98	.36	1.3	.62	--	<.05	.59	<.20	--	--	--	--	--	--	--	.97	4.2	1.2
		07/16/98	<.05	.45	<.20	--	<.05	.66	<.20	--	--	--	--	--	--	--	.48	3.3	1.3
06880800	West Fork Big Blue River at Dorchester, NE	05/23/98	2.2	<.20	<.20	--	4.2	.58	<.20	--	--	--	--	--	--	--	12	.59	.42
		06/10/98	.83	.69	1.1	--	.57	.69	.67	--	--	--	--	--	--	--	3.9	.58	.72
		05/07/02	5.4	.39	.54	.18	.38	.12	.09	<.05	4.1	.15	.20	.39	<.05	<.05	<.05	.63	.65
		07/26/02	.05	.16	.27	<.05	.05	.27	.18	<.05	<.05	<.05	<.05	.10	<.05	<.05	.21	.28	.33
		10/04/02	<.05	.13	.17	.07	<.05	.15	.08	.06	<.05	<.05	<.05	<.05	<.05	<.05	.13	.35	.44
03378500	Wabash River at New Harmony, IN	05/27/98	2.0	.78	.80	--	.14	.35	<.20	--	--	--	--	--	--	--	1.9	.86	.65
		06/23/98	.98	2.3	2.0	--	.17	1.4	.26	--	--	--	--	--	--	--	4.2	3.3	2.0
06804000	Wahoo Creek at Ithaca, NE	05/15/98	1.8	<.20	<.20	--	4.9	.55	.66	--	--	--	--	--	--	--	16	.55	.76
		06/08/98	.33	.36	.47	--	.22	.41	.41	--	--	--	--	--	--	--	.80	.34	.41
		05/13/02	18	.65	1.3	.57	.34	.11	.05	.07	.53	<.05	<.05	.93	.07	<.05	1.5	.12	.11
		06/12/02	10	1.0	1.8	.79	.77	.15	.19	.07	1.6	.09	.10	1.6	.09	.08	3.0	.08	.13
		10/04/02	<.05	.20	.22	.08	<.05	.09	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	.12	.07	.07
05421000	Wapsipinicon River near Independence, IA	05/29/98	1.5	1.7	.85	--	.32	1.4	<.20	--	--	--	--	--	--	--	1.8	4.4	1.0
		06/12/98	1.2	3.0	2.4	--	.08	1.3	<.20	--	--	--	--	--	--	--	2.2	3.7	1.5
		05/14/02	.62	.83	.21	<.05	.08	1.3	.06	<.05	.33	<.05	<.05	<.05	<.05	<.05	.26	3.2	.29
		06/24/02	.42	1.8	1.2	.38	<.05	1.1	.10	<.05	.24	.25	.15	<.05	<.05	<.05	.39	3.4	.67
		10/29/02	<.05	.44	.15	<.05	<.05	2.2	.12	<.05	<.05	.07	<.05	<.05	<.05	<.05	.07	3.0	.35
05420680	Wapsipinicon River near Tripoli, IA	05/27/98	.33	2.8	1.1	--	.08	3.2	<.20	--	--	--	--	--	--	--	.54	12	2.5
		06/20/98	.36	2.2	1.3	--	.12	1.9	.39	--	--	--	--	--	--	--	2.0	4.2	2.0

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Sulfonylurea reconnaissance study (DBD)—Continued																			
03351000	White River near Nora, IN	05/28/98	1.4	0.97	0.80	--	<0.05	0.62	0.22	--	--	--	--	--	--	--	3.8	3.1	1.3
		07/01/98	.37	1.5	1.2	--	.09	.76	.20	--	--	--	--	--	--	--	2.3	3.5	2.0
03275000	Whitewater River near Alpine, IN	05/26/98	1.7	1.2	.76	--	1.1	.50	.55	--	--	--	--	--	--	--	1.4	.69	.47
		07/08/98	.13	.48	.35	--	.06	.58	.40	--	--	--	--	--	--	--	.71	.99	.50
		06/14/02	.98	.65	.94	0.51	6.0	.86	1.1	0.76	0.59	0.07	<0.05	<0.05	<0.05	<0.05	2.2	.41	.37
		06/28/02	.61	.93	1.2	.43	1.3	.79	.84	.36	.06	<.05	<.05	<.05	<.05	<.05	.92	.50	.43
		10/29/02	<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05
03333450	Wildcat Creek near Jerome, IN	05/21/98	1.3	.99	.65	--	<.05	.53	<.20	--	--	--	--	--	--	--	1.0	4.8	1.0
		06/30/98	.21	1.9	1.1	--	.22	1.2	.44	--	--	--	--	--	--	--	2.1	6.4	2.4
		05/30/02	1.6	.52	.50	.31	.05	.15	<.05	<.05	.15	.05	<.05	<.05	<.05	<.05	.60	2.5	.37
		08/19/02	<.05	.09	.13	<.05	<.05	.16	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	.99	.23
		09/20/02	<.05	.16	.23	.05	<.05	.15	.09	<.05	<.05	.08	<.05	<.05	<.05	.05	.09	.80	.37
03335000	Wildcat Creek near Lafayette, IN	05/20/98	.78	.85	.46	--	<.05	.44	<.20	--	--	--	--	--	--	--	2.1	3.1	.91
		07/01/98	.14	1.6	1.0	--	<.05	.72	<.20	--	--	--	--	--	--	--	1.2	3.7	1.8
		05/30/02	.38	.26	.19	.10	<.05	.14	.05	<.05	.10	.05	<.05	<.05	<.05	<.05	.30	1.4	.28
		07/23/02	<.05	.12	.09	<.05	<.05	.11	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	.52	.11
		11/12/02	<.05	.38	.45	<.05	<.05	.13	.08	<.05	<.05	.07	<.05	<.05	<.05	<.05	.07	.87	.48
05407000	Wisconsin River at Muscoda, WI	06/16/98	.05	<.20	<.20	--	<.05	.29	<.20	--	--	--	--	--	--	--	.15	<.20	<.20
		08/07/98	<.05	.26	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	<.05	.56	.21
		05/28/02	<.05	<.05	<.05	<.05	<.05	.23	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.17	.07
		06/27/02	.06	.05	.05	<.05	<.05	.18	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	.16	.07
		09/23/02	<.05	.07	.07	<.05	<.05	.22	.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	.15	.09
05464220	Wolf Creek near Dysart, IA	06/10/98	.64	1.9	1.6	--	<.05	1.2	<.20	--	--	--	--	--	--	--	1.8	6.3	1.9
		06/22/98	.68	1.3	1.1	--	<.05	.63	<.20	--	--	--	--	--	--	--	2.0	2.4	1.1

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)																			
04186500	Auglaize River near Ft. Jennings, OH	03/30/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.13	--	--
		06/28/94	<.05	--	--	--	1.3	--	--	--	--	--	--	--	--	--	4.1	--	--
		05/31/95	.26	<0.20	<0.20	--	.57	4.8	2.7	--	--	--	--	--	--	--	2.5	4.0	<0.20
04180000	Auglaize River at Lima, OH	06/28/94	<.05	--	--	--	1.4	--	--	--	--	--	--	--	--	--	3.7	--	--
06882000	Big Blue River at Barneston, NE	03/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/15/94	<.05	<.20	<.20	--	7.9	3.0	<.20	--	--	--	--	--	--	--	4.6	1.3	<.20
		06/26/95	1.3	<.20	<.20	--	20	<.20	<.20	--	--	--	--	--	--	--	19	<.20	<.20
06881000	Big Blue River near Crete, NE	06/12/95	<.05	--	--	--	7.1	--	--	--	--	--	--	--	--	--	7.5	--	--
		06/12/95	<.05	--	--	--	.91	--	--	--	--	--	--	--	--	--	1.1	--	--
03230500	Big Darby Creek at Darbyville, OH	03/28/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		06/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.34	--	--
		05/25/95	.18	<.20	<.20	--	<.05	2.7	<.20	--	--	--	--	--	--	--	1.1	3.4	<.20
		06/01/95	.10	<.20	<.20	--	<.05	3.0	<.20	--	--	--	--	--	--	--	.67	3.4	<.20
06815000	Big Nemaha River at Falls City, NE	03/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/15/94	1.0	<.20	<.20	--	8.1	3.1	<.20	--	--	--	--	--	--	--	8.2	1.5	<.20
		06/26/95	<.05	<.20	<.20	--	5.8	<.20	<.20	--	--	--	--	--	--	--	16	<.20	<.20
06885500	Black Vermillion River near Frankfort, KS	03/22/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/14/94	<.05	<.20	<.20	--	5.6	<.20	<.20	--	--	--	--	--	--	--	5.4	<.20	<.20
03302800	Blue River at Fredricksburg, IN	03/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/16/94	<.05	--	--	--	.10	--	--	--	--	--	--	--	--	--	5.0	--	--
03378000	Bonpas Creek near Browns, IL	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		06/24/94	<.05	--	--	--	3.7	--	--	--	--	--	--	--	--	--	11	--	--
		06/28/95	1.2	<.20	<.20	--	1.9	<.20	<.20	--	--	--	--	--	--	--	18	<.20	<.20
06609500	Boyer River at Logan, IA	06/29/95	1.0	--	--	--	1.5	--	--	--	--	--	--	--	--	--	15	--	--
		03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/02/94	<.05	--	--	--	.08	--	--	--	--	--	--	--	--	--	1.4	--	--
		06/05/94	<.05	1.2	<.20	--	.34	1.2	<.20	--	--	--	--	--	--	--	1.7	1.2	<.20
		05/28/95	.89	<.20	<.20	--	.15	1.1	<.20	--	--	--	--	--	--	1.3	1.4	<.20	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
05587770	Cahokia Creek tributary near Worden, IL	03/30/94	<0.05	--	--	--	0.20	--	--	--	--	--	--	--	--	--	0.20	--	--
		06/15/94	<.05	--	--	--	7.0	--	--	--	--	--	--	--	--	--	7.2	--	--
05576005	Canoe Creek above Rochester, IL	03/25/94	<.05	--	--	--	.19	--	--	--	--	--	--	--	--	--	.18	--	--
		06/29/94	<.05	--	--	--	7.8	--	--	--	--	--	--	--	--	--	7.0	--	--
		06/30/95	<.05	--	--	--	7.8	--	--	--	--	--	--	--	--	--	9.7	--	--
05491200	Cedar Creek near Tracy, IA	05/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.33	--	--
		05/26/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.12	--	--
		05/30/95	.34	<0.20	<0.20	--	.09	7.5	3.8	--	--	--	--	--	--	--	.48	4.7	<0.20
03157000	Clear Creek at Rockbridge, OH	03/28/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.20	--	--
		06/01/95	.07	1.2	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.29	2.1	<.20
04170000	Clear Creek near Grand Blanc, OH	06/27/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
05317000	Cottonwood River near New Ulm, MN	04/05/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		05/25/94	<.05	2.6	<.20	--	4.5	2.1	1.8	--	--	--	--	--	--	--	1.2	1.4	<.20
		05/28/95	.07	<.20	<.20	--	.06	1.6	<.20	--	--	--	--	--	--	--	.28	1.9	<.20
03612020	Day Creek above Forman, IL	03/30/94	<.05	--	--	--	.27	--	--	--	--	--	--	--	--	--	.29	--	--
		06/14/94	<.05	--	--	--	7.2	--	--	--	--	--	--	--	--	--	7.8	--	--
06890100	Delaware River near Muscotah, KS	03/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/15/94	<.05	<.20	<.20	--	3.0	3.5	<.20	--	--	--	--	--	--	--	7.2	2.2	<.20
		06/25/95	.19	<.20	<.20	--	5.3	2.4	<.20	--	--	--	--	--	--	--	9.3	1.6	<.20
05480500	Des Moines River at Fort Dodge, IA	03/23/94	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.19	--	--
		06/06/94	<.05	--	--	--	.12	--	--	--	--	--	--	--	--	--	.26	--	--
		05/29/95	1.4	<.20	<.20	--	.32	2.9	<.20	--	--	--	--	--	--	--	2.6	4.1	<.20
05476000	Des Moines River at Jackson, MN	04/05/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		06/06/94	<.05	<.20	<.20	--	.33	2.4	<.20	--	--	--	--	--	--	--	.12	2.9	<.20
		05/28/95	.28	<.20	<.20	--	.05	2.6	<.20	--	--	--	--	--	--	--	.22	3.4	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
05540500	Dupage River near Shorewood, IL	03/30/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	<0.05	--	--
		06/14/94	<.05	--	--	--	.52	--	--	--	--	--	--	--	--	--	1.1	--	--
		--	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
03371500	East Fork White River at Bedford, IN	03/22/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/16/94	<.05	<0.20	<0.20	--	.91	2.2	<0.20	--	--	--	--	--	--	--	1.8	1.5	<0.20
		06/24/95	.57	<.20	<.20	--	.94	2.1	<.20	--	--	--	--	--	--	--	.84	1.5	<.20
03328500	Eel River near Logansport, IN	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/08/94	<.05	--	--	--	.11	--	--	--	--	--	--	--	--	--	.15	--	--
		06/14/94	<.05	1.0	<.20	--	4.4	3.9	<.20	--	--	--	--	--	--	--	1.9	1.5	<.20
		06/08/95	.11	<.20	<.20	--	.46	2.3	1.4	--	--	--	--	--	--	--	.68	1.7	<.20
03302500	Flat Creek near English, IN	06/26/95	<.05	<.20	<.20	--	.96	<.20	<.20	--	--	--	--	--	--	--	1.1	<.20	<.20
03353800	Indian Creek near Elizabeth, IN	03/24/94	<.05	--	--	--	.27	--	--	--	--	--	--	--	--	--	.29	--	--
		05/24/94	<.05	--	--	--	1.2	--	--	--	--	--	--	--	--	--	1.1	--	--
05526000	Iroquis River near Chebanse, IL	03/30/94	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.08	--	--
		06/16/94	<.05	--	--	--	1.1	--	--	--	--	--	--	--	--	--	1.1	--	--
		07/03/95	.42	--	--	--	.13	--	--	--	--	--	--	--	--	--	1.3	--	--
05592100	Kaskaskia River near Cowden, IL	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		06/13/94	<.05	<.20	<.20	--	2.1	5.7	<.20	--	--	--	--	--	--	--	5.6	3.2	<.20
		06/21/95	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	.30	2.4	<.20
03352000	Kitchel Creek near Fishers, IN	06/26/95	<.05	<.20	<.20	--	5.5	<.20	<.20	--	--	--	--	--	--	--	6.3	<.20	<.20
06884000	Little Blue River near Fairbury, NE	03/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/02/94	<.05	--	--	--	6.6	--	--	--	--	--	--	--	--	--	5.1	--	--
		06/26/95	2.4	1.3	<.20	--	5.3	2.6	<.20	--	--	--	--	--	--	--	5.6	1.4	<.20
03234700	Little Miami River at Columbus, OH	05/30/95	.32	2.2	<.20	--	.12	4.1	1.6	--	--	--	--	--	--	--	1.0	3.1	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
03240000	Little Miami River at Oldtown, OH	03/29/94	<0.05	--	--	--	0.07	--	--	--	--	--	--	--	--	--	0.31	--	--
		06/29/94	<.05	--	--	--	.13	--	--	--	--	--	--	--	--	--	1.2	--	--
		05/30/95	.33	2.2	<0.20	--	.13	4.1	1.5	--	--	--	--	--	--	--	1.0	3.0	<0.20
06606600	Little Sioux River at Correctionville, IA	03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		06/06/94	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.10	<.20	<.20
		05/28/95	.88	<.20	<.20	--	.10	<.20	<.20	--	--	--	--	--	--	--	3.3	<.20	<.20
03381495	Little Wabash River at Carmi, IL	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		06/28/94	<.05	<.20	<.20	--	2.9	7.6	<.20	--	--	--	--	--	--	--	2.8	1.9	<.20
		06/29/95	.80	<.20	<.20	--	1.1	4.7	<.20	--	--	--	--	--	--	--	6.4	2.5	<.20
05549510	Lucky Creek at McHenry, IL	03/25/94	<.05	--	--	--	.26	--	--	--	--	--	--	--	--	--	.27	--	--
		05/07/94	.16	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	1.3	3.3	<.20
		06/28/94	<.05	--	--	--	7.1	--	--	--	--	--	--	--	--	--	7.3	--	--
05587000	Macoupin Creek near Kane, IL	06/30/95	<.05	--	--	--	.94	--	--	--	--	--	--	--	--	--	1.1	--	--
		03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
03267900	Mad River at Eagle City, OH	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/24/94	<.05	--	--	--	.90	--	--	--	--	--	--	--	--	--	3.0	--	--
		05/30/95	.09	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.64	1.8	<.20
06607200	Maple River at Mapleton, IA	03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		06/05/94	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.54	1.6	<.20
		05/28/95	2.7	<.20	<.20	--	.06	2.3	<.20	--	--	--	--	--	--	--	11	1.9	<.20
06817700	Nodaway River at Graham, MO	06/02/94	<.05	--	--	--	3.4	--	--	--	--	--	--	--	--	--	3.1	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
05472500	North Skunk River near Sigourney, IA	03/24/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	<0.05	--	--
		05/25/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.12	--	--
05455100	Old Man's Creek near Iowa City, IA	03/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		06/02/95	2.0	2.7	<0.20	--	.54	4.3	<0.20	--	--	--	--	--	--	--	2.9	2.8	<0.20
		06/14/95	<.05	<.20	<.20	--	.07	3.5	<.20	--	--	--	--	--	--	--	.17	2.5	<.20
		07/05/95	.12	--	--	--	.05	--	--	--	--	--	--	--	--	--	1.2	--	--
		07/06/95	.17	--	--	--	.55	--	--	--	--	--	--	--	--	--	.45	--	--
		07/19/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		08/09/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		08/14/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
03234990	Olentangy River at Athens, OH	05/26/95	.90	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	1.2	<.20	<.20	
03223000	Olentangy River at Claridon, OH	03/25/94	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.18	--	--
		06/24/94	2.0	<.20	<.20	--	<.05	14	<.20	--	--	--	--	--	--	--	3.9	5.1	<.20
		05/30/95	1.7	2.7	<.20	--	.27	5.2	<.20	--	--	--	--	--	--	--	5.0	4.3	<.20
03363500	Pigeon River near Hanna, IN	03/23/94	<.05	--	--	--	.22	--	--	--	--	--	--	--	--	--	.25	--	--
		06/08/94	<.05	--	--	--	1.1	--	--	--	--	--	--	--	--	--	1.0	--	--
03327520	Pipe Creek near Bunker Hill, IN	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		05/16/94	<.05	--	--	--	2.2	--	--	--	--	--	--	--	--	--	3.4	--	--
		06/08/95	.10	--	--	--	.42	--	--	--	--	--	--	--	--	--	.61	--	--
05484500	Raccoon River at Van Meter, IA	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		05/26/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.37	--	--
		05/29/95	4.5	1.5	<.20	--	.10	2.2	<.20	--	--	--	--	--	--	--	6.7	2.4	<.20
05430500	Rock River at Afton, WI	04/05/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/08/95	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.18	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
06483000	Rock River at Luverne, MN	04/04/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.05	--	--
		06/06/94	1.0	<0.20	<0.20	--	1.9	3.9	<0.20	--	--	--	--	--	--	--	5.3	3.4	<0.20
		05/28/95	5.6	1.7	<.20	--	.10	3.9	<.20	--	--	--	--	--	--	--	11	4.4	<.20
04087240	Root River at Racine, WI	04/15/94	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/25/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
05439500	South Branch Kishwaukee River at Fairdale, IL	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		06/25/94	<.05	1.5	<.20	--	1.9	8.2	9.6	--	--	--	--	--	--	--	3.5	4.7	<.20
06803000	Salt Creek at Roca, NE	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/15/94	1.0	<.20	<.20	--	6.5	<.20	<.20	--	--	--	--	--	--	--	6.3	<.20	<.20
05576500	Sangamon River at Riverton, IL	07/04/95	.08	--	--	--	1.4	--	--	--	--	--	--	--	--	--	19	--	--
		07/25/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.22	--	--
		08/08/95	<.05	<.20	<.20	--	.54	3.2	2.0	--	--	--	--	--	--	--	.52	7.4	1.9
		09/02/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		09/02/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		03/25/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.22	--	--
		05/10/94	1.0	<.20	<.20	--	.84	3.4	<.20	--	--	--	--	--	--	--	3.3	3.4	<.20
03230100	Scioto River at Harrisburg, OH	06/23/95	.29	<.20	<.20	--	.27	3.0	<.20	--	--	--	--	--	--	--	1.6	2.8	<.20
		04/06/94	<.05	--	--	--	.89	--	--	--	--	--	--	--	--	--	1.1	--	--
		07/01/94	<.05	--	--	--	.35	--	--	--	--	--	--	--	--	--	.22	--	--
03234500	Scioto River at Higby, OH	05/26/95	1.0	<.20	<.20	--	.37	<.20	<.20	--	--	--	--	--	--	--	3.4	<.20	<.20
		04/06/94	<.05	--	--	--	.37	<.20	<.20	--	--	--	--	--	--	--	3.4	<.20	<.20
		07/01/94	<.05	--	--	--	.35	--	--	--	--	--	--	--	--	--	2.7	--	--
03234888	Scioto River at Westerville, OH	05/31/95	<.05	--	--	--	7.1	--	--	--	--	--	--	--	--	--	8.1	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
03230500	Scioto River near Columbus, OH	04/06/94	<0.05	--	--	--	0.97	--	--	--	--	--	--	--	--	--	1.0	--	--
03219500	Scioto River near Prospect, OH	03/25/94	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.18	--	--
		06/15/94	<.05	--	--	--	3.8	--	--	--	--	--	--	--	--	--	4.0	--	--
		05/30/95	1.1	<0.20	<0.20	--	.25	5.2	<0.20	--	--	--	--	--	--	--	6.6	3.8	<0.20
03157000	Scioto River near Rockbridge, OH	05/25/95	.96	1.7	<.20	--	.06	1.4	<.20	--	--	--	--	--	--	--	1.7	1.9	<.20
03220000	Scioto River near Scioto, OH	04/01/94	<.05	--	--	--	.90	--	--	--	--	--	--	--	--	--	1.0	--	--
05594000	Shoal Creek near Breese, IL	03/24/94	<.05	--	--	--	.24	--	--	--	--	--	--	--	--	--	.83	--	--
		06/26/95	.63	<.20	<.20	--	1.2	3.5	<.20	--	--	--	--	--	--	--	3.7	2.0	<.20
		06/30/95	.42	--	--	--	.65	--	--	--	--	--	--	--	--	--	7.0	--	--
03380530	Skillet Fork tributary near Wayne City, IL	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.23	--	--
		06/29/95	.82	<.20	<.20	--	1.1	4.7	<.20	--	--	--	--	--	--	--	6.6	2.4	<.20
05474000	Skunk River at Augusta, IA	03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		06/03/94	<.05	--	--	--	.09	--	--	--	--	--	--	--	--	--	.40	--	--
		06/08/95	1.7	<.20	<.20	--	.06	<.20	<.20	--	--	--	--	--	--	--	2.4	<.20	<.20
05472500	Skunk River near Sigourney, IA	06/06/95	2.7	2.4	<.20	--	<.05	3.5	<.20	--	--	--	--	--	--	--	3.0	3.4	<.20
05569500	Spoon River at London Mills, IL	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.24	--	--
		05/07/94	<.05	<.20	<.20	--	.15	2.0	<.20	--	--	--	--	--	--	--	1.3	3.4	<.20
		--	.48	--	--	--	.06	--	--	--	--	--	--	--	--	--	.74	--	--
05340500	St. Croix River at St. Croix Falls, WI	04/13/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/20/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/12/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.16	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
03362500	Sugar Creek near Edinburgh, IN	03/21/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	<0.05	--	--
		05/16/94	<.05	--	--	--	2.0	--	--	--	--	--	--	--	--	--	3.1	--	--
		06/03/95	.97	1.9	<0.20	--	2.3	3.3	<0.20	--	--	--	--	--	--	--	1.4	2.9	<0.20
04185000	Tiffin River at Stryker, OH	03/30/94	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.07	--	--
		06/28/94	<.05	--	--	--	.38	--	--	--	--	--	--	--	--	--	1.4	--	--
		07/07/94	<.05	--	--	--	5.6	--	--	--	--	--	--	--	--	--	6.1	--	--
		05/31/95	.84	<.20	<.20	--	.70	3.9	<.20	--	--	--	--	--	--	--	1.7	3.0	<.20
04123400	Tim Creek near Tim, OH	03/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.14	--	--
03336420	Trail Creek near Deputy, IN	03/29/94	<.05	--	--	--	.20	--	--	--	--	--	--	--	--	--	.20	--	--
		06/14/94	<.05	--	--	--	1.2	--	--	--	--	--	--	--	--	--	1.0	--	--
05411600	Turkey River at Spillville, IA	03/22/94	<.05	--	--	--	.08	--	--	--	--	--	--	--	--	--	.11	--	--
		05/24/94	<.05	--	--	--	.14	--	--	--	--	--	--	--	--	--	.05	--	--
		06/08/95	.62	<.20	<.20	--	1.9	3.9	4.0	--	--	--	--	--	--	--	.38	1.8	<.20
06880800	West Fork Big Blue River at Dorchester, NE	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/27/94	<.05	--	--	--	3.1	--	--	--	--	--	--	--	--	--	3.1	--	--
		06/09/95	5.6	3.3	<.20	--	2.0	3.1	<.20	--	--	--	--	--	--	--	7.9	1.5	<.20
05411100	West Fork Iowa River near Tiffin, IA	03/24/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
06804000	Wahoo Creek at Itica, NE	03/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/02/94	<.05	--	--	--	10	--	--	--	--	--	--	--	--	--	6.6	--	--
		07/05/95	<.05	--	--	--	.07	--	--	--	--	--	--	--	--	--	.24	--	--
05421000	Wapsipinicon River at Independence, IA	03/22/94	<.05	--	--	--	.09	--	--	--	--	--	--	--	--	--	.15	--	--
		05/24/94	<.05	--	--	--	.08	--	--	--	--	--	--	--	--	--	.11	--	--
		05/30/95	.36	<.20	<.20	--	.10	5.9	<.20	--	--	--	--	--	--	--	.50	4.3	<.20
03351000	White River near Nora, IN	03/22/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/26/94	<.05	--	--	--	2.3	--	--	--	--	--	--	--	--	--	2.0	--	--
		06/25/95	.07	2.0	<.20	--	.05	3.8	<.20	--	--	--	--	--	--	--	.90	2.8	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Atrazine label change study (DGL)—Continued																			
03275000	Whitewater River near Alpine, IN	03/29/94	<0.05	--	--	--	0.06	--	--	--	--	--	--	--	--	--	<0.05	--	--
		06/24/94	<.05	--	--	--	.71	--	--	--	--	--	--	--	--	--	.15	--	--
		06/27/94	<.05	--	--	--	.70	--	--	--	--	--	--	--	--	--	1.2	--	--
		06/03/95	1.0	<0.20	<0.20	--	.64	<0.20	<0.20	--	--	--	--	--	--	--	3.2	<0.20	<0.20
03333450	Wildcat Creek near Jerome, IN	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/25/94	<.05	1.1	<.20	--	.66	4.0	<.20	--	--	--	--	--	--	--	3.5	5.2	<.20
		06/03/95	.06	<.20	<.20	--	.06	3.4	<.20	--	--	--	--	--	--	--	.44	5.7	<.20
03335000	Wildcat Creek near Lafayette, IN	03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/25/94	<.05	--	--	--	.24	--	--	--	--	--	--	--	--	--	1.4	--	--
		06/14/94	<.05	--	--	--	.98	--	--	--	--	--	--	--	--	--	4.0	--	--
		06/23/95	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.46	<.20	<.20
05407000	Wisconsin River at Muscoda, WI	03/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		06/28/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		05/30/95	.23	<.20	<.20	--	.06	<.20	<.20	--	--	--	--	--	--	--	.52	<.20	<.20
03362500	Yellow River near Osco, IN	03/31/94	<.05	--	--	--	.30	--	--	--	--	--	--	--	--	--	.33	--	--
Mississippi River herbicide study (MDG)																			
07874000	Lower Mississippi River at Baton Rouge, LA	07/07/93	<.05	--	--	--	.36	--	--	--	--	--	--	--	--	--	1.0	--	--
		07/09/93	<.05	--	--	--	.37	--	--	--	--	--	--	--	--	--	1.1	--	--
		07/12/93	<.05	--	--	--	.32	--	--	--	--	--	--	--	--	--	1.1	--	--
		07/15/93	<.05	--	--	--	.31	--	--	--	--	--	--	--	--	--	.97	--	--
		07/19/93	<.05	--	--	--	.23	--	--	--	--	--	--	--	--	--	.87	--	--
		07/22/93	<.05	--	--	--	.17	--	--	--	--	--	--	--	--	--	.64	--	--
		07/26/93	--	--	--	--	.15	--	--	--	--	--	--	--	--	--	.60	--	--
		07/29/93	--	--	--	--	.14	--	--	--	--	--	--	--	--	--	.56	--	--
		08/02/93	--	--	--	--	.12	--	--	--	--	--	--	--	--	--	.52	--	--
		08/05/93	<.05	--	--	--	.13	--	--	--	--	--	--	--	--	--	.63	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

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Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/06/93	<0.05	--	--	--	0.14	--	--	--	--	--	--	--	--	--	0.70	--	--
		08/09/93	<.05	--	--	--	.10	--	--	--	--	--	--	--	--	--	.59	--	--
		08/12/93	<.05	--	--	--	.09	--	--	--	--	--	--	--	--	--	.53	--	--
		08/16/93	<.05	--	--	--	.18	--	--	--	--	--	--	--	--	--	.54	--	--
		08/19/93	<.05	--	--	--	.15	--	--	--	--	--	--	--	--	--	.52	--	--
		08/23/93	<.05	--	--	--	.10	--	--	--	--	--	--	--	--	--	.48	--	--
		08/27/93	<.05	--	--	--	.09	--	--	--	--	--	--	--	--	--	.45	--	--
		08/30/93	<.05	--	--	--	.07	--	--	--	--	--	--	--	--	--	.35	--	--
		09/02/93	<.05	--	--	--	.06	--	--	--	--	--	--	--	--	--	.32	--	--
		09/07/93	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.25	--	--
		09/16/93	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.25	--	--
		09/23/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.21	--	--
		10/01/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.15	--	--
		10/08/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		10/15/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		10/22/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		11/05/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.11	--	--
		11/10/93	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		11/19/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		11/24/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		12/04/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		12/09/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		12/22/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		12/31/93	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	01/06/94	--	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.06	--	--
		01/13/94	--	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		01/21/94	<0.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		01/27/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/04/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/10/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/17/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/25/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/04/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/11/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		04/01/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		04/08/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.13	--	--
		04/22/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.13	--	--
		04/28/94	<.05	--	--	--	.07	--	--	--	--	--	--	--	--	--	.30	--	--
		05/04/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		05/13/94	<.05	--	--	--	.20	--	--	--	--	--	--	--	--	--	.84	--	--
		06/24/94	<.05	--	--	--	.15	--	--	--	--	--	--	--	--	--	.71	--	--
		07/01/94	<.05	--	--	--	.12	--	--	--	--	--	--	--	--	--	.65	--	--
		07/07/94	<.05	--	--	--	.11	--	--	--	--	--	--	--	--	--	.81	--	--
07/15/94	<.05	--	--	--	.07	--	--	--	--	--	--	--	--	--	.56	--	--		
07/22/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.50	--	--		
08/05/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.22	--	--		
08/09/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.20	--	--		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/19/94	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.09	--	--
		08/29/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		09/08/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		09/16/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.11	--	--
		09/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.11	--	--
		09/30/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		10/05/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		10/13/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		10/21/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		10/26/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		11/04/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		11/10/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		11/10/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		11/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		12/01/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		12/07/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		12/15/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		12/23/94	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		01/05/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		01/13/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		01/19/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		01/27/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/03/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/10/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	02/17/95	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.05	--	--
		02/24/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/02/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/10/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/15/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		03/29/95	.07	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		04/05/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.11	--	--
		04/14/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		04/21/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.27	--	--
		04/28/95	.06	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.49	--	--
		05/05/95	.08	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.38	--	--
		05/15/95	.09	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.30	--	--
		05/19/95	.09	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.27	--	--
		05/26/95	.19	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.44	--	--
		06/07/95	.20	--	--	--	.07	--	--	--	--	--	--	--	--	--	.61	--	--
		06/15/95	.28	--	--	--	.07	--	--	--	--	--	--	--	--	--	.73	--	--
		06/23/95	.21	--	--	--	.07	--	--	--	--	--	--	--	--	--	.68	--	--
		07/03/95	.10	--	--	--	.05	--	--	--	--	--	--	--	--	--	.54	--	--
		07/06/95	.08	--	--	--	.05	--	--	--	--	--	--	--	--	--	.48	--	--
		07/20/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.44	--	--
		07/27/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.44	--	--
		08/02/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.27	--	--
		08/11/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.20	--	--
		08/18/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.22	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/25/95	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.23	--	--
		09/04/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.15	--	--
		09/07/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.19	--	--
		09/15/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.14	--	--
		09/22/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		09/28/95	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		01/12/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.06	--	--
		01/31/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/16/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/29/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/08/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		03/15/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.11	--	--
		03/22/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		04/05/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		04/12/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		04/26/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.48	--	--
		05/03/96	.09	--	--	--	.05	--	--	--	--	--	--	--	--	--	.44	--	--
		05/10/96	.16	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.54	--	--
		05/17/96	.12	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.56	--	--
		05/23/96	.21	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.80	--	--
		05/31/96	.34	--	--	--	<.05	--	--	--	--	--	--	--	--	--	1.1	--	--
		06/06/96	.17	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.71	--	--
		07/06/96	.13	--	--	--	.06	--	--	--	--	--	--	--	--	--	.83	--	--
		07/10/96	.11	--	--	--	.05	--	--	--	--	--	--	--	--	--	.75	--	--
		07/18/96	<.05	--	--	--	.05	--	--	--	--	--	--	--	--	--	.90	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Rssearch Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/02/96	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.52	--	--
		08/09/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.50	--	--
		08/16/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.44	--	--
		08/30/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.23	--	--
		08/30/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.24	--	--
		09/30/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		10/30/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		11/21/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		12/03/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		12/11/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		12/31/96	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		02/14/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		03/05/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		03/22/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.09	--	--
		03/27/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		04/03/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		04/17/97	.13	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.39	--	--
		04/30/97	.06	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.33	--	--
		05/16/97	.12	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.60	--	--
		05/27/97	.32	--	--	--	.05	--	--	--	--	--	--	--	--	--	.85	--	--
		06/06/97	.10	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.54	--	--
		06/27/97	.17	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.92	--	--
		07/01/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.79	--	--
		07/14/97	.07	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.58	--	--
		07/25/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.39	--	--

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/14/97	<0.05	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	0.21	--	--
		10/22/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.10	--	--
		12/10/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.07	--	--
		12/10/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.08	--	--
		01/14/98	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		02/04/98	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.05	--	--
		02/19/98	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/04/98	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		03/10/98	<.05	<0.20	<0.20	--	<.05	<0.20	<0.20	--	--	--	--	--	--	--	.07	0.49	<0.20
		03/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	.49	<.20
		03/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.39	<.20
		04/10/98	<.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.12	.66	.22
		04/17/98	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	.13	.57	<.20
		04/22/98	<.05	<.20	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	.13	.84	.30
		05/08/98	.07	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.25	.84	<.20
		07/24/98	<.05	.53	.49	--	<.05	.38	<.20	--	--	--	--	--	--	--	.55	.78	.57
		08/07/98	<.05	.33	.32	--	<.05	.30	<.20	--	--	--	--	--	--	--	.39	.63	.46
		08/13/98	<.05	<.20	.21	--	<.05	.22	<.20	--	--	--	--	--	--	--	.22	.45	.33
		08/27/98	<.05	.40	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	.17	1.2	.51
		09/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.15	.67	.23
		09/18/98	<.05	.31	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	.11	.79	.36
		10/02/98	.10	<.20	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	.09	.56	<.20
		10/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	<.20	<.20
		10/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	1.3	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	11/10/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.09	0.50	<0.20
		11/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.44	<.20
		12/23/98	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	.06	.85	.38
		01/05/99	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	<.05	.85	<.20
		01/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.28	<.20
		02/03/99	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.31	<.20
		02/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.43	<.20
		03/12/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.32	<.20
		03/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.21	<.20
		04/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.22	<.20
		04/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.22	<.20
		04/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.15	.25	<.20
		04/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	.26	<.20
		04/30/99	.19	.10	.11	--	<.05	.13	.05	--	0.10	<0.05	<0.05	--	--	--	.36	.46	.18
		05/07/99	.11	.11	.12	--	<.05	.11	<.05	--	.04	<.05	<.05	--	--	--	.39	.44	.23
		05/17/99	.17	.17	.20	--	<.05	.10	<.05	--	.05	<.05	<.05	--	--	--	.52	.51	.27
		05/25/99	.16	.13	.20	--	<.05	.10	.05	--	.06	<.05	<.05	--	--	--	.50	.41	.24
		06/03/99	.49	.29	.41	--	<.05	.13	.07	--	.23	<.05	<.05	--	--	--	.67	.53	.30
		06/10/99	.47	.42	.60	--	<.05	.26	<.20	--	.12	--	--	--	--	--	1.0	.80	.46
		06/18/99	.18	.33	.42	--	<.05	.23	<.20	--	.22	--	--	--	--	--	.46	.78	.30
		06/25/99	.37	.45	.56	--	.05	.21	.12	--	<.05	.07	.11	--	--	--	.78	.80	.46
		07/09/99	.08	<.20	.32	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	.34	.36	.36
		07/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/06/99	<.05	.29	.28	--	<.05	.15	.09	--	<.05	<.05	<.05	<.05	--	--	.23	.58	.33
		08/17/99	<.05	.25	.22	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.13	.48	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	08/23/99	<0.05	0.39	0.20	--	0.25	0.09	<0.05	--	<0.05	<0.05	<0.05	<0.05	--	--	0.16	0.79	0.34
		09/02/99	<.05	.25	.17	--	<.05	.18	.07	--	<.05	<.05	<.05	<.05	--	--	.06	.57	.28
		09/27/99	<.05	.12	.06	--	<.05	.16	.05	--	<.05	<.05	<.05	<.05	--	--	.05	.34	.14
		10/04/99	<.05	.12	.06	--	<.05	.16	<.05	--	<.05	<.05	<.05	<.05	--	--	.09	.34	.14
		10/20/99	<.05	.07	.05	--	<.05	.14	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.26	.13
		11/01/99	<.05	<.05	.06	--	<.05	.18	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.20	.09
		11/19/99	<.05	<.05	<.05	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.19	.08
		12/06/99	<.05	<.20	<.20	--	<.05	.16	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.18	.09
		01/13/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		02/14/00	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.32	<.20
		05/12/00	<.05	.07	.07	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	--	--	.36	.27	.16
		05/23/00	<.05	.10	.09	--	<.05	.09	.05	--	<.05	<.05	<.05	<.05	--	--	.20	.27	.11
		06/20/00	.12	.30	.34	--	<.05	.15	.07	--	.05	<.05	<.05	<.05	--	--	.31	.55	.28
		06/29/00	.05	.38	.38	--	<.05	.40	.08	--	<.05	<.05	<.05	<.05	--	--	.17	.54	.30
		07/07/00	.05	.55	.55	--	<.05	.13	.08	--	<.05	.06	.05	<.05	--	--	.23	.73	.45
		07/18/00	<.05	.58	.55	--	<.05	.15	.08	--	<.05	.07	.05	<.05	--	--	<.05	.88	.50
		08/03/00	<.05	<.05	.29	--	<.05	.15	.06	--	<.05	.06	.05	<.05	--	--	.08	.79	.39
		08/11/00	<.05	.34	.20	--	<.05	.14	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.61	.30
		08/21/00	<.05	.19	.14	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.37	.20
		08/29/00	<.05	.15	.12	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.34	.19
09/11/00	<.05	.13	.11	--	<.05	.14	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.36	.16		
09/27/00	<.05	.10	.07	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.24	.13		
10/10/00	<.05	<.05	.08	--	<.05	.18	.06	--	<.05	<.05	<.05	<.05	<0.05	<0.05	<.05	.26	.11		
10/19/00	<.05	.08	.06	--	<.05	.08	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	.08		

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	11/06/00	<0.05	0.10	0.08	--	<0.05	0.08	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.28	0.12
		11/20/00	<.05	<.05	<.05	--	<.05	.15	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.11
		12/04/00	<.05	.08	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	.11
		12/18/00	<.05	.11	.07	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.34	.09
		01/05/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	.09
		02/08/01	<.05	<.05	<.05	--	<.05	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	.08
		02/23/01	<.05	.06	<.05	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	.11
		03/06/01	<.05	.06	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	.10
		03/23/01	<.05	.08	.06	--	<.05	.08	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.06	.24	.11
		04/06/01	<.05	.08	.06	--	<.05	.11	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.05	.30	.14
		05/24/01	.31	.25	.29	--	<.05	.17	<.05	--	.06	<.05	<.05	<.05	<.05	<.05	.47	.53	.22
		05/31/01	.19	.25	.32	--	<.05	.13	<.05	--	.07	<.05	<.05	<.05	<.05	<.05	.41	.53	.25
		06/08/01	.16	.20	.26	--	<.05	.11	<.05	--	<.05	.05	<.05	<.05	<.05	<.05	.38	.37	.21
		07/02/01	.14	.45	.49	--	<.05	.18	.07	--	.06	.05	.05	<.05	<.05	<.05	.40	.64	.37
		07/16/01	<.05	.33	.31	--	<.05	.17	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.20	.57	.26
		07/30/01	<.05	.25	.26	--	<.05	.13	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.11	.40	.21
		08/13/01	<.05	.20	.20	--	<.05	.14	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.07	.37	.21
		08/28/01	<.05	.08	.11	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	.13
		09/18/01	<.05	.07	.08	--	<.05	.07	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	.10
10/01/01	<.05	<.05	.06	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.10		
10/16/01	<.05	.05	.07	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.12		
10/31/01	<.05	.05	.07	--	<.05	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	.13		
11/14/01	<.05	.16	.10	--	<.05	.13	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.43	.17		
11/28/01	<.05	.19	.10	--	<.05	.15	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.51	.19		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																	
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)	
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																				
Mississippi River herbicide study (MDG)—Continued																				
07874000	Lower Mississippi River at Baton Rouge, LA	12/10/01	<0.05	0.05	0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19	0.11	
		01/03/02	<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	.09	
		01/17/02	<.05	.09	<.05	<.05	<.05	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.08	
		02/04/02	<.05	.06	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	.07	
		02/28/02	<.05	.06	<.05	<.05	<.05	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.07	
		02/28/02	<.05	.08	<.05	<.05	<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.10	
		03/11/02	<.05	.07	<.05	<.05	<.05	.12	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.25	<.05	
		03/28/02	<.05	.06	<.05	<.05	<.05	.08	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.09	
		04/12/02	<.05	<.05	<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	.06	
		05/02/02	<.05	.06	.05	<.05	<.05	.10	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.32	.11	
		05/15/02	.17	.11	.12	<.05	<.05	.07	<.05	<.05	.10	<.05	<.05	<.05	<.05	<.05	<.05	.37	.26	.11
		06/05/02	.22	.20	.22	.17	<.05	.07	<.05	<.05	.12	<.05	<.05	<.05	<.05	<.05	<.05	.44	.36	.16
		06/11/02	.18	.17	.15	<.05	<.05	.06	<.05	<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	.43	.28	.17
		07/02/02	.27	.32	.38	<.05	<.05	.09	<.05	<.05	.11	.06	<.05	<.05	<.05	<.05	<.05	.66	.39	.24
		07/25/02	.08	.13	.12	<.05	.90	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	.29	.08
		08/21/02	<.05	.10	.10	<.05	<.05	.09	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	.09
		09/17/02	<.05	.11	.11	<.05	<.05	.12	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.11
		10/16/02	<.05	.06	.05	<.05	<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	.08
		11/19/02	<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.17	.05
		12/18/02	<.05	<.02	.03	<.02	<.05	.03	.02	<.02	<.05	<.02	<.02	<.05	<.02	<.02	<.05	.08	.04	
		01/15/03	<.02	.04	.06	<.02	<.02	.04	.03	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.13	.08
		02/20/03	<.02	<.02	.04	<.02	.07	.08	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.03	.11	.06
		03/13/03	<.02	<.02	<.02	<.02	.05	.03	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.06	.03
		04/03/03	<.02	.06	.03	<.02	<.02	.08	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.04	.15	.06

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Midcontinent Agricultural Chemical Research Project (fig. 1)—Continued																			
Mississippi River herbicide study (MDG)—Continued																			
07874000	Lower Mississippi River at Baton Rouge, LA	05/19/03	0.13	0.08	0.11	0.10	<0.02	0.09	0.02	<0.02	0.06	0.02	<0.02	<0.02	<0.02	<0.02	0.39	0.17	0.11
		06/03/03	.14	.14	.21	.09	<.02	.05	.03	<.02	.04	.06	.02	<.02	<.02	<.02	.34	.20	.13
		06/19/03	.07	.12	.13	.11	<.02	.07	.02	<.02	.02	.02	.02	<.02	<.02	<.02	.17	.23	.10
		07/03/03	.07	.24	.27	.19	<.02	.05	.03	<.02	<.02	.02	<.02	<.02	<.02	<.02	.24	.28	.20
		07/15/03	<.02	.13	.14	.10	<.02	.07	.03	<.02	<.02	.03	<.02	<.02	<.02	<.02	.13	.23	.12
		07/30/03	.05	.34	.33	.27	<.02	.10	.04	.04	<.02	.04	<.02	<.02	<.02	<.02	.16	.45	.25
		09/17/03	<.02	.06	.06	.02	<.02	.04	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.02	.11	.07
		09/29/03	<.02	.12	.10	.03	<.02	.05	.02	<.02	<.02	.02	<.02	<.02	<.02	<.02	.03	.25	.14
		10/15/03	<.02	.05	.04	.06	<.02	.03	<.02	<.02	<.02	.11	<.02	<.02	<.02	<.02	.02	.12	.07
		11/05/03	<.02	.05	.05	<.02	.05	<.02	.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.02	.16	.09
		12/01/03	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02
		12/01/03	<.02	.05	.04	<.02	.03	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.02	.10	.06
		12/10/03	<.02	.07	.04	<.02	.04	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02	.02	.15	.07
National Stream Quality Accounting Network (NASQAN) (fig. 2)																			
07263500	Arkansas River at Little Rock, AR	08/17/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.07	<.20	<.20
07265401	Arkansas River above Mississippi River confluence, AR	07/30/99	<.05	<.05	<.05	--	.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.15	<.05	.21
07381495	Atchafalaya River near Melville, LA	08/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.17	.38	<.20
05492000	Des Moines River at Keokuk, IA	07/22/99	.12	.57	.64	--	<.05	.20	<.20	--	.08	--	--	<.05	--	--	.20	1.7	.42
05587060	Illinois River at Hardin, IL	07/24/99	<.05	.45	.46	--	<.05	.53	<.20	--	<.05	--	--	<.05	--	--	.05	1.3	.46
05586100	Illinois River at Valley City, IL	06/09/00	.36	1.2	1.8	--	<.05	.49	<.20	--	.13	--	--	<.05	--	--	.08	1.3	.84
05465500	Iowa River at Wapello, IA	07/21/99	<.05	.48	.40	--	<.05	.58	<.20	--	<.05	--	--	<.05	--	--	.16	2.5	.41
05492200	Mississippi River at Alexandria, IA	04/26/01	<.05	.26	.15	--	<.05	.25	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	.20	.73	.22

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																			
07374000	Mississippi River at Baton Rouge, LA	05/02/00	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	<0.05	<0.05	<0.05	--	--	0.07	0.28	<0.20
		05/03/01	<.05	.11	.06	--	<.05	.13	<.05	--	<.05	<.05	<.05	<.05	<0.05	<0.05	.20	.45	.16
07374525	Mississippi River at Bell Chasse, LA	08/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	.20	.37	<.20
05448095	Mississippi River at Buffalo, IA	04/25/01	<.05	.26	.16	--	<.05	.21	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.22	.57	.20
05420500	Mississippi River at Clinton, IA	07/20/99	<.05	<.20	<.20	--	<.05	.28	<.20	--	<.05	--	--	<.05	--	--	<.05	.48	<.20
		06/06/00	.37	.24	.44	--	.06	<.20	<.20	--	.09	--	--	<.05	--	--	.31	.37	<.20
		08/08/00	<.05	.24	<.20	--	<.05	.29	<.20	--	<.05	--	--	<.05	--	--	<.05	.59	<.20
		04/24/01	<.05	.24	.16	--	<.05	.19	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.32	.50	.19
		05/09/01	.07	.27	.18	--	<.05	.24	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.18	.51	.17
07265402	Mississippi River above Arkansas River confluence, AR	07/30/99	.06	.36	.26	--	<.05	<.05	.06	--	<.05	--	--	<.05	--	--	.08	.63	.35
05466000	Mississippi River at Keithsburg, IA	04/25/01	<.05	.28	.16	--	<.05	.29	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.82	.24	.27
00703200	Mississippi River at Memphis, TN	07/28/99	.06	.46	.34	--	<.05	.08	.11	--	<.05	--	--	<.05	--	--	.09	1.0	.38
07373420	Mississippi River at St. Francisville, LA	03/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.20	<.20
		04/19/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	.29	<.20
		04/28/99	.05	.07	.07	--	<.05	.25	.05	--	<.05	--	--	--	--	--	.14	.41	.19
		05/26/99	.17	<.20	<.20	--	<.05	<.20	<.20	--	.07	--	--	<.05	--	--	.44	.37	<.20
		06/10/99	.51	.29	.50	--	<.05	<.20	<.20	--	.19	--	--	--	--	--	.73	.67	.24
		06/24/99	.35	.32	.48	--	<.05	.23	<.20	--	.15	--	--	<.05	--	--	.69	.60	.27
		07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.12	.39	<.20
		08/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.09	.37	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.30	<.20
		11/11/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/ day/year)	Concentrations, in micrograms per liter																	
			Aceto- chlor (μg/L)	Aceto- chlor ESA (μg/L)	Aceto- chlor OXA (μg/L)	Aceto- chlor SAA (μg/L)	Ala- chlor (μg/L)	Ala- chlor ESA (μg/L)	Ala- chlor OXA (μg/L)	Ala- chlor SAA (μg/L)	Di- meth- enamid (μg/L)	Di- meth- enamid ESA (μg/L)	Di- meth- enamid OXA (μg/L)	Flufen- acet (μg/L)	Flufen- acet ESA (μg/L)	Flufen- acet OXA (μg/L)	Meto- lachlor (μg/L)	Meto- lachlor ESA (μg/L)	Meto- lachlor OXA (μg/L)	
07373420	Mississippi River at St. Francisville, LA	National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																		
		12/01/99	<0.05	0.27	<0.20	--	<0.05	0.22	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	0.35	
		01/27/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20	
		02/17/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20	
		03/14/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20	
		03/29/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.06	<.20	<.20	
		04/12/00	<.05	<.20	.31	--	<.05	<.20	<.20	--	<.05	<0.05	<0.05	<.05			.09	<.20	<.20	
		05/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05			.16	<.20	<.20	
		05/23/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	--	--	.20	<.20	<.20	
		06/06/00	.08	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	--	--	.30	.35	<.20	
		06/23/00	.13	.33	.47	--	<.05	.21	<.20	--	.06	<.05	<.05	<.05	--	--	.35	.53	<.20	
		07/18/00	<.05	.57	.42	--	<.05	.26	<.20	--	<.05	<.05	<.05	<.05	<0.05	<0.05	.17	.84	.38	
		08/25/00	<.05	<.20	.34	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.31	.21	
		09/21/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	<.20	
		11/28/00	<.05	.08	.05	--	.09	.09	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.09	.27	.12	
		12/12/00	<.05	.08	.06	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.30	.12	
		01/24/01	<.05	<.05	<.05	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	.11	
		02/27/01	<.05	.07	.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	.10	
		03/14/01	<.05	.06	.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.06	.20	.10	
		04/02/01	<.05	.08	.07	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.05	.28	.12	
		04/16/01	<.05	.08	<.05	--	<.05	.11	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.26	.39	.16	
		05/07/01	<.05	.14	.09	--	<.05	.15	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.13	.52	.19	
		05/21/01	.12	.22	.19	--	<.05	.19	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.26	.54	.21	
		05/23/01	.07	.06	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.24	.24	.10	
		06/25/01	.10	.41	.49	--	<.05	.13	.07	--	.05	.05	<.05	<.05	<.05	<.05	.33	.57	.35	
07/10/01	.09	.42	.45	--	<.05	.16	.05	--	<.05	.05	<.05	<.05	<.05	<.05	.23	.60	.31			

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																			
07373420	Mississippi River at St. Francisville, LA	07/18/01	<0.05	0.31	0.28	--	<0.05	0.15	0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19	0.55	0.26
		08/27/01	<.05	.07	.11	--	<.05	.07	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	.12
		09/19/01	<.05	.07	.07	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	.10
		10/30/01	<.05	.06	.07	--	<.05	.10	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	.13
		12/18/01	<.05	.05	<.05	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	.10
		01/22/02	<.05	.07	.05	<0.05	<.05	.10	<.05	<0.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	.09
		04/22/02	<.05	<.05	<.05	<.05	<.05	.08	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	.25	.07
		05/07/02	.14	.09	.08	<.05	<.05	.10	<.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	.36	.29	.12
		05/28/02	.26	.17	.21	.14	<.05	.08	<.05	<.05	.10	<.05	<.05	<.05	<.05	<.05	.43	.27	.14
	Mississippi River at Thebes, IL	04/21/99	.57	<.20	<.20	--	.06	.25	<.20	--	.31	--	--	<.05	--	--	.73	.53	.23
		04/29/99	.32	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.43	.58	.43
		07/26/99	<.05	.43	.27	--	<.05	.31	<.20	--	<.05	--	--	<.05	--	--	.12	.95	.37
		06/12/00	.31	.39	.53	--	<.05	.31	<.20	--	.09	<.05	<.05	<.05	--	--	.48	.73	.28
		08/14/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.20	<.20
		04/29/02	.41	.13	.13	<.05	<.05	.17	<.05	<.05	.25	<.05	<.05	<.05	<.05	<.05	.68	.40	.13
		05/09/02	.27	.18	.19	<.05	<.05	.15	<.05	<.05	.15	<.05	<.05	<.05	<.05	<.05	.42	.41	.16
		05/14/02	.53	.24	.31	.18	.06	.12	.05	<.05	.16	<.05	<.05	<.05	<.05	<.05	.82	.33	.17
		06/12/02	.44	.45	.50	.18	<.05	.19	<.05	<.05	.12	.05	<.05	<.05	<.05	<.05	.60	.70	.25
		07/22/99	<.05	.26	.34	--	<.05	.36	<.20	--	<.05	--	--	<.05	--	--	.05	.95	.20
05587455	Mississippi River below Grafton, IL	03/17/99	<.05	<.20	<.20	--	<.05	.50	<.20	--	--	--	--	--	--	--	.08	.80	.26
		04/12/99	.14	<.20	<.20	--	<.05	.43	<.20	--	--	--	--	--	--	--	.22	.66	.23
		04/20/99	.65	.61	.23	--	<.05	<.20	<.20	--	.46	--	--	<.05	--	--	.59	1.1	.50
		05/10/99	.24	.35	<.20	--	<.05	.47	<.20	--	.12	--	--	<.05	--	--	.40	1.2	.40
		05/24/99	1.2	.75	.64	--	.05	.70	<.20	--	.47	--	--	--	--	--	1.3	1.4	.52
		06/07/99	.68	.57	.71	--	<.05	.39	<.20	--	.43	--	--	--	--	--	.59	1.3	.37
		06/21/99	1.7	1.2	1.3	--	.10	.50	<.20	--	.53	--	--	<.05	--	--	1.9	2.1	.73

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/ day/year)	Concentrations, in micrograms per liter																	
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)	
05587455	Mississippi River below Grafton, IL	National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																		
		07/24/99	0.05	0.47	0.42	--	<0.05	0.39	<0.20	--	<0.05	--	--	<0.05	--	--	0.11	0.28	0.35	
		08/09/99	<.05	.44	.30	--	<.05	.34	<.20	--	<.05	--	--	<.05	--	--	.06	1.1	.28	
		09/13/99	<.05	<.20	<.20	--	<.05	.28	<.20	--	<.05	--	--	<.05	--	--	<.05	.59	<.20	
		11/22/99	<.05	<.20	<.20	--	<.05	.33	<.20	--	<.05	--	--	<.05	--	--	<.05	.40	<.20	
		12/07/99	<.05	<.20	<.20	--	<.05	.37	<.20	--	<.05	--	--	<.05	--	--	<.05	.38	.21	
		01/19/00	<.05	<.20	<.20	--	<.05	.44	<.20	--	<.05	--	--	<.05	--	--	<.05	.46	.25	
		02/15/00	.05	<.20	<.20	--	<.05	.51	<.20	--	<.05	--	--	<.05	--	--	<.05	.54	<.20	
		03/13/00	<.05	<.20	<.20	--	<.05	.23	<.20	--	<.05	--	--	<.05	--	--	.05	.69	<.20	
		05/04/00	.17	.54	.28	--	<.05	.66	<.20	--	.08	--	--	<.05	--	--	.43	2.5	.64	
		06/09/00	.46	.57	.88	--	<.05	.38	<.20	--	.15	--	--	<.05	--	--	.63	.96	<.20	
		06/26/00	.12	.90	1.1	--	<.05	.46	<.20	--	<.05	--	--	<.05	--	--	.28	1.3	.57	
		07/10/00	<.05	.68	.49	--	<.05	.41	<.20	--	<.05	--	--	<.05	--	--	.11	.94	.36	
		08/11/00	<.05	.32	<.20	--	<.05	.36	<.20	--	<.05	--	--	<.05	--	--	<.05	.97	.28	
		09/11/00	<.05	<.20	<.20	--	<.05	.39	<.20	--	<.05	--	--	<.05	--	--	<.05	.77	<.20	
		10/02/00	<.05	<.05	.09	--	<.05	.38	.07	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	.54	.12	
		10/19/00	<.05	<.20	<.20	--	<.05	.33	<.20	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.60	<.20	
		11/07/00	<.05	<.05	.06	--	<.05	.41	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.64	.15	
		02/06/01	<.05	.13	.09	--	<.05	.26	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.10	.53	.21	
		02/21/01	<.05	.29	.19	--	<.05	.34	.08	--	<.05	<.05	<.05	<.05	<.05	<.05	.10	.94	.36	
		03/01/01	<.05	.19	.13	--	<.05	.29	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.11	.68	.22	
		03/07/01	<.05	.29	.18	--	<.05	.31	.09	--	<.05	<.05	<.05	<.05	<.05	<.05	.25	.90	.36	
		03/21/01	.08	.20	.13	--	<.05	.29	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.12	.79	.27	
		04/02/01	<.05	.21	.13	--	<.05	.31	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.87	1.0	.32	
		04/16/01	.11	.22	.11	--	<.05	.35	<.05	--	.13	<.05	<.05	<.05	<.05	<.05	.32	.93	.25	
04/30/01	<.05	.27	.16	--	<.05	.26	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.22	.77	.25			

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/ day/year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																			
05587455	Mississippi River below Grafton, IL	05/14/01	0.23	0.30	0.25	--	<0.05	0.30	<0.05	--	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	0.29	0.84	0.26
		06/06/01	.42	.77	1.1	--	<.05	.33	.10	--	.17	.14	.13	<.05	<.05	<.05	.88	1.2	.80
		06/11/01	.30	.66	.82	--	<.05	.24	<.05	--	.13	.12	.11	<.05	<.05	<.05	.63	1.1	.58
		07/16/01	.08	.54	.50	--	<.05	.31	<.05	--	<.05	.05	.05	<.05	<.05	<.05	.16	.88	.30
		08/06/01	.05	.45	.43	--	<.05	.38	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.11	.99	.31
06610000	Missouri River at Omaha, NE	09/12/01	<.05	.09	.14	--	<.05	.12	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	.16
		06/02/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/04/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
06934500	Missouri River near Hermann, MO	03/18/99	<.05	.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	<.20	<.20
		04/13/99	.09	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.20	<.20	<.20
		04/19/99	.64	<.20	<.20	--	.09	<.20	<.20	--	--	--	--	--	--	--	.93	.31	<.20
		04/28/99	.37	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	.66	.22	<.20
		05/11/99	.39	<.20	<.20	--	<.05	<.20	<.20	--	.08	--	--	--	--	--	.62	.24	<.20
		05/19/99	.44	<.20	<.20	--	.07	<.20	<.20	--	.12	--	--	--	--	--	.85	.28	<.20
		06/08/99	.97	.30	.55	--	.18	<.20	<.20	--	.32	--	--	--	--	--	2.0	.31	.26
		06/22/99	.13	.30	.45	--	.16	<.20	.26	--	.18	--	--	<.05	--	--	1.0	.45	.29
		07/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.18	.28	<.20
		08/10/99	<.05	<.20	<.20		.08	<.20	<.20		<.05	--	--	<.05	--	--	.34	.24	.22
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		10/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		12/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		02/15/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		03/08/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		04/04/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/05/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.06	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																			
06934500	Missouri River near Hermann, MO	05/30/00	0.24	<0.20	<0.20	--	0.11	<0.20	<0.20	--	0.17	--	--	<0.05	--	--	0.75	<0.20	<0.20
		06/08/00	<.05	.09	.11	--	<.05	.06	.06	--	<.05	<0.05	<0.05	<.05			.10	.11	.11
		06/23/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.18	.23	.21
		06/28/00	.16	1.5	2.0	--	<.05	.74	<.20	--	<.05	--	--	<.05	--	--	.52	1.7	1.2
		07/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.16	.20	<.20
		08/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/13/00	<.05	.29	.32	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.48	.28
		08/25/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.10	<.20	<.20
		09/12/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		10/03/00	<.05	.06	.06	--	<.05	<.05	.07	--	<.05	<.05	<.05	<.05	<0.05	<0.05	<.05	.11	.09
		11/29/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		01/22/01	<.05	<.05	<.05	--	<.05	.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	.10
		02/05/01	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	.09
		02/28/01	<.05	<.05	<.05	--	<.05	.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	.09
		03/08/01	<.05	.05	.08	--	<.05	.09	.08	--	<.05	<.05	<.05	<.05	<.05	<.05	.07	.16	.15
		04/03/01	<.05	.10	.13	--	<.05	.07	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.13	.22	.19
		05/01/01	.16	.12	.11	--	<.05	.06	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.21	.25	.11
		05/10/01	1.6	.33	.60	--	.08	.05	<.05	--	.20	<.05	<.05	.12	<.05	<.05	1.6	.38	.29
		06/07/01	.28	.31	.56	--	.13	.12	.07	--	.08	.06	.05	.05	<.05	<.05	.65	.30	.31
		06/12/01	.19	.36	.55	--	.08	.11	.10	--	.06	.06	.05	<.05	<.05	<.05	.58	.32	.35
		06/25/01	.13	.46	.60	--	.06	.16	.12	--	.06	<.05	<.05	<.05	<.05	<.05	.44	.39	.36
		07/17/01	<.05	.14	.17	--	<.05	.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.12	.19	.13
		08/07/01	<.05	.19	.19	--	<.05	.10	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.10	.28	.27
		09/13/01	<.05	.07	.06	--	<.05	.07	.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.06	.08	.16

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
National Stream Quality Accounting Network (NASQAN) (fig. 2)—Continued																			
03612500	Ohio River near Grand Chain, IL	08/22/01	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.08
		04/25/02	<.05	<.05	<.05	<0.05	<.05	<.05	<.05	<0.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	.32	.09
		05/07/02	.10	.07	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.31	.22	.10
		05/29/02	.12	.14	.12	.07	<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.28	.31	.13
		06/12/02	.20	.10	.12	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.35	.21	.08
06805500	Platte River near Louisville, NE	06/02/00	.07	<.20	<.20	--	<.05	<.20	<.20	--	.05	--	--	<.05	--	--	.29	<.20	<.20
		08/04/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.27	<.20
03609750	Tennessee River near Paducah, KY	07/13/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/14/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		11/29/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
		12/19/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
03375800	Wabash River at New Harmony, IN	04/13/99	<.05	<.20	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	.12	.48	.22
		04/26/99	.31	.31	.20	--	<.05	.38	<.20	--	.09	--	--	--	--	--	.73	1.2	.59
		05/11/99	.24	.31	<.20	--	<.05	.53	<.20	--	<.05	--	--	--	--	--	.42	.90	.38
		05/26/99	.88	.39	.58	--	.05	.29	<.20	--	.24	--	--	--	--	--	.88	.74	.41
		06/08/99	1.7	1.7	3.0	--	.11	.45	.27	--	.43	--	--	--	--	--	4.0	1.8	1.3
03378500	Wabash River at New Harmony, IN	08/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.29	<.20
		06/11/00	.19	1.1	1.2	--	<.05	.62	<.20	--	.09	--	--	<.05	--	--	.63	1.4	.72
		06/27/00	<.05	.12	<.20	--	<.05	.16	<.20	--	<.05	--	--	<.05	--	--	.15	.24	.20
		07/11/00	<.05	.96	.66	--	<.05	.52	<.20	--	<.05	--	--	<.05	--	--	.18	1.2	.65
		11/28/00	<.05	.43	.27	--	<.05	.12	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.06	.74	.30
07288955	Yazoo River below Steele Bayou, MS	08/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.19	<.20	<.20
		06/19/00	<.05	<.20	<.20	--	<.05	.55	<.20	--	.13	--	--	.05	--	--	3.0	.54	<.20
		08/22/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.10	<.20	<.20
		05/10/02	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	<.05	<.05	<.05	<.05	<.05	1.1	.09	.10
		06/27/02	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.34	.07	.09

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

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Analytical Results for Selected Acetamide Herbicides and Their Degradation Products, Ethanesulfonic Acid, Oxanilic Acid, and Sulfimyl Acetic Acid, in Surface-Water Samples, 1993–2003 159

Their Degradation Products, Ethanesulfonic Acid, Oxanilic Acid, and Sulfimyl Acetic Acid, in Surface-Water Samples, 1993–2003 159

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Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delaware River Basin (DELR/BET)—Continued																			
01470779	Tulpehocken Creek near Bernville, PA	06/16/99	--	<0.05	<0.05	--	--	1.1	<0.05	--	--	--	--	--	--	--	--	1.7	0.28
		06/23/99	--	<.05	<.05	--	--	.44	<.05	--	--	--	--	--	--	--	--	.74	.06
		07/01/99	--	<.05	<.05	--	--	.55	<.05	--	--	--	--	--	--	--	--	1.1	<.05
		07/07/99	--	<.05	<.05	--	--	.37	<.05	--	--	--	--	--	--	--	--	1.0	<.05
		07/15/99	--	<.05	<.05	--	--	.12	<.05	--	--	--	--	--	--	--	--	.36	<.05
		07/20/99	--	<.05	<.05	--	--	.13	<.05	--	--	--	--	--	--	--	--	.37	<.05
		08/04/99	--	<.05	<.05	--	--	.07	<.05	--	--	--	--	--	--	--	--	.24	<.05
		08/17/99	--	<.05	<.05	--	--	.08	<.05	--	--	--	--	--	--	--	--	.28	<.05
		09/01/99	--	<.05	<.05	--	--	.18	<.05	--	--	--	--	--	--	--	--	.44	<.05
		09/16/99	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.13	.06
		10/06/99	--	<.05	<.05	--	--	.17	<.05	--	--	--	--	--	--	--	--	.67	.12
		11/03/99	--	<.05	<.05	--	--	.20	<.05	--	--	--	--	--	--	--	--	.73	.07
		12/08/99	--	<.05	<.05	--	--	.93	<.05	--	--	--	--	--	--	--	--	1.4	.11
		12/14/99	--	<.05	<.05	--	--	.45	<.05	--	--	--	--	--	--	--	--	1.1	.07
		01/05/00	--	<.05	<.05	--	--	.17	<.05	--	--	--	--	--	--	--	--	.37	<.05
		02/03/00	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.61	<.05
		02/28/00	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	.49	.25
		03/08/00	--	<.05	<.05	--	--	.10	<.05	--	--	--	--	--	--	--	--	.47	<.05
		03/21/00	--	<.05	<.05	--	--	.20	<.05	--	--	--	--	--	--	--	--	.64	<.05
		03/22/00	--	<.05	<.05	--	--	.06	<.05	--	--	--	--	--	--	--	--	.34	.10
		05/03/00	--	<.05	<.05	--	--	.12	<.05	--	--	--	--	--	--	--	--	.60	<.05
		05/17/00	--	<.05	<.05	--	--	.34	<.05	--	--	--	--	--	--	--	--	.70	.21
		06/01/00	--	<.05	<.05	--	--	.14	<.05	--	--	--	--	--	--	--	--	.53	.06

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Dimeth-enamid ESA (µg/L)	Dimeth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delaware River Basin (DELR/BET)—Continued																			
01470779	Tulpehocken Creek near Bernville, PA	06/14/00	--	<0.05	<0.05	--	--	0.29	<0.05	--	--	--	--	--	--	--	--	0.64	0.24
		06/29/00	--	.28	<.05	--	--	.27	<.05	--	--	--	--	--	--	--	--	.65	.21
		07/11/00	--	<.05	<.05	--	--	.16	<.05	--	--	--	--	--	--	--	--	.74	.14
		08/02/00	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.87	.30
		08/14/00	--	<.05	<.05	--	--	.18	<.05	--	--	--	--	--	--	--	--	.69	.08
		08/28/00	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.59	.07
Delmarva Peninsula (DLMV/JMD)																			
01493110	Chesterville Branch near Chesterville, MD	10/13/99	--	<.05	<.05	--	--	20	4.8	--	--	--	--	--	--	--	--	16	5.0
		02/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	<.05	<.05
01494200	Chester River near McKinley, MD	04/12/01	--	<.05	<.05	--	--	.19	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.97	.20
		06/12/01	--	<.05	<.05	--	--	.17	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.86	.26
		08/14/01	--	<.05	<.05	--	--	.21	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.83	<.05
		10/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.92	.25
01493112	Chesterville Branch near Crumpton, MD	02/08/99	--	<.20	<.20	--	--	2.4	.72	--	--	--	--	--	--	--	--	2.3	.66
		02/26/99	--	<.20	<.20	--	--	1.2	.26	--	--	--	--	--	--	--	--	1.2	.29
		03/10/99	--	<.20	<.20	--	--	2.7	.70	--	--	--	--	--	--	--	--	2.6	.84
		03/15/99	--	<.20	<.20	--	--	2.7	.74	--	--	--	--	--	--	--	--	2.3	.90
		04/06/99	--	<.20	<.20	--	--	2.1	1.1	--	--	--	--	--	--	--	--	2.1	.90
		04/06/99	--	<.20	<.20	--	--	2.1	1.1	--	--	--	--	--	--	--	--	2.0	.80
		04/21/99	--	<.20	<.20	--	--	1.4	.57	--	--	--	--	--	--	--	--	1.6	.58
		05/05/99	--	.34	<.05	--	--	3.0	.77	--	--	--	--	--	--	--	--	1.8	.54
		05/17/99	--	<.05	<.05	--	--	2.2	.61	--	--	--	--	--	--	--	--	3.2	.41
		05/24/99	--	<.05	<.05	--	--	1.8	.90	--	--	--	--	--	--	--	--	3.7	1.3
06/08/99	--	<.05	<.05	--	--	2.4	.86	--	--	--	--	--	--	--	--	2.1	.64		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																	
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)	
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																				
Delmarva Peninsula (DLMV/JMD)—Continued																				
01493112	Chesterville Branch near Crumpton, MD	06/20/99	--	<0.05	<0.05	--	--	2.2	2.2	--	--	--	--	--	--	--	--	1.7	1.4	
		06/21/99	--	<.05	<.05	--	--	3.3	4.1	--	--	--	--	--	--	--	--	2.1	2.4	
		07/06/99	--	<.05	<.05	--	--	.76	.19	--	--	--	--	--	--	--	--	1.3	.38	
		07/21/99	--	<.05	<.05	--	--	1.6	.30	--	--	--	--	--	--	--	--	1.5	.32	
		08/03/99	--	<.05	<.05	--	--	1.4	.29	--	--	--	--	--	--	--	--	1.7	.35	
			01/04/00	--	<.05	<.05	--	--	1.4	1.5	--	--	--	--	--	--	--	--	1.8	1.4
			06/12/01	--	<.05	<.05	--	--	2.5	.67	--	--	<0.05	<0.05	--	<0.05	<0.05	--	3.0	1.1
			07/16/01	--	<.05	<.05	--	--	2.5	.63	--	--	<.05	<.05	--	<.05	<.05	--	3.0	1.0
			08/14/01	--	<.05	<.05	--	--	2.1	.71	--	--	<.05	<.05	--	<.05	<.05	--	2.5	.93
			09/10/01	--	<.05	<.05	--	--	.46	.32	--	--	<.05	<.05	--	<.05	<.05	--	.53	1.1
		11/15/01	--	<.05	<.05	--	--	2.3	.54	--	--	<.05	<.05	--	<.05	<.05	--	2.9	.75	
		12/03/01	--	<.05	<.05	<0.05	--	1.8	.39	<0.05	--	<.05	<.05	--	<.05	<.05	--	2.3	.53	
		01493500	Morgan Creek near Kennedyville, MD	02/22/00	--	.40	.06	--	--	.20	.21	--	--	--	--	--	--	--	2.2	.55
				02/23/00	--	.46	<.05	--	--	.23	<.05	--	--	--	--	--	--	--	1.4	.30
				03/06/02	--	<.05	<.05	<.05	--	.67	.15	<.05	--	<.05	<.05	--	<.05	<.05	--	3.8
03/27/02	--			.05	<.05	<.05	--	.40	.11	<.05	--	<.05	<.05	--	<.05	<.05	--	2.5	.42	
01485719	Pocomoke River at Shelldown, MD			04/09/01	--	.11	.07	--	--	.42	.05	--	--	<.05	<.05	--	<.05	<.05	--	2.4
		06/11/01	--	.08	<.05	--	--	.38	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.0	.67	
		08/13/01	--	<.05	<.05	--	--	.36	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.3	<.05	
		10/22/01	--	.16	.08	--	--	.30	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.8	.60	
		03/25/02	--	.06	<.05	<.05	--	.29	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.3	.33	
		04/29/02	--	.15	<.05	<.05	--	.46	.05	<.05	--	<.05	<.05	--	<.05	<.05	--	2.2	.63	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Delmarva Peninsula (DLMV/JMD)—Continued																			
01485000	Pocomoke River near Willards, MD	06/20/99	--	0.13	0.41	--	--	1.7	0.07	--	--	--	--	--	--	--	--	2.0	2.0
		05/19/00	--	.43	.34	--	--	1.1	.53	--	--	<0.05	<0.05	--	--	--	--	2.7	1.4
		05/31/00	--	<.05	<.05	--	--	1.1	<.05	--	--	<.05	<.05	--	--	--	--	1.7	.38
		02/21/01	--	.58	.22	--	--	.99	.15	--	--	<.05	<.05	--	<0.05	<0.05	--	5.6	2.1
		03/19/01	--	.68	.22	--	--	.79	.15	--	--	<.05	<.05	--	<.05	<.05	--	8.4	2.0
		03/30/01	--	.55	.18	--	--	.51	.10	--	--	<.05	<.05	--	<.05	<.05	--	5.7	1.9
		06/25/01	--	1.1	.54	--	--	1.0	.19	--	--	<.05	<.05	--	<.05	<.05	--	5.9	3.1
		07/09/01	--	.45	.17	--	--	1.4	.24	--	--	<.05	<.05	--	<.05	<.05	--	3.3	1.6
		07/23/01	--	.41	.17	--	--	1.1	.20	--	--	<.05	<.05	--	<.05	<.05	--	3.5	1.4
		08/13/01	--	.45	.13	--	--	.66	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.3	1.3
		08/20/01	--	1.1	.36	--	--	1.0	.22	--	--	<.05	<.05	--	<.05	<.05	--	5.0	2.1
		09/04/01	--	.34	.12	--	--	1.3	.24	--	--	<.05	<.05	--	<.05	<.05	--	3.2	.93
		09/19/01	--	.11	.08	--	--	.28	.15	--	--	<.05	<.05	--	<.05	<.05	--	.42	1.1
		03/25/02	--	.63	.19	<0.05	--	.97	.18	<0.05	--	<.05	<.05	--	<.05	<.05	--	5.8	1.9
		04/29/02	--	.77	.27	<.05	--	.55	.08	<.05	--	<.05	<.05	--	<.05	<.05	--	4.4	1.9
Eastern Iowa Basin (EIWA/SKI)																			
05462770	Beaver Creek near Parkersburg, IA	08/19/97	<0.05	.82	.21	--	<0.05	3.5	.28	--	--	--	--	--	--	--	0.33	6.2	1.1
		05/21/98	<.05	.65	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.12	4.4	1.1
05473550	Big Creek near Lowell, IA	08/13/97	<.05	.51	.55	--	<.05	.48	<.20	--	--	--	--	--	--	--	.06	1.2	.49
		05/20/98	.19	.90	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.45	7.5	1.7
05463510	Black Hawk Creek at Waterloo, IA	08/20/97	<.05	<.20	<.20	--	<.05	2.2	.31	--	--	--	--	--	--	--	.11	6.7	.99
		05/20/98	<.05	.55	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	.05	8.5	.98
05421700	Buffalo Creek near Stone City, IA	08/14/97	<.05	.21	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	<.05	2.4	.37
		05/21/98	<.05	.99	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.05	5.4	1.4
05473400	Cedar Creek near Oakland Mills, IA	08/13/97	<.05	.45	.53	--	<.05	.86	.30	--	--	--	--	--	--	--	.11	1.4	.66
		05/19/98	1.3	.72	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	.17	2.4	.48

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05465000	Cedar River at Conesville, IA	03/11/96	<0.05	0.31	<0.20	--	<0.05	1.4	<0.20	--	--	--	--	--	--	--	1.2	2.1	0.50
		04/10/96	.12	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.83	2.6	.95
		06/13/96	.19	2.7	2.5	--	<.05	3.2	<.20	--	--	--	--	--	--	--	.48	8.5	3.2
		07/08/96	<.05	.96	.36	--	<.05	2.5	<.20	--	--	--	--	--	--	--	.10	4.8	.60
		08/05/96	<.05	.21	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.05	3.3	.67
		09/10/96	<.05	.33	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	<.05	1.6	.50
		10/10/96	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	2.3	.49
		10/29/96	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.06	2.0	.38
		03/26/96	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.37	2.6	<.20
		06/25/96	.11	1.7	1.3	--	<.05	2.3	.32	--	--	--	--	--	--	--	.47	5.4	1.2
05464020	Cedar River at Gilbertville, IA	07/23/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	.07	3.4	.56
		08/29/96	<.05	.48	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.09	4.2	1.5
		09/24/96	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	1.8	.36
		10/15/96	<.05	<.20	<.20	--	<.05	2.6	.23	--	--	--	--	--	--	--	<.05	3.4	.51
		11/12/96	<.05	<.20	.21	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.07	2.7	.30
		12/12/96	<.05	.41	<.20	--	<.05	2.0	.30	--	--	--	--	--	--	--	.07	4.0	.48
		01/15/97	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	.40	4.3	.66
		02/10/97	<.05	<.20	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	.19	2.9	.67
		10/29/96	<.05	.22	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.06	2.1	.25
		11/13/96	<.05	<.20	.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.08	2.9	.33
05464935	Cedar River near Nichols, IA	12/04/96	<.05	.38	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.13	4.2	.71
		01/22/97	<.05	.28	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.37	3.2	.47
		02/03/97	<.05	.30	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.36	2.3	.35
		03/13/97	<.05	.97	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.90	3.2	1.1
		05/07/97	.80	1.1	.49	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.78	5.0	1.0
		04/03/98	<.05	.57	<.20	--	<.05	.73	<.20	--	--	--	--	--	--	--	.21	2.9	.71

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05464935	Cedar River near Nichols, IA	05/07/98	0.14	0.58	<0.20	--	<0.05	1.2	<0.20	--	--	--	--	--	--	--	0.28	3.5	0.73
		06/05/98	.29	1.3	.70	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.28	4.9	.73
		07/06/98	.09	2.1	1.2	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.39	4.1	1.2
		08/04/98	<.05	.64	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	3.7	.40
		09/03/98	<.05	1.1	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	.05	3.6	.65
05473060	Crooked Creek at Coppock, IA	07/28/99	.07	3.0	1.8	--	<.05	1.3	<.20	--	0.06	--	--	<0.05	--	--	.28	4.9	1.7
		08/12/97	<.05	.69	.87	--	<.05	.66	.24	--	--	--	--	--	--	--	.18	2.8	.87
		05/19/98	.12	.76	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.49	5.4	1.1
05471120	East Branch Indian Creek near Iowa Center, IA	08/18/97	<.05	.59	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	.06	3.3	.56
		05/21/98	.30	.91	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	.60	4.4	.78
05449200	East Branch Iowa River at Belmond, IA	08/26/97	<.05	.21	<.20	--	<.05	3.0	<.20	--	--	--	--	--	--	--	<.05	4.1	.66
		05/20/98	<.05	.74	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.06	7.3	1.8
05420720	East Fork Wapsipin- icon near Tripoli, IA	08/28/97	<.05	.31	<.20	--	<.05	2.3	.54	--	--	--	--	--	--	--	.06	2.3	.50
05455500	English River at Kalona, IA	08/11/97	<.05	<.20	.35	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.06	1.3	.29
		05/18/98	.07	.61	<.20	--	<.05	.65	<.20	--	--	--	--	--	--	--	.19	2.8	.58
05461390	Flood Creek near Powersville, IA	03/28/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	.22	2.8	<.20
		06/04/96	.05	1.9	<.20	--	<.05	2.7	<.20	--	--	--	--	--	--	--	.46	12	3.3
		06/07/96	.36	2.0	1.7	--	.13	3.3	<.20	--	--	--	--	--	--	--	1.2	12	2.7
		06/19/96	.08	2.1	1.7	--	<.05	3.3	.45	--	--	--	--	--	--	--	.75	11	1.9
		07/17/96	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	3.8	.20
		08/14/96	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	<.05	4.0	<.20
		09/18/96	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	2.0	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05461390	Flood Creek near Powersville, IA	09/18/96	<0.05	<0.20	<0.20	--	<0.05	1.2	0<.20	--	--	--	--	--	--	--	<0.05	1.9	<0.20
		10/23/96	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	1.7	<.20
		12/11/96	<.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	3.0	<.20
		01/14/97	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	4.6	<.20
		02/19/97	<.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	2.5	<.20
		03/18/97	<.05	1.8	.77	--	.08	.91	<.20	--	--	--	--	--	--	--	2.4	4.7	2.1
		05/03/97	2.3	1.9	.93	--	<.05	2.6	<.20	--	--	--	--	--	--	--	2.3	12	2.6
		08/25/97	<.05	.37	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	3.4	.28
		04/02/98	<.05	1.4	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	1.4	9.8	2.1
		05/06/98	<.05	.48	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.15	8.0	.40
	05/18/98	.05	.51	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.11	3.8	.50	
	07/08/98	<.05	1.7	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	.07	7.8	1.1	
	08/05/98	<.05	.33	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	3.6	.15	
	09/02/98	<.05	.48	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	<.05	5.4	.35	
	07/22/99	.05	1.1	.60	--	.06	1.0	.46	--	0.05	--	--	<0.05	--	--	.54	2.9	.99	
05464137	Four Mile Creek near Trear, IA	04/15/98	<.05	.49	<.20	--	<.05	.85	<.20	--	--	--	--	--	--	<.05	2.6	.57	
		07/16/98	<.05	1.2	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	<.05	3.8	.65	
		08/12/98	<.05	1.0	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	<.05	4.7	.37	
05453100	Iowa River at Marengo, IA	03/15/96	<.05	<.20	<.20		<.05	1.1	<.20								.25	1.9	<.20
		04/25/96	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.14	2.8	.49
		05/23/96	1.1	.50	.77	--	<.05	.80	<.20	--	--	--	--	--	--	--	.71	2.6	.49
		05/31/96	.19	.98	.75	--	<.05	1.1	.26	--	--	--	--	--	--	--	.62	4.2	1.0
		06/27/96	<.05	.70	.67	--	<.05	.90	.32	--	--	--	--	--	--	--	.48	4.6	1.3
		07/25/96	<.05	.38	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.32	3.8	.89
		08/26/96	<.05	<.20	<.20	--	<.05	.89	<.20	--	--	--	--	--	--	--	.05	2.2	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05453100	Iowa River at Marengo, IA	09/26/96	<0.05	<0.20	<0.20	--	<0.05	1.3	<0.20	--	--	--	--	--	--	--	0.24	2.7	0.45
		10/16/96	<.05	<.20	<.20	--	<.05	1.9	.20	--	--	--	--	--	--	--	<.05	4.0	.81
		11/14/96	<.05	<.20	<.20	--	<.05	.95	<.20	--	--	--	--	--	--	--	.08	4.8	.37
		12/10/96	<.05	<.20	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.07	5.6	.61
		01/14/97	<.05	.41	<.20	--	<.05	.90	<.20	--	--	--	--	--	--	--	2.2	3.8	.64
		02/13/97	<.05	.44	<.20	--	<.05	.84	<.20	--	--	--	--	--	--	--	.31	2.6	.45
		03/19/97	<.05	1.1	.36	--	<.05	.98	<.20	--	--	--	--	--	--	--	.74	4.8	1.9
		05/06/97	.54	.45	.33	--	<.05	.82	.24	--	--	--	--	--	--	--	1.2	4.8	1.0
		04/02/98	<.05	.22	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	.31	2.0	.47
		05/08/98	.31	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.76	8.2	4.2
		06/05/98	.09	.62	.33	--	<.05	.77	<.20	--	--	--	--	--	--	--	.33	3.8	.78
		06/13/98	.80	1.4	1.4	--	<.05	.80	<.20	--	--	--	--	--	--	--	3.3	3.9	1.6
		06/26/98	.16	1.3	.81	--	<.05	.93	<.20	--	--	--	--	--	--	--	1.3	3.7	1.4
		07/07/98	.06	1.6	.80	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.59	5.5	1.7
		08/07/98	<.05	.60	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.13	4.4	.69
05449500	Iowa River near Rowan, IA	09/04/98	<.05	.58	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	3.4	.74
		03/20/96	<.05	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.14	4.0	1.2
		04/16/96	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.10	4.7	1.0
		05/14/96	.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.11	5.2	.56
		06/20/96	.17	.95	1.1	--	.12	1.8	.43	--	--	--	--	--	--	--	1.1	8.3	1.5
		07/16/96	<.05	.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	.08	5.5	.99
		08/13/96	<.05	<.20	<.20	--	<.05	2.5	<.20	--	--	--	--	--	--	--	.06	7.8	1.8
		09/17/96	<.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	3.2	.62
		10/08/96	<.05	<.20	<.20	--	<.05	2.6	<.20	--	--	--	--	--	--	--	<.05	5.8	.97

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Dimeth-enamid ESA (µg/L)	Dimeth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05449500	Iowa River near Rowan, IA	11/05/96	<.05	0.23	<0.20	--	<0.05	1.7	<0.20	--	--	--	--	--	--	--	0.08	5.6	0.49
		12/03/96	<.05	.21	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.06	8.8	1.0
		01/09/97	<.05	.28	<.20	--	<.05	1.4	.24	--	--	--	--	--	--	--	.32	5.0	.52
		02/04/97	<.05	.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.72	3.1	.41
		03/11/97	<.05	.75	<.20	--	<.05	.46	<.20	--	--	--	--	--	--	--	1.6	2.2	.85
		03/18/97	<.05	1.5	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	3.5	5.5	2.9
		03/24/97	<.05	.74	.33	--	<.05	1.0	.31	--	--	--	--	--	--	--	1.1	5.4	2.3
		04/03/97	<.05	.60	.39	--	<.05	1.4	.21	--	--	--	--	--	--	--	.25	4.6	1.3
		04/09/97	<.05	.60	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.15	5.9	1.4
		04/15/97	<.05	.36	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.15	5.6	.92
		04/22/97	.18	.26	<.20	--	.14	1.3	<.20	--	--	--	--	--	--	--	.24	4.6	.82
		04/29/97	<.05	.25	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.13	4.8	.84
		05/03/97	.58	.48	.30	--	<.05	1.3	<.20	--	--	--	--	--	--	--	1.1	7.7	1.4
		05/13/97	.06	.42	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.21	6.7	1.1
		05/20/97	.54	.48	.35	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.41	5.4	.99
		05/28/97	<.05	.41	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.13	6.2	1.0
		06/04/97	<.05	.28	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.09	5.0	.90
		06/10/97	<.05	.26	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.08	4.5	.69
		06/17/97	<.05	.30	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.25	5.3	.84
		06/23/97	.31	.61	.92	--	.52	1.1	.67	--	--	--	--	--	--	--	2.9	6.4	3.0
		06/30/97	<.05	1.1	.42	--	<.05	1.3	.20	--	--	--	--	--	--	--	.13	4.7	.89
07/01/97	.08	1.1	.98	--	<.05	1.3	.31	--	--	--	--	--	--	--	.51	7.0	1.6		
07/15/97	.05	.42	.27	--	<.05	.86	<.20	--	--	--	--	--	--	--	.14	2.8	.50		
07/29/97	<.05	.58	.30	--	<.05	1.8	.23	--	--	--	--	--	--	--	.27	10	2.2		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05449500	Iowa River near Rowan, IA	08/11/97	<0.05	<0.20	0.24	--	<0.05	1.8	<0.20	--	--	--	--	--	--	--	<0.05	4.1	0.71
		08/26/97	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	2.9	.61
		09/11/97	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.05	3.3	.69
		09/25/97	<.05	<.20	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	<.05	3.1	.84
		10/08/97	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	2.9	.58
		10/20/97	<.05	.28	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.38	3.6	.48
		11/05/97	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.09	3.2	.51
		11/17/97	<.05	<.20	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.06	3.4	.55
		12/02/97	<.05	.23	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.06	3.2	.60
		01/06/98	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.10	3.4	.70
		02/18/98	.24	.72	.40	--	.05	.56	<.20	--	--	--	--	--	--	--	11	2.5	1.3
		03/12/98	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.24	3.6	.67
		03/31/98	<.05	.53	<.20	--	<.05	.93	<.20	--	--	--	--	--	--	--	.30	4.7	.98
		05/05/98	<.05	.29	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.11	6.1	.49
		05/20/98	.07	.63	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.20	5.9	1.6
		06/13/98	.12	.60	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.22	7.7	1.1
		07/07/98	<.05	.77	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.32	6.1	1.4
		08/04/98	<.05	.46	<.20	--	<.05	2.8	<.20	--	--	--	--	--	--	--	.08	4.9	.89
		09/01/98	<.05	.83	<.20	--	<.05	2.6	<.20	--	--	--	--	--	--	--	.05	6.1	1.2
		01/10/01	<.05	.12	<.05	--	<.05	.78	.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	3.3	.31
		02/06/01	<.05	<.05	<.05	--	<.05	1.5	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	4.1	.40
		03/07/01	<.05	.09	.06	--	<.05	1.0	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.2	.35
		04/10/01	<.05	.48	.34	--	<.05	.43	.08	--	.18	.14	.06	<.05	<.05	<.05	.28	2.3	.71
		05/02/01	1.4	.33	.34	--	<.05	.55	<.05	--	.74	.17	.10	<.05	<.05	<.05	1.8	3.2	1.1

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05449500	Iowa River near Rowan, IA	06/08/01	0.12	0.92	0.47	--	<0.05	0.63	<0.05	--	0.11	0.18	0.06	<0.05	<0.05	<0.05	0.09	4.5	0.82
		07/12/01	<.05	.52	.13	--	<.05	.88	<.05	--	<.05	.13	<.05	<.05	<.05	<.05	.06	3.4	.52
		08/07/01	<.05	<.05	<.05	--	<.05	1.5	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.06	3.9	.49
		09/06/01	<.05	<.05	.05	--	<.05	.25	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.45	.44
05451810	Iowa River at Tama, IA	07/25/96	<.05	.39	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.10	4.2	.80
05465500	Iowa River at Wapello, IA	03/13/96	<.05	.35	<.20	--	<.05	1.3	.19	--	--	--	--	--	--	--	.91	2.3	.51
		04/08/96	<.05	1.4	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	1.1	2.6	<.20
		04/08/96	<.05	1.7	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	1.2	3.1	<.20
		05/08/96	.14	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.29	2.8	.51
		06/11/96	.28	2.6	2.1	--	<.05	2.6	<.20	--	--	--	--	--	--	--	.64	6.7	2.5
		07/09/96	<.05	.82	.61	--	<.05	2.0	.20	--	--	--	--	--	--	--	.25	4.8	1.6
		08/06/96	<.05	.27	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.07	3.1	.73
		09/11/96	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	2.7	.72
		10/08/96	<.05	<.20	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	2.5	.59
		11/06/96	<.05	<.20	.43	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.07	3.5	1.0
		12/03/96	<.05	.28	.27	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.12	4.4	.51
		01/07/97	<.05	.37	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.08	3.3	.40
		02/05/97	<.05	.47	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.43	2.2	.39
		03/11/97	<.05	.47	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	.68	1.8	.41
		03/20/97	<.05	1.0	.40	--	<.05	.91	<.20	--	--	--	--	--	--	--	1.1	3.1	1.3
		03/27/97	<.05	.29	.33	--	<.05	.74	<.20	--	--	--	--	--	--	--	1.0	2.6	.79
		03/31/97	<.05	.43	<.20	--	<.05	.86	<.20	--	--	--	--	--	--	--	.75	2.9	.75
		04/10/97	<.05	.69	.31	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.33	3.5	.90

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05465500	Iowa River at Wapello, IA	04/16/97	<0.05	0.56	0.24	--	<0.05	1.3	<0.20	--	--	--	--	--	--	--	0.19	3.5	0.73
		04/23/97	<.05	.43	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.12	3.4	.63
		04/30/97	.06	.23	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	.09	2.2	.36
		05/07/97	.69	.81	.36	--	<.05	1.3	<.20	--	--	--	--	--	--	--	1.0	4.2	.85
		05/14/97	.41	.84	.44	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.61	4.4	.86
		05/21/97	1.7	.68	.74	--	.24	.97	<.20	--	--	--	--	--	--	--	4.9	3.0	.84
		05/29/97	.59	.79	.71	--	<.05	.96	<.20	--	--	--	--	--	--	--	1.7	3.1	.93
		06/05/97	.16	.43	.24	--	<.05	.91	<.20	--	--	--	--	--	--	--	.36	2.6	.49
		06/12/97	.31	.57	.40	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.34	3.6	.76
		06/19/97	.10	.47	.22	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.36	3.8	.77
		06/25/97	.11	.72	.56	--	<.05	.96	<.20	--	--	--	--	--	--	--	.33	3.3	.71
		07/02/97	.28	1.4	1.6	--	<.05	1.1	<.20	--	--	--	--	--	--	--	1.1	4.0	1.8
		07/16/97	<.05	.59	.35	--	<.05	.80	<.20	--	--	--	--	--	--	--	.31	2.7	.69
		07/31/97	<.05	.98	.46	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.16	4.6	.98
		08/13/97	<.05	.64	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.05	3.3	.70
		08/28/97	<.05	.24	<.20	--	<.05	.78	<.20	--	--	--	--	--	--	--	<.05	1.6	.29
		09/05/97	<.05	.23	<.20	--	<.05	.75	<.20	--	--	--	--	--	--	--	.05	1.6	.29
		09/23/97	<.05	.23	<.20	--	<.05	.98	<.20	--	--	--	--	--	--	--	<.05	1.9	.40
		10/06/97	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	2.4	.44
		10/22/97	<.05	.69	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.07	4.0	.71
		11/03/97	<.05	.38	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	<.05	2.7	.40
		11/19/97	<.05	.35	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	2.5	.37
		12/01/97	<.05	.25	<.20	--	<.05	.88	<.20	--	--	--	--	--	--	--	<.05	2.2	.37
		01/05/98	<.05	.45	<.20	--	<.05	.79	<.20	--	--	--	--	--	--	--	.08	2.5	.52

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05465500	Iowa River at Wapello, IA	02/17/98	<0.05	0.35	<0.20	--	<0.05	0.73	<0.20	--	--	--	--	--	--	--	0.17	2.0	0.32
		03/09/98	<.05	.60	<.20	--	<.05	.77	<.20	--	--	--	--	--	--	--	.27	2.9	.63
		03/30/98	<.05	.53	<.20	--	<.05	.83	<.20	--	--	--	--	--	--	--	.11	2.9	.54
		04/04/98	<.05	.84	<.20	--	<.05	.79	<.20	--	--	--	--	--	--	--	.16	3.2	.70
		05/04/98	.05	.48	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	.13	4.6	.53
		06/01/98	.93	1.8	1.3	--	.07	1.2	<.20	--	--	--	--	--	--	--	2.0	5.0	1.9
		07/02/98	.12	1.9	1.3	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.55	4.1	1.4
		08/03/98	<.05	1.2	.50	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.22	5.4	1.1
		08/31/98	<.05	1.1	.20	--	<.05	2.1	.20	--	--	--	--	--	--	--	<.05	7.2	1.1
		10/06/98	<.05	.45	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	.07	2.4	.45
		11/09/98	<.05	.90	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	--	<.05	5.6	.57
		12/01/98	<.05	.40	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	4.8	.39
		01/13/99	<.05	.33	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	2.7	.40
		02/09/99	<.05	.35	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.06	2.0	.36
		03/02/99	<.05	.44	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.34	2.8	.42
		04/07/99	<.05	.24	<.20	--	<.05	.88	<.20	--	--	--	--	--	--	--	.19	1.9	.36
		05/04/99	<.05	.52	<.20	--	<.05	.91	<.20	--	--	--	--	--	--	--	.14	2.7	.56
		06/07/99	.72	1.2	1.4	--	<.05	.86	<.20	--	0.42	--	--	--	--	--	.85	2.6	.79
		07/06/99	.11	.73	.60	--	<.05	.37	<.20	--	.08	--	--	--	--	--	.40	1.6	.42
		08/03/99	<.05	.92	.33	--	<.05	.60	<.20	--	<.05	--	--	<0.05	--	--	.06	2.5	.49
		09/01/99	<.05	.34	<.20	--	<.05	.57	<.20	--	<.05	--	--	<.05	--	--	<.05	1.7	.24
		10/04/99	<.05	.28	<.20	--	<.05	.83	<.20	--	<.05	--	--	<.05	--	--	<.05	1.8	.27
		11/01/99	<.05	.46	<.20	--	<.05	1.1	.51	--	<.05	--	--	<.05	--	--	<.05	1.4	.60
		12/07/99	<.05	.24	<.20	--	<.05	1.1	<.20	--	<.05	--	--	<.05	--	--	<.05	1.5	<.20
		01/05/00	<.05	<.20	.99	--	<.05	1.0	<.20	--	<.05	--	--	<.05	--	--	<.05	1.6	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05465500	Iowa River at Wapello, IA	02/01/00	<0.05	0.22	<0.20	--	<0.05	1.1	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	1.8	0.29
		03/01/00	<.05	.24	<.20	--	<.05	.59	<.20	--	<.05	--	--	<.05	--	--	<.05	1.1	.22
		04/03/00	<.05	<.20	<.20	--	<.05	.75	<.20	--	<.05	--	--	<.05	--	--	.06	1.6	.24
		05/01/00	<.05	.24	<.20	--	<.05	.59	<.20	--	<.05	--	--	<.05	--	--	.08	1.7	<.20
		06/07/00	.07	.70	.73	--	<.05	.52	<.20	--	<.05	--	--	<.05	--	--	.09	1.6	.45
		07/05/00	<.05	.70	.46	--	<.05	.51	<.20	--	<.05	--	--	<.05	--	--	.15	1.6	.49
		08/09/00	<.05	.25	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.4	.31
		08/31/00	<.05	.29	.29	--	<.05	.80	<.20	--	<.05	--	--	<.05	--	--	<.05	1.6	.38
		10/03/00	<.05	<.05	.06	--	<.05	1.1	.06	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	1.5	.43
		11/01/00	<.05	<.05	.08	--	<.05	.97	.08	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.8	.19
		12/06/00	<.05	.40	.08	--	<.05	1.2	.42	--	<.05	<.05	<.05	<.05	<.05	<.05	.34	2.9	.47
		01/04/01	<.05	.23	.05	--	<.05	.85	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.1	.22
		02/01/01	<.05	.14	.08	--	<.05	.57	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.07	1.4	.18
		03/02/01	<.05	.13	.07	--	<.05	.43	.06	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.2	.20
		04/02/01	.11	.22	.12	--	<.05	.42	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.76	1.6	.37
		05/01/01	.06	.43	.18	--	<.05	.65	<.05	--	<.05	.06	<.05	<.05	<.05	<.05	.19	2.4	.55
		06/05/01	.31	.94	.76	--	<.05	.57	<.05	--	.11	.11	.07	<.05	<.05	<.05	.34	3.0	.75
		07/06/01	<.05	.70	.35	--	<.05	.81	.06	--	<.05	.09	<.05	<.05	<.05	<.05	.10	2.2	.44
		08/01/01	<.05	.86	.37	--	<.05	.57	<.05	--	<.05	.06	<.05	<.05	<.05	<.05	.08	2.3	.44
		09/06/01	<.05	.08	.11	--	<.05	.21	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	.33	.31
05457950	Little Cedar River near Floyd, IA	05/06/03	--	.26	.22	0.10	--	.25	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	1.5	.21
		08/27/97	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	2.5	.29
		05/18/98	.05	1.0	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.12	5.7	1.1

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05420900	Little Wapsipinicon River at Littleton, IA	08/20/97	0.14	0.55	<0.20	--	<0.05	3.2	<0.20	--	--	--	--	--	--	--	0.12	2.1	0.70
		05/20/98	<.05	2.0	<.20	--	<.05	4.0	<.20	--	--	--	--	--	--	--	<.05	4.8	.76
05465310	Long Creek near Columbus Junc- tion, IA	08/12/97	<.05	.80	.61	--	<.05	.90	<.20	--	--	--	--	--	--	--	.08	1.0	.40
		05/20/98	.15	.94	<.20	--	<.05	.55	<.20	--	--	--	--	--	--	--	.07	2.5	.56
05455870	Maynes Creek near Kesley, IA	08/25/97	<.05	.37	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	3.1	.46
		05/21/98	<.05	<.20	<.20	--	<.05	.89	<.20	--	--	--	--	--	--	--	.08	3.4	.67
		09/09/98	<.05	<.20	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	<.05	1.4	<.20
05421870	Mud Creek near Donahue, IA	08/14/97	<.05	.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.07	3.1	.60
		05/21/98	.07	.68	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.10	6.2	1.0
05455100	Old Man's Creek near Iowa City, IA	03/18/96	<.05	.22	.14	--	<.05	1.0	.25	--	--	--	--	--	--	--	.05	.94	.27
		04/11/96	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
		05/07/96	.19	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.32	1.4	<.20
		05/10/96	2.5	<.20	.92	--	<.05	<.20	<.20	--	--	--	--	--	--	--	9.7	.77	.28
		05/21/96	3.2	1.4	2.1	--	<.05	.74	<.20	--	--	--	--	--	--	--	3.6	1.7	.88
		06/14/96	.06	1.3	.24	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.19	1.7	.53
		06/14/96	.05	1.7	.39		<.05	1.6	<.20	--	--	--	--	--	--	--	.21	2.6	.60
		07/11/96	<.05	1.3	.23	--	<.05	1.7	<.20	--	--	--	--	--	--	--	.09	2.6	.74
		08/08/96	<.05	.70	<.20	--	<.05	1.9	<.20	--	--	--	--	--	--	--	.08	1.9	.59
		09/09/96	<.05	.29	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	.08	3.2	.78
		10/07/96	<.05	1.9	1.7	--	<.05	2.4	.24	--	--	--	--	--	--	--	.10	6.4	1.6
		10/24/96	.10	.28	<.20	--	<.05	1.3	.79	--	--	--	--	--	--	--	.10	.48	.36
		11/12/96	<.05	.45	<.20	--	<.05	1.9	.38	--	--	--	--	--	--	--	.07	1.4	.39
		12/02/96	<.05	.25	<.20	--	<.05	1.5	.36	--	--	--	--	--	--	--	.08	.92	.31
		01/06/97	<.05	.39	.26	--	<.05	1.5	.33	--	--	--	--	--	--	--	.09	1.2	.26

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05455100	Old Man's Creek near Iowa City, IA	02/04/97	0.14	0.58	0.49	--	<0.05	0.28	<0.20	--	--	--	--	--	--	--	0.34	0.84	0.45
		03/10/97	<.05	1.6	1.6	--	<.05	.62	.51	--	--	--	--	--	--	--	.34	1.9	1.3
		05/01/97	1.6	.28	.30	--	<.05	.44	<.20	--	--	--	--	--	--	--	1.7	1.4	.39
		05/08/97	4.4	.81	.84	--	<.05	.61	<.20	--	--	--	--	--	--	--	2.1	1.7	.67
		08/11/97	<.05	.34	.40	--	<.05	1.3	.29	--	--	--	--	--	--	--	<.05	1.6	.36
		03/31/98	<.05	<.20	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.09	1.2	<.20
		05/05/98	<.05	.63	<.20	--	<.05	.71	<.20	--	--	--	--	--	--	--	.05	3.0	.59
		05/18/98	.09	1.1	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.09	2.6	.81
		05/18/98	.10	1.2	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.10	2.6	.86
		06/02/98	.05	1.3	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.09	3.0	.70
	07/10/98	<.05	.97	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.06	2.9	.65	
	08/05/98	<.05	.48	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	<.05	1.9	.31	
	09/01/98	<.05	.49	<.20	--	<.05	.91	<.20	--	--	--	--	--	--	--	<.05	3.2	.42	
	11/10/99	<.05	<.20	<.20	--	<.05	1.2	.20	--	--	--	--	--	--	--	<.05	1.1	.25	
	05452020	Salt Creek at Belle Plaine, IA	08/21/97	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	<.05	2.2	.21
		05/18/98	<.05	.24	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	<.05	3.9	.39	
05474000	Skunk River at Augusta, IA	03/12/96	<.05	.25	.23	--	<.05	.51	.34	--	--	--	--	--	--	--	.35	1.4	.45
		04/09/96	<.05	.73	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	.14	1.8	<.20
		05/09/96	3.7	1.3	2.7	--	.42	.64	.50	--	--	--	--	--	--	--	3.0	1.5	.97
		06/12/96	.13	.91	.68	--	<.05	.56	<.20	--	--	--	--	--	--	--	.62	2.4	.67
		07/10/96	1.6	.86	.77	--	<.05	.60	<.20	--	--	--	--	--	--	--	.32	3.8	1.1
		08/07/96	<.05	.40	<.20	--	<.05	.42	<.20	--	--	--	--	--	--	--	.16	2.1	.61
		09/12/96	<.05	<.20	<.20	--	<.05	.43	<.20	--	--	--	--	--	--	--	.09	.81	.50
		10/09/96	<.05	<.20	<.20	--	<.05	.41	<.20	--	--	--	--	--	--	--	.12	2.3	.59
		11/07/96	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	.13	2.7	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Dimeth-enamid ESA (µg/L)	Dimeth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05474000	Skunk River at Augusta, IA	12/04/96	<0.05	0.21	0.27	--	<0.05	0.34	<0.20	--	--	--	--	--	--	--	0.09	4.7	0.52
		01/08/97	<.05	.29	<.20	--	<.05	.40	<.20	--	--	--	--	--	--	--	<.05	3.1	.39
		02/06/97	<.05	.63	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	.29	1.4	.41
		03/12/97	<.05	.51	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	.21	2.4	.81
		03/30/98	<.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.08	1.1	<.20
		05/05/98	.14	.30	<.20	--	<.05	.39	<.20	--	--	--	--	--	--	--	.64	3.5	.39
		05/26/98	7.6	2.7	4.0	--	.10	.87	<.20	--	--	--	--	--	--	--	6.5	2.9	1.6
		06/02/98	.62	1.2	1.3	--	<.05	.77	<.20	--	--	--	--	--	--	--	1.5	3.5	1.3
		07/08/98	.09	2.1	1.6	--	<.05	.96	.20	--	--	--	--	--	--	--	.82	3.9	1.9
		08/04/98	<.05	.61	.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	.06	3.4	.56
		09/01/98	<.05	.63	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	.13	2.6	.83
05451210	South Fork Iowa River near New Providence, IA	03/19/96	<.05	<.20	<.20	--	<.05	.91	<.20	--	--	--	--	--	--	--	.87	3.3	1.0
		04/15/96	<.05	<.20	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	.39	4.8	.86
		05/13/96	.43	<.20	<.20	--	<.05	.79	<.20	--	--	--	--	--	--	--	.57	4.7	.86
		06/17/96	.34	1.9	2.6	--	<.05	1.3	<.20	--	--	--	--	--	--	--	2.7	9.5	5.3
		07/15/96	<.05	<.20	.23	--	<.05	.77	<.20	--	--	--	--	--	--	--	.09	5.2	.90
		08/12/96	<.05	.27	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.14	6.4	1.9
		09/16/96	<.05	<.20	<.20	--	<.05	.67	<.20	--	--	--	--	--	--	--	.05	2.5	.96
		10/07/96	<.05	<.20	<.20	--	<.05	.70	.27	--	--	--	--	--	--	--	.30	3.6	.83
		11/04/96	<.05	.22	<.20	--	<.05	.67	<.20	--	--	--	--	--	--	--	.21	5.1	.56
		12/02/96	<.05	<.20	<.20	--	<.05	.76	<.20	--	--	--	--	--	--	--	.32	7.7	.74
		01/06/97	.05	.78	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	5.5	2.1	.44
02/03/97	<.05	.35	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	1.1	1.8	.31		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05451210	South Fork Iowa River near New Providence, IA	03/10/97	<0.05	0.68	<0.20	--	<0.05	0.42	<0.20	--	--	--	--	--	--	--	2.0	3.6	1.1
		08/19/97	<.05	.49	.28	--	<.05	.62	.21	--	--	--	--	--	--	--	.09	4.7	.92
		03/30/98	<.05	.34	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	.44	4.4	.79
		03/30/98	<.05	.30	<.20	--	<.05	.50	<.20	--	--	--	--	--	--	--	.43	3.8	.69
		04/01/98	<.05	.40	<.20	--	<.05	.43	<.20	--	--	--	--	--	--	--	.29	4.3	.78
		05/04/98	.13	.37	<.20	--	<.05	.40	<.20	--	--	--	--	--	--	--	.16	6.1	.54
		05/21/98	<.05	.37	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	.16	5.1	.83
		05/22/98	<.05	.51	<.20	--	<.05	.53	<.20	--	--	--	--	--	--	--	.43	5.9	.78
		05/29/98	.86	1.5	1.2	--	<.05	1.1	<.20	--	--	--	--	--	--	--	4.2	6.3	2.4
		06/01/98	.21	1.1	.75	--	<.05	.90	<.20	--	--	--	--	--	--	--	.59	6.7	1.4
		06/12/98	.21	1.5	1.2	--	<.05	1.2	<.20	--	--	--	--	--	--	--	1.6	7.3	2.5
		07/06/98	.06	1.5	.70	--	<.05	.95	<.20	--	--	--	--	--	--	--	.58	6.5	1.9
		08/03/98	<.05	1.2	.46	--	<.05	.71	<.20	--	--	--	--	--	--	--	.09	6.6	.99
		08/31/98	<.05	1.6	.32	--	<.05	.91	<.20	--	--	--	--	--	--	--	.13	9.4	1.4
		01/14/99	<.05	.36	<.20	--	<.05	.60	<.20	--	--	--	--	--	--	--	<.05	4.2	.45
		02/10/99	<.05	.48	<.20	--	<.05	.50	<.20	--	--	--	--	--	--	--	1.0	3.5	.77
		03/03/99	<.05	.47	<.20	--	<.05	.64	<.20	--	--	--	--	--	--	--	.18	4.4	.61
		04/08/99	<.05	.37	<.20	--	<.05	.52	<.20	--	--	--	--	--	--	--	.19	4.9	.76
		05/05/99	.07	.26	<.20	--	<.05	.43	<.20	--	0.86	--	--	--	--	--	.21	3.9	.51
		06/03/99	.12	.74	.51	--	<.05	.46	<.20	--	.10	--	--	--	--	--	.35	4.0	.85
		07/07/99	<.05	.60	<.20	--	<.05	.27	<.20	--	<.05	--	--	<0.05	--	--	.18	3.6	.62
		08/04/99	<.05	.23	<.20	--	<.05	.25	<.20	--	<.05	--	--	<.05	--	--	.08	2.9	.33
		09/02/99	<.05	.51	<.20	--	<.05	.29	<.20	--	<.05	--	--	<.05	--	--	.07	2.4	.63
		10/05/99	<.05	.35	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.3	.24

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05451210	South Fork Iowa River near New Providence, IA	11/02/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	1.2	0.41
		11/08/99	<.05	<.20	<.20	--	<.05	.48	<.20	--	<.05	--	--	<.05	--	--	<.05	.80	.36
		12/08/99	<.05	<.20	<.20	--	<.05	.20	<.20	--	<.05	--	--	<.05	--	--	.05	1.2	.30
		01/06/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.1	<.20
		01/31/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.1	<.20
		03/07/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.17	1.4	<.20
		04/06/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	1.1	.22
		05/02/00	.07	<.20	.35	--	<.05	.22	<.20	--	.54	--	--	<.05	--	--	.29	1.4	.34
		06/05/00	.09	<.20	.47	--	<.05	<.20	<.20	--	.09	--	--	<.05	--	--	.41	2.8	1.0
		07/06/00	.08	.32	<.20	--	<.05	.42	<.20	--	.16	--	--	<.05	--	--	.17	3.1	.61
		08/10/00	<.05	.21	<.20	--	<.05	.21	<.20	--	<.05	--	--	<.05	--	--	<.05	1.9	.28
		09/07/00	<.05	<.20	.21	--	<.05	.22	<.20	--	<.05	--	--	<.05	--	--	<.05	1.5	.40
		10/04/00	<.05	.13	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	1.2	.25
		11/02/00	<.05	.12	<.05	--	<.05	.07	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.2	.18
		12/05/00	<.05	.28	.17	--	<.05	.29	.14	--	<.05	.06	<.05	<.05	<.05	<.05	.15	3.0	.69
		01/09/01	<.05	.08	<.05	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.3	.23
		01/09/01	<.05	.09	<.05	--	<.05	.12	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.2	.21
		02/05/01	<.05	.17	.14	--	<.05	.25	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.08	2.1	.36
		03/06/01	<.05	.13	.09	--	<.05	.20	.07	--	<.05	<.05	<.05	<.05	<.05	<.05	.55	1.4	.31
		04/09/01	<.05	.28	.16	--	<.05	.23	<.05	--	<.05	.08	<.05	<.05	<.05	<.05	.66	3.8	1.1
		05/01/01	.06	.19	.07	--	<.05	.22	<.05	--	<.05	.06	<.05	<.05	<.05	<.05	.35	3.2	.70
		06/07/01	.37	1.1	.81	--	<.05	.21	<.05	--	.09	.19	.09	<.05	<.05	<.05	.83	6.1	1.7
		07/11/01	<.05	.36	.07	--	<.05	.18	<.05	--	<.05	.06	<.05	<.05	<.05	<.05	.06	2.9	.45
		08/06/01	<.05	.33	.08	--	<.05	.13	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	.11	3.1	.56

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																	
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)	
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																				
Eastern Iowa Basin (EIWA/SKI)—Continued																				
05451210	South Fork Iowa River near New Providence, IA	09/05/01	<0.05	0.08	0.10	--	<0.05	0.08	0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33	0.49	
05456510	Turtle Creek at Austin, IA	08/27/97	<.05	.38	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	--	.06	1.8	.76
		05/19/98	.06	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	--	.09	2.6	<.20
05422000	Wapsipinicon River near Dewitt, IA	03/14/96	<.05	.36	<.20	--	<.05	1.8	.26	--	--	--	--	--	--	--	--	.67	2.1	.47
		04/24/96	<.05	<.20	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	--	.19	2.6	.49
		05/22/96	1.6	2.6	2.9	--	.06	2.4	.46	--	--	--	--	--	--	--	--	2.8	5.5	2.4
		06/26/96	.15	2.3	1.9	--	.09	2.4	.46	--	--	--	--	--	--	--	--	.69	5.9	2.3
		07/24/96	<.05	.51	.37	--	<.05	2.4	<.20	--	--	--	--	--	--	--	--	.15	3.5	1.0
		08/27/96	<.05	<.20	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	--	<.05	2.5	<.20
		09/25/96	<.05	<.20	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	--	<.05	2.2	.34
		10/15/96	<.05	<.20	<.20	--	<.05	2.0	<.20	--	--	--	--	--	--	--	--	.09	2.0	.45
		11/13/96	<.05	.83	<.20	--	<.05	3.1	.24	--	--	--	--	--	--	--	--	.13	4.1	.69
		12/09/96	<.05	1.0	<.20	--	<.05	3.4	<.20	--	--	--	--	--	--	--	--	.08	5.1	.80
		01/13/97	<.05	1.0	<.20	--	<.05	2.4	<.20	--	--	--	--	--	--	--	--	1.0	4.0	.77
		02/11/97	<.05	.42	<.20	--	<.05	2.7	<.20	--	--	--	--	--	--	--	--	.21	3.2	.67
		03/20/97	<.05	.51	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	--	.63	1.9	.62
		05/06/97	1.3	1.4	.42	--	<.05	2.2	.22	--	--	--	--	--	--	--	--	.84	4.9	1.1
		04/02/98	<.05	.73	<.20	--	<.05	.62	<.20	--	--	--	--	--	--	--	--	.22	3.3	.90
		05/06/98	.08	.96	<.20	--	<.05	2.2	<.20	--	--	--	--	--	--	--	--	.08	6.1	.79
		06/03/98	1.1	2.6	1.9	--	.07	2.0	<.20	--	--	--	--	--	--	--	--	1.4	5.6	1.6
		06/17/98	.53	2.7	2.1	--	.05	1.7	<.20	--	--	--	--	--	--	--	--	1.1	4.6	1.7
		07/09/98	.05	2.3	1.2	--	<.05	1.8	.32	--	--	--	--	--	--	--	--	.36	4.9	1.7
		08/06/98	<.05	1.1	.20	--	<.05	3.6	<.20	--	--	--	--	--	--	--	--	<.05	4.6	.78

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05422000	Wapsipinicon River near Dewitt, IA	09/02/98	<0.05	2.1	0.39	--	<0.05	2.3	<0.20	--	--	--	--	--	--	--	0.11	5.6	1.1
05420680	Wapsipinicon River near Tripoli, IA	03/27/96	<.05	.87	.92	--	<.05	1.3	.78	--	--	--	--	--	--	--	4.7	3.5	1.6
		04/18/96	<.05	<.20	<.20	--	<.05	2.9	<.20	--	--	--	--	--	--	--	.42	4.0	.82
		05/16/96	.14	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.22	<.20	<.20
		06/24/96	.09	3.1	2.4	--	.07	4.1	.49	--	--	--	--	--	--	--	.44	10	3.2
		07/18/96	<.05	.70	<.20	--	<.05	3.7	.26	--	--	--	--	--	--	--	.09	4.7	1.1
		08/15/96	<.05	<.20	<.20	--	<.05	.35	.29	--	--	--	--	--	--	--	.08	2.4	.24
		09/19/96	<.05	<.20	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	1.7	<.20
		10/09/96	<.05	<.20	<.20	--	<.05	3.9	.32	--	--	--	--	--	--	--	.05	2.8	.73
		11/06/96	<.05	<.20	<.20	--	<.05	3.1	.28	--	--	--	--	--	--	--	.13	2.4	.42
		12/04/96	<.05	.93	.30	--	<.05	2.8	.29	--	--	--	--	--	--	--	.12	5.8	1.0
		01/08/97	<.05	.77	.23	--	<.05	2.5	.24	--	--	--	--	--	--	--	.15	5.6	.92
		02/05/97	<.05	.20	<.20	--	<.05	3.1	.32	--	--	--	--	--	--	--	.08	2.9	.50
		03/17/97	<.05	1.4	.29	--	<.05	1.8	<.20	--	--	--	--	--	--	--	.57	4.9	2.0
		05/05/97	1.4	2.3	.96	--	.20	3.3	.34	--	--	--	--	--	--	--	1.7	10	3.1
		06/22/97	.45	3.0	2.3	--	<.05	3.8	.78	--	--	--	--	--	--	--	.53	11	3.5
		08/28/97	<.05	.27	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	--	.11	2.3	.45
		04/02/98	<.05	1.1	.28	--	<.05	1.2	<.20	--	--	--	--	--	--	--	<.05	5.1	1.3
		05/06/98	.14	1.5	.25	--	<.05	3.5	.25	--	--	--	--	--	--	--	.24	8.2	2.1
		05/19/98	.10	1.7	.21	--	<.05	4.1	<.20	--	--	--	--	--	--	--	.07	7.6	1.4
		05/19/98	.15	1.7	.21	--	<.05	4.0	<.20	--	--	--	--	--	--	--	.11	7.4	1.4
		05/19/98	<.05	1.9	<.20	--	<.05	4.0	<.20	--	--	--	--	--	--	--	.07	6.5	1.1
		05/29/96	1.5	3.9	4.9	--	.12	2.2	<.20	--	--	--	--	--	--	--	3.7	4.9	3.5
		07/08/98	<.05	2.5	.61	--	<.05	3.2	.32	--	--	--	--	--	--	--	.16	7.5	2.1

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05420680	Wapsipinicon River near Tripoli, IA	08/05/98	<0.05	0.46	<0.20	--	<0.05	2.8	<0.20	--	--	--	--	--	--	--	<0.05	2.9	0.55
		09/02/98	<.05	3.6	.59	--	<.05	4.7	<.20	--	--	--	--	--	--	--	.07	4.7	1.1
		11/08/99	<.05	.27	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	1.8	.33
		01/11/01	<.05	.31	.08	--	<.05	2.4	.16	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	3.1	.41
		01/11/01	<.05	.35	.07	--	<.05	2.9	.15	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	3.4	.45
		02/07/01	<.05	<.05	.10	--	<.05	3.6	.14	--	<.05	<.05	<.05	<.05	<.05	<.05	.05	3.8	.56
		03/08/01	<.05	.34	.10	--	<.05	2.4	.13	--	<.05	<.05	<.05	<.05	<.05	<.05	.09	2.8	.45
		04/11/01	<.05	.65	.24	--	<.05	.77	.07	--	<.05	.09	<.05	<.05	<.05	<.05	.29	2.4	.55
		05/03/01	1.6	.93	.45	--	<.05	1.3	.06	--	.12	.08	<.05	<.05	<.05	<.05	1.7	4.0	.91
		06/06/01	.13	.91	.18	--	<.05	1.9	<.05	--	.07	.12	<.05	<.05	<.05	<.05	.09	5.0	.84
		07/03/01	<.05	.71	.15	--	<.05	2.3	.12	--	<.05	.10	<.05	<.05	<.05	<.05	.05	3.2	.53
		08/08/01	<.05	<.05	<.05	--	<.05	3.0	.08	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.4	.28
		09/07/01	<.05	<.05	.06	--	<.05	3.1	.18	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	2.0	.25
05449600	Wheeler Creek near Rowan, IA	09/11/98	<.05	.30	<.20	--	<.05	1.8	<.20	--	--	--	--	--	--	<.05	4.4	1.0	
05459300	Winnebago River near Fertile, IA	08/26/97	<.05	.42	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	<.05	1.2	.33	
		05/19/98	.66	.81	.80	--	<.05	1.1	<.20	--	--	--	--	--	--	.31	2.4	.71	
05454220	Wolf Creek near Dysart, IA	03/21/96	<.05	<.20	<.20	--	<.05	1.7	<.20	--	--	--	--	--	--	.11	3.9	.43	
		04/22/96	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	.20	3.9	.55	
		06/18/96	.98	5.1	6.9	--	.07	2.8	<.20	--	--	--	--	--	--	2.6	8.1	6.8	
		07/22/96	<.05	.27	<.20	--	<.05	2.0	.34	--	--	--	--	--	--	<.05	6.7	.69	
		08/28/96	<.05	<.20	<.20	--	<.05	2.1	<.20	--	--	--	--	--	--	.05	5.4	.57	
		09/23/96	<.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	.06	3.2	.43	
		10/10/96	<.05	<.20	<.20	--	<.05	2.6	.27	--	--	--	--	--	--	<.05	5.6	.77	
		11/07/96	<.05	<.20	<.20	--	.06	1.1	<.20	--	--	--	--	--	--	.10	5.1	<.20	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05464220	Wolf Creek near Dysart, IA	12/05/96	<0.05	<0.20	<0.20	--	<0.05	1.5	<0.20	--	--	--	--	--	--	--	0.05	6.1	0.53
		01/13/97	<.05	.35	<.20	--	<.05	1.6	.20	--	--	--	--	--	--	--	.31	5.8	.63
		02/06/97	<.05	<.20	<.20	--	<.05	.84	<.20	--	--	--	--	--	--	--	.48	3.2	.44
		03/12/97	<.05	.70	.45	--	<.05	1.5	.30	--	--	--	--	--	--	--	.48	5.2	1.2
		03/17/97	<.05	.97	.89	--	<.05	1.8	.51	--	--	--	--	--	--	--	.18	5.9	1.7
		03/24/97	<.05	.50	<.20	--	<.05	1.6	<.20	--	--	--	--	--	--	--	<.05	5.3	.53
		04/02/97	<.05	<.20	<.20	--	<.05	1.3	.20	--	--	--	--	--	--	--	.05	4.4	.48
		04/08/97	<.05	.28	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.07	4.2	.71
		04/14/97	<.05	<.20	<.20	--	<.05	.96	<.20	--	--	--	--	--	--	--	.07	3.7	.42
		04/21/97	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.08	4.1	.41
		04/28/97	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.14	4.4	.42
		05/05/97	.12	.45	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.33	4.8	.56
		05/12/97	.11	.25	<.20	--	<.05	.85	<.20	--	--	--	--	--	--	--	.15	3.4	.37
		05/19/97	<.05	.30	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.15	4.4	.45
		05/27/97	.12	.29	<.20	--	<.05	.98	<.20	--	--	--	--	--	--	--	1.5	3.8	.46
		06/03/97	<.05	.24	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.05	4.0	.43
		06/09/97	.07	.29	<.20	--	<.05	.88	<.20	--	--	--	--	--	--	--	.09	3.2	.31
		06/16/97	.14	.38	.36		<.05	.83	<.20								1.5	3.7	1.2
		06/24/97	.37	2.2	2.2	--	<.05	1.3	.20	--	--	--	--	--	--	--	.69	5.4	1.3
		06/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	<.20	<.20
		07/14/97	<.05	.27	<.20	--	<.05	.59	<.20	--	--	--	--	--	--	--	.18	2.3	.28
		07/28/97	<.05	.32	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	<.05	4.5	.41
		07/28/97	<.05	.33	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.05	4.8	.47
		08/12/97	<.05	<.20	.34	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	4.1	.48

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Eastern Iowa Basin (EIWA/SKI)—Continued																			
05464220	Wolf Creek near Dysart, IA	08/21/97	<0.05	<0.20	<0.20	--	<0.05	1.4	<0.20	--	--	--	--	--	--	--	<0.05	3.7	0.38
		08/25/97	<.05	.33	<.20	--	<.05	.93	<.20	--	--	--	--	--	--	--	<.05	4.6	1.8
		09/09/97	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.21	4.8	.77
		09/24/97	<.05	<.20	<.20	--	<.05	.87	<.20	--	--	--	--	--	--	--	.16	4.5	.64
		10/10/97	<.05	.44	<.20	--	<.05	.67	<.20	--	--	--	--	--	--	--	.09	5.9	1.1
		10/21/97	<.05	.23	<.20	--	<.05	.80	<.20	--	--	--	--	--	--	--	<.05	4.4	.38
		11/07/97	<.05	<.20	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	<.05	5.0	.42
		11/18/97	<.05	<.20	<.20	--	<.05	.94	<.20	--	--	--	--	--	--	--	<.05	4.4	.36
		12/04/97	.34	.29	<.20	--	<.05	.75	<.20	--	--	--	--	--	--	--	.08	4.5	.51
		01/08/98	<.05	.23	<.20	--	<.05	.77	<.20	--	--	--	--	--	--	--	.10	4.5	.43
		02/20/98	<.05	.35	<.20	--	<.05	.73	<.20	--	--	--	--	--	--	--	.05	3.6	.35
		03/18/98	<.05	<.20	<.20	--	<.05	.92	<.20	--	--	--	--	--	--	--	<.05	4.0	<.20
		04/01/98	<.05	.70	<.20	--	<.05	.52	<.20	--	--	--	--	--	--	--	.30	3.6	.99
		05/07/98	.15	.55	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	.47	4.7	.78
		05/18/98	<.05	.51	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	<.05	5.0	.49
		06/04/98	<.05	.88	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.09	5.9	.80
		06/12/98	.90	1.3	1.2	--	.06	<.20	<.20	--	--	--	--	--	--	--	5.6	4.3	2.1
		07/09/98	<.05	1.9	.38	--	<.05	1.3	.20	--	--	--	--	--	--	--	.16	6.3	1.1
		08/06/98	<.05	.73	.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	.31	5.2	1.8
		09/03/98	<.05	.99	<.20	--	<.05	2.3	<.20	--	--	--	--	--	--	--	<.05	6.1	.61
		11/12/99	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	<.05	3.6	.31
Great and Little Miami River Basins (MIAM/BET)																			
400236084222400	Canyon Run at Range Line Road, OH	05/19/00	--	1.7	4.0	--	--	.46	.80	--	--	<0.05	<0.05	--	--	--	--	3.8	3.2

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
03274000	Great Miami River at Hamilton, OH	03/08/99	--	0.39	<0.20	--	--	0.65	<0.20	--	--	--	--	--	--	--	--	1.7	0.92
		03/24/99	--	<.20	<.20	--	--	.41	<.20	--	--	--	--	--	--	--	--	.86	.34
		04/07/99	--	.10	.05	--	--	.14	<.05	--	--	--	--	--	--	--	--	.46	.18
		04/22/99	--	.29	.34	--	--	.19	.12	--	--	--	--	--	--	--	--	.96	.57
		05/07/99	--	.18	.11	--	--	.11	.07	--	--	--	--	--	--	--	--	.89	<.05
		05/20/99	--	.25	<.05	--	--	.21	<.05	--	--	--	--	--	--	--	--	1.3	<.05
		06/14/99	--	.56	.71	--	--	.17	.12	--	--	--	--	--	--	--	--	1.2	.55
		06/29/99	--	.56	.31	--	--	.19	.13	--	--	--	--	--	--	--	--	.46	.48
		07/15/99	--	.06	<.05	--	--	.07	<.05	--	--	--	--	--	--	--	--	.27	.13
		07/27/99	--	.07	.07	--	--	.06	<.05	--	--	--	--	--	--	--	--	.38	.13
		08/10/99	--	.20	.28	--	--	.06	.06	--	--	--	--	--	--	--	--	.47	.27
		08/24/99	--	.10	.20	--	--	.20	.06	--	--	--	--	--	--	--	--	.52	.22
		09/07/99	--	<.05	<.05	--	--	.05	<.05	--	--	--	--	--	--	--	--	.15	<.05
		09/30/99	--	<.05	<.05	--	--	.11	<.05	--	--	--	--	--	--	--	--	.05	<.05
		10/12/99	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.73	.14
		10/18/99	--	<.05	.09	--	--	.96	.12	--	--	--	--	--	--	--	--	1.0	.55
		11/16/99	--	<.05	<.05	--	--	.17	<.05	--	--	--	--	--	--	--	--	.17	.10
		12/02/99	--	<.05	<.05	--	--	.53	<.05	--	--	--	--	--	--	--	--	.35	.09
		12/07/99	--	<.05	<.05	--	--	.17	.06	--	--	--	--	--	--	--	--	.11	.11
		01/04/00	--	.08	.09	--	--	<.05	<.05	--	--	--	--	--	--	--	--	.47	.34
		02/10/00	--	<.05	<.05	--	--	.10	<.05	--	--	--	--	--	--	--	--	.34	.21
		02/14/00	--	.45	.47	--	--	.21	.21	--	--	--	--	--	--	--	--	1.3	.98
		03/08/00	--	.22	.11	--	--	.11	.05	--	--	<0.05	<0.05	--	--	--	--	.80	.37
		03/21/00	--	.29	.15	--	--	.11	.07	--	--	<.05	<.05	--	--	--	--	1.0	.55

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
03274000	Great Miami River at Hamilton, OH	04/08/00	--	0.21	0.10	--	--	0.11	0.06	--	--	<0.05	<0.05	--	--	--	--	0.79	0.48
		07/13/00	--	.54	.39	--	--	.16	.10	--	--	<.05	<.05	--	<0.05	<0.05	--	1.1	.57
		07/19/00	--	.28	.21	--	--	.14	.07	--	--	<.05	<.05	--	<.05	<.05	--	.62	.28
		05/17/01	--	.08	.51	--	--	.13	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.47	.14
		06/13/01	--	.45	.40	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.69	.40
		07/26/01	--	.33	.12	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.44	.11
		08/15/01	--	.30	.14	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.52	.27
		09/18/01	--	.31	.22	--	--	.14	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.85	.38
		04/26/00	--	.55	.33	--	--	.41	.27	--	--	<.05	<.05	--	--	--	--	1.3	.69
		05/03/00	--	.24	<.05	--	--	.23	.05	--	--	<.05	<.05	--	--	--	--	.63	.34
03274500	Great Miami River at Venice, OH	06/01/00	--	.68	.59	--	--	.23	.13	--	--	<.05	<.05	--	--	--	--	1.1	.51
		06/14/00	--	.81	1.1	--	--	.12	.10	--	--	.07	.08	--	<.05	<.05	--	1.1	.60
		06/29/00	--	1.1	1.1	--	--	.25	.15	--	--	.09	.06	--	<.05	<.05	--	1.8	1.1
		08/16/00	--	.55	.47	--	--	.16	.10	--	--	<.05	<.05	--	<.05	<.05	--	1.6	1.0
		09/13/00	--	.15	.10	--	--	.14	.06	--	--	<.05	<.05	--	<.05	<.05	--	.52	.30
		09/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.36	.07
		11/16/00	--	.46	.35	--	--	.13	.07	--	--	<.05	<.05	--	<.05	<.05	--	1.2	.55
		12/20/00	--	.56	.42	--	--	.17	.10	--	--	<.05	<.05	--	<.05	<.05	--	1.7	.85
		04/11/01	--	.09	.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.30	.13
		04/11/01	--	.09	.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.32	.13
400616084355700	Greenville Creek at Jaysville, OH	04/12/01	--	.19	.14	--	--	.09	.05	--	--	<.05	<.05	--	<.05	<.05	--	.79	.42
		05/20/00	--	1.3	2.3	--	--	.57	.64	--	--	.47	.68	--	--	--	--	1.6	1.3
		05/20/00	--	1.5	2.4	--	--	<.05	.51	--	--	.53	.75	--	--	--	--	2.4	1.7

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
03267900	Mad River at St. Paris at Eagle City, OH	04/28/99	--	0.30	0.62	--	--	0.05	<0.05	--	--	--	--	--	--	--	--	0.95	0.81
		05/06/99	--	<.05	<.05	--	--	.64	<.05	--	--	--	--	--	--	--	--	.58	<.05
		05/13/99	--	<.05	<.05	--	--	.81	<.05	--	--	--	--	--	--	--	--	.55	<.05
		05/19/99	--	<.05	<.05	--	--	.41	<.05	--	--	--	--	--	--	--	--	.39	<.05
		05/26/99	--	<.05	<.05	--	--	1.0	<.05	--	--	--	--	--	--	--	--	.62	.14
		06/08/99	--	<.05	<.05	--	--	1.0	<.05	--	--	--	--	--	--	--	--	.68	.15
		06/17/99	--	.39	.25	--	--	.81	.10	--	--	--	--	--	--	--	--	1.2	.37
		06/24/99	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.18	<.05
		07/01/99	--	.08	<.05	--	--	.65	.05	--	--	--	--	--	--	--	--	.51	.10
		07/06/99	--	.09	<.05	--	--	.58	.05	--	--	--	--	--	--	--	--	.52	.10
		07/13/99	--	<.05	<.05	--	--	.33	<.05	--	--	--	--	--	--	--	--	.26	<.05
		07/21/99	--	.19	.11	--	--	.59	.07	--	--	--	--	--	--	--	--	1.9	.96
		07/22/99	--	.56	.89	--	--	.16	.20	--	--	--	--	--	--	--	--	1.9	1.5
		08/12/99	--	<.05	<.05	--	--	.30	<.05	--	--	--	--	--	--	--	--	.27	.11
		09/09/99	--	<.05	<.05	--	--	.15	<.05	--	--	--	--	--	--	--	--	.16	<.05
		10/21/99	--	<.05	<.05	--	--	.89	<.05	--	--	--	--	--	--	--	--	.91	<.05
		11/17/99	--	<.05	<.05	--	--	.31	<.05	--	--	--	--	--	--	--	--	.21	.05
		12/09/99	--	<.05	<.05	--	--	.58	<.05	--	--	--	--	--	--	--	--	.41	<.05
		01/04/00	--	<.05	.10	--	--	.25	<.05	--	--	--	--	--	--	--	--	1.1	.59
		02/11/00	--	<.05	<.05	--	--	.37	<.05	--	--	--	--	--	--	--	--	.49	.24
		02/11/00	--	<.05	<.05	--	--	.32	<.05	--	--	--	--	--	--	--	--	.49	.24
		03/07/00	--	<.05	<.05	--	--	.21	<.05	--	--	0.07	<0.05	--	--	--	--	.31	.08
		03/21/00	--	.12	.07	--	--	.11	<.05	--	--	<.05	<.05	--	--	--	--	1.1	.48
		04/05/00	--	.07	<.05	--	--	.25	<.05	--	--	<.05	<.05	--	--	--	--	.92	.39

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Dimeth-enamid ESA (µg/L)	Dimeth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
03267900	Mad River at St. Paris at Eagle City, OH	04/08/00	--	0.09	0.09	--	--	0.07	<0.05	--	--	<0.05	<0.05	--	--	--	--	0.80	0.52
		04/25/00	--	<.05	.21	--	--	.47	.21	--	--	<.05	<.05	--	--	--	--	.72	.29
		05/02/00	--	<.05	<.05	--	--	.31	<.05	--	--	<.05	<.05	--	--	--	--	.56	.26
		05/10/00	--	<.05	<.05	--	--	.32	<.05	--	--	<.05	<.05	--	--	--	--	.44	.22
		05/16/00	--	<.05	.22	--	--	.33	.23	--	--	<.05	<.05	--	--	--	--	.42	.21
		06/13/00	--	<.05	<.05	--	--	.31	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.41	.06
		06/22/00	--	.12	.08	--	--	.17	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.50	.23
		06/28/00	--	<.05	<.05	--	--	.24	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.40	.08
		07/11/00	--	<.05	<.05	--	--	.23	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.31	.08
		07/19/00	--	<.05	<.05	--	--	.21	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	.08
		08/16/00	--	<.05	<.05	--	--	.25	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.33	.09
		09/14/00	--	.28	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.43	.12
		09/26/00	--	.32	.23	--	--	.26	.06	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.46
		10/18/00	--	<.05	<.05	--	--	.30	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.43	.10
		11/28/00	--	<.05	<.05	--	--	.35	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.39	.10
		12/12/00	--	.18	.13	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.2	.62
		01/24/01	--	<.05	<.05	--	--	.27	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.36	.08
		02/22/01	--	<.05	<.05	--	--	.28	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.46	.10
		03/21/01	--	.05	<.05	--	--	.25	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.38	.11
		04/25/01	--	<.05	<.05	--	--	.24	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.47	.10
		05/15/01	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.05
		05/15/01	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.05
		06/12/01	--	.05	<.05	--	--	.25	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.45	.10
		07/25/01	--	<.05	<.05	--	--	.15	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.41	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
03267900	Mad River at St. Paris at Eagle City, OH	08/14/01	--	<0.05	<0.05	--	--	0.33	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.43	0.07
		09/19/01	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.31	.11
		10/17/01	--	.15	.08	--	--	.17	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.2	.42
		11/06/01	--	<.05	<.05	--	--	.33	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.51	.10
		12/05/01	--	.06	<.05	--	--	.27	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.60	<.05
400126084395300	Mud Creek at Weaver-Ft. Jeff Road, OH	05/19/00	--	.54	.83	--	--	.59	.70	--	--	<.05	<.05	--	--	--	--	.38	.23
401404084381200	North Fork at State Route 118, OH	05/20/00	--	4.8	5.7	--	--	1.0	1.2	--	--	<.05	<.05	--	--	--	--	3.5	2.3
401757084403000	North Fork at Rie- gle-Bell Road, OH	05/19/00	--	13	13	--	--	<.05	.96	--	--	<.05	<.05	--	--	--	--	1.2	.83
400422084244400	Painter Creek at Sugar Grove Road, OH	05/20/00	--	2.1	3.5	--	--	.08	.29	--	--	<.05	<.05	--	<.05	<.05	--	1.6	.88
400056084391900	Prairie Outlet at State Route 121, OH	05/19/00	--	4.1	8.1	--	--	.70	1.2	--	--	.22	.38	--	<.05	<.05	--	1.0	1.2
395922084400400	Prairie Outlet at Hollandburg- Arcanum Road, OH	05/19/00	--	8.6	13	--	--	2.1	4.6	--	--	<.05	<.05	--	<.05	<.05	--	.51	.62
401301084364300	Stillwater River at Beisner Road, OH	05/19/00	--	2.4	4.2	--	--	.62	.82	--	--	.32	<.05	--	--	--	--	3.9	3.6
400937084240400	Stillwater River at State Route 185, OH	05/20/00	--	2.8	4.8	--	--	1.0	1.5	--	--	.36	<.05	--	--	--	--	3.8	3.5

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Great and Little Miami River Basins (MIAM/BET)—Continued																			
395355084173600	Stillwater River on Marindale Road, OH	03/09/00	--	0.18	0.21	--	--	0.25	0.23	--	--	<0.05	<0.05	--	--	--	--	1.1	0.55
		03/20/00	--	.15	<.05	--	--	.13	.06	--	--	<.05	<.05	--	--	--	--	1.1	.39
		04/04/00	--	.27	.07	--	--	.29	.09	--	--	<.05	<.05	--	--	--	--	1.4	.54
395611084180600	Stillwater River at Fred-Garland Road, OH	04/08/00	--	.36	.34	--	--	.22	.11	--	--	<.05	<.05	--	--	--	--	1.6	1.0
		04/21/00	--	.58	.31	--	--	.45	.29	--	--	<.05	<.05	--	--	--	--	1.6	.75
		05/02/00	--	.26	<.05	--	--	.27	.08	--	--	<.05	<.05	--	--	--	--	.90	.33
		05/20/00	--	2.2	4.1	--	--	.31	.45	--	--	.10	.25	--	<0.05	<0.05	--	2.3	1.9
		06/15/00	--	.39	.34	--	--	.11	.10	--	--	<.05	<.05	--	<.05	<.05	--	.99	.47
		07/20/00	--	.27	.15	--	--	.16	.10	--	--	<.05	<.05	--	<.05	<.05	--	.86	.32
		08/21/00	--	.15	.12	--	--	.19	.13	--	--	<.05	<.05	--	<.05	<.05	--	.90	.48
401502084421500	South Fork at Wash- ington Road, OH	08/23/00	--	.11	.08	--	--	.19	.12	--	--	<.05	<.05	--	<.05	<.05	--	.64	.33
		09/12/00	--	.16	.11	--	--	.16	.10	--	--	<.05	<.05	--	<.05	<.05	--	.75	.38
		05/19/00	--	1.0	1.2	--	--	<.05	.42	--	--	.34	<.05	--	--	--	--	3.1	2.7
401436084404800	Stillwater River at Zumbrum Road, OH	05/20/00	--	1.0	1.2	--	--	<.05	.28	--	--	.33	.59	--	--	--	--	3.6	1.9
401612084280200	Swamp Creek at Pitsburg Road, OH	05/20/00	--	3.8	6.3	--	--	5.8	5.6	--	--	<.05	<.05	--	--	--	--	4.5	2.7
401247084295500	Swamp Creek State Route 121, OH	05/19/00	--	4.3	7.3	--	--	1.3	1.4	--	--	<.05	<.05	--	--	--	--	4.2	3.2
401723084325900	Swamp Creek at Greenville, St Mary's, OH	05/19/00	--	5.1	9.0	--	--	19	14	--	--	<.05	<.05	--	--	--	--	2.6	2.5
400850084204500	Trotters Creek at Piqua-Clay Road, OH	05/19/00	--	.70	1.2	--	--	.33	.35	--	--	<.05	<.05	--	--	--	--	3.4	3.7

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

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Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Illinois River Basin (UIRB/BET)—Continued																			
05525500	Sugar Creek at Milford, IL	08/31/99	--	<0.05	0.05	--	--	0.59	<0.05	--	--	--	--	--	--	--	--	0.90	0.17
		11/04/99	--	<.05	<.05	--	--	.64	<.05	--	--	--	--	--	--	--	--	.83	.11
		12/09/99	--	<.05	<.05	--	--	.56	.05	--	--	--	--	--	--	--	--	.57	.07
		01/06/00	--	<.05	.07	--	--	.36	.10	--	--	--	--	--	--	--	--	.44	.13
		02/03/00	--	<.05	.05	--	--	.61	.08	--	--	--	--	--	--	--	--	.80	.20
		03/09/00	--	.27	.30	--	--	.22	.21	--	--	0.09	<0.05	--	--	--	--	.83	.33
		03/20/00	--	.15	.05	--	--	.12	<.05	--	--	.06	<.05	--	--	--	--	.56	.12
		04/06/00	--	.25	.08	--	--	.15	.05	--	--	.06	<.05	--	--	--	--	.67	.11
		04/18/00	--	.13	.12	--	--	.20	<.05	--	--	.12	<.05	--	--	--	--	.58	.23
		05/01/00	--	.41	.21	--	--	.23	<.05	--	--	.07	<.05	--	--	--	--	.62	.23
		05/10/00	--	.94	1.5	--	--	<.05	.39	--	--	.52	.39	--	--	--	--	.88	.60
		05/17/00	--	.62	.40	--	--	.41	.31	--	--	.41	.51	--	--	--	--	.81	.38
		05/28/00	--	1.8	2.5	--	--	<.05	.08	--	--	.95	1.7	--	--	--	--	1.4	.80
		06/06/00	--	.45	.27	--	--	.13	<.05	--	--	.25	<.05	--	--	--	--	.63	.15
		06/15/00	--	.90	1.1	--	--	.11	<.05	--	--	<.05	.25	--	--	--	--	1.3	.61
		06/21/00	--	.37	.28	--	--	.10	.07	--	--	.33	.36	--	--	--	--	1.2	.54
		07/05/00	--	.71	1.0	--	--	.06	.07	--	--	.60	.90	--	0.29	<0.05	--	.80	.64
Lower Illinois River Basin (LIRB/BOB)																			
05572000	Sangamon River at Monticello, IL	04/07/97	<0.05	.39	<.20	--	<0.05	.24	<.20	--	--	--	--	--	--	--	0.17	2.5	.54
		04/21/97	.06	.28	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	.19	2.5	.42
		05/04/97	.81	.48	.51	--	<.05	.34	<.20	--	--	--	--	--	--	--	1.8	4.0	.99
		05/21/97	<.05	.24	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	.08	2.1	.30
		06/05/97	.43	2.0	2.2	--	<.05	.47	<.20	--	--	--	--	--	--	--	.80	3.5	1.3
		06/16/97	.21	2.0	1.5	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.74	3.7	1.4
		07/14/97	<.05	1.0	.69	--	<.05	.31	<.05	--	--	--	--	--	--	--	.26	2.5	.82
		07/28/97	<.05	.38	.65	--	<.05	.24	.23	--	--	--	--	--	--	--	.14	2.0	.44

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower Illinois River Basin (LIRB/BOB)—Continued																			
05572000	Sangamon River at Monticello, IL	08/11/97	<0.05	0.27	0.20	--	<0.05	0.24	<0.05	--	--	--	--	--	--	--	0.07	1.5	0.35
		08/25/97	<.05	1.1	.78	--	<.05	.43	.18	--	--	--	--	--	--	--	.24	2.9	1.1
		09/08/97	<.05	.38	<.05	--	<.05	.28	<.05	--	--	--	--	--	--	--	.07	1.4	.47
		09/22/97	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	.15	--	--
Lower Illinois River Basin (PTI)																			
05586598	Apple Creek at 900 E near Haypress, IL	08/07/97	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.40	.25
05556500	Big Bureau Creek at Princeton, IL	08/11/97	.06	.47	<.20	--	<.05	.47	.45	--	--	--	--	--	--	--	.16	1.2	.47
05569860	Cedar Creek near Avon, IL	08/05/97	<.05	.17	.35	--	<.05	.23	<.20	--	--	--	--	--	--	--	.11	1.5	.29
05559500	Crow Creek near Washburn, IL	08/12/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.76	<.20
05575850	Horse Creek at Springfield, IL	08/08/97	<.05	.26	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.08	1.7	.36
05553500	Illinois River at Ottawa, IL	07/09/98	.13	2.2	1.7	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.45	2.6	1.3
		08/06/98	.05	.84	.85	--	<.05	.95	<.20	--	--	--	--	--	--	--	.09	1.3	.48
		08/20/98	<.05	.56	<.20	--	<.05	.82	<.20	--	--	--	--	--	--	--	<.05	1.1	.45
		09/03/98	<.05	.24	<.20	--	<.05	.76	<.20	--	--	--	--	--	--	--	<.05	.80	.29
05586100	Illinois River at Valley City, IL	07/07/98	.13	1.3	1.1	--	<.05	.79	<.20	--	--	--	--	--	--	--	.60	2.1	.93
		07/21/98	.06	1.4	1.1	--	<.05	.79	<.20	--	--	--	--	--	--	--	.36	2.5	1.1
		07/23/98	<.05	.56	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.10	1.8	<.20
		08/04/98	<.05	1.1	.60	--	<.05	.83	<.20	--	--	--	--	--	--	--	.10	2.9	.66
		08/18/98	<.05	.83	.37	--	<.05	.89	<.20	--	--	--	--	--	--	--	.07	1.8	.51
		09/01/98	<.05	.56	.22	--	<.05	.76	<.20	--	--	--	--	--	--	--	.07	1.5	.55
		09/15/98	<.05	.25	<.20	--	<.05	.55	<.20	--	--	--	--	--	--	--	<.05	.72	.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower Illinois River Basin (PTI)—Continued																			
05568800	Indian Creek near Wyoming, IL	08/04/97	<0.05	<0.20	0.45	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.05	2.3	<0.20
05580000	Kickapoo Creek at Waynesville, IL	08/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	1.4	.29
05563000	Kickapoo Creek near Kickapoo, IL	08/12/97	<.05	.35	.72	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.19	.82	.35
05584500	Lamoine River at Colmar, IL	08/05/97	<.05	.25	.29	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.61	<.20
		07/07/98	.12	1.2	.85	--	<.05	.35	<.20	--	--	--	--	--	--	--	.38	.92	.42
		07/14/98	<.05	1.4	.36	--	<.05	.44	<.20	--	--	--	--	--	--	--	.05	1.6	.37
		07/21/98	<.05	.75	<.20	--	<.05	.39	<.20	--	--	--	--	--	--	--	<.05	1.3	<.20
		07/28/98	<.05	.63	.20	--	<.05	.35	<.20	--	--	--	--	--	--	--	<.05	1.3	.33
		08/05/98	<.05	1.0	.58	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.0	<.20
		08/12/98	<.05	.40	<.20	--	<.05	.34	<.20	--	--	--	--	--	--	--	<.05	.84	<.20
		08/18/98	<.05	.65	.38	--	<.05	.42	<.20	--	--	--	--	--	--	--	<.05	1.5	<.20
		08/25/98	<.05	.35	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	<.05	1.0	<.20
		09/01/98	<.05	--	--	--	<.05	--	--	--	--	--	--	--	--	--	<.05	--	--
		09/08/98	<.05	.22	<.20	--	<.05	.25	<.20	--	--	--	--	--	--	--	<.05	.57	<.20
		09/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.35	<.20
05568000	Mackinaw River at Green Valley, IL	08/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.42	.37	<.20
05567500	Mackinaw River near Congerville, IL	08/13/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.78	<.20
05564300	Mackinaw River near Kappa, IL	08/14/97	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	<.05	1.0	.24
05586645	Macoupin Creek near Carlinville, IL	08/07/97	<.05	.30	<.20	--	<.05	.44	<.20	--	--	--	--	--	--	--	.08	2.6	.69

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower Illinois River Basin (PTI)—Continued																			
05587000	Macoupin Creek near Kane, IL	08/07/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.39	0.20
05585800	Mckee Creek, IL	08/06/97	<.05	.53	.95	--	<.05	.27	<.20	--	--	--	--	--	--	--	.16	.59	.64
05554000	Vermilion River near Charlotte, IL	08/15/97	<.05	<.20	<.20	--	<.05	.31	.22	--	--	--	--	--	--	--	.41	1.3	.53
05567000	Panther Creek near El Paso, IL	08/14/97	<.05	<.20	<.20	--	<.05	.29	.24	--	--	--	--	--	--	--	<.05	.87	.23
05572000	Sangamon River at Monticello, IL	06/29/98	.06	2.1	.98	--	<.05	.67	<.20	--	--	--	--	--	--	--	.53	3.8	1.1
		07/07/98	<.05	1.9	.73	--	<.05	.50	<.20	--	--	--	--	--	--	--	.34	3.4	.84
		07/14/98	<.05	2.6	.68	--	<.05	.58	<.20	--	--	--	--	--	--	--	.19	4.9	1.2
		07/20/98	<.05	1.6	.41	--	<.05	.44	<.20	--	--	--	--	--	--	--	.13	4.1	.92
		07/27/98	<.05	1.7	.72	--	<.05	.56	.25	--	--	--	--	--	--	--	.30	4.1	1.3
		08/04/98	<.05	1.9	.42	--	<.05	.57	<.20	--	--	--	--	--	--	--	.10	5.4	.88
		08/12/98	<.05	2.0	.51	--	<.05	.83	<.20	--	--	--	--	--	--	--	.13	6.1	1.5
		08/17/98	<.05	1.8	.43	--	<.05	.64	<.20	--	--	--	--	--	--	--	.09	4.7	.95
		08/24/98	<.05	.80	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	<.05	2.4	.47
		08/31/98	<.05	.43	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	<.05	2.0	.31
		09/08/98	<.05	.43	<.20	--	<.05	.36	<.20	--	--	--	--	--	--	--	<.05	1.6	.32
		09/14/98	<.05	.40	<.20	--	<.05	.35	<.20	--	--	--	--	--	--	--	<.05	1.5	.30
05570910	Sangamon River at Fisher, IL	08/15/97	<.05	.21	<.20	--	<.05	.39	.22	--	--	--	--	--	--	--	.06	1.1	.31
05568830	Spoon River near Elmore, IL	08/04/97	<.05	.46	.60	--	<.05	.26	<.20	--	--	--	--	--	--	--	.14	1.9	.34
05583900	Sugar Creek near Ray, IL	08/06/97	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.10	.99	.31

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Lower Illinois River Basin (PTI)—Continued																			
05554490	Vermilion River at Mcdowell, IL	08/11/97	<0.05	<0.20	<0.20	--	<0.05	0.24	<0.20	--	--	--	--	--	--	--	0.05	1.1	0.26
Lake Erie-Lake Saint Clair drainage (LERI/BOB)																			
04178000	St. Joseph River near Newville, IN	05/20/97	4.7	2.4	3.9	--	2.3	1.5	1.4	--	--	--	--	--	--	--	11	2.7	1.9
		05/28/97	3.1	1.3	1.9	--	1.3	1.1	.82	--	--	--	--	--	--	--	5.9	2.0	1.4
		06/03/97	1.9	4.5	6.8	--	.76	2.3	2.0	--	--	--	--	--	--	--	5.4	4.2	3.2
		06/17/97	.14	.54	.58	--	.09	.53	.24	--	--	--	--	--	--	--	.44	1.0	.60
		07/08/97	.16	.92	1.2	--	.32	1.5	1.0	--	--	--	--	--	--	--	1.2	1.9	1.6
		09/30/97	<.05	.63	.37	--	<.05	.74	.26	--	--	--	--	--	--	--	.11	1.7	.72
		11/18/97	<.05	<.20	<.20	--	<.05	.34	<.20	--	--	--	--	--	--	--	.05	.69	.29
		12/16/97	<.05	.45	.32	--	<.05	.59	.22	--	--	--	--	--	--	--	.06	1.5	.53
		01/14/98	<.05	.35	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	.08	.89	.28
		03/30/98	<.05	.19	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	.10	.85	.28
Upper Mississippi River Basin (UMIS/BOB)																			
05320270	Little Cobb River near Beauford, MN	04/18/97	<.05	.95	.59	--	<.05	1.4	.32	--	--	--	--	--	--	--	.10	3.8	.58
		04/24/97	<.05	.84	.37	--	<.05	1.3	.24	--	--	--	--	--	--	--	.06	4.3	.62
		05/08/97	<.05	.69	.33	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.27	4.2	.55
		05/22/97	<.05	.66	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.09	4.3	.48
		05/28/97	1.2	1.3	1.7	--	.06	.88	<.20	--	--	--	--	--	--	--	.49	3.8	.53
		06/09/97	.08	1.0	.69	--	<.05	1.0	.22	--	--	--	--	--	--	--	.09	4.4	.73
		06/23/97	.14	1.3	1.0	--	.09	1.2	.67	--	--	--	--	--	--	--	.07	3.5	.70
		07/11/97	.06	1.2	1.8	--	<.05	.92	.21	--	--	--	--	--	--	--	.08	4.1	.48
		08/08/97	<.05	1.4	.71	--	<.05	1.1	.33	--	--	--	--	--	--	--	.05	4.8	.52
		08/20/97	<.05	.99	.83	--	<.05	.91	.25	--	--	--	--	--	--	--	.08	3.3	.41
09/09/97	<.05	.95	.40	--	<.05	.92	<.05	--	--	--	--	--	--	--	<.05	2.8	.45		
10/28/97	<.05	1.1	.20	--	<.05	1.1	<.05	--	--	--	--	--	--	--	.08	4.6	.49		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Mississippi River Basin (UMIS/BOB)—Continued																			
05320270	Little Cobb River near Beauford, MN	11/20/97	<0.05	0.48	<0.05	--	<0.05	0.56	<0.05	--	--	--	--	--	--	--	0.13	2.2	0.30
		11/20/97	<.05	.46	<.05	--	<.05	.52	<.05	--	--	--	--	--	--	--	.13	2.1	.29
		12/18/97	<.05	.74	<.05	--	<.05	.93	<.05	--	--	--	--	--	--	--	.07	3.6	.43
		01/08/98	<.05	.69	<.05	--	<.05	1.0	<.05	--	--	--	--	--	--	--	.05	3.5	.43
		02/05/98	<.05	.47	<.05	--	<.05	.86	<.05	--	--	--	--	--	--	--	.06	2.8	.41
		04/20/98	<.05	1.0	.41	--	<.05	.61	<.05	--	--	--	--	--	--	--	.09	2.2	.52
		05/18/98	2.1	2.4	1.4	--	.13	1.2	<.05	--	--	--	--	--	--	--	.52	4.3	.98
		05/19/98	.21	2.0	.54	--	<.05	1.3	.33	--	--	--	--	--	--	--	.13	4.9	1.1
		06/04/98	<.05	<.20	<.20	--	<.05	<.20	<.05	--	--	--	--	--	--	--	<.05	<.20	<.20
Upper Mississippi River Basin (UMIS/KLM)																			
05288839	Bassett Creek at Dresden Lane in Golden Valley, MN	09/15/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05331050	Battle Creek below McKnight Road in St. Paul, MN	09/29/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05318178	Center Creek at Huntley, MN	08/14/97	<.05	.22	<.20	--	<.05	.28	<.05	--	--	--	--	--	--	--	.07	1.4	.28
05314510	Chetomba Creek near Renville, MN	08/25/97	<.05	.38	.21	--	<.05	2.4	.35	--	--	--	--	--	--	--	.11	3.4	.96
05320230	Cobb River near Mapleton, MN	08/20/97	<.05	.73	.23	--	<.05	1.0	<.20	--	--	--	--	--	--	--	<.05	3.5	.28
05288475	Coon Creek at 131 Street in Coon Rapids, MN	09/25/97	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Mississippi River Basin (UMIS/KLM)—Continued																			
05317828	Coon Creek at U.S. Highway 169 near Blue Earth, MN	08/20/97	0.21	0.53	<0.20	--	<0.05	0.81	<0.20	--	--	--	--	--	--	--	0.12	4.8	0.73
05304795	Dry Weather Creek near Watson, MN	08/12/97	<.05	<.20	1.4	--	<.05	.39	<.20	--	--	--	--	--	--	--	<.05	.28	<.20
05318050	East Branch Blue Earth River below Bricelyn, MN	08/20/97	<.05	.68	.26	--	<.05	.82	<.20	--	--	--	--	--	--	--	<.05	1.6	<.20
05287890	Elm Creek near Champlin, MN	09/24/97	<.05	.30	.27	--	<.05	.52	<.20	--	--	--	--	--	--	--	<.05	.21	<.20
05318240	Elm Creek near Northrop, MN	08/14/97	<.05	.39	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	<.05	2.7	.28
05286798	Ford Brook on Green Valley Road in Ramsey, MN	09/16/97	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.40	.23
05314500	Hawk Creek near Maynard, MN	08/11/97	<.05	<.20	<.20	--	<.05	.64	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05326700	High Island Creek near Arlington, MN	08/28/97	<.05	.48	.36	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.09	1.7	.70
05320080	Le Sueur River near Wilton, MN	08/18/97	<.05	1.6	.55	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.10	3.8	.74
05320270	Little Cobb River near Beauford, MN	08/18/97	<.05	1.3	.60	--	<.05	1.0	.21	--	--	--	--	--	--	--	.09	3.8	.51
05317170	Little Cottonwood River near Searles, MN	08/13/97	<.05	.33	<.20	--	<.05	.75	<.20	--	--	--	--	--	--	--	.07	1.4	.27

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Mississippi River Basin (UMIS/KLM)—Continued																			
05320450	Maple River near Sterling Center, MN	08/19/97	0.07	0.65	0.31	--	<0.05	0.55	0.24	--	--	--	--	--	--	--	0.24	2.9	0.48
05326150	Middle Branch Rush River near New Rome, MN	08/28/97	<.05	.87	.38	--	<.05	1.5	<.20	--	--	--	--	--	--	--	.12	2.8	1.1
05330702	Minnesota River tributary on Beech Street in Chaska, MN	09/26/97	<.05	<.20	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05289600	Minnehaha Creek at Nicollet Avenue in Minneapolis, MN	09/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05330902	Nine Mile Creek near James Circle at Bloomington, MN	09/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05319360	Perch Creek below Vernon Center, MN	08/19/97	<.05	.84	<.20	--	<.05	.45	<.20	--	--	--	--	--	--	--	<.05	2.5	.31
05330801	Purgatory Creek on Pioneer tributary in Eden Prairie, MN	09/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05288598	Rice Creek at Central Avenue, Fridley, MN	09/15/97	<.05	<.20	<.20	--	.19	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05330750	Riley Creek at Eden Prairie, MN	09/25/97	<.05	<.05	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Dimeth- enamid ESA (µg/L)	Dimeth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Mississippi River Basin (UMIS/KLM)—Continued																			
05326250	South Branch Rush River near Rush River, MN	08/21/97	<0.05	1.2	0.42	--	<0.05	2.0	<0.20	--	--	--	--	--	--	--	0.12	4.4	1.3
05288487	Sand Creek at Xeon Street in Coon Rapids, MN	09/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05303900	Shakopee Creek near Louriston, MN	08/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05288705	Shingle Creek at Queen Avenue in Minneapolis, MN	09/29/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
05316985	Sleepy Eye Creek near Springfield, MN	08/13/97	<.05	.31	<.20	--	<.05	.41	<.20	--	--	--	--	--	--	--	<.05	.93	.22
05318138	South Creek near Huntley, MN	08/14/97	<.05	.38	<.20	--	<.05	.47	<.20	--	--	--	--	--	--	--	<.05	1.3	.26
05319050	South Fork Watonwan River near St. James, MN	08/19/97	<.05	.63	.33	--	<.05	.54	.21	--	--	--	--	--	--	--	<.05	1.6	<.20
05312000	Spring Creek near Spring Creek, MN	08/12/97	<.05	.42	.59	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.63	<.20
05318800	St. James Creek near La Salle, MN	08/21/97	<.05	1.4	.32	--	<.05	.96	<.20	--	--	--	--	--	--	--	.09	3.1	.75
05318630	Watonwan River near St. James, MN	08/15/97	<.05	.43	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	<.05	1.0	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Dimeth-enamid ESA (µg/L)	Dimeth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
National Water-Quality Assessment Program (NAWQA) (fig. 3)—Continued																			
Upper Mississippi River Basin (UMIS/KLM)—Continued																			
05317800	West Branch Blue Earth River above Elmore, MN	08/20/97	<0.05	0.27	<0.20	--	<0.05	0.60	<0.20	--	--	--	--	--	--	--	0.10	2.6	0.48
Mississippi Embayment study (MISE/BOB)																			
07288650	Bogue Phalia River near Leland, MS	03/31/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		04/15/97	2.0	<.20	.32	--	.46	<.20	<.20	--	--	--	--	--	--	--	1.9	.35	.40
		04/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	5.7	.84	.97
		05/13/97	.70	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.30	.30	.49
		05/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.59	<.20	.20
		05/28/97	<.05	<.05	.38	--	<.05	<.05	<.20	--	--	--	--	--	--	--	2.5	.23	<.05
		06/03/97	<.05	.21	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	1.2	.50	.44
		06/18/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.80	.29	.65
		07/14/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	.09	<.05	<.05
		08/11/97	<.05	<.05	<.05	--	<.05	<.05	1.2	--	--	--	--	--	--	--	<.05	<.05	<.05
		08/18/97	<.05	<.05	<.05	--	<.05	<.05	1.1	--	--	--	--	--	--	--	<.05	<.05	<.05
		09/23/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		10/07/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
		11/17/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	.37
		12/29/97	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	.20
		01/28/98	<.05	<.05	<.05	--	<.05	<.05	<.05	--	--	--	--	--	--	--	<.05	<.05	<.05
Santee River Basin and Coastal drainages (SANT/BOB)																			
02174250	Cow Castle Creek near Bowman, SC	04/16/97	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.93	.23	<.20
		06/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.26	<.20	<.20
		07/10/97	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.05	.27	<.20
		08/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	<.20	<.20

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Their Degradation Products, Ethanesulfonic Acid, Oxanilic Acid, and Sulfinyl Acetic Acid, in Surface-Water Samples, 1993–2003 203

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Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

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Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Iowa State monitoring study (KIA)—Continued																			
--	Rock River near Hawarden, IA	12/07/99	--	<0.20	<0.20	--	--	<0.20	<0.20	--	--	--	--	--	--	--	--	0.93	0.26
06608500	Soldier River near Pisgah, IA	12/07/99	--	<.20	<.20	--	--	<.20	<.20	--	--	--	--	--	--	--	--	.22	<.20
05484000	South Raccoon River near Redfield, IA	12/08/99	--	<.20	.26	--	--	<.20	<.20	--	--	--	--	--	--	--	--	.54	<.20
--	South Skunk River near Cambridge, IA	12/06/99	--	.30	<.20	--	--	.42	<.20	--	--	--	--	--	--	--	--	.88	.69
05471500	South Skunk River at Oskaloosa, IA	12/07/99	--	<.20	<.20	--	--	.41	<.20	--	--	--	--	--	--	--	--	.73	.44
05412500	Turkey River at Garber, IA	12/07/99	--	.23	<.20	--	--	.85	<.20	--	--	--	--	--	--	--	--	.79	.23
05388250	Upper Iowa River at Dorchester, IA	12/07/99	--	<.20	<.20	--	--	.41	<.20	--	--	--	--	--	--	--	--	.73	<.20
--	Volga River at Elkport, IA	12/07/99	--	.23	<.20	--	--	.46	<.20	--	--	--	--	--	--	--	--	.97	.42
05422000	Wapsipinicon River at Dewitt, IA	12/06/99	--	.32	<.20	--	--	1.4	<.20	--	--	--	--	--	--	--	--	1.6	.44
05421000	Wapsipinicon River at Independence, IA	01/10/00	--	.74	<.20	--	--	2.3	.21	--	--	--	--	--	--	--	--	2.7	.56
05458900	West Fork Cedar River near Finchford, IA	12/09/99	--	.25	<.20	--	--	<.20	<.20	--	--	--	--	--	--	--	--	2.1	2.9
--	West Fork Des Moines River below Humboldt, IA	12/27/99	--	<.20	<.20	--	--	.50	.34	--	--	--	--	--	--	--	--	.83	<.20
Minnesota hydrologic study (MLM)																			
06483000	Rock River at Luverne, MN	03/24/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	0.99	1.2	.35
		04/07/97	<.05	1.0	.67	--	<.05	.57	<.20	--	--	--	--	--	--	--	.39	3.2	1.4

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

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Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																	
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)	
Federal-State Cooperative Studies—Continued																				
Minnesota hydrologic study (FRG)—Continued																				
443203093524501	Unnamed pond east-northeast of Henderson, MN	04/09/98	<0.05	0.89	0.61	--	<0.05	0.40	<0.20	--	--	--	--	--	--	--	1.1	0.85	0.62	
		06/04/98	<.05	.43	.23	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.52	<.20	
		06/04/98	<.05	1.6	.80	--	<.05	.68	<.20	--	--	--	--	--	--	--	.14	1.3	.87	
		03/30/99	<.05	.69	1.2	--	<.05	.26	<.05	--	--	--	--	--	--	--	<.05	.32	.73	
		05/11/99	.19	.95	.86	--	<.05	.36	<.05	--	--	--	--	--	--	--	.05	.57	.36	
		07/09/99	<.05	1.0	.85	--	<.05	.24	<.20	--	--	--	--	--	--	--	<.05	.57	.27	
		07/09/99	<.05	1.0	.76	--	<.05	.24	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.56	.24	
		04/25/00	.19	.52	.53	--	<.05	.40	.36	--	<.05	--	--	<.05	--	--	<.05	.62	.43	
		04/25/00	.18	.56	.58	--	<.05	.43	.39	--	<.05	<0.05	<0.05	<.05	--	--	<.05	.62	.48	
		04/25/00	.12	.55	.63	--	<.05	.41	.40	--	<.05	<.05	<.05	<.05	--	--	<.05	.63	.46	
	462327093575801	Unnamed pond north of Little Nokay near Esden, MN	06/06/00	<.05	.35	.44	--	<.05	.23	.24	--	<.05	<.05	<.05	<.05	--	--	<.05	.48	.23
			07/06/00	<.05	.27	.42	--	<.05	.13	.19	--	<.05	<.05	<.05	<.05	--	--	<.05	.41	.32
			06/17/01	<.05	2.9	2.1	--	<.05	.55	.56	--	<.05	--	--	<.05	--	--	<.05	1.0	.50
			06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
05/13/99			<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	<.05	--	--	<.05	<.20	<.20	
06/14/99			<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20	
07/05/99			<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20	
05/04/00			<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	<.05	<.05	
06/12/00			<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	<.05	<.05	
07/10/00			<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<0.05	<0.05	<.05	<.05	<.05	
07/10/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05			
06/07/01	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05			

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Minnesota hydrologic study (FRG)—Continued																			
450458094234101	Unnamed pond southeast of Little Darwin near Darwin, MN (DARP)	05/12/99	0.14	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		04/27/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<0.05	<0.05	<.05	<0.05	<0.05	<.05	<.05	<.05
450458094233501	Unnamed pond southeast of Little Darwin near Darwin, MN (ROI)	06/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/12/99	.13	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
450500094233401	Unnamed pond southeast of Little Darwin near Darwin, MN (ROI2)	04/27/00	<.05	<.05	<.05	--	<.05	<.05	.14	--	<.05	<.05	<.05	<.05	--	--	<.05	<.05	<.05
		05/12/99	.18	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
--	Unnamed pond southeast of Little Darwin near Darwin, MN (ROI3)	05/12/99	.17	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	.05	<.20	<.20	
450459094232501	Unnamed wetland southeast of Little Darwin near Darwin, MN	06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
Nebraska Platte River study (IVL)																			
06801000	Platte River at Ashland, NE	06/16/95	<.05	<.20	<.20	--	.06	<.20	<.20	--	--	--	--	--	--	--	.40	<.20	<.20
		05/27/96	3.2	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	4.5	<.20	<.20
		04/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	<.20	<.20
		05/27/97	.46	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.70	.24	.21

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
Nebraska Platte River study (IVL)—Continued																			
06801000	Platte River at Ashland, NE	06/21/97	1.8	0.39	0.76	--	0.52	0.33	0.29	--	--	--	--	--	--	--	5.3	0.56	0.64
		07/30/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.10	.42	<.20
		04/29/98	.05	<.20	<.20	--	<.05	.21	<.20	--	--	--	--	--	--	--	.13	.47	<.20
		05/16/98	5.0	<.20	<.20	--	.73	.29	<.20	--	--	--	--	--	--	--	5.5	.62	.37
		05/17/98	.61	<.20	<.20	--	.25	.30	<.20	--	--	--	--	--	--	--	1.8	.47	<.20
06796500	Platte River near Leshara, NE	05/26/98	1.5	.46	.60	--	.38	.35	.26	--	--	--	--	--	--	--	3.6	.55	.45
		05/24/95	<.05	<.20	<.20	--	<.05	.27	<.20	--	--	--	--	--	--	--	<.05	<.20	.34
		New York hydrologic study (PPN)																	
--	A1-S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	<.20	<.20
		07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.15	.65	.21
		07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	.59	.20
04232050	Allen Creek near Rochester, NY	06/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
01363400	Ashokan Reservoir, NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.25	<.05
		07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01363400	Ashokan Reservoir, NY	10/29/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
		05/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/29/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/21/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/21/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424937077422101	Avon public water supply intake at Conesus Lake, NY	09/12/00	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.23	.09
423016076320701	B10, Cayuga Lake, NY	07/28/98	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	0.12	.86	.21
423016076320701	B1-S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	.56	.20
423022076315901	B2D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.76	.20
423022076315901	B2S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.85	.24
423023076313201	B3D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.66	.37
423023076313201	B3S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.79	.27
0141309740	Batavia Kill below Vega, NY	12/04/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		12/04/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01413099	Batavia Kill east of Kelly Corners, NY	07/10/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
0421337640	Beaver Creek near Cordova, NY	06/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04234010	Big Salmon Creek at Genoa, NY	01/11/00	<0.05	1.6	<0.20	--	<0.05	0.21	<0.20	--	<0.05	--	--	<0.05	--	--	0.67	3.5	<0.20
		05/15/00	--	<.05	<.05	--	--	.26	<.05	--	--	<0.05	<0.05	--	--	--	--	4.6	1.3
		06/26/00	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	6.7	2.3
		07/26/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.1	1.1
		08/30/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.6	.49
		09/27/00	--	<.05	<.05	--	--	.18	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.2	1.7
		02/07/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	2.3	.66
		06/27/01	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	4.5	2.1
04235276	Black Brook at Tyre, NY	06/27/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.5	1.2
04231000	Black Creek at Churchville, NY	06/27/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.44	.11
422950076305901	Bolton Point public water supply intake, NY	07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.05	.62	.29
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.54	.22
01413990	Bryants Brook above Dunraven, NY	12/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
		12/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		12/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.18	<.05
		03/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
		08/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01413990	Bryants Brook above Dunraven, NY	10/03/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
		10/22/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		11/15/01	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
425309078542701	Buffalo public water supply intake, NY	07/12/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<0.05	<.20	<.20
		09/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/15/00	--	.21	.06	--	--	.21	<.05	--	--	<.05	<.05	--	--	--	--	.27	.08
		07/25/00	--	.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	.10
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.06
		02/05/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.05
		05/21/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	.06
		06/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		01/28/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.10	.05
		05/07/02	--	<.05	<.05	<.05	--	.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.07
		07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.10
423241755	Bullhorn Creek at McGrath Point, NY	06/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
422814076304901	C1-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.74	.33
423704076402201	C1D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	<.05	.68	<.20
423704076402701	C1S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	<.05	.26	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
423711076395401	C2D, Cayuga Lake, NY	07/28/98	<0.05	<0.20	<0.20	--	<0.05	0.41	<0.20	--	--	--	--	--	--	--	<0.05	0.36	<0.20
423711076395401	C2S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.41	<.20	--	--	--	--	--	--	--	<.05	.36	<.20
423711076395401	C3-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.63	<.20
423711076391401	C3D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.33	<.20	--	--	--	--	--	--	--	<.05	.28	<.20
423711076391401	C3S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.56	<.20	--	--	--	--	--	--	--	<.05	.60	.26
424016076411001	C4-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.75	.32
424547076435601	C5-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.85	.33
425117076432001	C6-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.05	.34	<.20
425602076441401	C7-25, Cayuga Lake, NY	07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
04235000	Canadaigua outlet at Chapin, NY	06/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
01349150	Canajoharie Creek near Canajoharie, NY	04/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.45	<.20
		05/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.36	<.20
		05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.29	<.20
		05/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
		06/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.39	<.20
		06/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.47	<.20
		06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.27	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01349150	Canajoharie Creek near Canajoharie, NY	06/19/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.41	<0.20
		06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.40	<.20
		06/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.24	<.20
		07/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	.40	<.20
		07/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.28	<.20
		07/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.29	.57	<.20
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.38	<.20
		08/06/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/14/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.25	<.20
		09/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.20	<.20
		10/27/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		11/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.21	<.20
		11/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.81	.56
		12/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.89	.46
		01/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.53	<.20
		02/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.48	<.20
		03/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.48	.21
		04/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.38	<.20
		05/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
		05/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.46	<.20
		05/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.50	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01349150	Canajoharie Creek near Canajoharie, NY	06/01/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.33	0.48	<0.20
		06/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	3.4	1.3	.70
		06/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.10	.75	.26
		06/12/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.86	<.20
		06/14/98	<.05	<.20	<.20	--	.06	<.20	<.20	--	--	--	--	--	--	--	3.5	2.2	1.4
		06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.58	<.20
		06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	.92	.31
		07/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.24	2.5	1.1
		08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.60	<.20
		08/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.31	<.20
		09/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
		09/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.77	<.20
		10/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		10/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
		11/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.30	<.20
		12/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.22	<.20
		02/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.26	<.20
		03/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.30	<.20
04/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.21	<.20		
04/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20		
05/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20		
05/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01349150	Canajoharie Creek near Canajoharie, NY	06/09/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	--	--	--	<0.05	0.27	<0.20
		06/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.29	<.20
		06/23/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.21	<.20
		06/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/04/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	2.2	.95	.99
		07/06/99	<.05	<.05	<.05	--	<.05	.17	.20	--	<.05	--	--	<.05	--	--	.59	1.8	1.4
		07/07/99	<.05	<.05	<.05	--	<.05	.88	.62	--	<.05	--	--	<.05	--	--	.72	.88	.62
		07/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.16	.79	.51
		07/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.41	.22
		07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.07	.34	<.20
		08/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.34	<.20
		08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.11	<.20	<.20
		09/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/17/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.17	1.2	.70
		09/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.71	.40
		09/19/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.64	.38
		09/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.73	.32
		09/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.66	.28
		10/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.62	.23
		10/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.66	<.20
		11/04/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		12/08/99	<.05	.52	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/05/00	<.05	.27	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.55	<.20
		03/06/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.22	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01349150	Canajoharie Creek near Canajoharie, NY	03/28/00	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	--	--	<0.05	--	--	<0.05	0.37	0.21
		04/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	--	--	--	.45	.21
		05/01/00	<.05	<.05	<.05	--	<.05	.20	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.43	.24
		05/17/00	--	<.05	<.05	--	--	.42	<.05	--	--	<.05	<.05	--	--	--	--	.70	.38
		06/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.42	.14
		06/21/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.44	.14
		07/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.37	.13
		07/17/00	--	<.05	<.05	--	--	.12	.16	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.66
		07/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.45	.21
		08/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.29	.16
		09/05/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.56	.14
		09/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.76	.18
		10/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.76	.11
		11/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.59	.13
		11/28/00	--	<.05	<.05	--	--	.15	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.70	.31
		01/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.07
		03/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.29	.08
		04/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.10
		04/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.29	.06
		05/31/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.51	.17
		06/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.44	.11
		08/02/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	<.05
		09/06/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.33	.16
		10/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.13	.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01349150	Canajoharie Creek near Canajoharie, NY	12/03/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.16	<0.05
		02/05/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.43	.14
		04/01/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.49	.17
		05/02/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.48	.14
		06/12/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.77	.18
		07/01/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.52	.14
		08/06/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.54	.11
		10/07/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.69	.20
		12/02/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.49	.10
04227000	Canaseraga Creek near Shakers Crossing, NY	05/22/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	0.13	.29	<.20
		06/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.11	.37	<.20
		06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.19	.39	<.20
		06/24/97	<.05	<.20	<.20	--	.06	<.20	<.20	--	--	--	--	--	--	--	<.05	.30	.23
		06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.74	.55	.37
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.33	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		10/07/97	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	<.05	.81	.33
		12/01/97	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	<.05	.61	.23
		01/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.35	<.20
		02/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.73	.29
		04/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.55	.35
		05/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.57	<.20
		06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.50	.22
		06/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	2.8	1.6
		06/16/98	<.05	<.20	<.20	--	.28	.25	<.20	--	--	--	--	--	--	--	1.1	.75	.36

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04227000	Canaseraga Creek near Shakers Crossing, NY	06/23/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.29	0.92	<0.20
		06/26/98	<.05	<.20	<.20	--	1.3	2.1	2.1	--	--	--	--	--	--	--	4.0	3.0	2.4
		06/26/98	<.05	<.20	<.20	--	.60	1.3	1.1	--	--	--	--	--	--	--	3.5	2.4	1.8
		07/08/98	<.05	<.20	<.20	--	.07	1.4	.62	--	--	--	--	--	--	--	.59	1.4	1.2
		07/27/98	<.05	<.20	<.20	--	<.05	.28	<.20	--	--	--	--	--	--	--	.05	.70	<.20
		08/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.25	<.20
		10/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		12/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	.05	.99	.23
		02/09/99	<.05	<.20	<.20	--	<.05	.34	<.20	--	--	--	--	--	--	--	<.05	.76	.30
		04/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.28	<.20
		05/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.26	<.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.21	<.20
		06/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		06/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	.08	.22	<.20
		07/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	.13	<.05
		08/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		10/13/99	<.05	.27	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		12/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		06/25/01	--	<.05	<.05	--	--	.07	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.26	.09
		06/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
424730077173001	Canajoharie Lake Department of Environment conservation site, NY	09/04/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		07/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
424230077340101	Candice Lake Department of Environment conservation site, NY	09/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
01423900	Cannonsville Reservoir, NY	01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	.14	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.05	<.05	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.21	.22
		05/15/00	--	<.05	<.05	--	--	.22	<.05	--	--	<0.05	<0.05	--	--	--	--	.39	.21
		07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.10	<.05
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.21	.06
		10/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.12	<.05
		05/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.16	<.05
01416870	Cat Hollow Brook near Downsville, NY	07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.20
423331076358501	Cayuga Lake Department of Environment conservation site, NY	09/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.30	<.20
		07/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.05	.71	.32

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
422950076305901	Cayuga Lake public water intake at Bolton, NY	07/02/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.63	<0.20
		02/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.45	<.20
		06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.91	.38
		09/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.31	.33
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.33	<.20
		05/15/00	--	<.05	<.05	--	--	.21	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.61	.30
		07/26/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.49	.23
		02/07/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.44	.23
		04/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.52	.24
		05/22/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.56	.24
		06/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.48	.19
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.51	.17
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.42	.19
		01/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.50	.20
		05/07/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.49	.21
		07/23/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.46	.20
424800077423001	Conesus Lake Department of Environment conservation site, NY	09/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	.33	<.20	
		07/16/98	<.05	<.20	<.20	--	<.05	.28	<.20	--	--	--	--	--	--	--	.12	.47	.26

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
424937077422101	Conesus Lake public water supply intake at Avon, NY	05/16/00	--	<0.05	<0.05	--	--	0.22	0.05	--	--	<0.05	<0.05	--	--	--	--	0.34	0.21
		07/25/00	--	<.05	<.05	--	--	.10	.06	--	--	<.05	<.05	--	<0.05	<0.05	--	.21	.16
		02/06/01	--	<.05	<.05	--	--	.11	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.25	.08
		04/23/01	--	<.05	<.05	--	--	.13	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.22	.12
		05/21/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.22	.09
		06/19/01	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.20	.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	<.05
		10/30/01	--	<.05	<.05	--	--	.11	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.19	.09
		01/29/02	--	<.05	<.05	<0.05	--	.09	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.19	.06
424739077430801	Conesus Lake, Geneseo public water supply intake, NY	07/25/00	--	<.05	<.05	--	--	.10	.06	--	--	<.05	<.05	--	<.05	<.05	--	.21	.13
01374995	Croton Reservoir, NY	01/26/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		05/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		04/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/14/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
424546076445901	D1D, Cayuga Lake, NY	07/28/98	<0.05	<0.20	<0.20	--	<0.05	0.61	<0.20	--	--	--	--	--	--	--	<0.05	0.57	0.20
424546076445901	D1S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.70	<.20	--	--	--	--	--	--	--	<.05	.65	.32
424547076435601	D2D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.83	<.20	--	--	--	--	--	--	--	.17	.70	.45
424547076435601	D2S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	1.0	<.20	--	--	--	--	--	--	--	.23	.70	.34
424546076430601	D3D, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.58	<.20	--	--	--	--	--	--	--	<.05	.38	<.20
424546076430601	D3S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.76	<.20	--	--	--	--	--	--	--	<.05	.54	.21
425425076443901	E1S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.65	<.05	--	--	--	--	--	--	--	<.05	.34	.20
425426076441801	E2S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.76	<.05	--	--	--	--	--	--	--	<.05	.37	.32
425428076440001	E3S, Cayuga Lake, NY	07/28/98	<.05	<.20	<.20	--	<.05	.61	<.05	--	--	--	--	--	--	--	<.05	.57	.41
425032074393901	ED3, drainage ditch, Montgomery Co., NY	06/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.14	4.1	.99
425030074393902	ED3A, drainage ditch, Montgomery Co., NY	06/30/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.20
04234000	Fall Creek near Ithaca, NY	05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.40	<.20
		06/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
		06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.32	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04234000	Fall Creek near Ithaca, NY	06/19/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.19	0.80	0.45
		06/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.54	<.20
		07/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.27	<.20
		07/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.31	<.20
		07/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.59	.23
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.42	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.32	<.20
		10/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.41	<.20
		11/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.35	<.20
		12/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.20
		01/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.37	<.20
		02/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.44	<.20
		04/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.67	<.20
		05/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.85	<.20
		06/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.71	<.20
		06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.68	<.20
		06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.52	<.20
		06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.74	.29
		06/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.11	1.1	<.20
		06/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.50	<.20
		06/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	.56	<.20
		06/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	.84	.47
		06/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.10	1.0	.43
		07/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	<.05	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04234000	Fall Creek near Ithaca, NY	07/27/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.81	<0.20
		08/25/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.82	<.20
		10/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.31	<.05
		12/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.69	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.51	<.20
		02/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.43	<.20
		04/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.40	<.20
		05/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.40	<.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.37	<.20
		06/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.28	<.20
		06/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.31	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	.35	<.05
		08/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	.24	<.20
		09/17/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		10/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	.28	<.20
		12/14/99	<.05	.33	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		08/31/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.37	<.05
04219650	Fourmile Creek near Youngstown, NY	06/28/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	.05
04228500	Genesee River at Avon, NY	05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.15	.24	<.20
		06/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.27	<.20
		06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.38	<.20
		06/19/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.32	<.20
		06/25/97	<.05	<.20	<.20	--	.08	<.20	<.20	--	--	--	--	--	--	--	.97	.64	.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04228500	Genesee River at Avon, NY	07/24/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.34	<0.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.23	<.20
		10/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.73	<.20
		12/01/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.65	.27
		01/09/98	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.13	.79	.28
		02/02/98	<.05	<.20	<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	.08	1.1	.49
		04/06/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.49	<.20
		05/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.40	<.20
		06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.13	.63	.20
		06/16/98	<.05	<.20	<.20	--	.22	.27	<.20	--	--	--	--	--	--	--	1.2	1.0	.46
		06/23/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.32	.93	<.20
		06/26/98	<.05	<.20	<.20	--	.07	.25	<.20	--	--	--	--	--	--	--	.49	.75	.29
		07/09/98	<.05	<.20	<.20	--	.08	1.6	.56	--	--	--	--	--	--	--	1.6	2.8	2.6
		07/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.76	<.20
		10/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.31	<.20
		12/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.45	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	.07	1.1	.32
		02/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.43	<.20
		04/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.27	<.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.05	<.20
		06/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.33	<.20
		06/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.33	<.20
		07/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	<.05	.40	<.05
		08/10/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	.34	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04228500	Genesee River at Avon, NY	09/14/99	<0.05	<0.20	0<.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	0.33	<0.20
		10/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	.22	<.20
		12/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
424025076321001	Genoa-King Ferry Water District, NY	08/03/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.25	1.0	<.20
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	1.8	.35
		10/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.6	.30
		01/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.69	<.05
01414840	Gladstone Hollow Brook near Andes, NY	12/06/00	--	<.05	<.05	--	--	.07	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	<.05
		07/19/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05
01414835	Gladstone Hollow Brook north of Andes, NY	12/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		05/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/28/01	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		08/29/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.15	<.05
		10/03/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		10/03/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		10/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
		11/15/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		11/15/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
04235820	Grout Brook near Fairhaven, NY	05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	.32	<.20	
01374494	Haviland Hollow Brook near Putnam Lake, NY	07/20/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	<.05	<.20	<.20	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																	
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)	
Federal-State Cooperative Studies—Continued																				
New York hydrologic study (PPN)—Continued																				
424618077364701	Hemlock Lake public water supply intake, NY	07/02/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		09/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	<.05	<.20	<.20
		04/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	<.05	1.0	.34
		04/29/98	<.05	<.20	<.20	--	<.05	.24	<.20	--	--	--	--	--	--	--	--	<.05	1.1	.30
		01/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	<.05	.23	<.05
		05/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	--	--	--	--	<.05	<.05	<.05
		09/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	--	<.05	<.20	<.20
		05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.23	<.05	
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	.09	
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05	
		02/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05	
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
		01/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.11	<.05	
		07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.10	<.05	
424445077310001	Honeoye Lake Department of Environment conservation site, NY	09/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20	
		07/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20	
422402077373901	Hornell Reservoir #2 inflow, NY	05/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20	
		06/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.98	<.20	
		06/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	1.0	1.3	.60	
		07/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.18	1.6	<.20	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
422402077373901	Hornell Reservoir #2 inflow, NY	09/28/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	0.35	<0.20
		01/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.70	<.20
422403077370901	Hornell Reservoir #3 inflow, NY	05/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.2	<.20
		06/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.88	<.20
		06/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.82	1.4	.72
		07/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.97	<.20
422328077374001	Hornell Reservoir #3 outflow, NY	09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/20/98	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	.11	1.0	.47
		09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.35	<.20
		01/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.63	<.20
422306077380401	Hornell Reservoir intake, NY	05/18/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.3	.39
		06/22/98	<.05	<.20	<.20	--	<.05	1.4	<.20	--	--	--	--	--	--	--	<.05	.73	.34
		07/20/98	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	.21	.96	.51
		09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.62	<.20
		05/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	.56	<.20
		07/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<0.05	--	--	<0.05	--	--	<.05	.55	<.05
		09/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.49	.21
		01/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	.54	<.20
		05/16/00	--	<.05	<.05	--	--	.20	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.88	.35
		07/25/00	--	.10	<.05	--	--	<.05	.06	--	--	<.05	<.05	--	<.05	<.05	--	.56	.33
		09/11/00	--	<.05	<.05	--	--	.11	.08	--	--	<.05	<.05	--	<.05	<.05	--	.63	.12
		02/06/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.65	.11
		04/24/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.56	.21
		05/21/01	--	<.05	<.05	--	--	.09	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.58	.14
		06/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.45	.06
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.29	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
422306077380401	Hornell Reservoir intake, NY	10/30/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.27	0.05
		01/29/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.39	.14
		05/07/02	--	<.05	<.05	<.05	--	.14	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.67	.18
0150273301	Hotchkiss Creek near Windsor, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
414318073562501	Hudson River at Poughkeepsie (raw), NY	09/10/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	.06
414318073562502	Hudson River at Poughkeepsie (finished), NY	09/10/01	--	<.05	<.05	--	--	.06	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	.05
01301900	Kensico Reservoir along Delaware Aqueduct 18, NY	01/26/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		05/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	.05	<.05
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.27	<.05
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		04/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/14/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		07/16/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		10/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metolachlor (µg/L)	Metolachlor ESA (µg/L)	Metolachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
422500077120501	Keuka Lake	09/10/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
	Department of Environment conservation site, NY	07/15/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
423034077092601	Keuka Lake vineyard site, NY	06/25/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<.05	<.05
01374987	Kisco River below Mount Kisco, NY	05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
424708078000901	Lake LaGrange inflow, NY	05/18/98	<.05	<.20	<.20	--	<.05	.49	<.20	--	--	--	--	--	--	--	.30	2.8	.95
		06/22/98	<.05	<.20	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	.13	2.7	.45
		06/26/98	<.05	<.20	<.20	--	.12	<.20	<.20	--	--	--	--	--	--	--	15	8.2	6.5
424735077595401	Lake LaGrange outflow, NY	05/18/98	<.05	<.20	<.20	--	<.05	.48	<.20	--	--	--	--	--	--	--	.73	1.9	1.1
		06/22/98	<.05	<.20	<.20	--	<.05	.30	<.20	--	--	--	--	--	--	--	.85	1.8	.72
		07/20/98	<.05	<.20	<.20	--	<.05	1.1	<.20	--	--	--	--	--	--	--	1.5	6.7	3.1
		09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	1.7	.25
		01/05/99	<.05	<.20	<.20	--	<.05	.55	<.20	--	--	--	--	--	--	--	.20	2.9	2.1
		05/15/00	--	<.05	<.05	--	--	.33	.10	--	--	<.05	<.05	--	<.05	<.05	--	2.0	1.1
		07/25/00	--	<.05	<.05	--	--	.17	.08	--	--	<.05	<.05	--	<.05	<.05	--	1.9	.91
		09/11/00	--	<.05	<.05	--	--	.16	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.9	.90
425225077584901	Lake LeRoy tributary inflow, NY	06/26/98	<.05	<.20	<.20	--	.07	4.4	.70	--	--	--	--	--	--	--	13	10	8.7
		09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
425338077583102	LeRoy Reservoir, finished water, NY	04/23/01	--	<.05	<.05	--	--	.94	<.05	--	--	<.05	<.05	--	<.05	<.05	--	3.9	1.6
		05/21/01	--	<.05	<.05	--	--	.81	.19	--	--	<.05	<.05	--	<.05	<.05	--	3.7	1.4
		06/04/01	--	<.05	<.05	--	--	.69	.14	--	--	<.05	<.05	--	<.05	<.05	--	3.1	1.4
		06/20/01	--	<.05	<.05	--	--	.67	.15	--	--	<.05	<.05	--	<.05	<.05	--	2.2	.98

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425338077583102	LeRoy Reservoir, finished water, NY	07/09/01	--	<0.05	<0.05	--	--	0.68	0.17	--	--	<0.05	<0.05	--	<0.05	<0.05	--	2.5	1.1
		07/16/01	--	<.05	<.05	--	--	.54	.12	--	--	<.05	<.05	--	<.05	<.05	--	2.1	.91
		07/30/01	--	<.05	<.05	--	--	.53	.13	--	--	<.05	<.05	--	<.05	<.05	--	2.4	1.1
		08/13/01	--	<.05	<.05	--	--	.64	.06	--	--	<.05	<.05	--	<.05	<.05	--	2.5	1.1
		08/27/01	--	<.05	<.05	--	--	.58	.14	--	--	<.05	<.05	--	<.05	<.05	--	3.1	.96
		09/10/01	--	<.05	<.05	--	--	.14	.11	--	--	<.05	<.05	--	<.05	<.05	--	.45	1.1
		09/24/01	--	<.05	<.05	--	--	.38	.10	--	--	<.05	<.05	--	<.05	<.05	--	2.3	.83
		10/29/01	--	<.05	<.05	--	--	.30	.08	--	--	<.05	<.05	--	<.05	<.05	--	1.8	.79
		07/22/02	--	<.05	<.05	<0.05	--	1.4	.28	<0.05	--	<.05	<.05	--	<.05	<.05	--	2.8	1.0
		10/08/02	--	<.05	<.05	<0.05	--	.91	.17	<0.05	--	<.05	<.05	--	<.05	<.05	--	2.1	.80
425338077583101	LeRoy Reservoir, raw-water intake, NY	05/18/98	<0.05	<.20	<.20	--	<0.05	1.1	<.20	--	--	--	--	--	--	--	0.14	2.4	1.4
		06/22/98	<.05	<.20	<.20	--	<.05	.82	<.20	--	--	--	--	--	--	--	1.1	2.2	1.0
		07/20/98	<.05	<.20	<.20	--	<.05	1.5	<.20	--	--	--	--	--	--	--	1.3	4.3	3.3
		09/28/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.40	7.8	4.9
		01/05/99	<.05	<.20	<.20	--	<.05	.86	.23	--	--	--	--	--	--	--	.12	3.5	2.4
		05/18/99	<.05	<.20	<.20	--	<.05	.62	<.20	--	<0.05	--	--	--	--	--	.08	2.7	1.7
		01/10/00	<.05	<.20	1.5	--	<.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<.05	1.1	<.20
		02/06/01	--	<.05	<.05	--	--	.49	.28	--	--	<.05	<.05	--	<.05	<.05	--	4.0	1.6
		04/23/01	--	<.05	.22	--	--	.92	.22	--	--	<.05	<.05	--	<.05	<.05	--	3.8	1.5
		05/21/01	--	<.05	<.05	--	--	.80	.18	--	--	<.05	<.05	--	<.05	<.05	--	3.5	1.4
		06/04/01	--	<.05	<.05	--	--	.74	.15	--	--	<.05	<.05	--	<.05	<.05	--	3.3	1.5
		06/18/01	--	<.05	<.05	--	--	.72	.17	--	--	<.05	<.05	--	<.05	<.05	--	2.7	1.3
		07/09/01	--	<.05	<.05	--	--	.72	.18	--	--	<.05	<.05	--	<.05	<.05	--	2.6	1.2
		07/16/01	--	<.05	<.05	--	--	.59	.14	--	--	<.05	<.05	--	<.05	<.05	--	2.3	1.0
		07/30/01	--	<.05	<.05	--	--	.56	.14	--	--	<.05	<.05	--	<.05	<.05	--	2.6	1.1

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425338077583101	LeRoy Reservoir, raw-water intake, NY	08/13/01	--	<0.05	<0.05	--	--	0.68	0.07	--	--	<0.05	<0.05	--	<0.05	<0.05	--	2.6	1.1
		08/27/01	--	<.05	<.05	--	--	.35	.08	--	--	<.05	<.05	--	<.05	<.05	--	1.8	.65
		09/10/01	--	<.05	<.05	--	--	.14	.10	--	--	<.05	<.05	--	<.05	<.05	--	.50	1.2
		09/24/01	--	<.05	<.05	--	--	.37	.10	--	--	<.05	<.05	--	<.05	<.05	--	2.2	.83
		10/29/01	--	<.05	<.05	--	--	.35	.09	--	--	<.05	<.05	--	<.05	<.05	--	2.1	.92
		01/28/02	--	<.05	<.05	<0.05	--	.55	.21	<0.05	--	<.05	<.05	--	<.05	<.05	--	1.8	.81
		05/07/02	--	<.05	<.05	<0.05	--	2.1	.48	<0.05	--	<.05	<.05	--	<.05	<.05	--	4.5	1.3
		06/11/02	--	<.05	<.05	<0.05	--	<0.05	<0.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<0.05	<0.05
		07/22/02	--	<.05	<.05	<0.05	--	1.5	.29	<0.05	--	<.05	<.05	--	<.05	<.05	--	2.9	1.0
		10/08/02	--	<.05	<.05	<0.05	--	1.0	.19	<0.05	--	<.05	<.05	--	<.05	<.05	--	2.4	.92
04228908	Limekiln Creek north of Springwater, NY	07/09/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	<0.05	<.20	<.20	
		07/23/97	<.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	<0.05	<.20	<.20	
01356190	Lisha Kill northwest of Niskayuna, NY	06/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		12/05/01	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/06/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01309500	Massapequa Creek at Massapequa, NY	06/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01374654	Middle Branch Croton River near Carmel, NY	05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01414280	Mill Brook east of Belle Ayr, NY	12/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/20/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		03/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/20/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		08/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01414280	Mill Brook east of Belle Ayr, NY	10/03/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
		10/22/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		11/15/01	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01414500	Mill Brook near Dunraven, NY	07/10/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.31	<.05
		07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/17/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01414290	Mill Brook tributary west of Belle Ayr, NY	12/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/20/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01357500	Mohawk River at Cohoes, NY	04/24/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/28/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/04/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/16/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/18/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		06/25/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/10/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/17/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		08/20/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/03/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01357500	Mohawk River at Cohoes, NY	09/18/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	<0.05	<0.20	<0.20
		10/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		11/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		12/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.20	<.20
		01/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.33	<.20
		02/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		03/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.34	<.20
		04/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.05
		05/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.05
		05/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	<.05	<.05
		05/19/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.05
		06/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.05	<.05
		06/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.22	.24
		06/15/98	<.05	<.20	<.20	--	.05	.23	<.20	--	--	--	--	--	--	--	<.05	.75	.51
		06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.53	.49	<.20
		06/22/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.11	.24	<.20
		07/07/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	8.9	2.5
		07/21/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.45	.20
		08/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.27	<.20
		08/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/10/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		09/24/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		10/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		11/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01357500	Mohawk River at Cohoes, NY	12/02/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<.20	--	--	--	--	--	--	--	<0.05	0.21	<0.20
		01/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		02/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		03/11/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		04/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		05/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		05/21/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		06/08/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		06/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20
		07/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		07/04/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		07/06/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	.07	<.05
		07/07/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	.06	<.05
		07/08/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.09	.07	<.05
		07/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		08/02/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.18	<.20	<.20
		08/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.05	.27	<.20
		08/31/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.05	.21	<.20
		09/16/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		09/17/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		10/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		11/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01357500	Mohawk River at Cohoes, NY	12/08/99	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	<0.05	--	--	<0.05	<0.20	<0.20
		01/05/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		02/02/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		03/07/00	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	<.05	<.05	<.05
		04/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	--	--	--	.25	<.05
		05/04/00	<.05	<.05	<.05	--	<.05	.20	<.05	--	<.05	<.05	<.05	<.05	--	--	<.05	.28	.20
		05/17/00	--	<.05	<.05	--	--	.46	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.57	.35
		06/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.21	<.05
		06/21/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.24	.12
		07/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.26	.10
		07/17/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.34	.21
		08/02/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.19	.08
		08/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	.15
		09/05/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	.07
		09/19/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	.06
		10/03/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.18	.07
		11/06/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.17	<.05
		11/28/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.16	<.05
		01/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
		01/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	<.05
		03/15/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	<.05
		04/03/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	.05
		05/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01357500	Mohawk River at Cohoes, NY	06/08/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.11	<0.05
		09/08/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05
		06/29/01	--	<.05	<.05	--	--	.10	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.27	.23
		08/01/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
		09/05/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.13	<.05
		10/03/01	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		12/04/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		02/06/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	.05
		02/06/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		03/27/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	<.05
		05/01/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	<.05
		06/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.15	<.05
		07/02/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.22	.11
		08/05/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.10	<.05
		10/08/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	.06
431729077372701	Monroe County water authority, NY	12/04/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.23	<.05
		07/12/99	<0.05	<.05	<.05	--	<0.05	<.05	<.05	--	<0.05	--	--	<0.05	--	--	<0.05	.10	.06
		09/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/19/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/22/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.22	<.05
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.07
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	.06
		04/23/01	--	<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.12	.10

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
431729077372701	Monroe County water authority, NY	05/21/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.10	0.07
		06/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.06
		01/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.12	.06
		05/07/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.14	.09
		07/22/02	--	<.05	<.05	<.05	--	.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.08
01413085	Montgomery Hollow Brook near Roxbury, NY	07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01435800	Neversink Reservoir, NY	01/25/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	.18	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	<.05	<.05
		07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/28/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01374995	New Croton Reservoir near Croton on Hudson, NY	10/30/01	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05
		06/18/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/16/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/16/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		08/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01304000	Nissequogue River near Smithtown, NY	10/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01500850	North Winfield Creek at West Winfield, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01496500	Oaks Creek at Index, NY	11/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
430701076144201	Oneida Lake at outlet, NY	09/09/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
04246500	Oneida River at Caughdenoy, NY	07/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.22	<.20
430701076144201	Onondaga Lake at outlet, NY	09/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
04249000	Oswego River at Oswego, NY	07/29/98	<.05	<.20	<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	<.05	.46	.29
425140076170101	Otisco Lake Department of Environment conservation site, NY	09/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.38	<.20
		07/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	1.1	.25

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
425232076314001	Owasco Lake	09/11/97	<0.05	<0.20	<0.20	--	<0.05	0.21	<0.20	--	--	--	--	--	--	--	<0.05	0.31	<0.20
	Department of Environment conservation site, NY	07/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.77	.23
04234044	Paines Creek near Aurora, NY	06/11/98	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	1.3	5.3	.70
		06/17/98	<.05	<.20	<.20	--	<.05	.38	<.20	--	--	--	--	--	--	--	.93	5.1	1.5
01415200	Pepacton Reservoir, NY	06/18/98	<.05	<.20	<.20	--	.05	<.05	<.05	--	--	--	--	--	--	--	5.4	16	9.5
		01/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	--	--	--	.24	<.05
		07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	<.05	<.05
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01416895	Pepacton Reservoir west end tributary near Downsville, NY	04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/13/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/28/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																		
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)		
Federal-State Cooperative Studies—Continued																					
New York hydrologic study (PPN)—Continued																					
424237078012801	Perry Silver Lake public water supply intake, NY	06/22/98	<0.05	<0.20	<0.20	--	<0.05	0.48	<0.20	--	--	--	--	--	--	--	0.09	1.0	0.42		
		07/13/99	<.05	<.05	<.05	--	<.05	.18	.10	--	<0.05	--	--	<0.05	--	--	.06	.99	.62		
		09/07/99	<.05	<.20	<.20	--	<.05	.34	<.20	--	<.05	--	--	<.05	--	--	<.05	.83	.33		
		01/10/00	<.05	<.20	.70	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.61	<.20		
		05/16/00	--	<.05	<.05	--	--	.29	.08	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.82	.46		
		07/25/00	--	<.05	<.05	--	--	.20	.08	--	--	<.05	<.05	--	<.05	<.05	--	.96	.47		
		09/12/00	--	<.05	<.05	--	--	.21	.07	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.44		
		02/06/01	--	<.05	<.05	--	--	.22	.09	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.43		
		04/24/01	--	<.05	<.05	--	--	.21	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.46		
		05/21/01	--	<.05	<.05	--	--	.22	<.05	--	--	<.05	<.05	--	<.05	<.05	--	1.1	.46		
		06/19/01	--	<.05	<.05	--	--	.20	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.91	.35		
		07/30/01	--	<.05	<.05	--	--	.12	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.87	.30		
		10/30/01	--	<.05	<.05	--	--	.20	.05	--	--	<.05	<.05	--	<.05	<.05	--	.92	.34		
		01/29/02	--	<.05	<.05	<0.05	--	.19	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.90	.37		
		05/07/02	--	<.05	<.05	<.05	--	.16	.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.1	.41		
		414318073562501	Poughkeepsie water treatment plant, raw, unfinished water, NY	07/22/02	--	<.05	<.05	<.05	--	.15	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.1	.44
				04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	<.05
04/23/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
05/07/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
05/07/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
05/21/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
05/21/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05		
06/04/01	--			<.05	<.05	--	--	.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.11	<.05		
06/04/01	--			<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Meto-lachlor (µg/L)	Meto-lachlor ESA (µg/L)	Meto-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
414318073562501	Poughkeepsie water treatment plant, raw, unfinished water, NY	06/18/01	--	<0.05	<0.05	--	--	<0.05	<0.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	0.11	<0.05
		06/18/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.06
		07/09/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/16/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.09	.06
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	.06
		08/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.07	<.05
		08/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		08/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.14	.08
		08/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		09/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	.07
		09/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.10	.07
		09/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		10/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		10/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/13/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
		06/06/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.12	.06
		06/06/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.05
		06/17/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.05
		06/17/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.08	.05
		06/24/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.15	.09
		06/24/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
414318073562501	Poughkeepsie water treatment plant, raw, unfinished water, NY	07/01/02	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.16	0.07
		07/01/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	.05
		07/09/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.17	.07
		07/09/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.14	.06
		07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.14	.11
	07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.05	.08	
	08/12/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	.06	
	08/12/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.11	<.05	
01413276	Rider Hollow Brook near Mapeldale, NY	12/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		06/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/20/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01366400	Rondout Reservoir, NY	01/25/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	<0.05	<.20	<.20
		05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
	05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.27	<.05	
	07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
	09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05	
	02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05	
	04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05	
	07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05	
	10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05	
	05/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.07	<.05	
	07/22/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.09	.09	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (µg/L)	Aceto-chlor ESA (µg/L)	Aceto-chlor OXA (µg/L)	Aceto-chlor SAA (µg/L)	Ala-chlor (µg/L)	Ala-chlor ESA (µg/L)	Ala-chlor OXA (µg/L)	Ala-chlor SAA (µg/L)	Di-meth-enamid (µg/L)	Di-meth-enamid ESA (µg/L)	Di-meth-enamid OXA (µg/L)	Flufen-acet (µg/L)	Flufen-acet ESA (µg/L)	Flufen-acet OXA (µg/L)	Metol-lachlor (µg/L)	Metol-lachlor ESA (µg/L)	Metol-lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01366400	Rondout Reservoir, NY	10/28/02	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.06	<0.05
01502702	Route 41 Street south of Afton, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	1.3	1.2
04234018	Salmon Creek at Ludlauville, NY	06/11/98	<0.05	<.20	<.20	--	<0.05	.32	<.05	--	--	--	--	--	--	--	0.77	4.3	.46
		06/17/98	<.05	<.20	<.20	--	<.05	.63	<.05	--	--	--	--	--	--	--	1.5	5.3	1.5
		06/18/98	<.05	<.20	<.20	--	.23	1.9	.68	--	--	--	--	--	--	--	4.8	8.3	4.4
		06/19/98	<.05	<.05	<.05	--	.10	1.0	.50	--	--	--	--	--	--	--	2.0	5.2	2.7
04232060	Salmon Creek at Pultneyville, NY	06/25/01	--	<.05	<.05	--	--	.16	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.54	.32
01376500	Saw Mill River at Yonkers, NY	06/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
04216214	Scajaquada Creek at Buffalo, NY	06/28/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
01362230	Schoharie Reservoir, NY	05/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	<.05	<.05
		09/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/10/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/15/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	--	--	--	.27	<.05
		07/24/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		05/13/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/29/02	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Metolachlor (μg/L)	Metolachlor ESA (μg/L)	Metolachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01362230	Schoharie Reservoir, NY	10/21/02	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.07	<0.05
422428076523101	Seneca Lake S1-2D, NY	07/22/99	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	<0.05	--	--	<0.05	--	--	<0.05	<.20	<.20
422428076523101	Seneca Lake S1-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
422954076540401	Seneca Lake S2-2D, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
422954076540401	Seneca Lake S2-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
423619076534901	Seneca Lake S3-2D, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
423190765349011	Seneca Lake S3-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
423937076531801	Seneca Lake S4-2D, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
423927076531801	Seneca Lake S4-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
424603076565701	Seneca Lake S5-2D, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
424603076565701	Seneca Lake S5-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
458041076573601	Seneca Lake S6-2D, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
425041076573601	Seneca Lake S6-2S, NY	07/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
04237500	Seneca River at Baldwinsville, NY	05/22/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.08	.47	<.20
		06/11/97	<.05	<.20	<.20	--	.12	<.20	<.20	--	--	--	--	--	--	--	.14	.35	<.20

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04237500	Seneca River at Baldwinsville, NY	06/18/97	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	--	--	--	--	--	--	0.07	0.37	<0.20
		06/26/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.44	<.20
		07/05/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.27	<.20
		07/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.09	.44	<.20
		07/24/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.07	.23	<.20
		08/21/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		10/07/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.32	<.20
		12/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.58	.29
		01/09/98	<.05	<.20	<.20	--	<.05	.20	<.20	--	--	--	--	--	--	--	.10	.72	.30
		02/03/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.05	.62	.23
		04/06/98	<.05	<.20	<.20	--	<.05	.23	<.20	--	--	--	--	--	--	--	<.05	.71	.41
		05/20/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.06	.68	.29
		06/09/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.10	.44	.22
		06/16/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.11	.44	.25
		06/24/98	<.05	<.20	<.20	--	<.05	.37	<.20	--	--	--	--	--	--	--	.53	.92	.55
		06/27/98	<.05	<.20	<.20	--	.08	.33	<.20	--	--	--	--	--	--	--	.38	.76	.48
		07/01/98	<.05	<.20	<.20	--	<.05	.43	<.20	--	--	--	--	--	--	--	<.05	1.0	.66
		07/29/98	<.05	<.20	<.20	--	<.05	.39	<.20	--	--	--	--	--	--	--	.12	.61	.40
		08/25/98	<.05	<.20	<.20	--	<.05	.26	<.20	--	--	--	--	--	--	--	.09	.74	.28
		10/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.32	<.20
		12/01/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.72	<.20
		01/25/99	<.05	<.20	<.20	--	<.05	.22	<.20	--	--	--	--	--	--	--	.05	.80	.22
		02/09/99	<.05	<.20	<.20	--	<.05	.31	<.20	--	--	--	--	--	--	--	<.05	.78	.36
		04/06/99	<.05	<.20	<.20	--	<.05	.32	<.20	--	<0.05	--	--	--	--	--	<.05	.50	.29

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/ year)	Concentrations, in micrograms per liter																
			Aceto- chlor (µg/L)	Aceto- chlor ESA (µg/L)	Aceto- chlor OXA (µg/L)	Aceto- chlor SAA (µg/L)	Ala- chlor (µg/L)	Ala- chlor ESA (µg/L)	Ala- chlor OXA (µg/L)	Ala- chlor SAA (µg/L)	Di- meth- enamid (µg/L)	Di- meth- enamid ESA (µg/L)	Di- meth- enamid OXA (µg/L)	Flufen- acet (µg/L)	Flufen- acet ESA (µg/L)	Flufen- acet OXA (µg/L)	Meto- lachlor (µg/L)	Meto- lachlor ESA (µg/L)	Meto- lachlor OXA (µg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
04237500	Seneca River at Baldwinsville, NY	05/18/98	<0.05	<0.20	<0.20	--	<0.05	<0.20	<0.20	--	<0.05	--	--	--	--	--	<0.05	0.35	0.20
		06/08/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.35	<.20
		06/22/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	.06	.24	<.20
		07/01/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	.33	<.20
		07/12/99	<.05	<.05	<.05	--	<.05	.06	<.05	--	<.05	--	--	<.05	--	--	.05	.36	.13
		08/06/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.05	.22	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		10/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		12/14/99	<.05	.61	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.33
		01/09/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
0423406130	Seneca River at Free Bridge Corners, NY	01/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	.26
		07/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
04235600	Seneca River near Port Byron, NY	07/29/98	<.05	<.20	<.20	--	<.05	.27	<.05	--	--	--	--	--	--	--	.06	.58	.34
04232730	Seneca River near Seneca Falls, NY	07/29/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
01496330	Shadow Brook at East Springfield, NY	11/26/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<0.05	<0.05	--	<0.05	<0.05	--	.33	<.05
04234038	Sheldrake Creek at Sheldrake, NY	06/11/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.56	<.20
		07/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	13	4.0
		07/08/98	<.05	<.20	<.20	--	<.05	.36	<.20	--	--	--	--	--	--	--	<.05	1.1	.31
424318078014601	Silver Lake inlet near Perry, NY	05/18/98	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.37	3.8	.94
		06/22/98	<.05	<.20	<.20	--	<.05	1.2	<.20	--	--	--	--	--	--	--	.07	2.5	.62
		06/26/98	<.05	<.20	<.20	--	.45	2.0	.72	--	--	--	--	--	--	--	8.0	3.4	2.4
		07/20/98	<.05	<.20	<.20	--	<.05	1.9	.48	--	--	--	--	--	--	--	.22	3.6	2.0
		09/28/98	<.05	<.20	<.20	--	<.05	.61	.34	--	--	--	--	--	--	--	.08	1.8	.45

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																		
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)		
Federal-State Cooperative Studies—Continued																					
New York hydrologic study (PPN)—Continued																					
424318078014601	Silver Lake inlet near Perry, NY	01/05/99	<0.05	<0.20	<0.20	--	<0.05	0.58	0.20	--	--	--	--	--	--	--	0.06	1.4	0.54		
425549076250201	Skaneateles Lake intake #1, NY	05/18/99	<.05	<.20	<.20	--	<.05	.45	<.20	--	<0.05	--	--	--	--	--	.06	.91	.46		
		07/02/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20		
		09/11/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20		
		07/27/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20		
		01/05/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20		
		05/18/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	<.20	<.20		
		07/12/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<0.05	--	--	<.05	<.05	<.05		
04228900	Springwater Creek near Springwater, NY	09/07/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20		
		01/19/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20		
		05/15/00	--	<.05	<.05	--	--	.20	<.05	--	--	<0.05	<0.05	--	--	--	--	.26	.05		
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<0.05	<0.05	--	.07	.06		
		09/11/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		02/05/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.05	<.05		
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		
		01/28/02	--	<.05	<.05	<0.05	--	<.05	<.05	<0.05	--	<.05	<.05	--	<.05	<.05	--	.05	<.05		
		07/09/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	.15	.55	.22	
		07/23/97	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	.05	.40	<.20	
		06/26/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	--	.95	6.0	4.3	
		07/16/98	<.05	<.20	<.20	--	<.05	.32	<.20	--	--	--	--	--	--	--	--	.18	1.4	.59	
		01500628	Smokey Kill west of Sidney Center, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		01374918	Stone Hill River south of Katonah, NY	06/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01374921	Stone Hill tributary at Bedford Hills, NY	06/27/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05		

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																	
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)	
Federal-State Cooperative Studies—Continued																				
New York hydrologic study (PPN)—Continued																				
01503000	Susquehanna River at Conklin, NY	11/26/01	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.30	<0.05	
01500500	Susquehanna River at Unadilla, NY	11/26/01	--	<.05	<.05	<.05	--	.06	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.16	<.05	
0423403010	Taughannock Creek near Taughannack Falls, NY	06/11/98	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	0.05	1.7	.28	
		07/05/98	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	.12	<.20	<.20	
		07/08/98	<.05	<.20	<.20	--	<.05	.62	<.20	--	--	--	--	--	--	--	<.05	2.0	.49	
		07/09/98	<.05	<.20	<.20	--	<.05	1.3	<.20	--	--	--	--	--	--	--	.13	1.9	.66	
04218000	Tonawanda Creek at Rapids, NY	06/27/01	--	<.05	<.05	--	--	.08	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.31	.10	
01421618	Town Brook southeast of Hobart, NY	01/24/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	.36	<.20	
		05/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	.08	.25	<.20	
		06/09/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.49	<.20	
		06/15/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.54	<.20	
		06/28/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.34	<.20	
		06/29/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.44	.22	
		06/30/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	--	--	--	<.05	.54	<.20	
01421618	Town Brook southeast of Hobart, NY	07/02/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	.56	<.20	
		07/03/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.09	.48	.28	
		07/04/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.10	.34	.20	
		07/06/99	<.05	.25	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	.11	.46	<.20	
		07/07/99	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	--	--	<.05	--	--	.09	.93	.52	
01500832	Unadilla River at Miller's Mill, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.44	<.05	
01502500	Unadilla River at Rockdale, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.47	.11	

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

Site number	Site location	Date of collection (month/day/year)	Concentrations, in micrograms per liter																
			Aceto-chlor (μg/L)	Aceto-chlor ESA (μg/L)	Aceto-chlor OXA (μg/L)	Aceto-chlor SAA (μg/L)	Ala-chlor (μg/L)	Ala-chlor ESA (μg/L)	Ala-chlor OXA (μg/L)	Ala-chlor SAA (μg/L)	Di-meth-enamid (μg/L)	Di-meth-enamid ESA (μg/L)	Di-meth-enamid OXA (μg/L)	Flufen-acet (μg/L)	Flufen-acet ESA (μg/L)	Flufen-acet OXA (μg/L)	Meto-lachlor (μg/L)	Meto-lachlor ESA (μg/L)	Meto-lachlor OXA (μg/L)
Federal-State Cooperative Studies—Continued																			
New York hydrologic study (PPN)—Continued																			
01502707	Unnamed stream at Plains Road east of Nineveh, NY	11/26/01	--	<0.05	<0.05	<0.05	--	0.08	<0.05	<0.05	--	<0.05	<0.05	--	<0.05	<0.05	--	0.64	0.26
01497309	Upland tributary east of Portlandville, NY	11/26/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
01413303	Valley Creek above Halcott Center, NY	12/04/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.14	<.05
		12/07/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.20	<.05
		07/19/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.15	<.05
		07/20/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.42	<.05
01371500	Wallkill River near Gardiner, NY	06/16/97	<0.05	<.20	<.20	--	<0.05	<.20	<.20	--	--	--	--	--	--	--	0.17	.34	<.20
01423900	West Branch Delaware River, NY	02/12/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.19	<.05
		04/23/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.19	.06
		07/30/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.18	<.05
01374620	West Branch Reservoir, NY	01/26/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	--	--	--	--	--	--	<.05	<.20	<.20
		05/25/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<0.05	--	--	--	--	--	<.05	<.20	<.20
		07/13/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<0.05	--	--	<.05	<.20	<.20
		09/14/99	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		01/11/00	<.05	<.20	<.20	--	<.05	<.20	<.20	--	<.05	--	--	<.05	--	--	<.05	<.20	<.20
		05/16/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		07/25/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		09/12/00	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.06	<.05
		02/13/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		04/24/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	.08	<.05
		07/31/01	--	<.05	<.05	--	--	<.05	<.05	--	--	<.05	<.05	--	<.05	<.05	--	<.05	<.05
		10/29/01	--	<.05	<.05	<.05	--	<.05	<.05	<.05	--	<.05	<.05	--	<.05	<.05	--	.13	<.05

Table 6. Analytical results for selected acetamide herbicides and their degradation products, ethanesulfonic acid, oxanilic acid, and sulfinyl acetic acid, in surface-water samples, 1993–2003.—Continued

[OGRL, U.S. Geological Survey Organic Geochemistry Research Laboratory, Lawrence, Kansas; ESA, ethanesulfonic acid; OXA, oxanilic acid; SAA, sulfinyl acetic acid; --, no data; <, less than]

[illegible]