# SURFACE WATER-QUALITY ASSESSMENT OF THE LOWER KANSAS RIVER BASIN, KANSAS AND NEBRASKA: CONCENTRATIONS OF MAJOR METALS AND TRACE ELEMENTS IN STREAMBED SEDIMENTS, 1987

By D.Q. Tanner, R.F. Sanzolone, and R.B. Zelt

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# CONTENTS


Page

Abstract ..... 1
Introduction ..... 1

Background ..... 1
Purpose and scope ..... 2
Description of the study area ..... 2

Methods ..... 2

Sampling design ..... 2
Sample collection ..... 5
Sample submittal and preparation ..... 5
Analytical procedures ..... 12
Quality assurance and quality control ..... 12

Concentrations of major metals and trace elements ..... 12
Summary ..... 12
Selected references ..... 13


## ILLUSTRATIONS


Figure — Page

1. Maps showing location of study area ..... 3
2. Map showing location of streambed-sediment sampling sites on first- and second-order streams ..... 4
3. Map showing location of streambed-sediment sampling sites on Big Blue, Little Blue, and Kansas Rivers and their major tributaries ..... 10


## TABLES


Table — Page

1. Streambed-sediment sampling sites on first- and second-order streams ..... 6
2. Streambed-sediment sampling sites on principal streams ..... 11
3. Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987 ..... 14
4. Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987 ..... 16
5. Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987 ..... 18
6. Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987 ..... 66

## CONVERSION FACTORS

The inch-pound units used for the most part in this report may be converted to metric units (International System) by using the following factors:

| *Multiply inch-pound unit* | *By* | *To obtain metric unit* |
|---|---|---|
| inch | 25.4 | millimeter |
| | 2.54 | centimeter |
| mile | 1.609 | kilometer |
| square mile | 2.590 | square kilometer |
| pound | 0.4536 | kilogram |

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## ABSTRACT

In 1986, the U.S. Geological Survey began a National Water-Quality Assessment Program to: (1) provide nationally consistent descriptions of the current status of water quality for a large, diverse, and geographically distributed part of the Nation's water resources; (2) define trends in water quality where possible; and (3) identify and describe the relation of current water-quality conditions and trends to natural and human factors. This report presents the results of a reconnaissance sampling of major metals and trace elements in streambed sediments in the lower Kansas River basin, which is one of the four surface-water pilot studies of the National Water-Quality Assessment Program.

The lower Kansas River basin drains about 15,300 square miles in eastern Kansas and Nebraska. Three large, multipurpose Federal reservoirs (Tuttle Creek, Perry, and Clinton Lakes) are in the study area. The largest tributary in the study area is the Big Blue River, which drains parts of Nebraska and Kansas. Land use in the study area is predominantly agricultural; principal crops include corn, grain sorghum, soybeans, and wheat. The three major urban areas, Topeka, Lawrence, and Kansas City, Kansas, occupy a very small part of the total area.

In September and October 1987, samples of streambed sediments were collected in the lower Kansas River basin and analyzed for 42 major metals and trace elements. Major metals include aluminum, calcium, iron, magnesium, potassium, sodium, and titanium. Trace elements generally are those elements present in the Earth's crust in concentrations less than 100 micrograms per gram. Four hundred twenty-two samples were collected on first- and second-order streams within the study area. Sixty-two additional streambed-sediment samples were collected from the Big Blue, Little Blue, and Kansas Rivers and their major tributaries. Along the main stem of the Big Blue, Little Blue, and Kansas Rivers, samples were collected at least once every 50 stream miles, and at sites where trace-element enrichment might be suspected based on the location of point-source discharges for which National Pollutant Discharge Elimination System (NPDES) permits have been issued. Material that was less than 63 micrometers in diameter from each sample was analyzed for 42 major metals and trace elements. In addition, the samples were analyzed for total carbon and carbonate carbon, phosphorus, and sulfur concentrations. The samples of streambed sediments collected along the main streams and tributaries also were analyzed for clay content.

For 10 of the 47 measured constituents, a majority of sites had values that were considered "qualified"; that is, the values were less than the lower level of detection for that particular analysis. Concentrations of the remaining constituents varied considerably, with aluminum, barium, iron, manganese, and phosphorus having the largest median concentrations. Concentrations of all constituents analyzed are presented and statistically summarized.

## INTRODUCTION

### Background

During the past two decades, public awareness of the importance of water-quality issues has increased dramatically. Along with this increased awareness have come commitments by local, State, and Federal governments and private industries for the assessment and protection of water quality. In 1986, the Congress appropriated funds for the U.S. Geological Survey to test and refine concepts related to a National Water-Quality Assessment (NAWQA) Program (Hirsch and others, 1988).

The long-term goals of the NAWQA Program are to: (1) provide a nationally consistent description of current water-quality conditions for a large part of the Nation's water resources; (2) define long-term trends (or lack of trends) in water quality; and (3) identify, describe, and explain the major natural and human factors that affect observed water-quality conditions and trends.

At present (1989), the NAWQA Program is in a pilot phase to test and modify assessment concepts and approaches. Seven pilot studies (four surface-water and three ground-water studies) have been initiated. The lower Kansas River basin in Kansas and Nebraska is one of the four surface-water pilot studies, which also include the Kentucky River basin in Kentucky, the Yakima River basin in Washington, and the Upper Illinois River basin in Illinois, Indiana, and Wisconsin (see cover). The lower Kansas River basin was selected for a pilot study because it is typical of the very productive Midwestern grain belt that includes irrigated and non-irrigated cropland and nonirrigated pasture and rangeland. The basin also includes typical uses of water for irrigation, municipal, and industrial purposes.

Major metals and trace elements are important water-quality components of the lower Kansas River basin surface-water system. Major metals include aluminum, calcium, iron, magnesium, potassium, sodium, and titanium. Trace elements generally are those elements present in the Earth's crust in concentrations less than 100 micrograms per gram. Many trace elements are beneficial or essential to plants and animals in small concentrations but can be toxic in large concentrations. Major metals and trace elements form the matrix of, or are adsorbed to, sediment particles that can be deposited on the bed of a stream or lake; they can become re-suspended or dissolved at a later time. Streambed sediments, hence, can serve as an integrator or sink for major metals and trace elements.

## Purpose and Scope

The purpose of this report is to present the results of a reconnaissance sampling of major metals and trace elements in streambed sediments in the lower Kansas River basin. The scope is to report the concentrations of 42 major metals and trace elements in 484 streambed-sediment samples collected during September and October 1987. Additional data may include the concentrations of total carbonate and organic carbon, clay, total phosphorus, and total sulfur. Methods of sample collection and analysis, quality control, and quality assurance also are discussed.

## Description of the Study Area

The lower Kansas River Basin drains about 15,300 square miles and coincides with the area defined by the U.S. Water Resources Council as hydrologic subregion 1027 (Seaber and others, 1984). Although 7.5 square miles of the subregion lie within Missouri, drainage from this small area does not affect water use in the study area and will not be included in the study. The study area does include the Big Blue River basin in Nebraska and Kansas, as well as basins of smaller tributaries to the 170-mile long Kansas River from Junction City, Kansas, to the mouth of the Kansas River near Kansas City, Kansas (fig. 1).

The Kansas River is formed by the confluence of the Smoky Hill and Republican Rivers at Junction City, Kansas. Three large Federal reservoirs, Tuttle Creek, Perry, and Clinton Lakes, lie within the Kansas part of the study area. A more detailed description of the lower Kansas River basin can be found in Stamer and others (1987).

# METHODS

## Sampling Design

During September and October of 1987, streambed sediments were collected in the lower Kansas River basin of Kansas and Nebraska. During a reconnaissance survey, 422 samples were collected from first- and second-order streams. First-order streams were determined as those having no tributaries shown on a 1:24,000-scale U.S. Geological Survey topographic quadrangle. Second-order streams were those that had only first-order streams as tributaries. The location of these sampling sites is shown in figure 2. Sampling sites were selected using a Universal-Transverse-Mercator (UTM)-based square-grid sampling procedure to identify 6.21-


**Figure 1.** Location of study area.

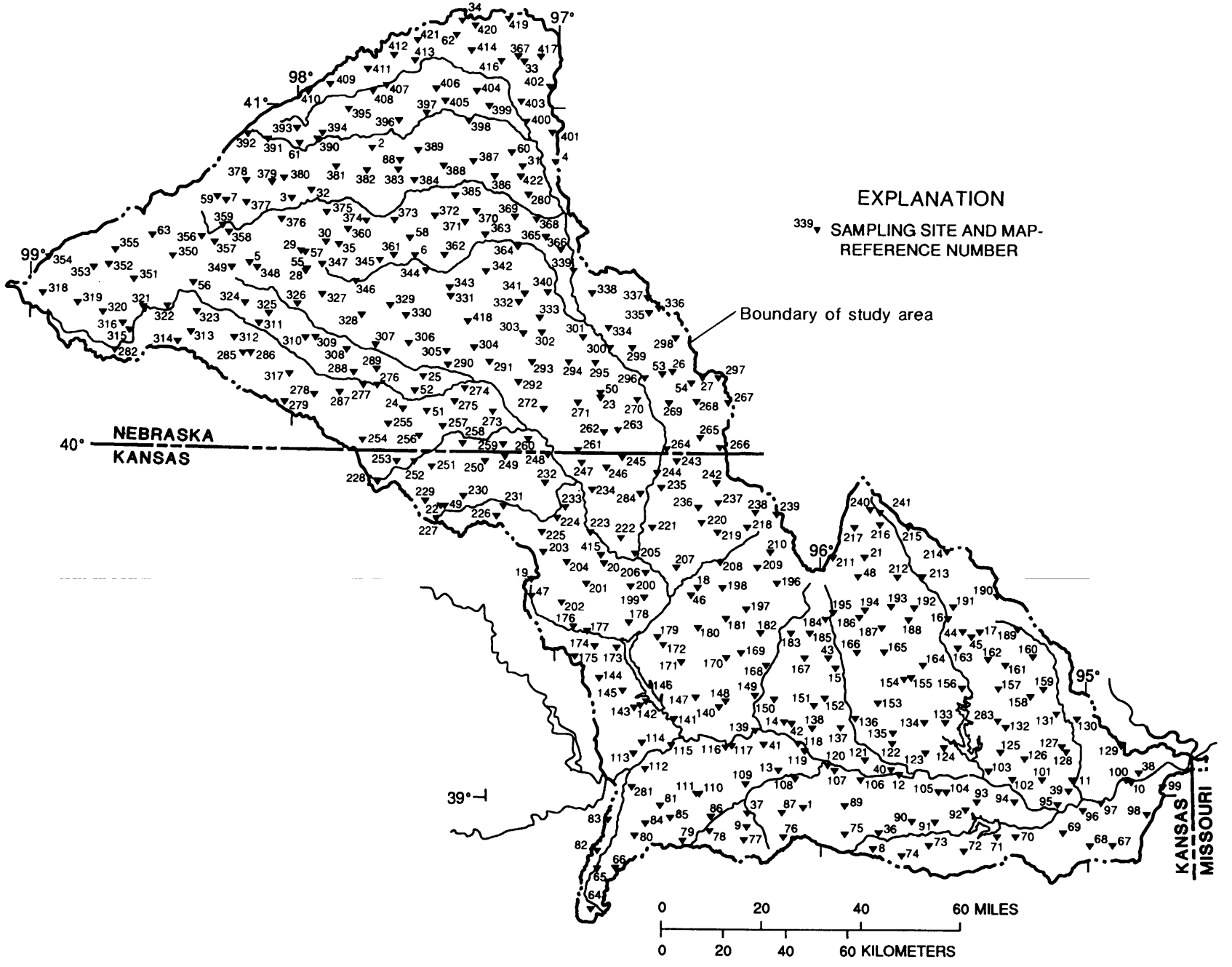


**Figure 2.** Location of streambed-sediment sampling sites on first- and second-order streams.

x 6.21-mile cells (38.6 square miles). Each sampling site was selected randomly from potential sites within a given cell using the following criteria: (1) stream was of first- or second-order, (2) stream was 1 to 3 miles in length, (3) drainage area was about 6 square miles, (4) all of the drainage basin was within the cell, and (5) stream drainage did not originate from or contain ponds or lakes. Table 1 lists the latitude and longitude of each of the 422 sampling sites on first- and second-order streams.

Additionally, 62 streambed-sediment samples were collected along the main stem of the Big Blue, Little Blue, and Kansas Rivers and their major tributaries. These samples were collected at least once every 50 stream miles and at sites where trace-element enrichment might be expected. The location of these sampling sites is shown in figure 3. Table 2 lists the latitude and longitude of each of the 62 sampling sites on principal streams in the lower Kansas River basin.

## Sample Collection

Samples from first- and second-order streams were collected from the active stream channel using a stainless-steel scoop. Five to seven representative subsamples were collected at each site. Care was taken to sample the oxidizing part of the streambed sediments (top 1 to 2 centimeters) and to restrict the loss of fine material while retaining as little water as possible. The subsamples were placed on a 2.0-millimeter-mesh, stainless-steel screen that was placed over a stainless-steel pan. The material was worked through the screen by hand, and the less than 2.0-millimeter material and associated water that accumulated in the pan were transferred to a 6- x 10-inch Hubco[1] aerobic sample bag. The water was allowed to drain from the bag, and the sample was air-dried prior to submittal to the laboratory. In many cases where the streambed sediments were all clay- and silt-sized material, the subsamples were transferred directly to the aerobic sample bag without processing through the stainless-steel screen. Both procedures resulted in bulk samples ranging from 1 to 3 pounds dry weight.

The 62 samples from the Big Blue, Little Blue, and Kansas Rivers and their major tributaries were collected and processed onsite to obtain the less-than 63-micrometer-sized sediment fraction. Subsamples were collected, combined, and wet-sieved through a 63-micrometer-mesh, stainless-steel screen. The material passing through the screen was air-dried, and a split sample was taken out for determination of clay content prior to submittal to the laboratory for further analysis.

## Sample Submittal and Preparation

Samples were submitted to the U.S. Geological Survey's laboratory in Arvada, Colorado. Upon arrival, dried samples were organized randomly into jobs of 40 samples each, including four slots in each job for the insertion of double-blind, quality-assessment materials for quality-control purposes.

Samples from first- and second-order streams contained a large percentage of clay, which resulted in "bricks" upon drying that could not be disaggregated by hand prior to sieving. These samples were first placed in a jaw crusher to break down the bricks into smaller chunks. The samples then were placed in a ceramic grinder (Mechanical Nasco-Asplin Soil Grinder) for further disaggregation with minimal particle disintegration. About 25 percent of the sample then was split out and archived. The remainder of the sample was dry-sieved through a 63-micrometer-mesh, stainless-steel sieve. Material passing through the sieve was submitted for analysis.

The 62 samples that were wet-sieved onsite to less than 63 micrometers were first crushed to break up the large aggregates of material that formed during drying. About 25 percent of the material then was split out and archived. The remainder of the sample was processed using a ceramic-plate pulverizer to disaggregate and homogenize the sample prior to submittal for analysis.

[1] The use of brand names in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

**Table 1.** *Streambed-sediment sampling sites on first- and second-order streams*

| Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) | Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) |
|---|---|---|---|---|---|
| 1 | 38 58 19 | 96 03 55 | 61 | 40 53 14 | 97 59 23 |
| 2 | 40 52 38 | 97 42 42 | 62 | 41 12 34 | 97 23 23 |
| 3 | 40 43 39 | 98 00 53 | 63 | 40 36 42 | 98 32 34 |
| 4 | 40 50 36 | 97 00 43 | 64 | 38 40 30 | 96 51 23 |
| 5 | 40 32 21 | 98 10 14 | 65 | 38 47 40 | 96 50 02 |
| 6 | 40 34 05 | 97 32 20 | 66 | 38 47 51 | 96 45 56 |
| 7 | 40 43 02 | 98 15 49 | 67 | 38 51 17 | 94 54 25 |
| 8 | 38 51 09 | 95 48 10 | 68 | 38 51 18 | 94 59 33 |
| 9 | 38 54 59 | 96 16 32 | 69 | 38 53 36 | 95 05 34 |
| 10 | 39 02 13 | 94 50 05 | 70 | 38 53 06 | 95 16 16 |
| 11 | 39 02 47 | 95 03 21 | 71 | 38 53 04 | 95 20 20 |
| 12 | 39 03 57 | 95 42 09 | 72 | 38 50 37 | 95 27 48 |
| 13 | 39 04 49 | 96 09 26 | 73 | 38 51 36 | 95 35 38 |
| 14 | 39 13 17 | 96 08 14 | 74 | 38 49 52 | 95 41 46 |
| 15 | 39 22 34 | 95 56 29 | 75 | 38 53 45 | 95 54 34 |
| 16 | 39 31 01 | 95 30 56 | 76 | 38 53 14 | 96 08 26 |
| 17 | 39 28 41 | 95 23 40 | 77 | 38 52 45 | 96 17 12 |
| 18 | 39 36 33 | 96 27 31 | 78 | 38 54 20 | 96 24 46 |
| 19 | 39 37 50 | 97 05 15 | 79 | 38 52 37 | 96 30 45 |
| 20 | 39 40 47 | 96 48 50 | 80 | 38 53 29 | 96 41 37 |
| 21 | 39 41 47 | 95 49 48 | 81 | 38 58 46 | 96 35 53 |
| 22 | 39 50 32 | 97 25 40 | 82 | 38 50 47 | 96 50 03 |
| 23 | 40 09 41 | 96 49 56 | 83 | 38 56 14 | 96 47 39 |
| 24 | 40 07 20 | 97 34 34 | 84 | 38 55 39 | 96 39 13 |
| 25 | 40 13 05 | 97 30 02 | 85 | 38 56 34 | 96 33 32 |
| 26 | 40 14 13 | 96 33 28 | 86 | 38 56 45 | 96 24 27 |
| 27 | 40 13 09 | 96 26 30 | 87 | 38 57 26 | 96 08 45 |
| 28 | 40 31 04 | 97 57 25 | 88 | 40 50 36 | 97 36 06 |
| 29 | 40 34 34 | 97 58 34 | 89 | 38 58 38 | 95 54 34 |
| 30 | 40 36 09 | 97 52 54 | 90 | 38 55 51 | 95 39 24 |
| 31 | 40 49 44 | 97 08 07 | 91 | 38 55 41 | 95 34 14 |
| 32 | 40 45 07 | 97 56 24 | 92 | 38 57 49 | 95 27 20 |
| 33 | 41 08 01 | 97 07 59 | 93 | 38 59 09 | 95 24 45 |
| 34 | 41 15 02 | 97 22 14 | 94 | 38 59 09 | 95 16 20 |
| 35 | 40 35 49 | 97 50 04 | 95 | 38 58 31 | 95 06 41 |
| 36 | 38 53 55 | 95 46 53 | 96 | 38 57 25 | 95 00 59 |
| 37 | 38 57 24 | 96 16 21 | 97 | 38 58 41 | 94 56 52 |
| 38 | 39 03 52 | 94 48 25 | 98 | 38 56 37 | 94 46 43 |
| 39 | 39 00 53 | 95 04 11 | 99 | 39 01 23 | 94 43 08 |
| 40 | 39 04 50 | 95 43 57 | 100 | 39 02 37 | 94 51 11 |
| 41 | 39 09 22 | 96 12 42 | 101 | 39 02 51 | 95 10 06 |
| 42 | 39 12 57 | 96 06 30 | 102 | 39 02 58 | 95 16 46 |
| 43 | 39 24 19 | 95 58 12 | 103 | 39 04 29 | 95 22 05 |
| 44 | 39 28 44 | 95 27 35 | 104 | 39 00 54 | 95 31 38 |
| 45 | 39 27 52 | 95 25 36 | 105 | 39 00 58 | 95 33 25 |
| 46 | 39 35 16 | 96 28 54 | 106 | 39 03 06 | 95 50 55 |
| 47 | 39 34 58 | 97 05 14 | 107 | 39 04 45 | 95 56 47 |
| 48 | 39 38 24 | 95 51 13 | 108 | 39 03 22 | 96 05 42 |
| 49 | 39 50 32 | 97 24 49 | 109 | 39 02 28 | 96 16 45 |
| 50 | 40 10 33 | 96 49 56 | 110 | 39 00 47 | 96 27 02 |
| 51 | 40 07 05 | 97 29 06 | 111 | 39 00 49 | 96 27 42 |
| 52 | 40 10 34 | 97 31 55 | 112 | 39 05 01 | 96 39 19 |
| 53 | 40 13 49 | 96 35 42 | 113 | 39 07 46 | 96 41 56 |
| 54 | 40 12 16 | 96 28 58 | 114 | 39 09 41 | 96 40 04 |
| 55 | 40 31 30 | 97 57 05 | 115 | 39 09 16 | 96 33 25 |
| 56 | 40 28 40 | 98 22 57 | 116 | 39 08 54 | 96 21 10 |
| 57 | 40 34 26 | 97 57 25 | 117 | 39 09 07 | 96 19 48 |
| 58 | 40 37 06 | 97 33 33 | 118 | 39 09 31 | 96 05 06 |
| 59 | 40 43 38 | 98 17 52 | 119 | 39 08 14 | 96 03 35 |
| 60 | 40 52 13 | 97 10 39 | 120 | 39 05 41 | 95 58 23 |

**Table 1.** *Streambed-sediment sampling sites on first- and second-order streams*--Continued

| Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) | Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) |
|---|---|---|---|---|---|
| 121 | 39 06 31 | 95 49 49 | 181 | 39 31 09 | 96 21 05 |
| 122 | 39 09 31 | 95 43 38 | 182 | 39 28 44 | 96 13 27 |
| 123 | 39 07 46 | 95 36 16 | 183 | 39 28 43 | 96 06 38 |
| 124 | 39 08 38 | 95 32 06 | 184 | 39 31 03 | 95 58 46 |
| 125 | 39 07 44 | 95 19 23 | 185 | 39 28 40 | 96 02 21 |
| 126 | 39 06 34 | 95 13 56 | 186 | 39 31 18 | 95 51 03 |
| 127 | 39 08 36 | 95 05 34 | 187 | 39 29 31 | 95 45 54 |
| 128 | 39 07 44 | 95 04 37 | 188 | 39 30 54 | 95 39 49 |
| 129 | 39 08 35 | 94 52 10 | 189 | 39 29 04 | 95 15 13 |
| 130 | 39 13 23 | 95 02 07 | 190 | 39 34 49 | 95 19 47 |
| 131 | 39 14 16 | 95 06 43 | 191 | 39 33 05 | 95 29 42 |
| 132 | 39 12 04 | 95 18 09 | 192 | 39 32 59 | 95 38 34 |
| 133 | 39 12 59 | 95 31 48 | 193 | 39 33 12 | 95 43 46 |
| 134 | 39 13 03 | 95 36 29 | 194 | 39 32 39 | 95 49 50 |
| 135 | 39 11 15 | 95 43 32 | 195 | 39 32 09 | 95 57 03 |
| 136 | 39 13 50 | 95 52 05 | 196 | 39 37 19 | 96 09 48 |
| 137 | 39 12 14 | 95 55 25 | 197 | 39 32 53 | 96 16 37 |
| 138 | 39 12 08 | 96 01 50 | 198 | 39 36 34 | 96 21 55 |
| 139 | 39 11 48 | 96 14 34 | 199 | 39 34 51 | 96 39 38 |
| 140 | 39 15 50 | 96 22 40 | 200 | 39 36 46 | 96 42 46 |
| 141 | 39 13 46 | 96 32 50 | 201 | 39 37 10 | 96 52 55 |
| 142 | 39 16 07 | 96 40 26 | 202 | 39 33 59 | 96 58 26 |
| 143 | 39 15 43 | 96 41 50 | 203 | 39 42 42 | 97 02 34 |
| 144 | 39 20 52 | 96 49 50 | 204 | 39 40 53 | 96 57 22 |
| 145 | 39 18 37 | 96 44 31 | 205 | 39 42 30 | 96 41 48 |
| 146 | 39 16 51 | 96 39 04 | 206 | 39 39 12 | 96 39 19 |
| 147 | 39 17 28 | 96 27 55 | 207 | 39 40 03 | 96 32 20 |
| 148 | 39 16 51 | 96 21 07 | 208 | 39 40 56 | 96 22 28 |
| 149 | 39 17 50 | 96 14 42 | 209 | 39 40 04 | 96 14 11 |
| 150 | 39 17 10 | 96 10 26 | 210 | 39 42 40 | 96 11 13 |
| 151 | 39 16 04 | 96 01 25 | 211 | 39 41 47 | 95 57 01 |
| 152 | 39 17 21 | 95 59 01 | 212 | 39 38 18 | 95 42 18 |
| 153 | 39 16 29 | 95 46 56 | 213 | 39 38 19 | 95 36 39 |
| 154 | 39 20 34 | 95 40 56 | 214 | 39 42 39 | 95 31 06 |
| 155 | 39 20 49 | 95 39 22 | 215 | 39 46 59 | 95 39 48 |
| 156 | 39 18 54 | 95 27 55 | 216 | 39 47 26 | 95 46 15 |
| 157 | 39 18 49 | 95 19 44 | 217 | 39 46 60 | 95 52 04 |
| 158 | 39 17 21 | 95 12 37 | 218 | 39 47 02 | 96 16 25 |
| 159 | 39 18 37 | 95 09 40 | 219 | 39 46 10 | 96 23 05 |
| 160 | 39 24 12 | 95 11 54 | 220 | 39 47 54 | 96 26 40 |
| 161 | 39 22 50 | 95 18 05 | 221 | 39 47 02 | 96 37 55 |
| 162 | 39 23 53 | 95 21 58 | 222 | 39 45 15 | 96 45 01 |
| 163 | 39 25 54 | 95 28 42 | 223 | 39 46 09 | 96 51 59 |
| 164 | 39 22 55 | 95 36 38 | 224 | 39 48 37 | 96 59 37 |
| 165 | 39 25 22 | 95 45 24 | 225 | 39 46 07 | 97 02 57 |
| 166 | 39 25 14 | 95 51 36 | 226 | 39 48 49 | 97 13 14 |
| 167 | 39 24 19 | 96 03 36 | 227 | 39 48 21 | 97 26 35 |
| 168 | 39 23 03 | 96 12 12 | 228 | 39 54 34 | 97 40 13 |
| 169 | 39 25 15 | 96 17 51 | 229 | 39 51 24 | 97 29 13 |
| 170 | 39 24 24 | 96 21 03 | 230 | 39 52 18 | 97 20 36 |
| 171 | 39 23 37 | 96 31 11 | 231 | 39 50 34 | 97 11 43 |
| 172 | 39 26 39 | 96 35 16 | 232 | 39 54 47 | 97 02 18 |
| 173 | 39 26 07 | 96 45 51 | 233 | 39 50 31 | 96 57 46 |
| 174 | 39 26 18 | 96 50 54 | 234 | 39 53 35 | 96 51 44 |
| 175 | 39 24 32 | 96 55 24 | 235 | 39 54 00 | 96 35 46 |
| 176 | 39 29 44 | 96 55 43 | 236 | 39 50 29 | 96 27 21 |
| 177 | 39 28 58 | 96 52 36 | 237 | 39 51 22 | 96 22 53 |
| 178 | 39 30 29 | 96 43 09 | 238 | 39 49 38 | 96 14 31 |
| 179 | 39 27 59 | 96 36 35 | 239 | 39 49 19 | 96 09 49 |
| 180 | 39 29 37 | 96 27 26 | 240 | 39 50 04 | 95 48 26 |

**Table 1.** *Streambed-sediment sampling sites on first- and second-order streams*--Continued

| Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) | Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) |
|---|---|---|---|---|---|
| 241 | 39 49 36 | 95 46 11 | 301 | 40 20 07 | 96 53 55 |
| 242 | 39 54 50 | 96 23 16 | 302 | 40 20 59 | 97 03 25 |
| 243 | 39 58 39 | 96 32 20 | 303 | 40 20 44 | 97 07 35 |
| 244 | 39 56 33 | 96 36 51 | 304 | 40 18 13 | 97 18 42 |
| 245 | 39 59 14 | 96 44 46 | 305 | 40 17 33 | 97 24 45 |
| 246 | 39 57 30 | 96 48 25 | 306 | 40 18 50 | 97 33 27 |
| 247 | 39 58 18 | 96 54 07 | 307 | 40 18 27 | 97 41 11 |
| 248 | 39 59 35 | 97 01 50 | 308 | 40 17 34 | 97 47 48 |
| 249 | 39 59 17 | 97 11 29 | 309 | 40 19 36 | 97 54 56 |
| 250 | 39 58 25 | 97 15 56 | 310 | 40 19 30 | 97 57 12 |
| 251 | 39 57 21 | 97 27 47 | 311 | 40 21 54 | 98 07 55 |
| 252 | 39 58 13 | 97 31 49 | 312 | 40 19 18 | 98 13 25 |
| 253 | 39 58 11 | 97 35 54 | 313 | 40 20 07 | 98 23 14 |
| 254 | 40 01 52 | 97 43 53 | 314 | 40 18 23 | 98 26 10 |
| 255 | 40 04 43 | 97 37 58 | 315 | 40 20 09 | 98 37 16 |
| 256 | 40 02 44 | 97 30 46 | 316 | 40 21 21 | 98 38 51 |
| 257 | 40 04 27 | 97 25 27 | 317 | 40 13 13 | 98 00 42 |
| 258 | 40 01 27 | 97 20 59 | 318 | 40 26 16 | 98 57 12 |
| 259 | 40 01 24 | 97 11 52 | 319 | 40 24 47 | 98 49 07 |
| 260 | 40 02 18 | 97 06 16 | 320 | 40 23 14 | 98 43 26 |
| 261 | 40 00 28 | 96 54 58 | 321 | 40 24 15 | 98 34 19 |
| 262 | 40 03 37 | 96 48 59 | 322 | 40 24 31 | 98 28 45 |
| 263 | 40 04 02 | 96 45 53 | 323 | 40 23 37 | 98 21 55 |
| 264 | 40 00 44 | 96 34 41 | 324 | 40 25 23 | 98 11 06 |
| 265 | 40 02 41 | 96 26 59 | 325 | 40 23 39 | 98 05 43 |
| 266 | 40 00 57 | 96 22 33 | 326 | 40 25 24 | 97 59 08 |
| 267 | 40 08 47 | 96 20 39 | 327 | 40 27 07 | 97 53 33 |
| 268 | 40 09 03 | 96 27 50 | 328 | 40 23 38 | 97 44 29 |
| 269 | 40 08 48 | 96 34 08 | 329 | 40 25 23 | 97 37 55 |
| 270 | 40 09 19 | 96 41 23 | 330 | 40 23 39 | 97 34 13 |
| 271 | 40 08 48 | 96 55 05 | 331 | 40 27 07 | 97 24 02 |
| 272 | 40 07 40 | 97 02 54 | 332 | 40 26 12 | 97 08 40 |
| 273 | 40 07 04 | 97 14 17 | 333 | 40 23 34 | 97 03 54 |
| 274 | 40 11 08 | 97 20 34 | 334 | 40 21 51 | 96 48 06 |
| 275 | 40 08 50 | 97 22 52 | 335 | 40 24 26 | 96 38 50 |
| 276 | 40 11 27 | 97 40 39 | 336 | 40 25 15 | 96 36 33 |
| 277 | 40 11 27 | 97 43 51 | 337 | 40 27 03 | 96 39 10 |
| 278 | 40 09 42 | 97 54 54 | 338 | 40 27 55 | 96 52 01 |
| 279 | 40 08 17 | 98 01 43 | 339 | 40 31 45 | 96 56 19 |
| 280 | 40 44 52 | 97 06 47 | 340 | 40 27 57 | 97 02 09 |
| 281 | 39 01 57 | 96 42 21 | 341 | 40 27 38 | 97 07 21 |
| 282 | 40 16 39 | 98 40 28 | 342 | 40 31 27 | 97 16 08 |
| 283 | 39 13 10 | 95 19 54 | 343 | 40 28 36 | 97 24 21 |
| 284 | 39 52 54 | 96 40 35 | 344 | 40 31 27 | 97 29 46 |
| 285 | 40 16 39 | 98 11 21 | 345 | 40 33 12 | 97 40 27 |
| 286 | 40 16 41 | 98 09 39 | 346 | 40 29 28 | 97 45 59 |
| 287 | 40 10 10 | 97 49 13 | 347 | 40 32 21 | 97 53 37 |
| 288 | 40 13 38 | 97 46 09 | 348 | 40 31 30 | 98 08 32 |
| 289 | 40 14 14 | 97 40 52 | 349 | 40 31 29 | 98 14 14 |
| 290 | 40 15 10 | 97 24 26 | 350 | 40 33 13 | 98 27 46 |
| 291 | 40 15 47 | 97 15 09 | 351 | 40 29 02 | 98 36 37 |
| 292 | 40 12 16 | 97 08 34 | 352 | 40 31 27 | 98 42 21 |
| 293 | 40 15 45 | 97 05 35 | 353 | 40 30 56 | 98 45 43 |
| 294 | 40 15 50 | 96 57 13 | 354 | 40 32 31 | 98 55 57 |
| 295 | 40 15 46 | 96 51 06 | 355 | 40 34 04 | 98 40 55 |
| 296 | 40 13 09 | 96 39 47 | 356 | 40 36 43 | 98 21 15 |
| 297 | 40 13 09 | 96 22 54 | 357 | 40 35 48 | 98 18 18 |
| 298 | 40 20 06 | 96 32 43 | 358 | 40 37 33 | 98 15 08 |
| 299 | 40 18 23 | 96 42 40 | 359 | 40 38 43 | 98 16 31 |
| 300 | 40 18 24 | 96 47 44 | 360 | 40 38 26 | 97 47 59 |

**Table 1.** *Streambed-sediment sampling sites on first- and second-order streams*--Continued

| Map-reference number (fig. 2) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) |
|---|---|---|
| 361 | 40 34 05 | 97 37 13 |
| 362 | 40 34 11 | 97 25 31 |
| 363 | 40 37 53 | 97 16 25 |
| 364 | 40 35 47 | 97 09 04 |
| 365 | 40 37 31 | 97 02 43 |
| 366 | 40 35 21 | 96 59 18 |
| 367 | 41 08 55 | 97 09 26 |
| 368 | 40 40 33 | 97 04 49 |
| 369 | 40 41 00 | 97 09 43 |
| 370 | 40 41 56 | 97 18 26 |
| 371 | 40 39 57 | 97 20 58 |
| 372 | 40 41 02 | 97 27 50 |
| 373 | 40 40 09 | 97 37 12 |
| 374 | 40 39 58 | 97 43 44 |
| 375 | 40 41 24 | 97 52 54 |
| 376 | 40 39 58 | 98 03 07 |
| 377 | 40 42 45 | 98 11 14 |
| 378 | 40 46 33 | 98 11 15 |
| 379 | 40 46 24 | 98 05 31 |
| 380 | 40 47 07 | 98 02 43 |
| 381 | 40 49 17 | 97 50 56 |
| 382 | 40 48 42 | 97 43 51 |
| 383 | 40 48 53 | 97 36 26 |
| 384 | 40 47 08 | 97 32 44 |
| 385 | 40 44 33 | 97 23 15 |
| 386 | 40 48 02 | 97 14 29 |
| 387 | 40 50 33 | 97 19 17 |
| 388 | 40 49 43 | 97 25 59 |
| 389 | 40 52 21 | 97 31 56 |
| 390 | 40 54 01 | 97 55 16 |
| 391 | 40 53 52 | 98 06 42 |
| 392 | 40 54 40 | 98 11 17 |
| 393 | 40 55 51 | 97 59 59 |
| 394 | 40 55 07 | 97 54 10 |
| 395 | 40 59 18 | 97 48 16 |
| 396 | 40 57 33 | 97 36 29 |
| 397 | 40 58 51 | 97 30 06 |
| 398 | 40 57 34 | 97 20 25 |
| 399 | 41 00 14 | 97 15 48 |
| 400 | 40 57 34 | 97 07 26 |
| 401 | 40 55 39 | 97 01 28 |
| 402 | 41 03 41 | 97 02 05 |
| 403 | 41 01 03 | 97 08 36 |
| 404 | 41 02 49 | 97 18 46 |
| 405 | 41 01 03 | 97 25 53 |
| 406 | 41 03 08 | 97 27 54 |
| 407 | 41 03 39 | 97 39 30 |
| 408 | 41 02 34 | 97 42 42 |
| 409 | 41 03 40 | 97 52 38 |
| 410 | 41 02 13 | 97 57 35 |
| 411 | 41 06 21 | 97 43 57 |
| 412 | 41 08 53 | 97 37 50 |
| 413 | 41 08 02 | 97 32 56 |
| 414 | 41 09 47 | 97 20 02 |
| 415 | 39 42 12 | 96 49 31 |
| 416 | 41 08 03 | 97 13 09 |
| 417 | 41 08 54 | 97 04 12 |
| 418 | 40 22 46 | 97 20 09 |
| 419 | 41 15 27 | 97 11 43 |
| 420 | 41 14 10 | 97 19 14 |
| 421 | 41 11 33 | 97 32 27 |
| 422 | 40 47 59 | 97 08 33 |

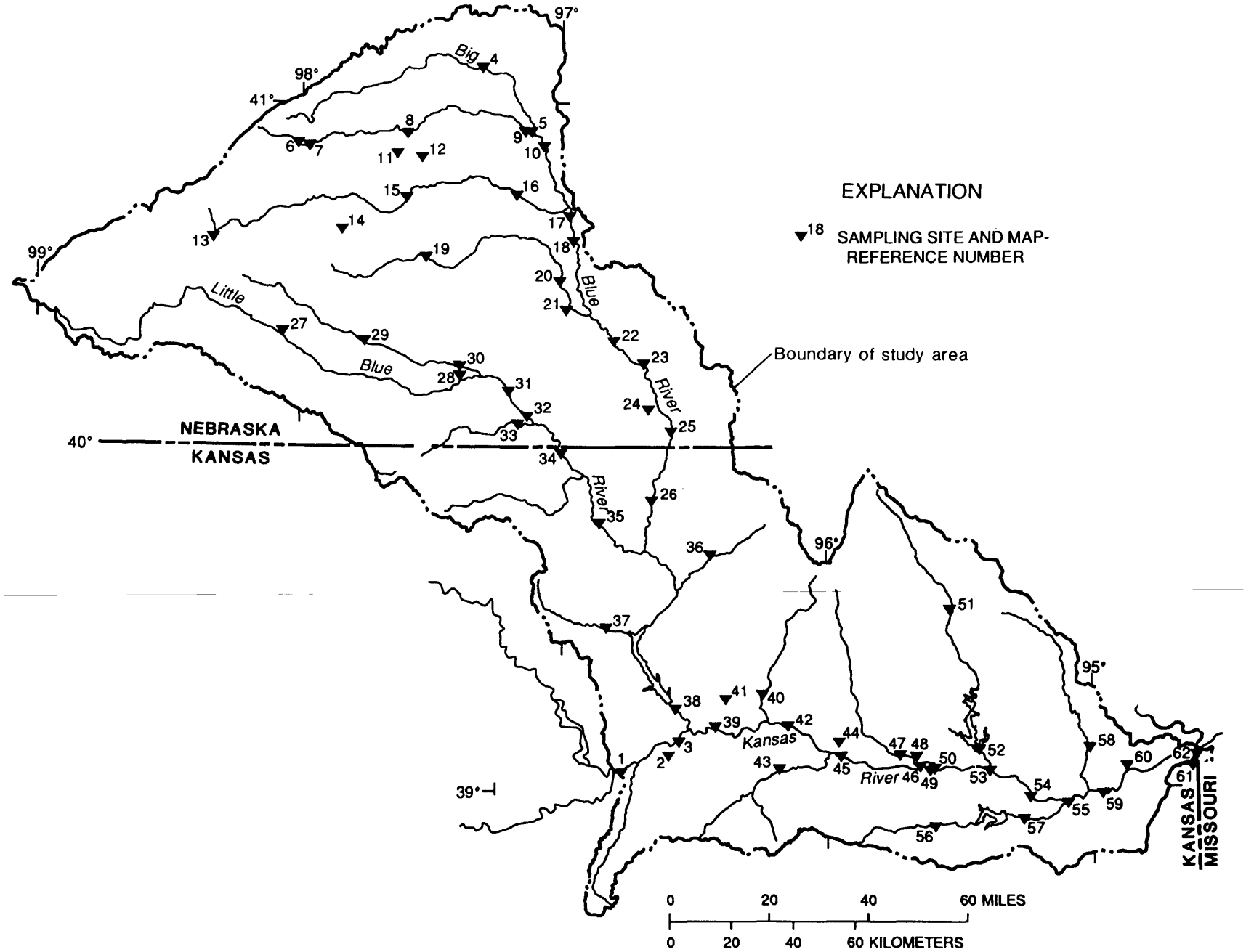


Figure 3. Location of streambed-sediment sampling sites on Big Blue, Little Blue, and Kansas Rivers and their major tributaries.

**Table 2.** *Streambed-sediment sampling sites on principal streams*

| Map-reference number (fig. 3) | Latitude (degrees, minutes, seconds) | Longitude (degrees, minutes, seconds) | U.S. Geological Survey station number |
|---|---|---|---|
| 1 | 39 03 09 | 96 46 33 | 06879100 |
| 2 | 39 06 07 | 96 35 42 | 06879650 |
| 3 | 39 08 33 | 96 33 25 | 390833096332500 |
| 4 | 41 06 05 | 97 18 35 | 06879900 |
| 5 | 40 54 57 | 97 07 18 | 405457097071800 |
| 6 | 40 52 49 | 98 01 00 | 405249098010000 |
| 7 | 40 52 21 | 97 58 21 | 405221097582100 |
| 8 | 40 54 38 | 97 35 48 | 405438097354800 |
| 9 | 40 54 57 | 97 08 43 | 06880000 |
| 10 | 40 52 20 | 97 04 25 | 405220097042500 |
| 11 | 40 51 08 | 97 38 06 | 405108097380600 |
| 12 | 40 50 29 | 97 32 21 | 405029097322100 |
| 13 | 40 36 11 | 98 20 06 | 403611098200600 |
| 14 | 40 37 49 | 97 50 34 | 403749097503400 |
| 15 | 40 43 27 | 97 35 46 | 404327097354600 |
| 16 | 40 43 52 | 97 10 38 | 06880800 |
| 17 | 40 40 07 | 96 58 30 | 404007096583000 |
| 18 | 40 35 47 | 96 57 36 | 06881000 |
| 19 | 40 33 04 | 97 31 14 | 403304097311400 |
| 20 | 40 28 48 | 97 00 43 | 06881200 |
| 21 | 40 23 48 | 96 59 11 | 402348096591100 |
| 22 | 40 18 23 | 96 48 07 | 401823096480700 |
| 23 | 40 14 25 | 96 41 22 | 401425096412200 |
| 24 | 40 06 32 | 96 40 16 | 400632096401600 |
| 25 | 40 02 40 | 96 35 12 | 06882000 |
| 26 | 39 50 31 | 96 39 39 | 06882510 |
| 27 | 40 19 58 | 98 04 00 | 06883000 |
| 28 | 40 12 27 | 97 23 23 | 06883570 |
| 29 | 40 18 26 | 97 45 11 | 401826097451100 |
| 30 | 40 14 06 | 97 23 20 | 06883940 |
| 31 | 40 09 40 | 97 12 20 | 400940097122000 |
| 32 | 40 05 19 | 97 08 07 | 400519097080700 |
| 33 | 40 03 59 | 97 10 14 | 400359097101400 |
| 34 | 39 58 48 | 97 00 16 | 06884025 |
| 35 | 39 46 33 | 96 51 29 | 06884400 |
| 36 | 39 41 03 | 96 26 15 | 06885500 |
| 37 | 39 28 20 | 96 49 55 | 06886500 |
| 38 | 39 14 14 | 96 34 16 | 06887000 |
| 39 | 39 11 09 | 96 25 10 | 391109096251000 |
| 40 | 39 16 42 | 96 14 34 | 06888030 |
| 41 | 39 15 53 | 96 22 47 | 06888300 |
| 42 | 39 11 15 | 96 08 50 | 06888350 |
| 43 | 39 03 44 | 96 10 52 | 06888500 |
| 44 | 39 08 20 | 95 57 15 | 390820095571500 |
| 45 | 39 05 54 | 95 56 47 | 06888705 |
| 46 | 39 04 00 | 95 38 58 | 06889000 |
| 47 | 39 06 00 | 95 43 27 | 06889500 |
| 48 | 39 05 45 | 95 39 46 | 390545095394600 |
| 49 | 39 03 16 | 95 36 46 | 390316095364600 |
| 50 | 39 03 34 | 95 35 43 | 390334095354300 |
| 51 | 39 31 17 | 95 31 57 | 06890100 |
| 52 | 39 06 51 | 95 25 33 | 06890900 |
| 53 | 39 03 07 | 95 23 15 | 06891000 |
| 54 | 38 58 31 | 95 14 08 | 06891080 |
| 55 | 38 57 22 | 95 05 43 | 06891100 |
| 56 | 38 53 29 | 95 35 34 | 385329095353400 |
| 57 | 38 54 40 | 95 15 37 | 06891500 |
| 58 | 39 06 59 | 95 00 39 | 06892000 |
| 59 | 38 59 00 | 94 57 52 | 06892350 |
| 60 | 39 03 37 | 94 52 21 | 06892500 |
| 61 | 39 03 31 | 94 37 33 | 06892940 |
| 62 | 39 05 24 | 94 36 32 | 06892950 |

## Analytical Procedures

Tables 3 and 4 at the end of this report list the analytical methods used and the lower levels of detection for each constituent. Samples for analysis by the inductively coupled plasma-atomic emission spectrometry (ICP-AES) technique underwent a "total" digestion with hydrochloric, nitric, perchloric, and hydrofluoric acids for sample decomposition. Samples for antimony and arsenic determinations underwent "total" mixed-acid digestion, which utilized hydrofluoric, nitric, and perchloric acids. Mercury was partially digested using a solution of nitric acid and sodium dichromate; uranium was partially digested using nitric acid; and boron was dissolved in hot water. Combustion was used as the decomposition technique for the sulfur and total carbon determinations. Carbonate carbon was determined using perchloric-acid digestion, and organic carbon was calculated from the difference between total and carbonate carbon.

## Quality Assurance and Quality Control

A quality-assurance program is an integral part of the U.S. Geological Survey laboratory. "Quality Assurance Manual for the U.S. Geological Survey's Branch of Geochemistry" describes the protocols for sample-handling procedures, sample preparation, analytical methods, use of instrumentation, and written documentation to be followed in the laboratory (Arbogast, 1988). In addition to this quality-assurance program, a quality-control program was established for the four surface-water pilot studies of the NAWQA Program. Documentation of the quality-control procedures, including results for the quality-assessment materials used for the quality-control program, is presented in Sanzolone and Ryder (1989).

# CONCENTRATIONS OF MAJOR METALS AND TRACE ELEMENTS

Statistical summaries of major-metal, trace-element, and other constituent concentrations in streambed sediments are presented for first- and second-order streams (table 3), and for principal streams (table 4) at the end of this report. These tables characterize the statistical populations of constituent concentrations for each data set and allow for comparison between the two data sets.

Concentrations of major metals and trace elements in streambed sediments for first- and second-order streams are shown in table 5 at the end of this report. For 10 elements, a majority of the sampling sites had qualified values; that is values that were less than the lower level of detection. Those 10 elements were bismuth, cadmium, europium, gold, holmium, mercury, molybdenum, silver, tantalum, and tin. Table 6 at the end of this report shows the concentrations of major metals and trace elements in streambed sediments of principal streams. Concentrations at a majority of sites for the following nine elements were qualified: bismuth, cadmium, europium, gold, holmium, molybdenum, silver, tantalum, and tin.

There are no standard guidelines for interpreting the environmental significance of the concentrations of major metals and trace elements in streambed sediments. The standard criteria for drinking water often are based on toxicological studies, and these standards apply only to finished waters. It is nevertheless important to consider the concentrations of major metals and trace elements in streambed sediments because these materials are associated closely with the sources and pathways of ground water and surface water.

# SUMMARY

The lower Kansas River basin is the area for one of four surface-water pilot studies of the U.S. Geological Survey's National Water-Quality Assessment Program. In September and October 1987, streambed sediments were collected at 422 sites on first- and second-order streams, and at 62 sites on the Big Blue, Little Blue, and Kansas Rivers and their major tributaries. Sampling sites on first- and second-order streams were chosen using a square-grid procedure.

Sample collection, submittal, and preparation were done consistently throughout the study area. The streambed sediments were analyzed for 47 constituents, including major metals; trace elements; total carbon and carbonate carbon; clay content; total phosphorus; and total sulfur.

Quality-assurance and quality-control procedures were documented throughout all aspects of the study.

For both first- and second-order streams and principal streams, about 20 percent of all the constituents measured had values that were qualified (less than the lower level of detection) at a majority of the sampling sites. The concentrations of all constituents are presented and statistically summarized.

## SELECTED REFERENCES


Arbogast, B.F., 1988, Quality assurance manual for the U.S. Geological Survey's Branch of Geochemistry: Denver, Colo., U.S. Geological Survey Laboratory, 12 p.

Hirsch, R.M., Alley, W.M., and Wilber, W.G., 1988, Conceptual design of a National Water-Quality Assessment Program: U.S. Geological Survey Circular 1021, 42 p.

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Stamer, J.K., Jordan, P.R., Engberg, R.A., and Dugan, J.T., 1987, Surface water-quality assessment of the lower Kansas River basin, Kansas and Nebraska: Project description: U.S. Geological Survey Open-File Report 87-105, 36 p.

**Table 3.** *Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*

[g/kg, grams per kilogram]

| Constituent | [1]Analytical method | Number of measurable concentrations | Number of concentrations less than detection level | Concentration, determined in micrograms per gram unless otherwise stated | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower level of detection | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Calcium, total as Ca, in g/kg | ICP-AES | 422 | 0 | 0.5 | 6.6 | 7.3 | 8.6 | 14 | 38 |
| Magnesium, total as Mg, determined in g/kg | ICP-AES | 422 | 0 | .05 | 4.0 | 4.7 | 5.3 | 6.1 | 7.7 |
| Sodium, total as Na, in g/kg | ICP-AES | 422 | 0 | .05 | 6.5 | 7.5 | 8.6 | 9.6 | 10 |
| Potassium, total as K, determined in g/kg | ICP-AES | 422 | 0 | .5 | 15 | 17 | 18 | 20 | 21 |
| Sulfur, total as S, in g/kg | Titration | 393 | 29 | .1 | .1 | .2 | .2 | .3 | .4 |
| Phosphorus, total as P | ICP-AES | 422 | 0 | 50 | 400 | 400 | 500 | 600 | 700 |
| Aluminum, total as Al | ICP-AES | 422 | 0 | 500 | 47,000 | 50,000 | 54,000 | 57,000 | 60,000 |
| Antimony, total as Sb | Hydride-AAS | 422 | 0 | .1 | .5 | .6 | .7 | .8 | 1.0 |
| Arsenic, total as As | Hydride-AAS | 422 | 0 | .1 | 4.5 | 5.3 | 6.4 | 8.0 | 11 |
| Barium, total as Ba | ICP-AES | 422 | 0 | 1 | 540 | 610 | 690 | 740 | 780 |
| Beryllium, total as Be | ICP-AES | 420 | 2 | 1 | 1 | 1 | 2 | 2 | 2 |
| Bismuth, total as Bi | ICP-AES | 1 | 421 | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Boron, water-soluble as B | ICP-AES | 333 | 89 | .4 | < .4 | .5 | .6 | .8 | 1.0 |
| Cadmium, total as Cd | ICP-AES | 4 | 418 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Cerium, total as Ce | ICP-AES | 422 | 0 | 4 | 59 | 64 | 70 | 77 | 90 |
| Chromium, total as Cr | ICP-AES | 422 | 0 | 1 | 38 | 41 | 45 | 50 | 57 |
| Cobalt, total as Co | ICP-AES | 422 | 0 | 1 | 8 | 9 | 11 | 15 | 21 |
| Copper, total as Cu | ICP-AES | 422 | 0 | 1 | 12 | 13 | 15 | 17 | 19 |
| Europium, total as Eu | ICP-AES | 1 | 421 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Gallium, total as Ga | ICP-AES | 422 | 0 | 4 | 11 | 12 | 12 | 13 | 15 |
| Gold, total as Au | ICP-AES | 0 | 422 | 8 | < 8 | < 8 | < 8 | < 8 | < 8 |
| Holmium, total as Ho | ICP-AES | 0 | 422 | 4 | < 4 | < 4 | < 4 | < 4 | < 4 |
| Iron, total as Fe | ICP-AES | 422 | 0 | 500 | 18,000 | 20,000 | 22,000 | 25,000 | 28,000 |
| Lanthanum, total as La | ICP-AES | 422 | 0 | 2 | 31 | 34 | 36 | 38 | 40 |
| Lead, total as Pb | ICP-AES | 422 | 0 | 4 | 17 | 18 | 20 | 23 | 29 |
| Lithium, total as Li | ICP-AES | 422 | 0 | 2 | 20 | 22 | 24 | 27 | 34 |
| Manganese, total as Mn | ICP-AES | 422 | 0 | 4 | 330 | 410 | 550 | 810 | 1,400 |
| Mercury, partial as Hg | Cold vapor-AAS | 174 | 248 | .02 | < .02 | < .02 | < .02 | .02 | .04 |
| Molybdenum, total as Mo | ICP-AES | 10 | 412 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Neodymium, total as Nd | ICP-AES | 422 | 0 | 4 | 27 | 30 | 32 | 34 | 37 |

**Table 3.** *Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Constituent | [1]Analytical method | Number of measurable concentrations | Number of concentrations less than detection level | Concentration, determined in micrograms per gram unless otherwise stated | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower level of detection | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Nickel, total as Ni | ICP-AES | 422 | 0 | 2 | 14 | 16 | 18 | 23 | 29 |
| Niobium, total as Nb | ICP-AES | 320 | 102 | 4 | < 4 | 4 | 6 | 7 | 9 |
| Scandium, total as Sc | ICP-AES | 422 | 0 | 2 | 6 | 7 | 7 | 8 | 8 |
| Silver, total as Ag | ICP-AES | 0 | 422 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Strontium, total as Sr | ICP-AES | 422 | 0 | 2 | 130 | 140 | 160 | 180 | 200 |
| Tantalum, total as Ta | ICP-AES | 0 | 422 | 40 | < 40 | < 40 | < 40 | < 40 | < 40 |
| Thorium, total as Th | ICP-AES | 422 | 0 | 4 | 9 | 10 | 11 | 12 | 13 |
| Tin, total as Sn | ICP-AES | 2 | 420 | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Titanium, total as Ti, determined in g/kg | ICP-AES | 422 | 0 | .05 | 2.5 | 2.6 | 2.8 | 2.9 | 3.1 |
| Vanadium, total as V | ICP-AES | 422 | 0 | 2 | 58 | 64 | 71 | 78 | 87 |
| Yttrium, total as Y | ICP-AES | 422 | 0 | 2 | 17 | 18 | 20 | 21 | 22 |
| Ytterbium, total as Yb | ICP-AES | 422 | 0 | 1 | 2 | 2 | 2 | 2 | 3 |
| Zinc, total as Zn | ICP-AES | 422 | 0 | 4 | 44 | 50 | 56 | 64 | 79 |
| Uranium, partial as U | Fluorimetry | 422 | 0 | .05 | .8 | 1.0 | 1.3 | 1.5 | 1.8 |
| Carbon, total as C, in g/kg | Infrared | 422 | 0 | .1 | 8.3 | 11 | 14 | 18 | 25 |
| Carbon, organic as C, in g/kg | Difference | 422 | 0 | .1 | 7.6 | 10 | 12 | 15 | 18 |
| Carbon, carbonate as C, determined in g/kg | Titration | 272 | 150 | .1 | < .1 | < .1 | .3 | 2.3 | 11 |

[1] ICP-AES, determined inductively coupled plasma-atomic emission spectrometry; Hydride-AAS, hydride reduction and atomic-absorption spectrometry; Cold vapor-AAS, cold-vapor generation and atomic-absorption spectrometry; Difference, difference between total and carbonate carbon.

**Table 4.** *Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*

[g/kg, grams per kilogram]

| Constituent | [1]Analytical method | Number of measurable concentrations | Number of concentrations less than detection level | Concentration, in micrograms per gram unless otherwise stated | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower level of detection | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Calcium, total as Ca, in g/kg | ICP-AES | 62 | 0 | 0.5 | 8.9 | 9.6 | 13 | 26 | 33 |
| Magnesium, total as Mg, in g/kg | ICP-AES | 62 | 0 | .05 | 5.3 | 5.8 | 6.3 | 7.4 | 8.1 |
| Sodium, total as Na, in g/kg | ICP-AES | 62 | 0 | .05 | 7.5 | 8.0 | 10 | 11 | 12 |
| Potassium, total as K, in g/kg | ICP-AES | 62 | 0 | .5 | 18 | 19 | 19 | 21 | 21 |
| Sulfur, total as S, in g/kg | Titration | 62 | 0 | .1 | .2 | .3 | .4 | .5 | .7 |
| Phosphorus, total as P | ICP-AES | 62 | 0 | 50 | 500 | 500 | 600 | 700 | 870 |
| Aluminum, total as Al | ICP-AES | 62 | 0 | 500 | 53,000 | 56,000 | 59,000 | 62,000 | 66,000 |
| Antimony, total as Sb | Hydride-AAS | 62 | 0 | .1 | .9 | .9 | 1.0 | 1.1 | 1.3 |
| Arsenic, total as As | Hydride-AAS | 62 | 0 | .1 | 4.8 | 5.5 | 6.3 | 7.5 | 8.9 |
| Barium, total as Ba | ICP-AES | 62 | 0 | 1 | 600 | 630 | 690 | 770 | 800 |
| Beryllium, total as Be | ICP-AES | 62 | 0 | 1 | 1 | 2 | 2 | 2 | 2 |
| Bismuth, total as Bi | ICP-AES | 0 | 62 | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Boron, water-soluble as B | ICP-AES | 61 | 1 | .4 | .4 | .5 | .6 | .9 | 2.0 |
| Cadmium, total as Cd | ICP-AES | 0 | 62 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Cerium, total as Ce | ICP-AES | 62 | 0 | 4 | 65 | 69 | 75 | 80 | 90 |
| Chromium, total as Cr | ICP-AES | 62 | 0 | 1 | 45 | 50 | 56 | 66 | 77 |
| Cobalt, total as Co | ICP-AES | 62 | 0 | 1 | 8 | 8 | 10 | 12 | 13 |
| Copper, total as Cu | ICP-AES | 62 | 0 | 1 | 11 | 12 | 16 | 19 | 23 |
| Europium, total as Eu | ICP-AES | 0 | 62 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Gallium, total as Ga | ICP-AES | 62 | 0 | 4 | 12 | 13 | 14 | 15 | 16 |
| Gold, total as Au | ICP-AES | 0 | 62 | 8 | < 8 | < 8 | < 8 | < 8 | < 8 |
| Holmium, total as Ho | ICP-AES | 0 | 62 | 4 | < 4 | < 4 | < 4 | < 4 | < 4 |
| Iron, total as Fe | ICP-AES | 62 | 0 | 500 | 18,000 | 20,000 | 23,000 | 27,000 | 30,000 |
| Lanthanum, total as La | ICP-AES | 62 | 0 | 2 | 37 | 39 | 42 | 44 | 49 |
| Lead, total as Pb | ICP-AES | 62 | 0 | 4 | 17 | 20 | 21 | 24 | 32 |
| Lithium, total as Li | ICP-AES | 62 | 0 | 2 | 20 | 21 | 26 | 32 | 36 |
| Manganese, total as Mn | ICP-AES | 62 | 0 | 4 | 360 | 430 | 530 | 700 | 990 |
| Mercury, partial as Hg | Cold vapor-AAS | 41 | 21 | .02 | < .02 | < .02 | .02 | .02 | .08 |
| Molybdenum, total as Mo | ICP-AES | 0 | 62 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Neodymium, total as Nd | ICP-AES | 62 | 0 | 4 | 31 | 33 | 35 | 37 | 43 |

**Table 4.** *Statistical summary of major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Constituent | [1]Analytical method | Number of measurable concentrations | Number of concentrations less than detection level | Concentration, in micrograms per gram unless otherwise stated | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower level of detection | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Nickel, total as Ni | ICP-AES | 62 | 0 | 2 | 15 | 17 | 20 | 24 | 29 |
| Niobium, total as Nb | ICP-AES | 32 | 30 | 4 | < 4 | < 4 | 4 | 5 | 8 |
| Scandium, total as Sc | ICP-AES | 62 | 0 | 2 | 6 | 6 | 7 | 8 | 9 |
| Silver, total as Ag | ICP-AES | 1 | 61 | 2 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Strontium, total as Sr | ICP-AES | 62 | 0 | 2 | 150 | 180 | 200 | 230 | 260 |
| Tantalum, total as Ta | ICP-AES | 0 | 62 | 40 | < 40 | < 40 | < 40 | < 40 | < 40 |
| Thorium, total as Th | ICP-AES | 62 | 0 | 4 | 9 | 10 | 11 | 12 | 13 |
| Tin, total as Sn | ICP-AES | 0 | 62 | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Titanium, total as Ti, in g/kg | ICP-AES | 62 | 0 | .05 | 2.6 | 2.8 | 2.9 | 3.2 | 3.4 |
| Vanadium, total as V | ICP-AES | 62 | 0 | 2 | 64 | 69 | 75 | 85 | 92 |
| Yttrium, total as Y | ICP-AES | 62 | 0 | 2 | 18 | 20 | 21 | 22 | 23 |
| Ytterbium, total as Yb | ICP-AES | 62 | 0 | 1 | 2 | 2 | 3 | 3 | 3 |
| Zinc, total as Zn | ICP-AES | 62 | 0 | 4 | 49 | 55 | 66 | 76 | 94 |
| Uranium, partial as U | Fluorimetry | 62 | 0 | .05 | 1.1 | 1.2 | 1.3 | 1.6 | 1.9 |
| Carbon, total as C, in g/kg | Infrared | 62 | 0 | .1 | 7.2 | 8.7 | 12 | 16 | 19 |
| Carbon, organic as C, in g/kg | Difference | 62 | 0 | .1 | 5.7 | 6.9 | 9.2 | 11 | 13 |
| Carbon, carbonate as C, in g/kg | Titration | 58 | 4 | .1 | .1 | .3 | 1.8 | 6.2 | 8.5 |

[1]ICP-AES, inductively coupled plasma-atomic emission spectrometry; Hydride-AAS, hydride reduction and atomic-absorption spectrometry; Cold vapor-AAS, cold-vapor generation and atomic-absorption spectrometry; Difference, difference between total and carbonate carbon.

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*

[Units of measurement: g/kg, grams per kilogram; mg/kg, milligrams per kilogram; µg/g, micrograms per gram. a, estimated value because of insufficient sample mass]

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 41.0 | 8.4 | 6.0 | 19 | 0.3 | 400 | 60,000 | 0.9 | 6.5 | 540 | 2 |
| 2 | 6.9 | 3.8 | 11 | 20 | .2 | 600 | 50,000 | .8 | 3.9 | 740 | 1 |
| 3 | 8.0 | 6.1 | 9.9 | 20 | .3 | 600 | 60,000 | .7 | 6.2 | 760 | 2 |
| 4 | 8.4 | 5.4 | 9.5 | 18 | .3 | 500 | 55,000 | .7 | 7.2 | 730 | 2 |
| 5 | 7.7 | 5.5 | 10 | 20 | .2 | 600 | 56,000 | .3 | 5.9 | 740 | 2 |
| 6 | 6.8 | 4.3 | 11 | 19 | .2 | 500 | 52,000 | .5 | 5.2 | 710 | 1 |
| 7 | 8.6 | 6.4 | 10 | 21 | .1 | 500 | 59,000 | .6 | 6.6 | 770 | 2 |
| 8 | 22.0 | 7.4 | 11. | 19 | .2 | 600 | 65,000 | .5 | 5.0 | 370 | 2 |
| 9 | 110 | 12 | 4.4 | 16 | .2 | 400 | 39,000 | .6 | 6.1 | 370 | 1 |
| 10 | 4.6 | 2.6 | 7.9 | 15 | .1 | 300 | 40,000 | .6 | 4.8 | 590 | 1 |
| 11 | 8.5 | 3.8 | 7.1 | 15 | .2 | 600 | 49,000 | 1.4 | 17 | 860 | 2 |
| 12 | 8.9 | 3.4 | 10 | 18 | .2 | 500 | 46,000 | .7 | 4.1 | 630 | 1 |
| 13 | 7.9 | 5.3 | 10 | 21 | .2 | 600 | 56,000 | .7 | 3.9 | 800 | 2 |
| 14 | 12.0 | 5.4 | 8.3 | 19 | .2 | 500 | 49,000 | .6 | 5.1 | 570 | 1 |
| 15 | 21.0 | 8.1 | 6.6 | 20 | .2 | 500 | 53,000 | .9 | 8.2 | 580 | 2 |
| 16 | 7.1 | 4.7 | 6.3 | 15 | < .1 | 300 | 57,000 | .7 | 4.3 | 550 | 2 |
| 17 | 10.0 | 3.7 | 6.6 | 13 | < .1 | 300 | 46,000 | .7 | 5.8 | 540 | 1 |
| 18 | 7.6 | 5.2 | 8.4 | 19 | .1 | 400 | 54,000 | .6 | 5.7 | 640 | 2 |
| 19 | 6.4 | 5.0 | 8.5 | 18 | .3 | 400 | 55,000 | .7 | 7.3 | 650 | 2 |
| 20 | 32.0 | 8.9 | 8.4 | 17 | .1 | 500 | 49,000 | .6 | 6.0 | 600 | 1 |
| 21 | 9.3 | 4.1 | 7.3 | 14 | .3 | 500 | 51,000 | .5 | 11 | 620 | 2 |
| 22 | 23.0 | 5.0 | 8.7 | 17 | .8 | 500 | 53,000 | .6 | 6.9 | 640 | 2 |
| 23 | 5.8 | 4.6 | 8.6 | 18 | .3 | 800 | 53,000 | .5 | 11 | 690 | 2 |
| 24 | 6.7 | 5.3 | 9.0 | 21 | .2 | 600 | 56,000 | .9 | 4.3 | 690 | 2 |
| 25 | 7.0 | 5.4 | 9.1 | 19 | < .1 | 600 | 56,000 | 1.2 | 7.1 | 680 | 2 |
| 26 | 8.3 | 5.6 | 8.2 | 19 | .2 | 700 | 57,000 | 1.1 | 11 | 710 | 2 |
| 27 | 12.0 | 5.0 | 8.8 | 17 | .2 | 400 | 55,000 | .8 | 7.1 | 710 | 2 |
| 28 | 7.4 | 5.1 | 9.2 | 21 | .5 | 700 | 56,000 | .5 | 4.3 | 720 | 2 |
| 29 | 7.4 | 5.3 | 9.5 | 20 | .2 | 600 | 56,000 | .7 | 5.6 | 760 | 2 |
| 30 | 8.5 | 5.3 | 11 | 20 | .2 | 600 | 55,000 | .7 | 5.7 | 750 | 2 |
| 31 | 7.2 | 6.3 | 9.6 | 22 | .2 | 800 | 63,000 | .7 | 6.5 | 810 | 2 |
| 32 | 8.4 | 5.8 | 9.7 | 20 | .2 | 700 | 55,000 | .7 | 5.3 | 750 | 2 |
| 33 | 8.3 | 6.1 | 10 | 19 | .3 | 700 | 57,000 | .9 | 7.0 | 780 | 2 |
| 34 | 7.1 | 5.3 | 9.9 | 19 | .2 | 700 | 56,000 | .8 | 7.7 | 710 | 2 |
| 35 | 7.3 | 6.6 | 7.6 | 20 | .4 | 1,100 | 62,000 | .7 | 6.4 | 730 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 7.3 | 5.6 | 9.6 | 20 | 0.2 | 500 | 59,000 | 0.6 | 5.9 | 720 | 2 |
| 37 | 83.0 | 8.4 | 5.4 | 18 | .4 | 900 | 48,000 | .5 | 5.6 | 440 | 1 |
| 38 | 10.0 | 2.5 | 8.5 | 16 | .2 | 400 | 37,000 | .7 | 5.0 | 570 | <1 |
| 39 | 6.5 | 3.0 | 7.8 | 14 | < .1 | 300 | 44,000 | .5 | 5.6 | 520 | 1 |
| 40 | 8.0 | 3.6 | 9.6 | 18 | < .1 | 500 | 43,000 | .6 | 3.0 | 570 | 1 |
| 41 | 14.0 | 5.3 | 6.1 | 15 | .2 | 400 | 48,000 | .6 | 6.8 | 530 | 1 |
| 42 | 7.6 | 4.6 | 11 | 19 | .2 | 400 | 52,000 | .6 | 6.6 | 700 | 1 |
| 43 | 19.0 | 5.8 | 7.6 | 17 | .2 | 400 | 51,000 | .8 | 6.9 | 600 | 1 |
| 44 | 19.0 | 3.7 | 7.1 | 14 | .1 | 500 | 45,000 | 1.1 | 8.8 | 540 | 1 |
| 45 | 6.6 | 3.9 | 7.4 | 15 | .2 | 800 | 48,000 | 1.2 | 8.0 | 810 | 2 |
| 46 | 51.0 | 6.1 | 6.8 | 14 | .3 | 400 | 49,000 | .9 | 6.9 | 830 | 2 |
| 47 | 9.2 | 4.6 | 8.1 | 18 | .5 | 500 | 47,000 | .9 | 9.1 | 880 | 1 |
| 48 | 7.7 | 3.9 | 7.3 | 14 | .1 | 500 | 49,000 | 1.0 | 13 | 600 | 2 |
| 49 | 9.8 | 5.8 | 7.8 | 18 | .3 | 500 | 60,000 | .8 | 6.8 | 650 | 2 |
| 50 | 6.0 | 4.0 | 9.6 | 19 | .2 | 500 | 52,000 | .6 | 4.3 | 690 | 1 |
| 51 | 7.4 | 5.5 | 9.5 | 20 | .1 | 500 | 56,000 | .5 | 6.2 | 690 | 2 |
| 52 | 7.7 | 4.9 | 9.3 | 20 | .1 | 400 | 53,000 | .6 | 5.0 | 670 | 2 |
| 53 | 20.0 | 13 | 8.6 | 18 | .2 | 500 | 55,000 | .8 | 7.0 | 650 | 2 |
| 54 | 24.0 | 6.8 | 7.3 | 16 | < .1 | 500 | 56,000 | .9 | 14 | 660 | 2 |
| 55 | 7.3 | 5.8 | 9.1 | 21 | .2 | 700 | 61,000 | .7 | 3.1 | 740 | 2 |
| 56 | 7.7 | 5.5 | 10 | 20 | .1 | 700 | 57,000 | .6 | 6.2 | 770 | 2 |
| 57 | 8.1 | 6.4 | 8.1 | 22 | .3 | 900 | 61,000 | .6 | 6.0 | 740 | 2 |
| 58 | 8.8 | 6.3 | 7.8 | 21 | .4 | 800 | 58,000 | 1.2 | 9.0 | 640 | 2 |
| 59 | 14.0 | 7.6 | 9.3 | 21 | .3 | 700 | 64,000 | .6 | 4.7 | 760 | 2 |
| 60 | 7.4 | 5.2 | 9.5 | 16 | .2 | 600 | 56,000 | .8 | 6.5 | 690 | 2 |
| 61 | 8.6 | 6.0 | 10 | 20 | .2 | 600 | 57,000 | .8 | 5.7 | 750 | 2 |
| 62 | 6.9 | 5.6 | 9.4 | 20 | .2 | 700 | 61,000 | .7 | 6.6 | 730 | 2 |
| 63 | 8.1 | 5.7 | 9.8 | 20 | .2 | 700 | 56,000 | .5 | 6.0 | 750 | 2 |
| 64 | 16.0 | 9.1 | 8.2 | 19 | .2 | 500 | 49,000 | .5 | 5.2 | 590 | 1 |
| 65 | 14.0 | 5.2 | 8.0 | 18 | .1 | 500 | 49,000 | .5 | 6.1 | 540 | 1 |
| 66 | 10.0 | 5.2 | 7.5 | 19 | .1 | 400 | 52,000 | .7 | 6.8 | 580 | 2 |
| 67 | 11.0 | 3.8 | 7.5 | 15 | .2 | 500 | 47,000 | 1.1 | 10 | 720 | 1 |
| 68 | 89.0 | 5.7 | 5.3 | 13 | .3 | 400 | 44,000 | .7 | 7.7 | 570 | 1 |
| 69 | 7.0 | 3.6 | 8.0 | 16 | .3 | 400 | 49,000 | .6 | 5.3 | 630 | 1 |
| 70 | 130 | 7.1 | 4.8 | 13 | .5 | 600 | 46,000 | .6 | 5.5 | 390 | 1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | 14.0 | 4.8 | 6.9 | 15 | 0.1 | 800 | 55,000 | 0.8 | 16 | 810 | 2 |
| 72 | 9.2 | 6.2 | 6.2 | 16 | .1 | 900 | 61,000 | 1.1 | 7.8 | 590 | 2 |
| 73 | 21.0 | 5.8 | 6.6 | 16 | .2 | 800 | 56,000 | .7 | 7.5 | 580 | 2 |
| 74 | 7.0 | 3.8 | 7.4 | 17 | .2 | 500 | 50,000 | .8 | 9.8 | 580 | 1 |
| 75 | 16.0 | 7.7 | 7.2 | 19 | .2 | 600 | 71,000 | .8 | 15 | 700 | 3 |
| 76 | 42.0 | 9.9 | 5.4 | 18 | .2 | 400 | 54,000 | .5 | 8.8 | 520 | 2 |
| 77 | 100.0 | 11 | 5.3 | 20 | .3 | 600 | 48,000 | .5 | 5.8 | 350 | 1 |
| 78 | 8.0 | 5.3 | 10 | 20 | .2 | 500 | 55,000 | .7 | 5.4 | 740 | 2 |
| 79 | 38.0 | 4.3 | 7.2 | 15 | .4 | 400 | 47,000 | .6 | 5.2 | 690 | 1 |
| 80 | 72.0 | 17 | 6.8 | 18 | .3 | 500 | 50,000 | .5 | 5.9 | 420 | 2 |
| 81 | 30.0 | 5.4 | 7.5 | 16 | .2 | 500 | 52,000 | .6 | 5.2 | 570 | 1 |
| 82 | 13.0 | 4.3 | 9.1 | 17 | .2 | 300 | 48,000 | .6 | 5.4 | 530 | 1 |
| 83 | 36.0 | 12 | 7.1 | 18 | .3 | 400 | 50,000 | .7 | 3.2 | 630 | 1 |
| 84 | 16.0 | 5.2 | 8.5 | 19 | .4 | 400 | 53,000 | .5 | 3.8 | 640 | 1 |
| 85 | 13.0 | 5.4 | 7.5 | 18 | .2 | 400 | 54,000 | .7 | 6.5 | 620 | 2 |
| 86 | 24.0 | 6.6 | 6.5 | 18 | .2 | 500 | 52,000 | .7 | 7.3 | 560 | 2 |
| 87 | 18.0 | 6.4 | 6.3 | 19 | .1 | 400 | 52,000 | .6 | 7.6 | 520 | 2 |
| 88 | 7.6 | 6.3 | 9.1 | 21 | .2 | 700 | 61,000 | .6 | 6.2 | 790 | 2 |
| 89 | 13.0 | 5.2 | 8.4 | 15 | .2 | 500 | 52,000 | .7 | 8.0 | 630 | 2 |
| 90 | 14.0 | 5.3 | 7.6 | 16 | .6 | 600 | 56,000 | 1.1 | 12 | 730 | 2 |
| 91 | 18.0 | 5.6 | 6.4 | 17 | .4 | 600 | 58,000 | .9 | 12 | 630 | 2 |
| 92 | 65.0 | 15 | 6.3 | 19 | .3 | 1,300 | 61,000 | 1.5 | 9.1 | 430 | 2 |
| 93 | 42.0 | 6.5 | 6.1 | 16 | .2 | 800 | 56,000 | 1.8 | 23 | 1,000 | 2 |
| 94 | 83.0 | 5.5 | 5.3 | 12 | .1 | 1,800 | 42,000 | 2.1 | 31 | 1,400 | 2 |
| 95 | 6.7 | 3.1 | 7.7 | 15 | .4 | 1,100 | 43,000 | .7 | 18.0 | 640 | 1 |
| 96 | 98.0 | 7.7 | 5.8 | 14 | .6 | 500 | 45,000 | .8 | 8 | 640 | 1 |
| 97 | 39.0 | 4.7 | 7.6 | 16 | .3 | 400 | 48,000 | .8 | 7.9 | 600 | 1 |
| 98 | 12.0 | 7.3 | 7.7 | 19 | .4 | 700 | 64,000 | .7 | 9.9 | 630 | 2 |
| 99 | 14.0 | 5.2 | 7.9 | 18 | .2 | 700 | 52,000 | 1.1 | 12 | 1,400 | 2 |
| 100 | 38.0 | 9.7 | 6.8 | 20 | .9 | 700 | 75,000 | .4 | 7.2 | 590 | 2 |
| 101 | 12.0 | 4.6 | 6.4 | 14 | .2 | 500 | 52,000 | .9 | 5.7 | 480 | 2 |
| 102 | 10.0 | 4.9 | 7.0 | 15 | .9 | 900 | 56,000 | 1.2 | 10 | 830 | 2 |
| 103 | 19.0 | 5.5 | 7.4 | 18 | .2 | 700 | 61,000 | 1.0 | 9.2 | 550 | 2 |
| 104 | 23.0 | 5.0 | 7.5 | 15 | .1 | 500 | 51,000 | .7 | 12 | 670 | 2 |
| 105 | 18.0 | 7.2 | 6.8 | 18 | 1.7 | 600 | 63,000 | .7 | 9.5 | 560 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 106 | 7.2 | 3.3 | 8.0 | 17 | 0.2 | 300 | 47,000 | 0.7 | 6.0 | 710 | 1 |
| 107 | 8.3 | 4.1 | 9.7 | 18 | .2 | 400 | 51,000 | .6 | 5.7 | 620 | 2 |
| 108 | 79.0 | 7.9 | 6.1 | 15 | .3 | 600 | 47,000 | .8 | 10 | 580 | 1 |
| 109 | 77.0 | 10 | 4.9 | 20 | .3 | 500 | 52,000 | .7 | 8.4 | 440 | 2 |
| 110 | 6.6 | 4.6 | 8.8 | 19 | .4 | 300 | 51,000 | .4 | 5.4 | 610 | 1 |
| 111 | 20.0 | 7.1 | 6.2 | 19 | .2 | 400 | 56,000 | .9 | 6.5 | 530 | 2 |
| 112 | 8.2 | 5.4 | 8.4 | 19 | .2 | 700 | 54,000 | .7 | 6.2 | 630 | 2 |
| 113 | 32.0 | 4.8 | 7.6 | 16 | .3 | 400 | 46,000 | .7 | 5.6 | 550 | 1 |
| 114 | 8.3 | 6.8 | 9.4 | 21 | .2 | 700 | 61,000 | .6 | 6.7 | 780 | 2 |
| 115 | 190 | 23 | 4.0 | 12 | .9 | 500 | 31,000 | .5 | 6.1 | 400 | <1 |
| 116 | 13.0 | 4.9 | 8.4 | 19 | .3 | 400 | 55,000 | .5 | 5.3 | 630 | 2 |
| 117 | 6.9 | 4.7 | 8.2 | 19 | .3 | 500 | 53,000 | .7 | 5.5 | 650 | 2 |
| 118 | 46.0 | 8.1 | 6.9 | 17 | .7 | 700 | 53,000 | .8 | 7.8 | 810 | 2 |
| 119 | 11.0 | 4.5 | 9.2 | 18 | < .1 | 400 | 51,000 | .7 | 4.3 | 630 | 1 |
| 120 | 8.4 | 4.0 | 8.8 | 16 | .2 | 500 | 50,000 | .6 | 9.1 | 610 | 2 |
| 121 | 14.0 | 4.6 | 7.8 | 18 | .3 | 500 | 53,000 | .7 | 7.0 | 630 | 2 |
| 122 | 15.0 | 6.4 | 6.9 | 15 | .5 | 400 | 53,000 | .8 | 8.6 | 690 | 2 |
| 123 | 9.9 | 5.0 | 6.5 | 16 | .2 | 400 | 57,000 | .8 | 9.2 | 560 | 2 |
| 124 | 17.0 | 5.3 | 6.6 | 13 | .2 | 500 | 51,000 | 1.3 | 13 | 560 | 1 |
| 125 | 18.0 | 7.3 | 8.6 | 17 | 1.3 | 600 | 58,000 | .9 | 9.2 | 470 | 2 |
| 126 | 21.0 | 6.0 | 6.2 | 17 | .4 | 700 | 59,000 | 1.1 | 11 | 570 | 2 |
| 127 | 39.0 | 7.3 | 6.5 | 17 | .3 | 700 | 59,000 | .7 | 7.7 | 500 | 2 |
| 128 | 5.1 | 5.3 | 7.8 | 16 | .1 | 400 | 58,000 | .7 | 12 | 620 | 2 |
| 129 | 8.3 | 5.5 | 8.2 | 18 | .2 | 500 | 56,000 | .7 | 6.3 | 630 | 2 |
| 130 | 9.1 | 3.7 | 6.2 | 14 | .2 | 700 | 52,000 | .6 | 12 | 590 | 2 |
| 131 | 6.6 | 4.3 | 7.7 | 16 | .1 | 300 | 56,000 | .9 | 7.0 | 660 | 2 |
| 132 | 11.0 | 4.7 | 6.9 | 16 | .1 | 400 | 50,000 | 1.1 | 14 | 710 | 1 |
| 133 | 11.0 | 3.9 | 8.0 | 15 | .2 | 300 | 45,000 | .6 | 8.3 | 600 | 1 |
| 134 | 53.0 | 6.9 | 7.2 | 15 | .4 | 600 | 46,000 | 1.0 | 15 | 740 | 1 |
| 135 | 8.3 | 7.8 | 5.6 | 18 | .2 | 300 | 69,000 | .7 | 11 | 670 | 2 |
| 136 | 8.8 | 4.3 | 7.4 | 15 | .3 | 400 | 52,000 | .9 | 8.1 | 650 | 2 |
| 137 | 10.0 | 4.6 | 8.4 | 16 | .2 | 500 | 55,000 | .6 | 5.6 | 580 | 2 |
| 138 | 7.2 | 5.4 | 7.7 | 18 | .2 | 500 | 52,000 | .4 | 8.4 | 620 | 2 |
| 139 | 11.0 | 5.5 | 9.1 | 20 | < .1 | 700 | 52,000 | .7 | 5.3 | 660 | 2 |
| 140 | 15.0 | 6.1 | 9.1 | 18 | .1 | 700 | 59,000 | .5 | 11 | 590 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | 95.0 | 6.2 | 7.0 | 17 | 0.6 | 500 | 39,000 | 0.4 | 3.6 | 490 | 1 |
| 142 | 47.0 | 8.4 | 6.1 | 18 | .3 | 500 | 53,000 | .6 | 6.0 | 510 | 2 |
| 143 | 21.0 | 5.4 | 7.2 | 17 | .2 | 400 | 54,000 | .7 | 7.4 | 630 | 2 |
| 144 | 8.2 | 5.0 | 9.3 | 18 | .2 | 500 | 47,000 | .6 | 6.8 | 630 | 1 |
| 145 | 60.0 | 10 | 7.5 | 18 | .2 | 400 | 46,000 | .7 | 4.8 | 540 | 1 |
| 146 | 170 | 12 | 3.9 | 15 | .3 | 400 | 39,000 | .5 | 3.9 | 280 | 1 |
| 147 | 15.0 | 5.3 | 8.0 | 18 | .1 | 400 | 52,000 | .7 | 8.3 | 630 | 2 |
| 148 | 5.7 | 4.2 | 7.5 | 17 | .4 | 500 | 56,000 | .7 | 7.4 | 700 | 2 |
| 149 | 12.0 | 5.2 | 8.0 | 17 | .2 | 500 | 52,000 | .7 | 10 | 620 | 2 |
| 150 | 12.0 | 4.9 | 6.4 | 15 | < .1 | 400 | 43,000 | .6 | 9.5 | 610 | 1 |
| 151 | 26.0 | 5.4 | 8.0 | 18 | .2 | 600 | 50,000 | .7 | 4.1 | 570 | 1 |
| 152 | 40.0 | 6.8 | 7.1 | 15 | .4 | 600 | 53,000 | 1.1 | 14 | 770 | 2 |
| 153 | 22.0 | 5.7 | 5.3 | 13 | .2 | 400 | 52,000 | .8 | 10 | 460 | 2 |
| 154 | 24.0 | 7.9 | 8.4 | 18 | .3 | 600 | 62,000 | .7 | 9.7 | 520 | 2 |
| 155 | 7.6 | 5.3 | 7.2 | 18 | .2 | 700 | 58,000 | 1.0 | 18 | 630 | 2 |
| 156 | 20.0 | 5.4 | 7.4 | 17 | .2 | 900 | 56,000 | 1.1 | 25 | 1,100 | 2 |
| 157 | 4.8 | 2.9 | 7.7 | 15 | .2 | 400 | 42,000 | .8 | 6.9 | 650 | 1 |
| 158 | 8.4 | 4.4 | 6.9 | 16 | .3 | 700 | 50,000 | 1.1 | 12 | 830 | 2 |
| 159 | 46.0 | 7.2 | 7.4 | 16 | .2 | 500 | 53,000 | 1.2 | 14 | 570 | 2 |
| 160 | 33.0 | 6.6 | 7.3 | 15 | .3 | 700 | 50,000 | 1.1 | 15 | 970 | 2 |
| 161 | 7.5 | 3.2 | 7.9 | 15 | .2 | 400 | 41,000 | .6 | 4.9 | 570 | 1 |
| 162 | 9.0 | 4.2 | 6.4 | 15 | .1 | 400 | 55,000 | .8 | 9.9 | 520 | 1 |
| 163 | 8.5 | 6.7 | 7.3 | 17 | .1 | 600 | 61,000 | .8 | 13 | 520 | 2 |
| 164 | 16.0 | 5.1 | 6.7 | 15 | .2 | 400 | 49,000 | .7 | 9.2 | 550 | 2 |
| 165 | 8.7 | 3.5 | 7.9 | 14 | < .1 | 400 | 41,000 | .7 | 6.4 | 530 | 1 |
| 166 | 13.0 | 5.5 | 6.6 | 15 | .2 | 300 | 55,000 | 1.0 | 9.9 | 580 | 2 |
| 167 | 32.0 | 8.9 | 7.1 | 20 | .2 | 500 | 59,000 | .7 | 14 | 650 | 2 |
| 168 | 20.0 | 7.6 | 6.5 | 19 | .3 | 600 | 58,000 | .7 | 8.7 | 610 | 2 |
| 169 | 100 | 14 | 5.5 | 17 | .5 | 500 | 49,000 | .6 | 7.2 | 470 | 1 |
| 170 | 33.0 | 7.1 | 7.1 | 18 | .4 | 400 | 58,000 | 1.0 | 8.1 | 870 | 2 |
| 171 | 9.9 | 5.7 | 8.0 | 17 | .2 | 400 | 53,000 | .8 | 7.2 | 730 | 2 |
| 172 | 9.8 | 4.6 | 8.6 | 17 | .1 | 400 | 51,000 | .6 | 5.9 | 620 | 1 |
| 173 | 39.0 | 9.1 | 7.7 | 18 | .4 | 500 | 49,000 | .9 | 6.8 | 800 | 2 |
| 174 | 37.0 | 18 | 7.4 | 18 | < .1 | 500 | 50,000 | .8 | 6.2 | 540 | 1 |
| 175 | 34.0 | 14 | 7.6 | 20 | .2 | 500 | 52,000 | .5 | 7.4 | 550 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 176 | 38.0 | 12 | 7.4 | 17 | 0.2 | 400 | 48,000 | 0.8 | 6.0 | 570 | 1 |
| 177 | 7.3 | 4.9 | 8.9 | 18 | .3 | 400 | 55,000 | .7 | 4.5 | 710 | 2 |
| 178 | 45.0 | 8.3 | 8.1 | 17 | .3 | 600 | 55,000 | .6 | 8.9 | 600 | 2 |
| 179 | 82.0 | 11 | 5.7 | 18 | .4 | 600 | 49,000 | .6 | 6.9 | 410 | 2 |
| 180 | 6.8 | 5 | 8.3 | 17 | .2 | 400 | 53,000 | .7 | 11 | 700 | 2 |
| 181 | 14.0 | 5.9 | 7.8 | 17 | .1 | 300 | 55,000 | .7 | 9.2 | 670 | 2 |
| 182 | 36.0 | 8.0 | 7.5 | 20 | .4 | 600 | 58,000 | .7 | 12 | 640 | 2 |
| 183 | 48.0 | 11 | 6.4 | 19 | .2 | 600 | 53,000 | .7 | 8.2 | 580 | 2 |
| 184 | 59.0 | 10 | 6.4 | 17 | .6 | 500 | 46,000 | .8 | 5.2 | 520 | 1 |
| 185 | 10.0 | 3.9 | 8.6 | 16 | .3 | 400 | 47,000 | .8 | 5.2 | 740 | 1 |
| 186 | 14.0 | 5.3 | 7.1 | 15 | .2 | 400 | 56,000 | .8 | 9.4 | 580 | 2 |
| 187 | 9.4 | 4.9 | 8.1 | 16 | .2 | 400 | 54,000 | .7 | 6.7 | 710 | 2 |
| 188 | 16.0 | 4.7 | 6.9 | 16 | .2 | 500 | 53,000 | .7 | 8.4 | 560 | 1 |
| 189 | 15.0 | 4.4 | 7.6 | 15 | .2 | 500 | 46,000 | .9 | 7.8 | 650 | 1 |
| 190 | 7.3 | 4.5 | 8.2 | 15 | < .1 | 500 | 51,000 | 1.1 | 11 | 770 | 2 |
| 191 | 9.1 | 4.0 | 7.8 | 17 | .2 | 300 | 47,000 | .8 | 6.9 | 670 | 1 |
| 192 | 7.1 | 4.1 | 8.8 | 17 | .2 | 400 | 49,000 | .7 | 6.9 | 650 | 1 |
| 193 | 9.9 | 3.9 | 7.8 | 14 | .6 | 400 | 45,000 | 1.0 | 11 | 810 | 1 |
| 194 | 8.2 | 4.6 | 6.3 | 13 | .2 | 600 | 56,000 | 1.2 | 12 | 560 | 2 |
| 195 | 10.0 | 5.7 | 6.8 | 18 | .2 | 600 | 60,000 | 1.4 | 19 | 830 | 2 |
| 196 | 9.1 | 4.2 | 7.8 | 14 | .1 | 400 | 49,000 | .7 | 9.3 | 600 | 1 |
| 197 | 59.0 | 5.9 | 6.8 | 16 | .4 | 500 | 49,000 | .9 | 12 | 650 | 1 |
| 198 | 6.7 | 4.9 | 8.0 | 17 | .2 | 400 | 55,000 | .8 | 5.6 | 650 | 2 |
| 199 | 44.0 | 10 | 7.6 | 20 | < .1 | 400 | 52,000 | .5 | 4.8 | 470 | 2 |
| 200 | 6.4 | 4.2 | 9.1 | 17 | .2 | 400 | 50,000 | .8 | 5.5 | 630 | 2 |
| 201 | 33.0 | 19 | 7.1 | 20 | .2 | 500 | 54,000 | .4 | 8.3 | 590 | 2 |
| 202 | 9.6 | 5.5 | 8.1 | 18 | .2 | 400 | 51,000 | .7 | 6.5 | 670 | 2 |
| 203 | 29.0 | 9.8 | 7.8 | 18 | .3 | 600 | 49,000 | .7 | 7.3 | 570 | 1 |
| 204 | 7.5 | 4.7 | 9.2 | 18 | .1 | 400 | 52,000 | .7 | 6.8 | 660 | 1 |
| 205 | 51.0 | 8.9 | 6.5 | 16 | .1 | 300 | 49,000 | .7 | 5.0 | 420 | 1 |
| 206 | 12.0 | 6.8 | 8.1 | 17 | .2 | 400 | 51,000 | .7 | 7.7 | 600 | 2 |
| 207 | 10.0 | 5.5 | 7.8 | 17 | .1 | 400 | 54,000 | .8 | 6.8 | 620 | 2 |
| 208 | 18.0 | 5.4 | 8.2 | 17 | .3 | 600 | 50,000 | 1.0 | 7.1 | 730 | 2 |
| 209 | 8.9 | 3.9 | 6.9 | 15 | .2 | 400 | 50,000 | .8 | 8.1 | 560 | 1 |
| 210 | 17.0 | 4.8 | 7.9 | 15 | .2 | 600 | 50,000 | .9 | 16 | 690 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 211 | 28.0 | 4.7 | 6.5 | 15 | 0.1 | 500 | 51,000 | 1.1 | 8.5 | 480 | 1 |
| 212 | 10.0 | 4.4 | 7.5 | 15 | .2 | 500 | 50,000 | 0.9 | 7.6 | 680 | 1 |
| 213 | 9.3 | 5.1 | 7.7 | 16 | .3 | 500 | 55,000 | 1.0 | 8.8 | 630 | 2 |
| 214 | 7.8 | 5.0 | 8.5 | 16 | .2 | 500 | 52,000 | .7 | 5.0 | 710 | 2 |
| 215 | 16.0 | 6.1 | 7.4 | 15 | .2 | 400 | 54,000 | 1.0 | 7.6 | 690 | 2 |
| 216 | 6.7 | 4.9 | 8.9 | 18 | .1 | 400 | 52,000 | .9 | 7.5 | 730 | 2 |
| 217 | 8.8 | 4.6 | 7.4 | 15 | .3 | 500 | 52,000 | 1.0 | 6.7 | 620 | 2 |
| 218 | 6.3 | 3.7 | 8.1 | 15 | .2 | 600 | 49,000 | 1.0 | 10 | 590 | 1 |
| 219 | 11.0 | 4.7 | 8.1 | 18 | .2 | 600 | 52,000 | .7 | 7.4 | 650 | 2 |
| 220 | 9.3 | 5.3 | 9.0 | 18 | .1 | 400 | 54,000 | .6 | 5.4 | 710 | 2 |
| 221 | 5.7 | 3.5 | 9.3 | 18 | .2 | 300 | 45,000 | .8 | 3.9 | 600 | 1 |
| 222 | 55.0 | 12 | 7.4 | 16 | .3 | 400 | 48,000 | .7 | 6.0 | 670 | 1 |
| 223 | 5.9 | 4.0 | 9.6 | 19 | .2 | 400 | 48,000 | .8 | 4.7 | 620 | 1 |
| 224 | 8.9 | 4.8 | 7.1 | 16 | .2 | 500 | 48,000 | .7 | 5.7 | 630 | 2 |
| 225 | 14.0 | 5.3 | 8.8 | 17 | .2 | 500 | 52,000 | .5 | 7.3 | 710 | 2 |
| 226 | 4.5 | 3.4 | 5.5 | 16 | .2 | 400 | 50,000 | .6 | 6.4 | 470 | 2 |
| 227 | 92.0 | 5.3 | 7.4 | 16 | .4 | 500 | 48,000 | 1.0 | 8.6 | 660 | 2 |
| 228 | 7.6 | 4.1 | 11 | 19 | .2 | 400 | 51,000 | .7 | 4.7 | 720 | 1 |
| 229 | 6.7 | 6.1 | 9.0 | 21 | .2 | 500 | 62,000 | .6 | 6.2 | 720 | 2 |
| 230 | 6.8 | 4.5 | 8.8 | 19 | .2 | 500 | 50,000 | .6 | 4.4 | 660 | 1 |
| 231 | 5.0 | 2.9 | 7.1 | 15 | .2 | 300 | 45,000 | .7 | 5.1 | 540 | 1 |
| 232 | 5.7 | 3.7 | 7.9 | 16 | .2 | 500 | 48,000 | .7 | 5.2 | 620 | 1 |
| 233 | 3.7 | 3.5 | 5.7 | 15 | .2 | 300 | 48,000 | .6 | 7.6 | 520 | 2 |
| 234 | 5.9 | 4.7 | 9.2 | 17 | < .1 | 400 | 51,000 | .7 | 5.2 | 570 | 2 |
| 235 | 9.6 | 4.5 | 9.7 | 17 | .2 | 400 | 47,000 | .6 | 7.0 | 680 | 1 |
| 236 | 9.1 | 4.7 | 9.0 | 17 | .2 | 400 | 48,000 | .6 | 7.8 | 640 | 1 |
| 237 | 7.5 | 3.4 | 8.3 | 15 | .2 | 300 | 44,000 | .8 | 6.0 | 620 | 1 |
| 238 | 8.7 | 5.2 | 8.8 | 20 | .1 | 500 | 59,000 | .8 | 6.0 | 710 | 2 |
| 239 | 7.5 | 4.0 | 8.5 | 16 | .2 | 500 | 51,000 | 1.0 | 16 | 840 | 2 |
| 240 | 11.0 | 5.8 | 8.3 | 18 | .1 | 700 | 58,000 | 1.0 | 9.1 | 800 | 2 |
| 241 | 70.0 | 16 | 7.7 | 20 | .4 | 600 | 50,000 | .8 | 9.0 | 570 | 1 |
| 242 | 8.1 | 4.6 | 7.6 | 16 | .2 | 400 | 55,000 | .9 | 8.0 | 570 | 2 |
| 243 | 9.3 | 4.8 | 8.7 | 19 | .2 | 500 | 51,000 | 1.4 | 8.9 | 780 | 2 |
| 244 | 8.1 | 5.2 | 9.7 | 20 | .2 | 600 | 52,000 | .5 | 4.9 | 710 | 1 |
| 245 | 9.3 | 4.3 | 9.3 | 19 | .4 | 800 | 48,000 | 1.0 | 6.0 | 700 | 1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 246 | 7.2 | 4.6 | 8.7 | 17 | 0.6 | 400 | 51,000 | 0.8 | 5.1 | 710 | 2 |
| 247 | 11.0 | 5.3 | 8.1 | 18 | .2 | 700 | 55,000 | .8 | 13 | 940 | 2 |
| 248 | 5.7 | 3.7 | 8.5 | 16 | .7 | 300 | 45,000 | .6 | 4.1 | 600 | 1 |
| 249 | 24.0 | 5.2 | 8.2 | 18 | .6 | 700 | 54,000 | .7 | 7.1 | 620 | 2 |
| 250 | 11.0 | 5.7 | 8.8 | 19 | .3 | 700 | 58,000 | .9 | 7.0 | 680 | 2 |
| 251 | 13.0 | 4.8 | 9.7 | 18 | 1.3 | 600 | 53,000 | .4 | 5.4 | 650 | 2 |
| 252 | 6.7 | 5.9 | 9.2 | 20 | .2 | 600 | 58,000 | .4 | 7.8 | 730 | 2 |
| 253 | 7.4 | 5.7 | 8.9 | 20 | .2 | 500 | 57,000 | .6 | 6.0 | 700 | 2 |
| 254 | 15.0 | 6.8 | 7.4 | 19 | .2 | 500 | 55,000 | .9 | 4.7 | 600 | 2 |
| 255 | 6.8 | 4.4 | 11 | 20 | .2 | 400 | 52,000 | .8 | 19 | 700 | 1 |
| 256 | 7.2 | 4.9 | 9.1 | 20 | .1 | 500 | 53,000 | .8 | 5.8 | 710 | 2 |
| 257 | 6.3 | 5.0 | 8.8 | 19 | .2 | 500 | 56,000 | .7 | 5.0 | 630 | 2 |
| 258 | 59.0 | 4.0 | 8.8 | 17 | .5 | 600 | 48,000 | .9 | 6.4 | 560 | 1 |
| 259 | 26.0 | 4.0 | 7.2 | 14 | .4 | 500 | 46,000 | .8 | 9.5 | 490 | 1 |
| 260 | 6.1 | 3.6 | 8.1 | 16 | .4 | 500 | 50,000 | .6 | 7.7 | 630 | 2 |
| 261 | 6.4 | 4.4 | 8.4 | 16 | .1 | 400 | 52,000 | .5 | 6.2 | 620 | 2 |
| 262 | 6.6 | 5.3 | 8.0 | 17 | .3 | 500 | 55,000 | .8 | 6.5 | 660 | 2 |
| 263 | 6.8 | 4.3 | 9.9 | 18 | .1 | 400 | 48,000 | .6 | 4.1 | 660 | 1 |
| 264 | 7.5 | 4.6 | 9.3 | 20 | .4 | 500 | 46,000 | .7 | 4.1 | 640 | 1 |
| 265 | 8.2 | 4.6 | 9.0 | 17 | .2 | 700 | 50,000 | .7 | 8.8 | 710 | 1 |
| 266 | 8.7 | 5.0 | 9.3 | 18 | .2 | 500 | 54,000 | .8 | 7.4 | 760 | 2 |
| 267 | 18.0 | 4.6 | 8.0 | 16 | .2 | 600 | 51,000 | .6 | 8.0 | 620 | 1 |
| 268 | 7.1 | 4.5 | 8.4 | 17 | .7 | 500 | 52,000 | .7 | 8.0 | 760 | 2 |
| 269 | 13.0 | 7.5 | 8.2 | 17 | .1 | 500 | 58,000 | .8 | 8.4 | 630 | 2 |
| 270 | 8.0 | 5.3 | 9.0 | 19 | .2 | 500 | 55,000 | .7 | 5.9 | 710 | 2 |
| 271 | 7.5 | 5.0 | 8.1 | 18 | .3 | 500 | 57,000 | .7 | 7.5 | 670 | 2 |
| 272 | 7.1 | 3.6 | 10 | 19 | .2 | 400 | 46,000 | .8 | 5.6 | 710 | 1 |
| 273 | 8.8 | 6.3 | 11 | 21 | .3 | 700 | 60,000 | .6 | 4.1 | 770 | 2 |
| 274 | 75.0 | 5.5 | 7.7 | 17 | .2 | 700 | 50,000 | .9 | 8.0 | 570 | 1 |
| 275 | 7.2 | 5.3 | 9.1 | 20 | .3 | 600 | 55,000 | .8 | 5.7 | 700 | 2 |
| 276 | 7.5 | 5.1 | 9.9 | 19 | .2 | 500 | 55,000 | .8 | 4.2 | 740 | 2 |
| 277 | 7.3 | 4.6 | 10 | 20 | .2 | 500 | 51,000 | .5 | 5.5 | 680 | 1 |
| 278 | 7.2 | 6.9 | 8.5 | 21 | .2 | 500 | 64,000 | 1.0 | 5.4 | 750 | 2 |
| 279 | 8.1 | 6.0 | 9.0 | 20 | .2 | 600 | 60,000 | .8 | 6.0 | 700 | 2 |
| 280 | 7.3 | 5.6 | 8.8 | 19 | .2 | 800 | 55,000 | .8 | 9.0 | 750 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | 11.0 | 5.3 | 8.1 | 18 | 0.3 | 400 | 51,000 | 0.3 | 6.2 | 580 | 2 |
| 282 | 8.9 | 6.4 | 10 | 20 | .2 | 600 | 59,000 | .6 | 5.5 | 750 | 2 |
| 283 | 8.6 | 5.8 | 7.5 | 18 | .2 | 700 | 62,000 | .8 | 17 | 590 | 2 |
| 284 | 8.2 | 6.4 | 8.6 | 19 | .4 | 500 | 54,000 | .5 | 7.5 | 620 | 2 |
| 285 | 8.4 | 5.8 | 11 | 19 | .2 | 500 | 58,000 | .8 | 5.5 | 750 | 2 |
| 286 | 8.9 | 5.9 | 10.0 | 20 | .1 | 500 | 58,000 | .7 | 6.0 | 760 | 2 |
| 287 | 8.2 | 6.6 | 9.0 | 19 | < .1 | 600 | 61,000 | .6 | 7.3 | 710 | 2 |
| 288 | 7.9 | 5.0 | 10.0 | 17 | .3 | 500 | 54,000 | .7 | 5.3 | 660 | 2 |
| 289 | 6.9 | 5.1 | 9.4 | 20 | .2 | 500 | 55,000 | .5 | 4.8 | 700 | 2 |
| 290 | 7.6 | 4.7 | 11 | 21 | < .1 | 500 | 52,000 | .7 | 4.4 | 720 | 1 |
| 291 | 8.6 | 2.5 | 3.1 | 22 | .2 | 200 | 46,000 | .8 | 3.9 | 190 | 6 |
| 292 | 6.7 | 6.0 | 8.7 | 20 | .4 | 700 | 61,000 | .7 | 5.3 | 690 | 2 |
| 293 | 6.6 | 5.1 | 9.4 | 20 | .1 | 500 | 57,000 | .7 | 5.8 | 710 | 2 |
| 294 | 7.2 | 5.2 | 8.5 | 19 | .2 | 600 | 58,000 | .6 | 6.4 | 660 | 2 |
| 295 | 6.6 | 5.5 | 8.8 | 20 | .2 | 600 | 55,000 | 1.1 | 7.2 | 680 | 2 |
| 296 | 6.5 | 4.5 | 9.8 | 18 | .2 | 500 | 51,000 | .9 | 6.5 | 680 | 1 |
| 297 | 6.7 | 3.4 | 9.0 | 17 | .2 | 400 | 45,000 | .7 | 5.3 | 610 | 1 |
| 298 | 8.1 | 5.2 | 8.9 | 17 | .2 | 500 | 52,000 | 1.0 | 8.5 | 710 | 2 |
| 299 | 6.0 | 4.1 | 9.5 | 18 | .2 | 400 | 50,000 | .7 | 4.9 | 660 | 1 |
| 300 | 12.0 | 6.8 | 7.7 | 19 | .9 | 1,400 | 60,000 | .5 | 7.8 | 750 | 2 |
| 301 | 7.0 | 5.7 | 8.9 | 20 | .3 | 900 | 58,000 | 1.0 | 5.3 | 750 | 2 |
| 302 | 7.6 | 5.1 | 11 | 20 | .2 | 600 | 54,000 | .8 | 5.2 | 770 | 2 |
| 303 | 7.6 | 6.0 | 9.4 | 19 | .1 | 600 | 59,000 | 1.2 | 8.9 | 820 | 2 |
| 304 | 7.1 | 5.6 | 9.0 | 21 | .2 | 600 | 57,000 | .8 | 7.0 | 700 | 2 |
| 305 | 6.8 | 5.6 | 9.0 | 20 | .1 | 500 | 56,000 | .7 | 7.1 | 680 | 2 |
| 306 | 6.4 | 4.4 | 9.6 | 20 | .2 | 600 | 54,000 | .7 | 5.0 | 690 | 2 |
| 307 | 8.8 | 7.3 | 9.6 | 20 | < .1 | 600 | 63,000 | .8 | 5.4 | 770 | 2 |
| 308 | 7.0 | 4.6 | 9.4 | 20 | .1 | 700 | 54,000 | 1.2 | 5.3 | 690 | 2 |
| 309 | 8.0 | 6.0 | 9.7 | 20 | < .1 | 600 | 58,000 | .7 | 6.6 | 730 | 2 |
| 310 | 7.2 | 5.4 | 9.5 | 21 | .2 | 600 | 57,000 | .7 | 5.7 | 710 | 2 |
| 311 | 10.0 | 3.6 | 12 | 19 | < .1 | 500 | 47,000 | .6 | 2.8 | 700 | 1 |
| 312 | 8.6 | 6.1 | 9.9 | 19 | < .1 | 500 | 56,000 | .7 | 4.9 | 680 | 2 |
| 313 | 9.8 | 6.4 | 11 | 21 | .1 | 500 | 59,000 | .5 | 5.0 | 780 | 2 |
| 314 | 9.2 | 5.8 | 10 | 20 | .1 | 500 | 56,000 | .7 | 3.9 | 720 | 2 |
| 315 | 13.0 | 3.9 | 8.9 | 16 | .2 | 800 | 47,000 | 1.0 | 17 | 860 | 1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 316 | 8.6 | 6.1 | 10 | 21 | 0.2 | 600 | 58,000 | 0.5 | 4.9 | 740 | 2 |
| 317 | 7.0 | 5.3 | 9.4 | 19 | .2 | 400 | 55,000 | .6 | 6.3 | 670 | 2 |
| 318 | 11.0 | 6.3 | 9.2 | 21 | .4 | 600 | 57,000 | .5 | 3.5 | 710 | 2 |
| 319 | 9.8 | 5.1 | 11 | 21 | .2 | 600 | 55,000 | .8 | 4.7 | 730 | 2 |
| 320 | 8.9 | 5.2 | 11 | 19 | .2 | 700 | 55,000 | .7 | 4.4 | 720 | 2 |
| 321 | 8.8 | 5.4 | 10 | 22 | .1 | 600 | 55,000 | .5 | 4.9 | 750 | 2 |
| 322 | 8.8 | 5.9 | 9.8 | 21 | .2 | 600 | 57,000 | .5 | 5.1 | 730 | 2 |
| 323 | 9.6 | 5.5 | 12 | 20 | < .1 | 600 | 56,000 | .5 | 5.0 | 760 | 2 |
| 324 | 8.7 | 5.5 | 9.8 | 22 | .3 | 1,100 | 54,000 | .4 | 4.6 | 730 | 2 |
| 325 | 9.1 | 6.8 | 8.8 | 20 | .3 | 900 | 62,000 | .6 | 7.2 | 740 | 2 |
| 326 | 8.4 | 6.3 | 9.7 | 21 | .2 | 700 | 58,000 | .7 | 5.2 | 770 | 2 |
| 327 | 7.3 | 5.2 | 9.5 | 21 | .1 | 700 | 58,000 | .6 | 4.6 | 750 | 2 |
| 328 | 6.8 | 5.1 | 10 | 21 | .3 | 700 | 57,000 | .9 | 5.2 | 770 | 2 |
| 329 | 7.4 | 5.3 | 8.6 | 20 | .4 | 1,000 | 55,000 | .8 | 8.2 | 860 | 2 |
| 330 | 7.2 | 4.3 | 11 | 19 | .2 | 500 | 52,000 | .6 | 3.3 | 730 | 2 |
| 331 | 8.0 | 5.7 | 8.6 | 19 | .5 | 700 | 57,000 | .7 | 7.0 | 660 | 2 |
| 332 | 7.1 | 5.7 | 8.6 | 19 | .2 | 400 | 56,000 | 1.0 | 7.1 | 640 | 2 |
| 333 | 7.2 | 5.9 | 8.7 | 20 | < .1 | 600 | 59,000 | .6 | 7.8 | 740 | 2 |
| 334 | 6.1 | 4.1 | 9.6 | 19 | .2 | 400 | 50,000 | .7 | 5.5 | 670 | 1 |
| 335 | 9.6 | 6.0 | 8.9 | 17 | .1 | 600 | 51,000 | .8 | 7.7 | 720 | 2 |
| 336 | 6.7 | 5.2 | 8.3 | 20 | .2 | 500 | 54,000 | .8 | 6.3 | 630 | 2 |
| 337 | 7.0 | 4.8 | 9.0 | 19 | .2 | 700 | 55,000 | .7 | 7.3 | 700 | 2 |
| 338 | 6.4 | 4.8 | 9.1 | 18 | .1 | 500 | 54,000 | .9 | 6.5 | 700 | 2 |
| 339 | 18.0 | 6.5 | 12 | 25 | .3 | 1,200 | 64,000 | 1.3 | 19 | 1,200 | 2 |
| 340 | 7.3 | 4.9 | 10 | 20 | .1 | 500 | 52,000 | .7 | 5.2 | 700 | 1 |
| 341 | 7.3 | 5.1 | 9.2 | 19 | .1 | 500 | 55,000 | .9 | 7.4 | 690 | 2 |
| 342 | 7.1 | 5.8 | 8.9 | 18 | .2 | 500 | 59,000 | .9 | 7.9 | 680 | 2 |
| 343 | 6.6 | 4.9 | 9.0 | 19 | .3 | 500 | 54,000 | .7 | 5.7 | 630 | 2 |
| 344 | 7.4 | 5.0 | 10 | 19 | .3 | 600 | 56,000 | .5 | 5.7 | 730 | 2 |
| 345 | 6.9 | 4.1 | 10 | 18 | < .1 | 400 | 50,000 | .6 | 4.0 | 680 | 1 |
| 346 | 6.7 | 4.9 | 9.5 | 20 | .2 | 500 | 55,000 | .7 | 5.1 | 670 | 2 |
| 347 | 7.5 | 6.2 | 8.4 | 20 | .1 | 800 | 61,000 | .9 | 7.8 | 700 | 2 |
| 348 | 9.0 | 6.3 | 8.4 | 20 | .3 | 900 | 60,000 | .4 | 5.1 | 690 | 2 |
| 349 | 7.7 | 7.5 | 7.9 | 21 | .2 | 700 | 65,000 | .8 | 5.4 | 710 | 2 |
| 350 | 7.3 | 5.2 | 10 | 21 | .2 | 600 | 57,000 | .6 | 4.3 | 750 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 351 | 9.2 | 6.4 | 10 | 21 | 0.2 | 600 | 58,000 | 0.5 | 4.8 | 770 | 2 |
| 352 | 9.2 | 5.5 | 11 | 21 | < .1 | 700 | 56,000 | .4 | 4.4 | 780 | 2 |
| 353 | 9.9 | 6.0 | 12 | 21 | .2 | 600 | 57,000 | .5 | 5.0 | 800 | 2 |
| 354 | 9.6 | 6.2 | 9.8 | 21 | .2 | 600 | 58,000 | .5 | 4.0 | 720 | 2 |
| 355 | 9.1 | 6.7 | 9.8 | 20 | .1 | 500 | 62,000 | .7 | 8.6 | 700 | 2 |
| 356 | 73.0 | 6.8 | 5.4 | 15 | .3 | 400 | 43,000 | .7 | 5.9 | 450 | 1 |
| 357 | 7.5 | 4.0 | 10 | 18 | < .1 | 400 | 48,000 | .8 | 4.6 | 680 | 1 |
| 358 | 7.8 | 5.3 | 10 | 21 | < .1 | 500 | 55,000 | .7 | 5.6 | 720 | 2 |
| 359 | 7.7 | 4.9 | 10 | 21 | .1 | 600 | 54,000 | .4 | 5.1 | 770 | 2 |
| 360 | 7.7 | 5.5 | 10 | 20 | < .1 | 500 | 57,000 | .7 | 6.0 | 750 | 2 |
| 361 | 8.2 | 4.5 | 11 | 20 | .3 | 600 | 53,000 | .4 | 4.4 | 720 | 1 |
| 362 | 7.5 | 5.9 | 9.6 | 21 | .1 | 600 | 57,000 | .8 | 7.4 | 750 | 2 |
| 363 | 7.2 | 4.8 | 9.7 | 18 | .2 | 500 | 53,000 | .8 | 5.5 | 700 | 2 |
| 364 | 6.4 | 4.0 | 9.9 | 18 | .3 | 400 | 48,000 | .8 | 6.2 | 680 | 1 |
| 365 | 6.4 | 4.9 | 9.4 | 17 | .2 | 600 | 54,000 | .8 | 4.2 | 680 | 2 |
| 366 | 6.3 | 5.5 | 9.0 | 21 | .2 | 600 | 56,000 | .8 | 7.5 | 700 | 2 |
| 367 | 7.7 | 5.3 | 9.9 | 18 | .1 | 500 | 56,000 | .9 | 7.3 | 750 | 2 |
| 368 | 8.3 | 6.7 | 8.2 | 21 | .2 | 900 | 59,000 | .9 | 6.0 | 750 | 2 |
| 369 | 7.1 | 5.0 | 9.9 | 20 | .1 | 500 | 56,000 | .7 | 6.0 | 740 | 2 |
| 370 | 7.2 | 6.5 | 9.5 | 20 | < .1 | 800 | 62,000 | .8 | 5.6 | 820 | 2 |
| 371 | 7.2 | 5.3 | 9.0 | 19 | .1 | 600 | 57,000 | .6 | 6.3 | 760 | 2 |
| 372 | 8.1 | 5.9 | 8.7 | 20 | .2 | 800 | 57,000 | .7 | 5.3 | 710 | 2 |
| 373 | 6.1 | 4.1 | 8.9 | 20 | .1 | 800 | 51,000 | .4 | 3.8 | 690 | 2 |
| 374 | 6.6 | 6.0 | 9.0 | 21 | .3 | 600 | 60,000 | .7 | 6.1 | 760 | 2 |
| 375 | 6.0 | 4.1 | 9.5 | 20 | .3 | 700 | 51,000 | .6 | 3.6 | 710 | 2 |
| 376 | 8.1 | 6.8 | 7.2 | 21 | .5 | 1,100 | 63,000 | .7 | 6.3 | 720 | 2 |
| 377 | 8.4 | 6.1 | 9.1 | 21 | .2 | 600 | 57,000 | .8 | 4.5 | 730 | 2 |
| 378 | 8.6 | 5.3 | 11 | 21 | .1 | 500 | 56,000 | .6 | 5.0 | 780 | 2 |
| 379 | 8.6 | 4.0 | 12 | 20 | .2 | 500 | 50,000 | .6 | 3.7 | 740 | 1 |
| 380 | 8.0 | 5.3 | 10 | 20 | .2 | 600 | 55,000 | .8 | 5.0 | 730 | 2 |
| 381 | 6.6 | 3.8 | 11 | 19 | .1 | 400 | 49,000 | .7 | 4.0 | 760 | 1 |
| 382 | 7.8 | 5.1 | 9.3 | 21 | .2 | 600 | 56,000 | .6 | 6.0 | 710 | 2 |
| 383 | 7.4 | 4.9 | 10 | 19 | .2 | 700 | 55,000 | .6 | 5.6 | 760 | 2 |
| 384 | 8.2 | 7.3 | 9.7 | 21 | .2 | 700 | 66,000 | .6 | 6.8 | 820 | 2 |
| 385 | 7.0 | 5.0 | 10 | 20 | .2 | 600 | 55,000 | .9 | 6.1 | 760 | 2 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 386 | 11.0 | 5.9 | 9.4 | 18 | 0.2 | 500 | 57,000 | 0.6 | 4.5 | 720 | 2 |
| 387 | 7.0 | 4.6 | 11 | 19 | .1 | 500 | 53,000 | .7 | 5.0 | 680 | 2 |
| 388 | 7.0 | 5.0 | 10 | 21 | .4 | 700 | 54,000 | .7 | 4.7 | 730 | 1 |
| 389 | 7.2 | 4.9 | 10 | 20 | .4 | 800 | 54,000 | .6 | 6.0 | 770 | 2 |
| 390 | 9.5 | 5.9 | 10 | 21 | .2 | 600 | 57,000 | .8 | 4.9 | 750 | 2 |
| 391 | 8.4 | 5.8 | 10 | 21 | .3 | 600 | 56,000 | .5 | 5.2 | 760 | 2 |
| 392 | 8.8 | 8.0 | 8.9 | 23 | .3 | 800 | 68,000 | .6 | 5.1 | 830 | 2 |
| 393 | 7.5 | 4.4 | 11 | 21 | .2 | 500 | 55,000 | .5 | 3.6 | 720 | 1 |
| 394 | 8.4 | 4.9 | 10 | 19 | .2 | 500 | 54,000 | .5 | 5.0 | 710 | 2 |
| 395 | 7.9 | 5.5 | 9.8 | 21 | .2 | 600 | 57,000 | .6 | 5.2 | 730 | 2 |
| 396 | 8.3 | 4.9 | 11 | 20 | < .1 | 500 | 54,000 | .4 | 5.0 | 760 | 1 |
| 397 | 8.3 | 4.9 | 11 | 20 | .1 | 600 | 53,000 | .6 | 5.5 | 760 | 1 |
| 398 | 7.4 | 5.6 | 11 | 19 | .2 | 500 | 55,000 | .7 | 8.1 | 780 | 2 |
| 399 | 7.8 | 6.9 | 9.1 | 21 | .2 | 700 | 63,000 | .9 | 7.9 | 790 | 2 |
| 400 | 6.9 | 6.1 | 8.9 | 21 | .2 | 600 | 62,000 | .7 | 7.7 | 740 | 2 |
| 401 | 8.5 | 5.4 | 9.3 | 19 | .6 | 700 | 54,000 | .8 | 7.1 | 710 | 2 |
| 402 | 10.0 | 5.9 | 8.8 | 19 | .3 | 1,100 | 57,000 | .6 | 14 | 740 | 2 |
| 403 | 11.0 | 6.2 | 9.6 | 19 | .8 | 1,000 | 57,000 | .8 | 8.0 | 740 | 2 |
| 404 | 7.9 | 6.2 | 9.2 | 20 | .3 | 600 | 58,000 | .9 | 7.3 | 750 | 2 |
| 405 | 7.3 | 5.7 | 9.5 | 19 | .2 | 600 | 57,000 | .8 | 7.2 | 740 | 2 |
| 406 | 8.3 | 5.9 | 9.1 | 20 | .2 | 600 | 57,000 | .8 | 8.1 | 720 | 2 |
| 407 | 7.8 | 6.0 | 9.8 | 20 | .2 | 600 | 58,000 | .8 | 6.2 | 770 | 2 |
| 408 | 7.8 | 5.5 | 11 | 20 | .2 | 700 | 57,000 | .6 | 6.3 | 800 | 2 |
| 409 | 7.9 | 5.1 | 9.9 | 20 | .3 | 700 | 54,000 | .7 | 4.7 | 720 | 2 |
| 410 | 8.8 | 4.7 | 11 | 21 | .3 | 500 | 53,000 | .5 | 4.6 | 710 | 1 |
| 411 | 9.1 | 4.6 | 11 | 21 | .1 | 600 | 54,000 | .6 | 4.8 | 710 | 1 |
| 412 | 6.6 | 4.9 | 10 | 20 | .2 | 500 | 55,000 | .9 | 5.4 | 740 | 2 |
| 413 | 7.6 | 5.2 | 9.8 | 21 | .2 | 600 | 55,000 | .7 | 5.9 | 760 | 2 |
| 414 | 7.1 | 5.4 | 9.1 | 20 | .2 | 700 | 59,000 | .8 | 5.8 | 810 | 2 |
| 415 | 6.5 | 4.9 | 8.6 | 18 | .2 | 500 | 55,000 | .8 | 6.1 | 640 | 2 |
| 416 | 6.6 | 5.2 | 10 | 20 | .2 | 700 | 57,000 | .8 | 6.2 | 720 | 2 |
| 417 | 12.0 | 5.4 | 9.0 | 20 | .6 | 700 | 55,000 | .8 | 8.1 | 720 | 2 |
| 418 | 6.7 | 4.1 | 10 | 19 | .2 | 700 | 52,000 | .7 | 3.9 | 710 | 1 |
| 419 | 15.0 | 5.7 | 9.4 | 19 | 1.4 | 700 | 55,000 | .9 | 9.9 | 740 | 2 |
| 420 | 6.6 | 4.7 | 9.4 | 19 | .2 | 500 | 53,000 | .6 | 6.0 | 720 | 2 |
| 421 | 7.8 | 5.7 | 11 | 20 | .2 | 500 | 56,000 | .6 | 7.4 | 780 | 2 |
| 422 | 6.3 | 4.6 | 10 | 20 | .3 | 700 | 52,000 | .4 | 6.3 | 750 | 1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <10 | < .4 | <2 | 64 | 64 | 12 | 16 | <2 | 14 | <8 | <4 | 28,000 |
| 2 | <10 | .6 | <2 | 52 | 34 | 7 | 13 | <2 | 11 | <8 | <4 | 16,000 |
| 3 | <10 | .8 | <2 | 67 | 44 | 9 | 15 | <2 | 15 | <8 | <4 | 23,000 |
| 4 | <10 | .9 | <2 | 64 | 43 | 10 | 13 | <2 | 13 | <8 | <4 | 21,000 |
| 5 | <10 | < .4 | <2 | 65 | 39 | 10 | 13 | <2 | 12 | <8 | <4 | 20,000 |
| 6 | <10 | .8 | <2 | 52 | 35 | 7 | 10 | <2 | 11 | <8 | <4 | 16,000 |
| 7 | <10 | < .4 | <2 | 62 | 43 | 9 | 14 | <2 | 13 | <8 | <4 | 21,000 |
| 8 | <10 | < .4 | <2 | 75 | 64 | 14 | 16 | <2 | 16 | <8 | <4 | 31,000 |
| 9 | <10 | .5 | <2 | 61 | 42 | 16 | 13 | <2 | 11 | <8 | <4 | 20,000 |
| 10 | <10 | < .4 | <2 | 49 | 32 | 4 | 9 | <2 | 8 | <8 | <4 | 14,000 |
| 11 | <10 | < .4 | <2 | 150 | 51 | 71 | 18 | <2 | 15 | <8 | <4 | 38,000 |
| 12 | <10 | .6 | <2 | 58 | 34 | 5 | 13 | <2 | 9 | <8 | <4 | 16,000 |
| 13 | <10 | < .4 | <2 | 64 | 40 | 6 | 13 | <2 | 13 | <8 | <4 | 18,000 |
| 14 | <10 | .5 | <2 | 98 | 47 | 13 | 11 | <2 | 11 | <8 | <4 | 21,000 |
| 15 | <10 | .6 | <2 | 84 | 60 | 17 | 19 | <2 | 13 | <8 | <4 | 25,000 |
| 16 | <10 | .5 | <2 | 79 | 58 | 9 | 17 | <2 | 13 | <8 | <4 | 22,000 |
| 17 | <10 | < .4 | <2 | 70 | 43 | 10 | 13 | <2 | 10 | <8 | <4 | 18,000 |
| 18 | <10 | .4 | <2 | 77 | 48 | 10 | 13 | <2 | 11 | <8 | <4 | 21,000 |
| 19 | <10 | < .4 | <2 | 70 | 42 | 10 | 13 | <2 | 13 | <8 | <4 | 21,000 |
| 20 | <10 | .6 | <2 | 65 | 44 | 11 | 13 | <2 | 11 | <8 | <4 | 19,000 |
| 21 | <10 | .7 | <2 | 87 | 50 | 19 | 16 | <2 | 13 | <8 | <4 | 25,000 |
| 22 | <10 | .9 | <2 | 65 | 41 | 9 | 13 | <2 | 12 | <8 | <4 | 21,000 |
| 23 | <10 | .8 | <2 | 60 | 42 | 11 | 15 | <2 | 12 | <8 | <4 | 25,000 |
| 24 | <10 | .9 | <2 | 83 | 46 | 15 | 16 | <2 | 14 | <8 | <4 | 23,000 |
| 25 | <10 | .9 | <2 | 74 | 45 | 12 | 15 | <2 | 13 | <8 | <4 | 23,000 |
| 26 | <10 | .6 | <2 | 67 | 50 | 16 | 19 | <2 | 14 | <8 | <4 | 25,000 |
| 27 | <10 | .4 | <2 | 74 | 50 | 12 | 16 | <2 | 12 | <8 | <4 | 21,000 |
| 28 | <10 | 1.0 | <2 | 64 | 42 | 7 | 16 | <2 | 13 | <8 | <4 | 20,000 |
| 29 | <10 | .9 | <2 | 63 | 42 | 10 | 15 | <2 | 14 | <8 | <4 | 21,000 |
| 30 | <10 | .8 | <2 | 92 | 45 | 11 | 12 | <2 | 13 | <8 | <4 | 21,000 |
| 31 | <10 | .6 | <2 | 80 | 53 | 17 | 18 | <2 | 14 | <8 | <4 | 25,000 |
| 32 | <10 | .9 | <2 | 60 | 42 | 9 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 33 | <10 | .6 | <2 | 72 | 47 | 13 | 14 | <2 | 13 | <8 | <4 | 22,000 |
| 34 | <10 | 1.1 | <2 | 68 | 44 | 11 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 35 | <10 | 1.5 | <2 | 72 | 50 | 10 | 19 | <2 | 14 | <8 | <4 | 26,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | <10 | 0.6 | <2 | 75 | 48 | 12 | 15 | <2 | 14 | <8 | <4 | 22,000 |
| 37 | <10 | .5 | <2 | 64 | 37 | 11 | 18 | <2 | 11 | <8 | <4 | 20,000 |
| 38 | <10 | 3.3 | <2 | 68 | 32 | 8 | 17 | <2 | 9 | <8 | <4 | 15,000 |
| 39 | <10 | .7 | <2 | 71 | 39 | 7 | 11 | <2 | 9 | <8 | <4 | 18,000 |
| 40 | <10 | < .4 | <2 | 68 | 32 | 6 | 9 | <2 | 10 | <8 | <4 | 15,000 |
| 41 | <10 | .9 | <2 | 59 | 45 | 11 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 42 | <10 | .6 | <2 | 86 | 41 | 10 | 12 | <2 | 12 | <8 | <4 | 20,000 |
| 43 | <10 | < .4 | <2 | 69 | 45 | 13 | 14 | <2 | 11 | <8 | <4 | 21,000 |
| 44 | <10 | < .4 | <2 | 78 | 48 | 13 | 16 | <2 | 10 | <8 | <4 | 22,000 |
| 45 | <10 | .5 | <2 | 74 | 45 | 12 | 19 | <2 | 10 | <8 | <4 | 25,000 |
| 46 | <10 | .9 | <2 | 100 | 53 | 33 | 17 | <2 | 14 | <8 | <4 | 30,000 |
| 47 | <10 | .7 | <2 | 56 | 42 | 9 | 12 | <2 | 12 | <8 | <4 | 23,000 |
| 48 | <10 | .5 | 10 | 75 | 46 | 16 | 16 | <2 | 12 | <8 | <4 | 26,000 |
| 49 | <10 | 1.0 | <2 | 84 | 49 | 13 | 16 | <2 | 14 | <8 | <4 | 25,000 |
| 50 | <10 | .5 | <2 | 63 | 43 | 9 | 13 | <2 | 11 | <8 | <4 | 17,000 |
| 51 | <10 | .5 | <2 | 72 | 44 | 10 | 14 | <2 | 13 | <8 | <4 | 21,000 |
| 52 | <10 | .4 | <2 | 70 | 49 | 9 | 15 | <2 | 13 | <8 | <4 | 20,000 |
| 53 | <10 | .5 | <2 | 76 | 52 | 13 | 17 | <2 | 13 | <8 | <4 | 23,000 |
| 54 | <10 | .9 | <2 | 100 | 57 | 22 | 20 | <2 | 14 | <8 | <4 | 28,000 |
| 55 | <10 | .7 | <2 | 72 | 52 | 9 | 16 | <2 | 14 | <8 | <4 | 23,000 |
| 56 | <10 | 1.1 | <2 | 64 | 41 | 9 | 13 | <2 | 12 | <8 | <4 | 22,000 |
| 57 | <10 | 1.5 | <2 | 70 | 50 | 9 | 20 | <2 | 15 | <8 | <4 | 25,000 |
| 58 | <10 | 1.1 | <2 | 78 | 49 | 14 | 19 | <2 | 14 | <8 | <4 | 25,000 |
| 59 | <10 | .4 | <2 | 66 | 48 | 9 | 19 | <2 | 14 | <8 | <4 | 23,000 |
| 60 | <10 | .8 | <2 | 57 | 43 | 8 | 16 | <2 | 14 | <8 | <4 | 21,000 |
| 61 | <10 | < .4 | <2 | 68 | 43 | 9 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 62 | <10 | .8 | <2 | 64 | 46 | 8 | 15 | <2 | 14 | <8 | <4 | 23,000 |
| 63 | <10 | .7 | <2 | 65 | 40 | 9 | 13 | <2 | 13 | <8 | <4 | 21,000 |
| 64 | <10 | .8 | <2 | 67 | 43 | 15 | 15 | <2 | 11 | <8 | <4 | 19,000 |
| 65 | <10 | .9 | <2 | 63 | 41 | 9 | 13 | <2 | 11 | <8 | <4 | 19,000 |
| 66 | <10 | .5 | <2 | 77 | 48 | 13 | 16 | <2 | 12 | <8 | <4 | 22,000 |
| 67 | <10 | .7 | <2 | 89 | 44 | 21 | 15 | <2 | 11 | <8 | <4 | 23,000 |
| 68 | <10 | .8 | <2 | 68 | 41 | 13 | 14 | <2 | 11 | <8 | <4 | 22,000 |
| 69 | <10 | < .4 | <2 | 58 | 41 | 8 | 13 | <2 | 10 | <8 | <4 | 19,000 |
| 70 | <10 | .6 | <2 | 52 | 57 | 11 | 16 | <2 | 11 | <8 | <4 | 23,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | <10 | 1.0 | <2 | 110 | 57 | 37 | 19 | <2 | 15 | <8 | <4 | 33,000 |
| 72 | <10 | < .4 | <2 | 81 | 78 | 18 | 24 | <2 | 16 | <8 | <4 | 34,000 |
| 73 | <10 | .9 | <2 | 76 | 56 | 15 | 17 | <2 | 13 | <8 | <4 | 29,000 |
| 74 | <10 | .5 | <2 | 75 | 47 | 8 | 18 | <2 | 12 | <8 | <4 | 23,000 |
| 75 | <10 | 1.7 | <2 | 110 | 80 | 36 | 23 | <2 | 18 | <8 | <4 | 52,000 |
| 76 | <10 | 2.1 | <2 | 100 | 55 | 23 | 17 | <2 | 14 | <8 | <4 | 28,000 |
| 77 | <10 | .8 | <2 | 55 | 50 | 13 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 78 | <10 | .5 | <2 | 84 | 43 | 11 | 13 | <2 | 12 | <8 | <4 | 21,000 |
| 79 | <10 | .7 | <2 | 66 | 40 | 13 | 13 | <2 | 11 | <8 | <4 | 18,000 |
| 80 | <10 | .5 | <2 | 58 | 51 | 11 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 81 | <10 | 1.3 | <2 | 63 | 45 | 12 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 82 | <10 | .5 | <2 | 62 | 38 | 8 | 11 | <2 | 10 | <8 | <4 | 17,000 |
| 83 | <10 | .6 | <2 | 81 | 46 | 17 | 16 | <2 | 12 | <8 | <4 | 21,000 |
| 84 | <10 | .4 | <2 | 75 | 47 | 10 | 17 | <2 | 12 | <8 | <4 | 19,000 |
| 85 | <10 | .6 | <2 | 70 | 50 | 12 | 16 | <2 | 13 | <8 | <4 | 23,000 |
| 86 | <10 | .8 | <2 | 99 | 53 | 21 | 15 | <2 | 12 | <8 | <4 | 25,000 |
| 87 | <10 | < .4 | <2 | 80 | 52 | 13 | 16 | <2 | 13 | <8 | <4 | 24,000 |
| 88 | <10 | 1.0 | <2 | 68 | 46 | 10 | 16 | <2 | 13 | <8 | <4 | 24,000 |
| 89 | <10 | .6 | <2 | 80 | 46 | 14 | 15 | <2 | 12 | <8 | <4 | 25,000 |
| 90 | <10 | .9 | <2 | 73 | 54 | 18 | 25 | <2 | 14 | <8 | <4 | 29,000 |
| 91 | <10 | < .4 | <2 | 94 | 64 | 20 | 20 | <2 | 15 | <8 | <4 | 33,000 |
| 92 | <10 | .8 | <2 | 69 | 81 | 19 | 26 | <2 | 15 | <8 | <4 | 30,000 |
| 93 | <10 | < .4 | 2 | 150 | 64 | 60 | 25 | <2 | 17 | <8 | <4 | 44,000 |
| 94 | <10 | < .4 | 5 | 190 | 56 | 80 | 26 | <2 | 14 | <8 | <4 | 44,000 |
| 95 | <10 | .5 | <2 | 63 | 38 | 10 | 10 | <2 | 11 | <8 | <4 | 29,000 |
| 96 | <10 | .5 | <2 | 73 | 50 | 23 | 19 | <2 | 12 | <8 | <4 | 23,000 |
| 97 | <10 | < .4 | <2 | 87 | 48 | 22 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 98 | <10 | .5 | <2 | 83 | 74 | 20 | 20 | <2 | 15 | <8 | <4 | 34,000 |
| 99 | <10 | < .4 | <2 | 81 | 51 | 26 | 19 | <2 | 15 | <8 | <4 | 27,000 |
| 100 | <10 | .7 | <2 | 76 | 78 | 16 | 24 | <2 | 19 | <8 | <4 | 35,000 |
| 101 | <10 | .6 | <2 | 65 | 57 | 10 | 19 | <2 | 13 | <8 | <4 | 23,000 |
| 102 | <10 | .8 | <2 | 72 | 62 | 18 | 20 | <2 | 15 | <8 | <4 | 29,000 |
| 103 | <10 | < .4 | <2 | 79 | 64 | 18 | 20 | <2 | 16 | <8 | <4 | 33,000 |
| 104 | <10 | .9 | <2 | 110 | 52 | 22 | 16 | <2 | 13 | <8 | <4 | 34,000 |
| 105 | <10 | .7 | <2 | 70 | 73 | 14 | 24 | <2 | 15 | <8 | <4 | 32,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 106 | <10 | <0.4 | <2 | 91 | 44 | 16 | 10 | <2 | 10 | <8 | <4 | 21,000 |
| 107 | <10 | .4 | <2 | 75 | 46 | 12 | 13 | <2 | 11 | <8 | <4 | 21,000 |
| 108 | <10 | .9 | <2 | 90 | 46 | 21 | 14 | <2 | 12 | <8 | <4 | 24,000 |
| 109 | <10 | .5 | <2 | 65 | 52 | 14 | 17 | <2 | 12 | <8 | <4 | 25,000 |
| 110 | <10 | < .4 | <2 | 59 | 41 | 7 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 111 | <10 | .5 | <2 | 71 | 54 | 13 | 17 | <2 | 14 | <8 | <4 | 26,000 |
| 112 | <10 | .7 | <2 | 76 | 47 | 10 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 113 | <10 | < .4 | <2 | 61 | 39 | 8 | 14 | <2 | 11 | <8 | <4 | 18,000 |
| 114 | <10 | < .4 | <2 | 70 | 48 | 11 | 17 | <2 | 15 | <8 | <4 | 25,000 |
| 115 | <10 | .6 | <2 | 35 | 35 | 8 | 10 | <2 | 8 | <8 | <4 | 15,000 |
| 116 | <10 | .8 | <2 | 62 | 45 | 8 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 117 | <10 | .8 | <2 | 60 | 45 | 13 | 15 | <2 | 13 | <8 | <4 | 22,000 |
| 118 | <10 | 1.1 | <2 | 91 | 53 | 22 | 16 | <2 | 14 | <8 | <4 | 26,000 |
| 119 | <10 | .5 | <2 | 66 | 39 | 8 | 11 | <2 | 12 | <8 | <4 | 19,000 |
| 120 | <10 | .5 | <2 | 66 | 42 | 10 | 12 | <2 | 10 | <8 | <4 | 23,000 |
| 121 | <10 | .8 | <2 | 88 | 47 | 13 | 13 | <2 | 13 | <8 | <4 | 27,000 |
| 122 | <10 | .9 | <2 | 96 | 51 | 23 | 16 | <2 | 13 | <8 | <4 | 27,000 |
| 123 | <10 | .5 | <2 | 75 | 56 | 10 | 18 | <2 | 15 | <8 | <4 | 27,000 |
| 124 | <10 | .5 | <2 | 69 | 50 | 15 | 25 | <2 | 13 | <8 | <4 | 32,000 |
| 125 | <10 | .8 | <2 | 73 | 64 | 15 | 18 | <2 | 15 | <8 | <4 | 28,000 |
| 126 | <10 | .5 | <2 | 86 | 70 | 23 | 24 | <2 | 15 | <8 | <4 | 36,000 |
| 127 | <10 | .8 | <2 | 72 | 67 | 15 | 21 | <2 | 14 | <8 | <4 | 29,000 |
| 128 | <10 | < .4 | <2 | 73 | 60 | 17 | 16 | <2 | 14 | <8 | <4 | 29,000 |
| 129 | <10 | .4 | <2 | 68 | 48 | 10 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 130 | <10 | .5 | <2 | 75 | 56 | 19 | 16 | <2 | 14 | <8 | <4 | 29,000 |
| 131 | <10 | < .4 | <2 | 65 | 58 | 10 | 16 | <2 | 13 | <8 | <4 | 24,000 |
| 132 | <10 | < .4 | <2 | 81 | 53 | 18 | 16 | <2 | 13 | <8 | <4 | 32,000 |
| 133 | <10 | < .4 | <2 | 80 | 40 | 14 | 14 | <2 | 10 | <8 | <4 | 20,000 |
| 134 | <10 | .7 | <2 | 83 | 46 | 18 | 20 | <2 | 12 | <8 | <4 | 28,000 |
| 135 | <10 | < .4 | <2 | 71 | 70 | 14 | 20 | <2 | 17 | <8 | <4 | 38,000 |
| 136 | <10 | .6 | <2 | 83 | 48 | 21 | 16 | <2 | 12 | <8 | <4 | 25,000 |
| 137 | <10 | .4 | <2 | 81 | 50 | 13 | 19 | <2 | 12 | <8 | <4 | 24,000 |
| 138 | <10 | .6 | <2 | 90 | 48 | 17 | 17 | <2 | 13 | <8 | <4 | 24,000 |
| 139 | <10 | .7 | <2 | 97 | 49 | 14 | 16 | <2 | 14 | <8 | <4 | 24,000 |
| 140 | <10 | < .4 | <2 | 83 | 56 | 16 | 16 | <2 | 14 | <8 | <4 | 30,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | <10 | 0.5 | <2 | 70 | 34 | 8 | 11 | <2 | 10 | <8 | <4 | 15,000 |
| 142 | <10 | .6 | <2 | 63 | 52 | 11 | 17 | <2 | 12 | <8 | <4 | 23,000 |
| 143 | <10 | < .4 | <2 | 84 | 51 | 16 | 16 | <2 | 12 | <8 | <4 | 23,000 |
| 144 | <10 | < .4 | <2 | 49 | 34 | 9 | 11 | <2 | 9 | <8 | <4 | 16,000 |
| 145 | <10 | < .4 | <2 | 74 | 43 | 9 | 13 | <2 | 10 | <8 | <4 | 18,000 |
| 146 | <10 | .4 | <2 | 40 | 39 | 8 | 11 | <2 | 9 | <8 | <4 | 17,000 |
| 147 | <10 | < .4 | <2 | 77 | 43 | 15 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 148 | <10 | .4 | <2 | 95 | 53 | 22 | 14 | <2 | 12 | <8 | <4 | 24,000 |
| 149 | <10 | .6 | <2 | 86 | 48 | 16 | 14 | <2 | 13 | <8 | <4 | 27,000 |
| 150 | <10 | 1.7 | <2 | 80 | 42 | 20 | 15 | <2 | 11 | <8 | <4 | 20,000 |
| 151 | <10 | .7 | <2 | 54 | 48 | 8 | 17 | <2 | 11 | <8 | <4 | 18,000 |
| 152 | <10 | 1.8 | <2 | 110 | 51 | 36 | 19 | <2 | 14 | <8 | <4 | 28,000 |
| 153 | <10 | .7 | <2 | 69 | 55 | 12 | 19 | <2 | 12 | <8 | <4 | 28,000 |
| 154 | <10 | .5 | <2 | 73 | 64 | 14 | 18 | <2 | 16 | <8 | <4 | 32,000 |
| 155 | <10 | .5 | <2 | 110 | 62 | 28 | 20 | <2 | 15 | <8 | <4 | 38,000 |
| 156 | <10 | .5 | <2 | 140 | 60 | 51 | 22 | <2 | 14 | <8 | <4 | 39,000 |
| 157 | <10 | .7 | <2 | 58 | 37 | 16 | 13 | <2 | 10 | <8 | <4 | 18,000 |
| 158 | <10 | .5 | <2 | 110 | 57 | 31 | 17 | <2 | 13 | <8 | <4 | 31,000 |
| 159 | <10 | .5 | <2 | 67 | 47 | 13 | 17 | <2 | 12 | <8 | <4 | 22,000 |
| 160 | <10 | < .4 | <2 | 120 | 49 | 35 | 18 | <2 | 12 | <8 | <4 | 33,000 |
| 161 | <10 | .5 | <2 | 56 | 37 | 10 | 13 | <2 | 9 | <8 | <4 | 16,000 |
| 162 | <10 | .4 | <2 | 70 | 59 | 10 | 22 | <2 | 13 | <8 | <4 | 27,000 |
| 163 | <10 | .6 | <2 | 74 | 62 | 11 | 21 | <2 | 15 | <8 | <4 | 33,000 |
| 164 | <10 | .8 | <2 | 82 | 50 | 14 | 16 | <2 | 12 | <8 | <4 | 24,000 |
| 165 | <10 | .6 | <2 | 69 | 39 | 9 | 11 | <2 | 9 | <8 | <4 | 17,000 |
| 166 | <10 | .6 | <2 | 85 | 59 | 15 | 21 | <2 | 13 | <8 | <4 | 26,000 |
| 167 | <10 | < .4 | <2 | 68 | 64 | 14 | 21 | <2 | 13 | <8 | <4 | 27,000 |
| 168 | <10 | .5 | <2 | 84 | 58 | 17 | 19 | <2 | 14 | <8 | <4 | 27,000 |
| 169 | <10 | .4 | <2 | 72 | 52 | 16 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 170 | <10 | < .4 | <2 | 100 | 55 | 40 | 19 | <2 | 15 | <8 | <4 | 27,000 |
| 171 | <10 | < .4 | <2 | 83 | 52 | 21 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 172 | <10 | .5 | <2 | 66 | 40 | 10 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 173 | <10 | .8 | <2 | 91 | 45 | 24 | 17 | <2 | 12 | <8 | <4 | 22,000 |
| 174 | <10 | .9 | <2 | 67 | 45 | 10 | 12 | <2 | 12 | <8 | <4 | 20,000 |
| 175 | <10 | < .4 | <2 | 74 | 48 | 12 | 15 | <2 | 12 | <8 | <4 | 21,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 176 | <10 | 0.6 | <2 | 67 | 41 | 12 | 15 | <2 | 12 | <8 | <4 | 20,000 |
| 177 | <10 | .8 | <2 | 69 | 44 | 14 | 16 | <2 | 12 | <8 | <4 | 26,000 |
| 178 | <10 | .4 | <2 | 92 | 53 | 21 | 23 | <2 | 14 | <8 | <4 | 30,000 |
| 179 | <10 | .5 | <2 | 56 | 52 | 12 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 180 | <10 | < .4 | <2 | 77 | 47 | 14 | 15 | <2 | 12 | <8 | <4 | 23,000 |
| 181 | <10 | < .4 | <2 | 73 | 49 | 16 | 15 | <2 | 12 | <8 | <4 | 24,000 |
| 182 | <10 | .7 | <2 | 100 | 62 | 30 | 22 | <2 | 15 | <8 | <4 | 34,000 |
| 183 | <10 | .6 | <2 | 98 | 59 | 27 | 17 | <2 | 13 | <8 | <4 | 25,000 |
| 184 | <10 | .9 | <2 | 85 | 47 | 21 | 12 | <2 | 11 | <8 | <4 | 21,000 |
| 185 | <10 | < .4 | <2 | 64 | 37 | 17 | 13 | <2 | 10 | <8 | <4 | 18,000 |
| 186 | <10 | < .4 | <2 | 74 | 60 | 11 | 17 | <2 | 13 | <8 | <4 | 26,000 |
| 187 | <10 | .5 | <2 | 71 | 49 | 12 | 15 | <2 | 13 | <8 | <4 | 24,000 |
| 188 | <10 | .5 | <2 | 72 | 57 | 12 | 18 | <2 | 12 | <8 | <4 | 24,000 |
| 189 | <10 | < .4 | <2 | 67 | 45 | 15 | 17 | <2 | 11 | <8 | <4 | 22,000 |
| 190 | <10 | .5 | <2 | 82 | 46 | 18 | 15 | <2 | 12 | <8 | <4 | 23,000 |
| 191 | <10 | .8 | <2 | 71 | 48 | 12 | 14 | <2 | 12 | <8 | <4 | 21,000 |
| 192 | <10 | < .4 | <2 | 68 | 40 | 13 | 15 | <2 | 11 | <8 | <4 | 19,000 |
| 193 | <10 | .5 | <2 | 99 | 45 | 29 | 14 | <2 | 11 | <8 | <4 | 22,000 |
| 194 | <10 | .6 | <2 | 75 | 61 | 12 | 21 | <2 | 14 | <8 | <4 | 27,000 |
| 195 | <10 | < .4 | <2 | 130 | 65 | 34 | 23 | <2 | 16 | <8 | <4 | 39,000 |
| 196 | <10 | .8 | <2 | 86 | 47 | 14 | 19 | <2 | 12 | <8 | <4 | 22,000 |
| 197 | <10 | .6 | <2 | 92 | 51 | 28 | 18 | <2 | 13 | <8 | <4 | 24,000 |
| 198 | <10 | .5 | <2 | 68 | 47 | 10 | 16 | <2 | 13 | <8 | <4 | 22,000 |
| 199 | <10 | 1.7 | <2 | 64 | 51 | 11 | 13 | <2 | 12 | <8 | <4 | 22,000 |
| 200 | <10 | .9 | <2 | 62 | 39 | 6 | 13 | <2 | 11 | <8 | <4 | 18,000 |
| 201 | <10 | < .4 | <2 | 80 | 51 | 15 | 16 | <2 | 14 | <8 | <4 | 24,000 |
| 202 | <10 | .5 | <2 | 70 | 44 | 12 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 203 | <10 | < .4 | <2 | 59 | 43 | 10 | 14 | <2 | 11 | <8 | <4 | 20,000 |
| 204 | <10 | < .4 | <2 | 68 | 46 | 9 | 12 | <2 | 11 | <8 | <4 | 20,000 |
| 205 | <10 | .5 | <2 | 58 | 46 | 9 | 15 | <2 | 12 | <8 | <4 | 20,000 |
| 206 | <10 | .8 | <2 | 81 | 47 | 14 | 13 | <2 | 13 | <8 | <4 | 22,000 |
| 207 | <10 | 1.0 | <2 | 83 | 47 | 13 | 15 | <2 | 12 | <8 | <4 | 23,000 |
| 208 | <10 | .6 | <2 | 78 | 45 | 23 | 16 | <2 | 13 | <8 | <4 | 21,000 |
| 209 | <10 | .6 | <2 | 72 | 48 | 13 | 15 | <2 | 11 | <8 | <4 | 23,000 |
| 210 | <10 | 1.8 | <2 | 100 | 55 | 26 | 17 | <2 | 13 | <8 | <4 | 26,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 211 | <10 | 0.5 | <2 | 62 | 54 | 9 | 20 | <2 | 11 | <8 | <4 | 23,000 |
| 212 | <10 | < .4 | <2 | 78 | 48 | 18 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 213 | <10 | .6 | <2 | 76 | 54 | 17 | 18 | <2 | 14 | <8 | <4 | 27,000 |
| 214 | <10 | < .4 | <2 | 69 | 48 | 10 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 215 | <10 | .7 | <2 | 80 | 51 | 14 | 16 | <2 | 12 | <8 | <4 | 24,000 |
| 216 | <10 | .5 | <2 | 70 | 44 | 11 | 16 | <2 | 11 | <8 | <4 | 21,000 |
| 217 | <10 | .6 | <2 | 72 | 49 | 11 | 17 | <2 | 12 | <8 | <4 | 22,000 |
| 218 | <10 | .8 | <2 | 75 | 42 | 17 | 14 | <2 | 13 | <8 | <4 | 22,000 |
| 219 | <10 | .9 | <2 | 66 | 43 | 11 | 16 | <2 | 11 | <8 | <4 | 21,000 |
| 220 | <10 | .5 | <2 | 78 | 41 | 12 | 18 | <2 | 12 | <8 | <4 | 20,000 |
| 221 | <10 | < .4 | <2 | 59 | 35 | 8 | 13 | <2 | 10 | <8 | <4 | 15,000 |
| 222 | <10 | .5 | <2 | 76 | 43 | 20 | 14 | <2 | 12 | <8 | <4 | 20,000 |
| 223 | <10 | < .4 | <2 | 69 | 38 | 10 | 13 | <2 | 11 | <8 | <4 | 17,000 |
| 224 | <10 | .7 | <2 | 81 | 45 | 15 | 17 | <2 | 10 | <8 | <4 | 22,000 |
| 225 | <10 | .5 | <2 | 65 | 41 | 10 | 13 | <2 | 12 | <8 | <4 | 21,000 |
| 226 | <10 | .5 | <2 | 94 | 49 | 50 | 17 | <2 | 12 | <8 | <4 | 24,000 |
| 227 | <10 | .9 | <2 | 70 | 41 | 15 | 18 | <2 | 12 | <8 | <4 | 19,000 |
| 228 | <10 | < .4 | <2 | 60 | 35 | 7 | 12 | <2 | 12 | <8 | <4 | 16,000 |
| 229 | <10 | .6 | <2 | 73 | 49 | 11 | 15 | <2 | 14 | <8 | <4 | 24,000 |
| 230 | <10 | .5 | <2 | 69 | 39 | 9 | 15 | <2 | 11 | <8 | <4 | 19,000 |
| 231 | <10 | .5 | <2 | 79 | 38 | 10 | 15 | <2 | 10 | <8 | <4 | 22,000 |
| 232 | <10 | .5 | <2 | 67 | 42 | 13 | 10 | <2 | 10 | <8 | <4 | 20,000 |
| 233 | <10 | < .4 | <2 | 67 | 43 | 11 | 11 | <2 | 11 | <8 | <4 | 26,000 |
| 234 | <10 | .7 | <2 | 59 | 41 | 6 | 12 | <2 | 11 | <8 | <4 | 18,000 |
| 235 | <10 | .6 | <2 | 85 | 38 | 17 | 12 | <2 | 11 | <8 | <4 | 18,000 |
| 236 | <10 | < .4 | <2 | 57 | 41 | 10 | 12 | <2 | 11 | <8 | <4 | 19,000 |
| 237 | <10 | < .4 | <2 | 71 | 38 | 14 | 13 | <2 | 10 | <8 | <4 | 18,000 |
| 238 | <10 | < .4 | <2 | 85 | 54 | 13 | 19 | <2 | 14 | <8 | <4 | 25,000 |
| 239 | <10 | < .4 | <2 | 130 | 45 | 50 | 16 | <2 | 11 | <8 | <4 | 24,000 |
| 240 | <10 | < .4 | <2 | 80 | 62 | 15 | 20 | <2 | 13 | <8 | <4 | 31,000 |
| 241 | <10 | 1.1 | <2 | 83 | 50 | 22 | 17 | <2 | 13 | <8 | <4 | 24,000 |
| 242 | <10 | 1.5 | <2 | 77 | 57 | 13 | 18 | <2 | 13 | <8 | <4 | 23,000 |
| 243 | <10 | .6 | <2 | 110 | 44 | 33 | 17 | <2 | 12 | <8 | <4 | 23,000 |
| 244 | <10 | < .4 | <2 | 66 | 41 | 8 | 14 | <2 | 12 | <8 | <4 | 19,000 |
| 245 | <10 | .7 | <2 | 67 | 38 | 15 | 14 | <2 | 11 | <8 | <4 | 19,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 246 | <10 | 1.2 | <2 | 70 | 39 | 18 | 14 | <2 | 11 | <8 | <4 | 21,000 |
| 247 | <10 | .7 | <2 | 130 | 45 | 46 | 17 | <2 | 13 | <8 | <4 | 25,000 |
| 248 | <10 | .6 | <2 | 62 | 35 | 10 | 11 | <2 | 10 | <8 | <4 | 16,000 |
| 249 | <10 | .6 | <2 | 69 | 43 | 11 | 16 | <2 | 12 | <8 | <4 | 22,000 |
| 250 | <10 | .8 | <2 | 69 | 47 | 11 | 18 | <2 | 14 | <8 | <4 | 23,000 |
| 251 | <10 | 1.4 | <2 | 52 | 39 | 8 | 14 | <2 | 12 | <8 | <4 | 19,000 |
| 252 | <10 | .6 | <2 | 79 | 46 | 17 | 16 | <2 | 14 | <8 | <4 | 23,000 |
| 253 | <10 | .7 | <2 | 86 | 47 | 11 | 16 | <2 | 12 | <8 | <4 | 23,000 |
| 254 | <10 | < .4 | <2 | 88 | 55 | 16 | 16 | <2 | 14 | <8 | <4 | 26,000 |
| 255 | <10 | < .4 | <2 | 62 | 36 | 6 | 12 | <2 | 11 | <8 | <4 | 17,000 |
| 256 | <10 | 1.1 | <2 | 66 | 43 | 11 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 257 | <10 | .6 | <2 | 77 | 47 | 9 | 14 | <2 | 12 | <8 | <4 | 21,000 |
| 258 | <10 | .6 | <2 | 73 | 43 | 10 | 15 | <2 | 10 | <8 | <4 | 18,000 |
| 259 | <10 | .6 | <2 | 65 | 40 | 9 | 14 | <2 | 10 | <8 | <4 | 20,000 |
| 260 | <10 | 1.1 | <2 | 76 | 42 | 14 | 12 | <2 | 12 | <8 | <4 | 25,000 |
| 261 | <10 | .8 | <2 | 70 | 41 | 11 | 14 | <2 | 12 | <8 | <4 | 20,000 |
| 262 | <10 | .7 | <2 | 71 | 46 | 11 | 15 | <2 | 13 | <8 | <4 | 23,000 |
| 263 | <10 | .5 | <2 | 59 | 35 | 7 | 11 | <2 | 9 | <8 | <4 | 15,000 |
| 264 | <10 | .6 | <2 | 57 | 38 | 7 | 13 | <2 | 11 | <8 | <4 | 16,000 |
| 265 | <10 | .6 | <2 | 61 | 40 | 12 | 12 | <2 | 10 | <8 | <4 | 20,000 |
| 266 | <10 | .5 | <2 | 78 | 48 | 18 | 16 | <2 | 12 | <8 | <4 | 21,000 |
| 267 | <10 | .9 | <2 | 69 | 46 | 12 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 268 | <10 | .5 | <2 | 74 | 45 | 26 | 15 | <2 | 13 | <8 | <4 | 22,000 |
| 269 | <10 | .6 | <2 | 82 | 56 | 11 | 18 | <2 | 12 | <8 | <4 | 25,000 |
| 270 | <10 | .5 | <2 | 67 | 50 | 9 | 17 | <2 | 12 | <8 | <4 | 20,000 |
| 271 | <10 | < .4 | <2 | 75 | 52 | 17 | 14 | <2 | 13 | <8 | <4 | 23,000 |
| 272 | <10 | < .4 | <2 | 96 | 37 | 16 | 11 | <2 | 11 | <8 | <4 | 18,000 |
| 273 | <10 | .7 | <2 | 71 | 47 | 8 | 17 | <2 | 14 | <8 | <4 | 21,000 |
| 274 | <10 | < .4 | <2 | 76 | 42 | 14 | 18 | <2 | 12 | <8 | <4 | 21,000 |
| 275 | <10 | .6 | <2 | 68 | 46 | 9 | 15 | <2 | 13 | <8 | <4 | 22,000 |
| 276 | <10 | .6 | <2 | 76 | 42 | 10 | 12 | <2 | 13 | <8 | <4 | 20,000 |
| 277 | <10 | .6 | <2 | 62 | 39 | 8 | 13 | <2 | 11 | <8 | <4 | 18,000 |
| 278 | <10 | .8 | <2 | 72 | 51 | 9 | 19 | <2 | 14 | <8 | <4 | 25,000 |
| 279 | <10 | .7 | <2 | 65 | 47 | 9 | 16 | <2 | 15 | <8 | <4 | 23,000 |
| 280 | <10 | .9 | <2 | 60 | 45 | 12 | 17 | <2 | 12 | <8 | <4 | 24,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | <10 | 0.6 | <2 | 71 | 46 | 9 | 14 | <2 | 15 | <8 | <4 | 21,000 |
| 282 | <10 | .7 | <2 | 66 | 43 | 8 | 14 | <2 | 13 | <8 | <4 | 21,000 |
| 283 | <10 | .6 | <2 | 81 | 66 | 21 | 19 | <2 | 15 | <8 | <4 | 36,000 |
| 284 | <10 | .6 | <2 | 61 | 45 | 12 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 285 | <10 | .6 | <2 | 73 | 44 | 10 | 13 | <2 | 13 | <8 | <4 | 21,000 |
| 286 | <10 | .7 | <2 | 72 | 44 | 8 | 14 | <2 | 13 | <8 | <4 | 21,000 |
| 287 | <10 | 1.1 | <2 | 68 | 49 | 10 | 16 | <2 | 15 | <8 | <4 | 25,000 |
| 288 | <10 | .4 a | <2 | 63 | 40 | 9 | 13 | <2 | 13 | <8 | <4 | 20,000 |
| 289 | <10 | .6 | <2 | 68 | 41 | 9 | 14 | <2 | 12 | <8 | <4 | 21,000 |
| 290 | <10 | .4 a | <2 | 59 | 41 | 7 | 14 | <2 | 12 | <8 | <4 | 18,000 |
| 291 | 10 | .5 | 4 | 51 | 36 | 9 | 1,200 | <2 | 15 | <8 | <4 | 33,000 |
| 292 | <10 | 1.1 | <2 | 64 | 50 | 8 | 17 | <2 | 14 | <8 | <4 | 23,000 |
| 293 | <10 | .5 | <2 | 75 | 46 | 11 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 294 | <10 | .5 | <2 | 66 | 50 | 10 | 16 | <2 | 12 | <8 | <4 | 23,000 |
| 295 | <10 | .6 | <2 | 68 | 47 | 14 | 16 | <2 | 13 | <8 | <4 | 23,000 |
| 296 | <10 | .6 | <2 | 73 | 40 | 11 | 14 | <2 | 13 | <8 | <4 | 19,000 |
| 297 | <10 | .9 | <2 | 57 | 35 | 8 | 11 | <2 | 10 | <8 | <4 | 16,000 |
| 298 | <10 | .9 | <2 | 83 | 44 | 23 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 299 | <10 | .7 | <2 | 66 | 39 | 7 | 11 | <2 | 11 | <8 | <4 | 18,000 |
| 300 | <10 | 2.1 | <2 | 63 | 51 | 12 | 23 | <2 | 13 | <8 | <4 | 27,000 |
| 301 | <10 | .8 | <2 | 63 | 48 | 9 | 18 | <2 | 13 | <8 | <4 | 23,000 |
| 302 | <10 | < .4 | <2 | 61 | 40 | 9 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 303 | <10 | .5 | <2 | 80 | 47 | 17 | 17 | <2 | 13 | <8 | <4 | 24,000 |
| 304 | <10 | .5 | <2 | 74 | 47 | 9 | 15 | <2 | 13 | <8 | <4 | 22,000 |
| 305 | <10 | < .4 | <2 | 72 | 45 | 10 | 16 | <2 | 14 | <8 | <4 | 22,000 |
| 306 | <10 | .5 | <2 | 58 | 41 | 7 | 14 | <2 | 12 | <8 | <4 | 18,000 |
| 307 | <10 | .5 | <2 | 70 | 50 | 12 | 16 | <2 | 15 | <8 | <4 | 26,000 |
| 308 | <10 | .7 | <2 | 66 | 40 | 9 | 14 | <2 | 13 | <8 | <4 | 20,000 |
| 309 | <10 | .5 | <2 | 64 | 44 | 9 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 310 | <10 | .6 | <2 | 62 | 43 | 9 | 14 | <2 | 13 | <8 | <4 | 22,000 |
| 311 | <10 | .4 a | <2 | 110 | 34 | 8 | 8 | <2 | 10 | <8 | <4 | 17,000 |
| 312 | <10 | .6 | <2 | 96 | 42 | 12 | 13 | <2 | 13 | <8 | <4 | 22,000 |
| 313 | <10 | < .4 | <2 | 70 | 42 | 9 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 314 | <10 | .5 | <2 | 69 | 43 | 9 | 14 | <2 | 13 | <8 | <4 | 20,000 |
| 315 | <10 | .5 | <2 | 88 | 45 | 20 | 18 | <2 | 11 | <8 | <4 | 28,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 319 | <10 | 0.5 | <2 | 70 | 38 | 9 | 14 | <2 | 14 | <8 | <4 | 19,000 |
| 320 | <10 | .5 | <2 | 65 | 38 | 8 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 321 | <10 | .6 | <2 | 70 | 42 | 9 | 15 | <2 | 13 | <8 | <4 | 20,000 |
| 322 | <10 | .8 | <2 | 68 | 43 | 10 | 14 | <2 | 13 | <8 | <4 | 22,000 |
| 323 | <10 | .9 | <2 | 73 | 40 | 8 | 11 | <2 | 12 | <8 | <4 | 19,000 |
| 324 | <10 | .7 | <2 | 67 | 40 | 8 | 15 | <2 | 13 | <8 | <4 | 19,000 |
| 325 | <10 | 1.2 | <2 | 70 | 49 | 13 | 16 | <2 | 15 | <8 | <4 | 26,000 |
| 326 | <10 | .7 | <2 | 67 | 45 | 8 | 17 | <2 | 14 | <8 | <4 | 22,000 |
| 327 | <10 | .5 | <2 | 69 | 44 | 10 | 14 | <2 | 13 | <8 | <4 | 20,000 |
| 328 | <10 | .7 | <2 | 58 | 41 | 8 | 15 | <2 | 13 | <8 | <4 | 20,000 |
| 329 | <10 | .9 | <2 | 76 | 46 | 22 | 26 | <2 | 13 | <8 | <4 | 23,000 |
| 330 | <10 | .5 | <2 | 58 | 36 | 7 | 12 | <2 | 11 | <8 | <4 | 16,000 |
| 331 | <10 | 1.0 | <2 | 65 | 45 | 9 | 16 | <2 | 13 | <8 | <4 | 23,000 |
| 332 | <10 | .6 | <2 | 80 | 48 | 12 | 15 | <2 | 13 | <8 | <4 | 23,000 |
| 333 | <10 | 1.0 | <2 | 66 | 49 | 11 | 17 | <2 | 14 | <8 | <4 | 25,000 |
| 334 | <10 | .7 | <2 | 63 | 36 | 14 | 12 | <2 | 11 | <8 | <4 | 17,000 |
| 335 | <10 | .7 | <2 | 66 | 42 | 16 | 14 | <2 | 11 | <8 | <4 | 21,000 |
| 336 | <10 | < .4 | <2 | 73 | 45 | 14 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 337 | <10 | .5 | <2 | 64 | 48 | 13 | 16 | <2 | 12 | <8 | <4 | 21,000 |
| 338 | <10 | .7 | <2 | 63 | 44 | 14 | 15 | <2 | 12 | <8 | <4 | 22,000 |
| 339 | <10 | .4 | <2 | 150 | 53 | 48 | 22 | <2 | 17 | <8 | <4 | 32,000 |
| 340 | <10 | .7 | <2 | 57 | 41 | 9 | 15 | <2 | 11 | <8 | <4 | 19,000 |
| 341 | <10 | .6 | <2 | 63 | 44 | 11 | 15 | <2 | 13 | <8 | <4 | 22,000 |
| 342 | <10 | .6 | <2 | 63 | 48 | 10 | 16 | <2 | 14 | <8 | <4 | 23,000 |
| 343 | <10 | .9 | <2 | 66 | 40 | 11 | 15 | <2 | 11 | <8 | <4 | 20,000 |
| 344 | <10 | .9 | <2 | 60 | 41 | 9 | 14 | <2 | 13 | <8 | <4 | 20,000 |
| 345 | <10 | < .4 | <2 | 62 | 34 | 9 | 12 | <2 | 10 | <8 | <4 | 17,000 |
| 346 | <10 | < .4 | <2 | 60 | 40 | 8 | 14 | <2 | 12 | <8 | <4 | 20,000 |
| 347 | <10 | .8 | <2 | 70 | 49 | 10 | 17 | <2 | 15 | <8 | <4 | 25,000 |
| 348 | <10 | 1.3 | <2 | 68 | 47 | 10 | 17 | <2 | 14 | <8 | <4 | 25,000 |
| 349 | <10 | .6 | <2 | 73 | 51 | 12 | 19 | <2 | 15 | <8 | <4 | 28,000 |
| 350 | <10 | .6 | <2 | 60 | 38 | 8 | 14 | <2 | 12 | <8 | <4 | 20,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 354 | <10 | 0.8 | <2 | 69 | 41 | 8 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 355 | <10 | .5 | <2 | 72 | 47 | 11 | 16 | <2 | 15 | <8 | <4 | 26,000 |
| 356 | <10 | .5 | <2 | 74 | 43 | 15 | 14 | <2 | 11 | <8 | <4 | 19,000 |
| 357 | <10 | < .4 | <2 | 53 | 31 | 7 | 11 | <2 | 11 | <8 | <4 | 15,000 |
| 358 | <10 | .6 | <2 | 66 | 43 | 9 | 13 | <2 | 14 | <8 | <4 | 20,000 |
| 359 | <10 | .5 | <2 | 61 | 38 | 8 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 360 | <10 | .8 | <2 | 75 | 43 | 10 | 13 | <2 | 12 | <8 | <4 | 21,000 |
| 361 | <10 | .7 | <2 | 56 | 37 | 8 | 13 | <2 | 12 | <8 | <4 | 17,000 |
| 362 | <10 | < .4 | <2 | 73 | 47 | 12 | 14 | <2 | 13 | <8 | <4 | 22,000 |
| 363 | <10 | .8 | <2 | 61 | 41 | 10 | 16 | <2 | 13 | <8 | <4 | 20,000 |
| 364 | <10 | .6 | <2 | 59 | 36 | 11 | 12 | <2 | 11 | <8 | <4 | 17,000 |
| 365 | <10 | .8 | <2 | 55 | 42 | 7 | 16 | <2 | 12 | <8 | <4 | 20,000 |
| 366 | <10 | .7 | <2 | 72 | 48 | 12 | 15 | <2 | 13 | <8 | <4 | 23,000 |
| 367 | <10 | .5 | <2 | 62 | 44 | 10 | 17 | <2 | 13 | <8 | <4 | 22,000 |
| 368 | <10 | .7 | <2 | 65 | 54 | 11 | 22 | <2 | 15 | <8 | <4 | 25,000 |
| 369 | <10 | .5 | <2 | 67 | 47 | 10 | 16 | <2 | 12 | <8 | <4 | 21,000 |
| 370 | <10 | 1.1 | <2 | 68 | 43 | 10 | 17 | <2 | 14 | <8 | <4 | 26,000 |
| 371 | <10 | .9 | <2 | 71 | 46 | 12 | 14 | <2 | 13 | <8 | <4 | 23,000 |
| 372 | <10 | .6 | <2 | 63 | 47 | 9 | 17 | <2 | 13 | <8 | <4 | 22,000 |
| 373 | <10 | .9 | <2 | 62 | 37 | 6 | 16 | <2 | 11 | <8 | <4 | 17,000 |
| 374 | <10 | 1.1 | <2 | 71 | 46 | 10 | 16 | <2 | 13 | <8 | <4 | 23,000 |
| 375 | <10 | < .4 | <2 | 60 | 36 | 6 | 14 | <2 | 11 | <8 | <4 | 16,000 |
| 376 | <10 | .9 | <2 | 69 | 55 | 10 | 20 | <2 | 15 | <8 | <4 | 26,000 |
| 377 | <10 | .7 | <2 | 68 | 46 | 9 | 15 | <2 | 14 | <8 | <4 | 22,000 |
| 378 | <10 | .7 | <2 | 59 | 38 | 8 | 14 | <2 | 12 | <8 | <4 | 19,000 |
| 379 | <10 | .9 | <2 | 62 | 35 | 7 | 11 | <2 | 12 | <8 | <4 | 15,000 |
| 380 | <10 | .5 | <2 | 67 | 41 | 8 | 13 | <2 | 13 | <8 | <4 | 20,000 |
| 381 | <10 | < .4 | <2 | 67 | 36 | 6 | 12 | <2 | 11 | <8 | <4 | 15,000 |
| 382 | <10 | .6 | <2 | 65 | 43 | 9 | 16 | <2 | 14 | <8 | <4 | 21,000 |
| 383 | <10 | .9 | <2 | 65 | 40 | 9 | 11 | <2 | 13 | <8 | <4 | 20,000 |
| 384 | <10 | .4 | <2 | 76 | 55 | 12 | 20 | <2 | 15 | <8 | <4 | 26,000 |
| 385 | <10 | .7 | <2 | 59 | 41 | 9 | 14 | <2 | 12 | <8 | <4 | 20,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 386 | <10 | 0.9 | <2 | 69 | 44 | 10 | 14 | <2 | 12 | <8 | <4 | 22,000 |
| 387 | <10 | .6 | <2 | 59 | 37 | 7 | 12 | <2 | 11 | <8 | <4 | 17,000 |
| 388 | <10 | .8 | <2 | 57 | 42 | 7 | 16 | <2 | 13 | <8 | <4 | 20,000 |
| 389 | <10 | 1.2 | <2 | 62 | 41 | 9 | 13 | <2 | 13 | <8 | <4 | 20,000 |
| 390 | <10 | < .4 | <2 | 61 | 43 | 9 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 391 | <10 | .6 | <2 | 71 | 40 | 9 | 14 | <2 | 12 | <8 | <4 | 21,000 |
| 392 | <10 | .7 | <2 | 73 | 55 | 11 | 19 | <2 | 15 | <8 | <4 | 26,000 |
| 393 | <10 | < .4 | <2 | 59 | 40 | 7 | 12 | <2 | 12 | <8 | <4 | 17,000 |
| 394 | <10 | .9 | <2 | 66 | 40 | 9 | 13 | <2 | 12 | <8 | <4 | 20,000 |
| 395 | <10 | .6 | <2 | 63 | 43 | 9 | 14 | <2 | 14 | <8 | <4 | 21,000 |
| 396 | <10 | < .4 | <2 | 60 | 38 | 7 | 12 | <2 | 12 | <8 | <4 | 18,000 |
| 397 | <10 | .8 | <2 | 64 | 39 | 9 | 13 | <2 | 12 | <8 | <4 | 19,000 |
| 398 | <10 | .5 | <2 | 70 | 46 | 12 | 13 | <2 | 12 | <8 | <4 | 22,000 |
| 399 | <10 | .6 | <2 | 68 | 59 | 11 | 19 | <2 | 14 | <8 | <4 | 26,000 |
| 400 | <10 | .5 | <2 | 65 | 56 | 10 | 18 | <2 | 14 | <8 | <4 | 25,000 |
| 401 | <10 | .8 | <2 | 64 | 44 | 11 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 402 | <10 | 1.3 | <2 | 77 | 48 | 25 | 17 | <2 | 14 | <8 | <4 | 27,000 |
| 403 | <10 | 1.0 | <2 | 59 | 46 | 10 | 16 | <2 | 13 | <8 | <4 | 24,000 |
| 404 | <10 | .7 | <2 | 61 | 49 | 11 | 20 | <2 | 13 | <8 | <4 | 23,000 |
| 405 | <10 | .6 | <2 | 67 | 45 | 10 | 14 | <2 | 13 | <8 | <4 | 23,000 |
| 406 | <10 | .9 | <2 | 66 | 48 | 11 | 17 | <2 | 14 | <8 | <4 | 24,000 |
| 407 | <10 | .5 | <2 | 62 | 45 | 9 | 16 | <2 | 13 | <8 | <4 | 22,000 |
| 408 | <10 | .8 | <2 | 71 | 44 | 12 | 14 | <2 | 13 | <8 | <4 | 21,000 |
| 409 | <10 | .6 | <2 | 56 | 40 | 8 | 16 | <2 | 13 | <8 | <4 | 19,000 |
| 410 | <10 | < .4 | <2 | 71 | 38 | 9 | 13 | <2 | 12 | <8 | <4 | 17,000 |
| 411 | <10 | < .4 | <2 | 58 | 37 | 7 | 11 | <2 | 12 | <8 | <4 | 16,000 |
| 412 | <10 | .6 | <2 | 56 | 40 | 7 | 14 | <2 | 10 | <8 | <4 | 19,000 |
| 413 | <10 | .6 | <2 | 62 | 43 | 12 | 15 | <2 | 14 | <8 | <4 | 21,000 |
| 414 | <10 | .8 | <2 | 66 | 47 | 10 | 17 | <2 | 14 | <8 | <4 | 23,000 |
| 415 | <10 | .5 | <2 | 79 | 51 | 11 | 15 | <2 | 12 | <8 | <4 | 21,000 |
| 416 | <10 | .7 | <2 | 62 | 43 | 7 | 16 | <2 | 14 | <8 | <4 | 21,000 |
| 417 | <10 | .8 | <2 | 59 | 46 | 11 | 16 | <2 | 13 | <8 | <4 | 23,000 |
| 418 | <10 | 1.7 | <2 | 62 | 40 | 7 | 12 | <2 | 10 | <8 | <4 | 16,000 |
| 419 | <10 | 1.4 | <2 | 59 | 44 | 11 | 16 | <2 | 12 | <8 | <4 | 22,000 |
| 420 | <10 | 1.1 | <2 | 61 | 42 | 8 | 15 | <2 | 13 | <8 | <4 | 20,000 |
| 421 | <10 | < .4 | <2 | 54 | 42 | 9 | 13 | <2 | 13 | <8 | <4 | 21,000 |
| 422 | <10 | 1.1 | <2 | 56 | 39 | 8 | 12 | <2 | 11 | <8 | <4 | 19,000 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, tota as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 20 | 44 | 590 | <0.02 | <2 | 31 | 28 | 4 | 9 | <2 | 170 |
| 2 | 31 | 17 | 18 | 340 | < .02 | <2 | 26 | 11 | 8 | 5 | <2 | 170 |
| 3 | 35 | 20 | 25 | 370 | .04 | <2 | 34 | 17 | <4 | 7 | <2 | 190 |
| 4 | 32 | 17 | 23 | 570 | .04 | <2 | 28 | 18 | <4 | 7 | <2 | 170 |
| 5 | 34 | 21 | 22 | 470 | < .02 | <2 | 30 | 16 | 6 | 7 | <2 | 190 |
| 6 | 29 | 19 | 19 | 270 | < .02 | <2 | 27 | 12 | 6 | 6 | <2 | 170 |
| 7 | 34 | 18 | 24 | 330 | .02 | <2 | 32 | 17 | 4 | 8 | <2 | 190 |
| 8 | 37 | 14 | 36 | 840 | < .02 | <2 | 37 | 29 | <4 | 11 | <2 | 130 |
| 9 | 33 | 17 | 34 | 930 | < .02 | <2 | 29 | 23 | 4 | 6 | <2 | 200 |
| 10 | 27 | 12 | 16 | 230 | < .02 | <2 | 24 | 10 | 6 | 5 | <2 | 110 |
| 11 | 43 | 54 | 27 | 4,600 | .02 | <2 | 39 | 43 | 4 | 7 | <2 | 130 |
| 12 | 31 | 51 | 17 | 290 | < .02 | <2 | 28 | 12 | 6 | 5 | <2 | 180 |
| 13 | 34 | 16 | 21 | 230 | .02 | <2 | 33 | 14 | 5 | 7 | <2 | 190 |
| 14 | 46 | 21 | 26 | 630 | < .02 | <2 | 41 | 18 | <4 | 7 | <2 | 150 |
| 15 | 40 | 26 | 37 | 900 | < .02 | <2 | 34 | 29 | 5 | 8 | <2 | 140 |
| 16 | 38 | 19 | 32 | 470 | .04 | <2 | 35 | 20 | 9 | 8 | <2 | 100 |
| 17 | 34 | 16 | 21 | 570 | < .02 | <2 | 28 | 18 | 6 | 6 | <2 | 100 |
| 18 | 39 | 19 | 26 | 490 | < .02 | <2 | 35 | 18 | 5 | 7 | <2 | 130 |
| 19 | 35 | 20 | 23 | 380 | .04 | <2 | 31 | 15 | <4 | 7 | <2 | 140 |
| 20 | 34 | 18 | 26 | 470 | < .02 | <2 | 31 | 17 | 6 | 6 | <2 | 180 |
| 21 | 36 | 26 | 26 | 1,100 | .02 | <2 | 34 | 25 | 7 | 7 | <2 | 120 |
| 22 | 34 | 18 | 22 | 470 | .04 | <2 | 31 | 17 | <4 | 7 | <2 | 170 |
| 23 | 32 | 24 | 22 | 640 | < .02 | <2 | 29 | 15 | 9 | 7 | <2 | 140 |
| 24 | 40 | 27 | 23 | 670 | .04 | <2 | 35 | 19 | 6 | 7 | <2 | 160 |
| 25 | 37 | 22 | 23 | 560 | < .02 | <2 | 34 | 17 | 8 | 7 | <2 | 170 |
| 26 | 34 | 24 | 25 | 1,100 | < .02 | <2 | 30 | 22 | 8 | 7 | <2 | 150 |
| 27 | 37 | 21 | 25 | 880 | < .02 | <2 | 34 | 21 | <4 | 7 | <2 | 160 |
| 28 | 35 | 21 | 22 | 250 | .02 | <2 | 33 | 15 | 9 | 7 | <2 | 160 |
| 29 | 35 | 19 | 22 | 400 | < .02 | <2 | 29 | 15 | 8 | 7 | <2 | 180 |
| 30 | 45 | 20 | 21 | 570 | < .02 | <2 | 42 | 15 | <4 | 7 | <2 | 200 |
| 31 | 39 | 24 | 26 | 790 | < .02 | <2 | 36 | 23 | <4 | 8 | <2 | 170 |
| 32 | 34 | 16 | 22 | 460 | < .02 | <2 | 27 | 17 | 7 | 7 | <2 | 190 |
| 33 | 36 | 20 | 23 | 420 | .02 | <2 | 32 | 20 | <4 | 7 | <2 | 190 |
| 34 | 35 | 21 | 21 | 560 | .02 | <2 | 32 | 17 | 5 | 7 | <2 | 180 |
| 35 | 38 | 28 | 26 | 440 | .04 | <2 | 34 | 19 | 9 | 9 | <2 | 150 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 37 | 26 | 25 | 570 | <0.02 | <2 | 33 | 19 | <4 | 7 | <2 | 170 |
| 37 | 34 | 18 | 35 | 540 | < .02 | <2 | 29 | 21 | <4 | 7 | <2 | 220 |
| 38 | 35 | 21 | 14 | 520 | < .02 | <2 | 30 | 13 | 5 | 4 | <2 | 130 |
| 39 | 36 | 17 | 22 | 530 | < .02 | <2 | 32 | 14 | <4 | 6 | <2 | 110 |
| 40 | 39 | 16 | 16 | 250 | < .02 | <2 | 32 | 10 | 7 | 5 | <2 | 170 |
| 41 | 30 | 20 | 27 | 480 | < .02 | <2 | 28 | 19 | 9 | 7 | <2 | 110 |
| 42 | 46 | 18 | 20 | 520 | < .02 | <2 | 39 | 14 | <4 | 6 | <2 | 180 |
| 43 | 33 | 21 | 29 | 730 | .02 | <2 | 30 | 19 | <4 | 7 | <2 | 170 |
| 44 | 41 | 18 | 24 | 880 | < .02 | <2 | 36 | 22 | <4 | 7 | <2 | 120 |
| 45 | 38 | 21 | 24 | 420 | < .02 | <2 | 38 | 20 | 7 | 7 | <2 | 120 |
| 46 | 38 | 31 | 28 | 2,700 | < .02 | 2 | 33 | 33 | <4 | 7 | <2 | 180 |
| 47 | 30 | 17 | 22 | 330 | < .02 | <2 | 27 | 15 | 4 | 6 | <2 | 150 |
| 48 | 35 | 24 | 24 | 1,100 | .02 | <2 | 30 | 23 | 6 | 7 | <2 | 120 |
| 49 | 37 | 26 | 26 | 630 | .02 | <2 | 33 | 21 | 6 | 8 | <2 | 140 |
| 50 | 31 | 17 | 20 | 370 | < .02 | <2 | 25 | 15 | 6 | 6 | <2 | 150 |
| 51 | 37 | 19 | 23 | 370 | < .02 | <2 | 32 | 16 | 4 | 7 | <2 | 170 |
| 52 | 38 | 18 | 20 | 440 | .04 | <2 | 32 | 19 | 7 | 6 | <2 | 160 |
| 53 | 36 | 22 | 26 | 660 | < .02 | <2 | 33 | 20 | <4 | 7 | <2 | 150 |
| 54 | 39 | 30 | 31 | 1,900 | .04 | <2 | 35 | 32 | <4 | 8 | <2 | 150 |
| 55 | 39 | 21 | 24 | 340 | .04 | <2 | 33 | 18 | 9 | 9 | <2 | 170 |
| 56 | 34 | 22 | 22 | 390 | < .02 | <2 | 30 | 15 | 7 | 7 | <2 | 190 |
| 57 | 39 | 25 | 27 | 300 | .04 | <2 | 33 | 18 | 8 | 8 | <2 | 160 |
| 58 | 38 | 27 | 27 | 580 | .02 | <2 | 33 | 21 | 7 | 8 | <2 | 150 |
| 59 | 36 | 21 | 27 | 380 | < .02 | <2 | 31 | 17 | 6 | 8 | <2 | 200 |
| 60 | 31 | 19 | 23 | 290 | .02 | <2 | 27 | 17 | 8 | 7 | <2 | 170 |
| 61 | 36 | 19 | 23 | 450 | < .02 | <2 | 33 | 17 | <4 | 7 | <2 | 190 |
| 62 | 34 | 22 | 24 | 390 | < .02 | <2 | 30 | 18 | 5 | 7 | <2 | 160 |
| 63 | 35 | 19 | 22 | 460 | < .02 | <2 | 32 | 16 | 8 | 7 | <2 | 190 |
| 64 | 35 | 21 | 29 | 760 | < .02 | <2 | 30 | 20 | <4 | 6 | <2 | 130 |
| 65 | 32 | 18 | 28 | 340 | < .02 | <2 | 29 | 16 | 7 | 6 | <2 | 120 |
| 66 | 39 | 22 | 29 | 620 | < .02 | <2 | 33 | 20 | 7 | 7 | <2 | 110 |
| 67 | 35 | 36 | 21 | 1,400 | .02 | <2 | 32 | 23 | 6 | 7 | <2 | 140 |
| 68 | 32 | 21 | 23 | 960 | .04 | <2 | 31 | 18 | 7 | 6 | <2 | 420 |
| 69 | 30 | 18 | 24 | 370 | < .02 | <2 | 26 | 14 | <4 | 7 | <2 | 130 |
| 70 | 30 | 15 | 30 | 730 | .04 | <2 | 26 | 25 | 5 | 8 | <2 | 390 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | 39 | 38 | 29 | 2,900 | 0.02 | <2 | 37 | 40 | 7 | 8 | <2 | 120 |
| 72 | 41 | 28 | 33 | 1,500 | < .02 | <2 | 36 | 35 | 9 | 10 | <2 | 130 |
| 73 | 36 | 22 | 32 | 1,000 | .04 | <2 | 33 | 25 | 4 | 9 | <2 | 150 |
| 74 | 39 | 20 | 27 | 570 | < .02 | <2 | 35 | 18 | 14 | 7 | <2 | 130 |
| 75 | 43 | 31 | 59 | 2,300 | .06 | <2 | 42 | 44 | 7 | 13 | <2 | 140 |
| 76 | 38 | 29 | 41 | 1,200 | < .02 | <2 | 36 | 30 | 7 | 8 | <2 | 150 |
| 77 | 28 | 17 | 39 | 600 | .02 | <2 | 28 | 24 | 6 | 8 | <2 | 220 |
| 78 | 42 | 19 | 22 | 600 | < .02 | <2 | 38 | 16 | <4 | 7 | <2 | 190 |
| 79 | 34 | 22 | 23 | 520 | .02 | <2 | 26 | 16 | 7 | 6 | <2 | 160 |
| 80 | 31 | 16 | 47 | 580 | < .02 | <2 | 28 | 23 | <4 | 8 | <2 | 190 |
| 81 | 33 | 19 | 27 | 620 | < .02 | <2 | 29 | 18 | 7 | 7 | <2 | 130 |
| 82 | 32 | 18 | 21 | 320 | < .02 | <2 | 29 | 13 | 6 | 6 | <2 | 130 |
| 83 | 40 | 25 | 28 | 890 | .02 | <2 | 33 | 22 | <4 | 7 | <2 | 140 |
| 84 | 38 | 28 | 26 | 290 | < .02 | <2 | 34 | 17 | 4 | 7 | <2 | 140 |
| 85 | 38 | 20 | 28 | 590 | < .02 | <2 | 31 | 19 | 7 | 7 | <2 | 120 |
| 86 | 40 | 24 | 34 | 1,100 | .06 | <2 | 35 | 26 | 5 | 8 | <2 | 180 |
| 87 | 39 | 20 | 34 | 630 | < .02 | <2 | 34 | 23 | 5 | 8 | <2 | 120 |
| 88 | 36 | 21 | 26 | 490 | .04 | <2 | 30 | 19 | 4 | 8 | <2 | 170 |
| 89 | 39 | 29 | 29 | 1,100 | .04 | <2 | 37 | 20 | 4 | 7 | <2 | 140 |
| 90 | 36 | 60 | 29 | 1,300 | .06 | <2 | 32 | 27 | 10 | 8 | <2 | 160 |
| 91 | 43 | 31 | 35 | 1,800 | .04 | <2 | 38 | 34 | 7 | 9 | <2 | 130 |
| 92 | 33 | 28 | 40 | 1,300 | .04 | <2 | 30 | 46 | <4 | 10 | <2 | 220 |
| 93 | 48 | 60 | 33 | 5,400 | .04 | 5 | 42 | 60 | 7 | 9 | <2 | 180 |
| 94 | 55 | 78 | 24 | 8,400 | .02 | 5 | 49 | 82 | 4 | 7 | <2 | 220 |
| 95 | 33 | 19 | 21 | 2,300 | < .02 | <2 | 30 | 14 | 6 | 5 | <2 | 130 |
| 96 | 34 | 29 | 27 | 1,800 | .02 | <2 | 30 | 30 | 6 | 6 | <2 | 410 |
| 97 | 39 | 42 | 23 | 1,400 | < .02 | <2 | 32 | 23 | 6 | 7 | <2 | 210 |
| 98 | 38 | 27 | 39 | 1,300 | .02 | <2 | 37 | 35 | 5 | 10 | <2 | 130 |
| 99 | 38 | 31 | 23 | 4,400 | .04 | <2 | 32 | 30 | 4 | 7 | <2 | 150 |
| 100 | 39 | 26 | 58 | 750 | < .02 | <2 | 37 | 32 | 9 | 13 | <2 | 200 |
| 101 | 36 | 22 | 26 | 600 | .02 | <2 | 33 | 23 | 8 | 8 | <2 | 110 |
| 102 | 36 | 28 | 30 | 1,200 | < .02 | <2 | 33 | 32 | 9 | 9 | <2 | 160 |
| 103 | 40 | 30 | 37 | 1,200 | < .02 | <2 | 34 | 32 | 8 | 9 | <2 | 130 |
| 104 | 48 | 28 | 27 | 2,100 | < .02 | <2 | 47 | 28 | 9 | 8 | <2 | 140 |
| 105 | 37 | 25 | 35 | 750 | < .02 | <2 | 34 | 35 | 8 | 10 | <2 | 140 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 106 | 44 | 22 | 19 | 750 | <0.02 | <2 | 40 | 17 | <4 | 6 | <2 | 120 |
| 107 | 35 | 21 | 28 | 750 | < .02 | <2 | 34 | 18 | <4 | 7 | <2 | 140 |
| 108 | 38 | 25 | 30 | 1,500 | .02 | <2 | 34 | 27 | <4 | 7 | <2 | 410 |
| 109 | 33 | 19 | 42 | 720 | < .02 | <2 | 33 | 26 | 4 | 9 | <2 | 190 |
| 110 | 29 | 15 | 25 | 310 | .02 | <2 | 27 | 14 | 5 | 6 | <2 | 140 |
| 111 | 37 | 22 | 37 | 610 | < .02 | <2 | 32 | 24 | 6 | 8 | <2 | 130 |
| 112 | 38 | 26 | 26 | 480 | < .02 | <2 | 35 | 19 | 4 | 7 | <2 | 140 |
| 113 | 32 | 18 | 22 | 520 | < .02 | <2 | 29 | 16 | <4 | 6 | <2 | 170 |
| 114 | 37 | 20 | 26 | 580 | .02 | <2 | 34 | 20 | 4 | 8 | <2 | 180 |
| 115 | 22 | 14 | 32 | 470 | .02 | <2 | 20 | 16 | <4 | 5 | <2 | 720 |
| 116 | 34 | 19 | 28 | 490 | < .02 | <2 | 30 | 17 | <4 | 8 | <2 | 140 |
| 117 | 32 | 21 | 25 | 670 | < .02 | <2 | 28 | 19 | 8 | 7 | <2 | 140 |
| 118 | 38 | 29 | 30 | 1,400 | .04 | <2 | 34 | 29 | <4 | 8 | <2 | 800 |
| 119 | 33 | 21 | 21 | 480 | .02 | <2 | 30 | 14 | 5 | 6 | <2 | 170 |
| 120 | 35 | 17 | 24 | 620 | .02 | <2 | 31 | 16 | 5 | 7 | <2 | 130 |
| 121 | 42 | 23 | 28 | 1,200 | .04 | <2 | 37 | 19 | <4 | 8 | <2 | 140 |
| 122 | 39 | 29 | 27 | 1,600 | .04 | <2 | 37 | 27 | 6 | 8 | <2 | 150 |
| 123 | 40 | 20 | 31 | 550 | < .02 | <2 | 36 | 22 | 6 | 8 | <2 | 120 |
| 124 | 33 | 37 | 26 | 1,000 | < .02 | <2 | 29 | 25 | 8 | 7 | <2 | 120 |
| 125 | 36 | 20 | 40 | 810 | < .02 | <2 | 32 | 30 | 5 | 10 | <2 | 130 |
| 126 | 41 | 35 | 38 | 1,700 | .02 | <2 | 36 | 39 | 8 | 10 | <2 | 140 |
| 127 | 35 | 26 | 40 | 820 | < .02 | <2 | 34 | 31 | 4 | 10 | <2 | 180 |
| 128 | 34 | 25 | 36 | 1,300 | .02 | <2 | 33 | 27 | <4 | 9 | <2 | 120 |
| 129 | 36 | 20 | 26 | 430 | < .02 | <2 | 34 | 18 | 5 | 7 | <2 | 130 |
| 130 | 36 | 26 | 31 | 1,100 | < .02 | <2 | 34 | 26 | 8 | 9 | <2 | 100 |
| 131 | 35 | 16 | 27 | 520 | < .02 | <2 | 30 | 20 | 7 | 8 | <2 | 120 |
| 132 | 41 | 20 | 27 | 1,100 | < .02 | <2 | 36 | 21 | 5 | 7 | <2 | 120 |
| 133 | 37 | 21 | 22 | 1,100 | .04 | <2 | 32 | 17 | 4 | 6 | <2 | 120 |
| 134 | 40 | 27 | 25 | 1,500 | .02 | <2 | 36 | 22 | 5 | 7 | <2 | 210 |
| 135 | 35 | 23 | 43 | 680 | < .02 | <2 | 36 | 32 | 6 | 11 | <2 | 130 |
| 136 | 40 | 22 | 31 | 1,300 | < .02 | <2 | 34 | 21 | 7 | 8 | <2 | 130 |
| 137 | 40 | 20 | 30 | 800 | < .02 | <2 | 37 | 20 | 4 | 8 | <2 | 150 |
| 138 | 39 | 23 | 27 | 1,200 | < .02 | <2 | 36 | 26 | 6 | 8 | <2 | 210 |
| 139 | 53 | 19 | 25 | 960 | < .02 | <2 | 45 | 23 | 11 | 7 | <2 | 170 |
| 140 | 39 | 21 | 36 | 800 | .18 | <2 | 39 | 25 | 7 | 9 | <2 | 140 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | 39 | 14 | 24 | 300 | <0.02 | <2 | 35 | 14 | 6 | 5 | <2 | 410 |
| 142 | 36 | 15 | 39 | 590 | .02 | <2 | 30 | 23 | <4 | 8 | <2 | 120 |
| 143 | 38 | 24 | 27 | 650 | .02 | <2 | 30 | 22 | 6 | 8 | <2 | 120 |
| 144 | 26 | 16 | 20 | 430 | < .02 | <2 | 24 | 13 | 6 | 6 | <2 | 140 |
| 145 | 38 | 15 | 26 | 450 | .02 | <2 | 32 | 17 | 5 | 7 | <2 | 190 |
| 146 | 23 | 13 | 31 | 420 | < .02 | <2 | 17 | 18 | <4 | 6 | <2 | 140 |
| 147 | 34 | 26 | 26 | 810 | < .02 | <2 | 32 | 21 | 7 | 7 | <2 | 140 |
| 148 | 41 | 29 | 27 | 840 | < .02 | <2 | 38 | 20 | 9 | 7 | <2 | 130 |
| 149 | 41 | 22 | 28 | 1,200 | < .02 | <2 | 35 | 22 | <4 | 8 | <2 | 180 |
| 150 | 33 | 22 | 24 | 1,300 | < .02 | <2 | 32 | 24 | 5 | 6 | <2 | 110 |
| 151 | 31 | 16 | 27 | 570 | < .02 | <2 | 26 | 19 | 7 | 7 | <2 | 150 |
| 152 | 37 | 39 | 29 | 3,000 | .02 | <2 | 33 | 34 | <4 | 8 | <2 | 200 |
| 153 | 32 | 20 | 32 | 630 | .06 | <2 | 30 | 28 | <4 | 8 | <2 | 140 |
| 154 | 36 | 21 | 51 | 770 | < .02 | <2 | 35 | 28 | 4 | 11 | <2 | 210 |
| 155 | 44 | 34 | 45 | 1,700 | .02 | <2 | 41 | 34 | 6 | 9 | <2 | 140 |
| 156 | 41 | 60 | 28 | 4,200 | < .02 | 2 | 38 | 46 | 7 | 9 | <2 | 140 |
| 157 | 30 | 18 | 19 | 650 | .02 | <2 | 26 | 15 | 7 | 5 | <2 | 110 |
| 158 | 44 | 28 | 28 | 1,900 | .02 | <2 | 38 | 34 | 7 | 7 | <2 | 130 |
| 159 | 36 | 20 | 33 | 630 | < .02 | <2 | 32 | 22 | 5 | 7 | <2 | 160 |
| 160 | 41 | 33 | 26 | 3,000 | .02 | <2 | 36 | 33 | <4 | 8 | <2 | 150 |
| 161 | 29 | 16 | 18 | 550 | < .02 | <2 | 25 | 13 | 6 | 5 | <2 | 110 |
| 162 | 37 | 20 | 32 | 480 | < .02 | <2 | 37 | 27 | <4 | 8 | <2 | 120 |
| 163 | 37 | 23 | 39 | 710 | < .02 | <2 | 33 | 26 | 6 | 9 | <2 | 130 |
| 164 | 38 | 27 | 26 | 820 | < .02 | <2 | 38 | 21 | <4 | 8 | <2 | 130 |
| 165 | 33 | 18 | 20 | 530 | < .02 | <2 | 31 | 15 | 5 | 5 | <2 | 130 |
| 166 | 41 | 23 | 31 | 740 | < .02 | <2 | 37 | 25 | 7 | 8 | <2 | 110 |
| 167 | 35 | 18 | 37 | 800 | < .02 | <2 | 34 | 26 | <4 | 9 | <2 | 190 |
| 168 | 40 | 23 | 37 | 1,100 | .04 | <2 | 35 | 28 | 5 | 9 | <2 | 210 |
| 169 | 34 | 23 | 42 | 1,000 | < .02 | <2 | 29 | 26 | <4 | 7 | <2 | 210 |
| 170 | 42 | 32 | 35 | 2,000 | < .02 | <2 | 36 | 34 | 5 | 8 | <2 | 150 |
| 171 | 37 | 22 | 27 | 1,100 | .02 | <2 | 32 | 24 | 7 | 7 | <2 | 140 |
| 172 | 32 | 19 | 22 | 500 | .04 | <2 | 30 | 16 | 7 | 6 | <2 | 140 |
| 173 | 39 | 30 | 27 | 660 | < .02 | <2 | 33 | 26 | 7 | 7 | <2 | 200 |
| 174 | 32 | 20 | 31 | 560 | .02 | <2 | 29 | 18 | <4 | 7 | <2 | 120 |
| 175 | 38 | 21 | 34 | 590 | .02 | <2 | 32 | 21 | 6 | 7 | <2 | 130 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 176 | 37 | 18 | 25 | 500 | <0.02 | <2 | 31 | 17 | 7 | 6 | <2 | 160 |
| 177 | 36 | 18 | 23 | 510 | < .02 | <2 | 30 | 19 | 4 | 7 | <2 | 150 |
| 178 | 39 | 33 | 30 | 1,600 | < .02 | <2 | 36 | 27 | <4 | 8 | <2 | 200 |
| 179 | 31 | 18 | 47 | 600 | < .02 | <2 | 28 | 26 | <4 | 8 | <2 | 140 |
| 180 | 37 | 22 | 24 | 700 | .04 | <2 | 34 | 20 | <4 | 8 | <2 | 130 |
| 181 | 34 | 20 | 28 | 840 | < .02 | <2 | 30 | 21 | 4 | 8 | <2 | 120 |
| 182 | 42 | 35 | 42 | 2,000 | < .02 | <2 | 39 | 38 | 8 | 10 | <2 | 370 |
| 183 | 37 | 31 | 38 | 1,500 | < .02 | <2 | 33 | 35 | <4 | 8 | <2 | 180 |
| 184 | 33 | 21 | 39 | 630 | .02 | <2 | 29 | 24 | 4 | 7 | <2 | 230 |
| 185 | 30 | 20 | 21 | 1,100 | .02 | <2 | 27 | 18 | <4 | 6 | <2 | 140 |
| 186 | 37 | 21 | 31 | 650 | < .02 | <2 | 31 | 27 | 7 | 8 | <2 | 130 |
| 187 | 35 | 19 | 26 | 610 | .02 | <2 | 32 | 19 | 6 | 8 | <2 | 140 |
| 188 | 36 | 20 | 31 | 670 | < .02 | <2 | 35 | 23 | <4 | 8 | <2 | 130 |
| 189 | 35 | 20 | 23 | 1,100 | < .02 | <2 | 31 | 22 | 6 | 6 | <2 | 130 |
| 190 | 36 | 23 | 22 | 790 | .02 | <2 | 33 | 22 | 5 | 7 | <2 | 130 |
| 191 | 39 | 18 | 25 | 760 | < .02 | <2 | 34 | 19 | 8 | 7 | <2 | 130 |
| 192 | 32 | 22 | 22 | 770 | < .02 | <2 | 30 | 21 | 6 | 6 | <2 | 140 |
| 193 | 38 | 29 | 22 | 1,400 | < .02 | <2 | 35 | 25 | 5 | 6 | <2 | 130 |
| 194 | 39 | 20 | 34 | 580 | .04 | 2 | 36 | 28 | 11 | 8 | <2 | 110 |
| 195 | 49 | 41 | 36 | 2,100 | < .02 | 2 | 45 | 38 | 7 | 9 | <2 | 130 |
| 196 | 37 | 23 | 25 | 1,100 | < .02 | <2 | 36 | 23 | 7 | 7 | <2 | 130 |
| 197 | 37 | 28 | 29 | 1,800 | .02 | <2 | 33 | 29 | 6 | 7 | <2 | 240 |
| 198 | 38 | 18 | 26 | 480 | < .02 | <2 | 33 | 18 | 7 | 7 | <2 | 130 |
| 199 | 32 | 15 | 41 | 460 | < .02 | <2 | 29 | 22 | <4 | 8 | <2 | 140 |
| 200 | 31 | 17 | 20 | 320 | < .02 | <2 | 28 | 13 | 7 | 7 | <2 | 150 |
| 201 | 36 | 22 | 32 | 930 | < .02 | <2 | 35 | 25 | <4 | 8 | <2 | 180 |
| 202 | 34 | 20 | 25 | 730 | < .02 | <2 | 33 | 18 | 4 | 7 | <2 | 250 |
| 203 | 34 | 16 | 29 | 450 | .02 | <2 | 29 | 17 | 8 | 6 | <2 | 140 |
| 204 | 37 | 18 | 22 | 490 | < .02 | <2 | 32 | 16 | 6 | 7 | <2 | 150 |
| 205 | 34 | 15 | 36 | 350 | < .02 | <2 | 30 | 20 | <4 | 7 | <2 | 140 |
| 206 | 38 | 22 | 26 | 780 | .02 | <2 | 35 | 22 | 4 | 7 | <2 | 130 |
| 207 | 36 | 22 | 27 | 660 | < .02 | <2 | 31 | 20 | <4 | 7 | <2 | 140 |
| 208 | 37 | 27 | 24 | 1,500 | < .02 | <2 | 32 | 29 | 6 | 7 | <2 | 180 |
| 209 | 35 | 18 | 27 | 920 | .02 | <2 | 32 | 22 | <4 | 7 | <2 | 120 |
| 210 | 39 | 29 | 26 | 2,200 | < .02 | <2 | 37 | 35 | 9 | 7 | <2 | 150 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 211 | 37 | 13 | 32 | 470 | <0.02 | <2 | 31 | 24 | <4 | 7 | <2 | 120 |
| 212 | 39 | 19 | 27 | 1,700 | < .02 | <2 | 34 | 26 | <4 | 7 | <2 | 130 |
| 213 | 37 | 25 | 31 | 1,200 | < .02 | <2 | 33 | 25 | 7 | 8 | <2 | 130 |
| 214 | 36 | 17 | 22 | 950 | .02 | <2 | 35 | 17 | 8 | 7 | <2 | 140 |
| 215 | 37 | 22 | 27 | 780 | .04 | <2 | 34 | 23 | 5 | 8 | <2 | 220 |
| 216 | 35 | 20 | 22 | 600 | < .02 | <2 | 31 | 18 | <4 | 7 | <2 | 150 |
| 217 | 38 | 17 | 27 | 1,000 | < .02 | <2 | 34 | 20 | 8 | 7 | <2 | 120 |
| 218 | 33 | 25 | 22 | 760 | .02 | <2 | 30 | 19 | 8 | 6 | <2 | 130 |
| 219 | 33 | 21 | 24 | 620 | .02 | <2 | 29 | 18 | 5 | 7 | <2 | 140 |
| 220 | 37 | 22 | 24 | 580 | < .02 | <2 | 34 | 18 | <4 | 7 | <2 | 140 |
| 221 | 32 | 16 | 19 | 390 | < .02 | <2 | 26 | 13 | 5 | 5 | <2 | 130 |
| 222 | 37 | 23 | 27 | 1,200 | .02 | <2 | 31 | 21 | 6 | 6 | <2 | 170 |
| 223 | 35 | 18 | 19 | 530 | < .02 | <2 | 30 | 15 | 9 | 6 | <2 | 150 |
| 224 | 39 | 20 | 23 | 580 | < .02 | <2 | 36 | 19 | 5 | 7 | <2 | 130 |
| 225 | 34 | 19 | 23 | 850 | < .02 | <2 | 32 | 17 | 5 | 7 | <2 | 160 |
| 226 | 41 | 19 | 24 | 720 | < .02 | <2 | 39 | 38 | 4 | 8 | <2 | 110 |
| 227 | 37 | 20 | 22 | 830 | < .02 | <2 | 30 | 27 | 9 | 6 | <2 | 280 |
| 228 | 33 | 19 | 18 | 270 | < .02 | <2 | 28 | 12 | <4 | 6 | <2 | 190 |
| 229 | 38 | 22 | 26 | 490 | .02 | <2 | 34 | 18 | <4 | 8 | <2 | 160 |
| 230 | 38 | 19 | 20 | 450 | < .02 | <2 | 32 | 16 | 6 | 6 | <2 | 150 |
| 231 | 35 | 19 | 19 | 460 | < .02 | <2 | 35 | 13 | <4 | 7 | <2 | 120 |
| 232 | 33 | 21 | 21 | 580 | .02 | <2 | 31 | 15 | 4 | 6 | <2 | 140 |
| 233 | 35 | 17 | 27 | 420 | < .02 | <2 | 35 | 20 | 5 | 7 | <2 | 99 |
| 234 | 31 | 19 | 23 | 270 | < .02 | <2 | 29 | 14 | 5 | 6 | <2 | 140 |
| 235 | 34 | 28 | 20 | 800 | < .02 | <2 | 31 | 18 | <4 | 5 | <2 | 150 |
| 236 | 30 | 17 | 23 | 540 | < .02 | <2 | 27 | 17 | 5 | 7 | <2 | 160 |
| 237 | 32 | 20 | 21 | 840 | < .02 | <2 | 31 | 17 | 6 | 6 | <2 | 130 |
| 238 | 43 | 25 | 27 | 680 | < .02 | <2 | 38 | 20 | 6 | 8 | <2 | 150 |
| 239 | 37 | 46 | 21 | 2,800 | .02 | <2 | 31 | 34 | 5 | 7 | <2 | 140 |
| 240 | 38 | 25 | 26 | 1,400 | < .02 | <2 | 32 | 32 | 8 | 9 | <2 | 140 |
| 241 | 36 | 29 | 43 | 1,300 | < .02 | <2 | 32 | 28 | 4 | 7 | <2 | 210 |
| 242 | 37 | 20 | 27 | 730 | < .02 | <2 | 31 | 24 | 7 | 8 | <2 | 130 |
| 243 | 38 | 65 | 23 | 950 | .02 | <2 | 33 | 27 | 6 | 7 | <2 | 140 |
| 244 | 36 | 18 | 21 | 370 | < .02 | <2 | 30 | 15 | 5 | 6 | <2 | 170 |
| 245 | 35 | 22 | 19 | 1,200 | < .02 | <2 | 29 | 17 | 9 | 6 | <2 | 160 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 246 | 34 | 24 | 23 | 430 | 0.04 | <2 | 29 | 18 | <4 | 7 | <2 | 170 |
| 247 | 39 | 48 | 25 | 2,500 | .02 | <2 | 35 | 33 | <4 | 7 | <2 | 160 |
| 248 | 31 | 19 | 20 | 310 | < .02 | <2 | 27 | 13 | <4 | 6 | <2 | 140 |
| 249 | 35 | 21 | 25 | 490 | .02 | 2 | 30 | 21 | 5 | 7 | <2 | 170 |
| 250 | 39 | 22 | 26 | 710 | < .02 | <2 | 33 | 18 | 8 | 8 | <2 | 160 |
| 251 | 29 | 18 | 22 | 270 | < .02 | <2 | 28 | 14 | 8 | 7 | <2 | 180 |
| 252 | 36 | 25 | 24 | 790 | < .02 | <2 | 33 | 20 | 6 | 8 | <2 | 160 |
| 253 | 43 | 21 | 24 | 490 | .02 | <2 | 38 | 17 | <4 | 8 | <2 | 170 |
| 254 | 44 | 23 | 33 | 1,000 | < .02 | <2 | 39 | 27 | 6 | 8 | <2 | 140 |
| 255 | 36 | 15 | 20 | 260 | < .02 | <2 | 32 | 13 | <4 | 6 | <2 | 170 |
| 256 | 35 | 19 | 22 | 450 | < .02 | <2 | 28 | 16 | 6 | 6 | <2 | 160 |
| 257 | 40 | 20 | 22 | 370 | < .02 | <2 | 34 | 18 | 8 | 7 | <2 | 140 |
| 258 | 40 | 15 | 20 | 380 | < .02 | <2 | 33 | 25 | 8 | 7 | <2 | 230 |
| 259 | 35 | 16 | 20 | 610 | .02 | 3 | 31 | 21 | 4 | 6 | <2 | 150 |
| 260 | 35 | 19 | 23 | 550 | .04 | <2 | 31 | 16 | <4 | 7 | <2 | 140 |
| 261 | 33 | 20 | 21 | 480 | .02 | <2 | 30 | 16 | 7 | 7 | <2 | 140 |
| 262 | 34 | 23 | 24 | 480 | .02 | <2 | 31 | 17 | <4 | 8 | <2 | 140 |
| 263 | 31 | 16 | 19 | 380 | .02 | <2 | 26 | 12 | 4 | 6 | <2 | 150 |
| 264 | 31 | 16 | 19 | 350 | < .02 | <2 | 26 | 13 | 5 | 5 | <2 | 140 |
| 265 | 31 | 21 | 21 | 840 | .02 | <2 | 28 | 17 | 7 | 7 | <2 | 150 |
| 266 | 37 | 25 | 23 | 830 | < .02 | <2 | 34 | 20 | <4 | 7 | <2 | 160 |
| 267 | 34 | 22 | 23 | 640 | .04 | <2 | 31 | 21 | 6 | 7 | <2 | 140 |
| 268 | 32 | 26 | 23 | 770 | .02 | <2 | 32 | 25 | 6 | 7 | <2 | 140 |
| 269 | 40 | 24 | 28 | 540 | .02 | <2 | 37 | 23 | 8 | 8 | <2 | 140 |
| 270 | 36 | 20 | 22 | 460 | < .02 | <2 | 31 | 18 | 8 | 7 | <2 | 150 |
| 271 | 35 | 22 | 24 | 1,000 | < .02 | <2 | 28 | 21 | 6 | 8 | <2 | 140 |
| 272 | 45 | 28 | 17 | 790 | < .02 | <2 | 38 | 16 | 7 | 5 | <2 | 160 |
| 273 | 38 | 19 | 24 | 300 | < .02 | <2 | 33 | 16 | 5 | 7 | <2 | 210 |
| 274 | 41 | 19 | 22 | 710 | .02 | <2 | 35 | 26 | 5 | 7 | <2 | 240 |
| 275 | 37 | 21 | 23 | 380 | .02 | <2 | 31 | 17 | 7 | 7 | <2 | 160 |
| 276 | 37 | 20 | 21 | 420 | .02 | <2 | 32 | 15 | 4 | 7 | <2 | 180 |
| 277 | 35 | 17 | 19 | 390 | < .02 | <2 | 28 | 13 | 8 | 6 | <2 | 180 |
| 278 | 41 | 23 | 29 | 310 | .02 | <2 | 35 | 19 | 10 | 9 | <2 | 160 |
| 279 | 36 | 21 | 25 | 350 | < .02 | <2 | 33 | 17 | 8 | 8 | <2 | 170 |
| 280 | 32 | 26 | 23 | 550 | .04 | <2 | 30 | 20 | 9 | 8 | <2 | 160 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | 37 | 22 | 27 | 440 | <0.02 | <2 | 38 | 18 | 6 | 8 | <2 | 150 |
| 282 | 36 | 20 | 23 | 340 | < .02 | <2 | 32 | 15 | <4 | 7 | <2 | 210 |
| 283 | 37 | 24 | 45 | 1,200 | .04 | <2 | 36 | 34 | 6 | 11 | <2 | 120 |
| 284 | 32 | 17 | 28 | 610 | .02 | <2 | 30 | 18 | 6 | 8 | <2 | 130 |
| 285 | 38 | 19 | 22 | 400 | < .02 | <2 | 34 | 16 | <4 | 7 | <2 | 200 |
| 286 | 38 | 20 | 23 | 340 | .02 | <2 | 34 | 16 | <4 | 7 | <2 | 200 |
| 287 | 35 | 20 | 26 | 470 | < .02 | <2 | 31 | 20 | 9 | 8 | <2 | 180 |
| 288 | 34 | 20 | 21 | 420 | .02 | <2 | 27 | 15 | 7 | 6 | <2 | 180 |
| 289 | 35 | 20 | 22 | 430 | .02 | <2 | 31 | 15 | 5 | 7 | <2 | 170 |
| 290 | 34 | 17 | 20 | 330 | .06 | <2 | 28 | 14 | 6 | 6 | <2 | 190 |
| 291 | 28 | 290 | 40 | 1,400 | < .02 | 8 | 24 | 12 | 9 | 5 | <2 | 23 |
| 292 | 35 | 20 | 26 | 350 | .02 | <2 | 32 | 18 | 5 | 8 | <2 | 150 |
| 293 | 37 | 23 | 22 | 450 | < .02 | <2 | 33 | 17 | 5 | 7 | <2 | 160 |
| 294 | 35 | 19 | 24 | 610 | < .02 | <2 | 29 | 19 | 6 | 8 | <2 | 140 |
| 295 | 34 | 26 | 24 | 550 | < .02 | <2 | 29 | 22 | 5 | 7 | <2 | 150 |
| 296 | 39 | 20 | 20 | 460 | .02 | <2 | 35 | 16 | 5 | 6 | <2 | 150 |
| 297 | 31 | 17 | 19 | 370 | < .02 | <2 | 26 | 14 | 7 | 5 | <2 | 140 |
| 298 | 33 | 29 | 22 | 1,500 | .02 | <2 | 29 | 24 | 6 | 7 | <2 | 150 |
| 299 | 32 | 17 | 19 | 320 | .04 | <2 | 28 | 13 | <4 | 6 | <2 | 150 |
| 300 | 35 | 23 | 28 | 940 | .06 | <2 | 30 | 22 | 9 | 9 | <2 | 160 |
| 301 | 37 | 18 | 25 | 370 | .04 | <2 | 32 | 18 | 10 | 7 | <2 | 150 |
| 302 | 32 | 18 | 21 | 420 | .02 | <2 | 30 | 16 | <4 | 6 | <2 | 190 |
| 303 | 40 | 24 | 26 | 870 | < .02 | <2 | 33 | 24 | <4 | 8 | <2 | 170 |
| 304 | 39 | 19 | 24 | 420 | .02 | <2 | 34 | 17 | 5 | 7 | <2 | 160 |
| 305 | 38 | 19 | 24 | 440 | .02 | <2 | 32 | 18 | 5 | 7 | <2 | 160 |
| 306 | 30 | 19 | 20 | 340 | .02 | <2 | 25 | 15 | 8 | 7 | <2 | 160 |
| 307 | 36 | 21 | 27 | 370 | .04 | <2 | 31 | 21 | <4 | 9 | <2 | 200 |
| 308 | 34 | 21 | 20 | 370 | < .02 | <2 | 31 | 14 | 9 | 7 | <2 | 170 |
| 309 | 34 | 21 | 24 | 390 | .02 | <2 | 30 | 17 | 5 | 7 | <2 | 180 |
| 310 | 33 | 20 | 23 | 480 | .02 | <2 | 30 | 16 | 6 | 7 | <2 | 170 |
| 311 | 51 | 18 | 14 | 440 | .02 | <2 | 44 | 10 | <4 | 5 | <2 | 230 |
| 312 | 46 | 24 | 21 | 640 | .02 | <2 | 40 | 18 | <4 | 7 | <2 | 180 |
| 313 | 37 | 22 | 24 | 390 | < .02 | <2 | 33 | 16 | <4 | 7 | <2 | 210 |
| 314 | 39 | 21 | 23 | 310 | .02 | <2 | 32 | 16 | 10 | 7 | <2 | 200 |
| 315 | 40 | 35 | 19 | 1,900 | < .02 | <2 | 36 | 24 | <4 | 6 | <2 | 150 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 316 | 38 | 22 | 23 | 410 | <0.02 | <2 | 33 | 15 | <4 | 7 | <2 | 200 |
| 317 | 39 | 21 | 22 | 420 | < .02 | <2 | 33 | 16 | <4 | 7 | <2 | 160 |
| 318 | 37 | 20 | 24 | 280 | < .02 | 2 | 31 | 17 | 7 | 7 | <2 | 190 |
| 319 | 38 | 20 | 20 | 470 | < .02 | <2 | 32 | 13 | 7 | 6 | <2 | 210 |
| 320 | 37 | 20 | 20 | 360 | < .02 | <2 | 31 | 13 | 6 | 6 | <2 | 210 |
| 321 | 39 | 18 | 21 | 410 | .04 | <2 | 33 | 15 | 9 | 7 | <2 | 200 |
| 322 | 39 | 19 | 23 | 400 | < .02 | <2 | 33 | 16 | 9 | 7 | <2 | 190 |
| 323 | 38 | 17 | 21 | 310 | < .02 | <2 | 35 | 13 | 7 | 6 | <2 | 220 |
| 324 | 37 | 23 | 21 | 360 | .04 | <2 | 30 | 14 | 7 | 7 | <2 | 190 |
| 325 | 36 | 22 | 27 | 610 | < .02 | <2 | 32 | 20 | 9 | 8 | <2 | 180 |
| 326 | 36 | 18 | 25 | 290 | .04 | <2 | 30 | 17 | 6 | 7 | <2 | 190 |
| 327 | 36 | 21 | 22 | 420 | < .02 | <2 | 33 | 15 | <4 | 7 | <2 | 170 |
| 328 | 35 | 19 | 23 | 370 | .02 | <2 | 32 | 15 | 9 | 7 | <2 | 170 |
| 329 | 39 | 29 | 23 | 670 | < .02 | <2 | 32 | 18 | 10 | 7 | <2 | 160 |
| 330 | 34 | 14 | 19 | 230 | .02 | <2 | 29 | 13 | 5 | 6 | <2 | 180 |
| 331 | 34 | 20 | 23 | 470 | .02 | <2 | 30 | 17 | 6 | 8 | <2 | 160 |
| 332 | 41 | 21 | 25 | 430 | .02 | <2 | 35 | 19 | 5 | 7 | <2 | 150 |
| 333 | 34 | 22 | 25 | 540 | .02 | <2 | 31 | 19 | 9 | 8 | <2 | 160 |
| 334 | 29 | 25 | 20 | 710 | .02 | <2 | 25 | 15 | <4 | 6 | <2 | 150 |
| 335 | 32 | 22 | 22 | 970 | .02 | <2 | 28 | 19 | 5 | 7 | <2 | 150 |
| 336 | 35 | 22 | 26 | 770 | < .02 | <2 | 33 | 19 | 7 | 7 | <2 | 140 |
| 337 | 32 | 21 | 22 | 810 | < .02 | <2 | 26 | 19 | 7 | 7 | <2 | 150 |
| 338 | 33 | 21 | 22 | 730 | < .02 | <2 | 28 | 19 | 9 | 7 | <2 | 150 |
| 339 | 53 | 55 | 26 | 3,600 | .02 | <2 | 45 | 41 | 5 | 8 | <2 | 220 |
| 340 | 32 | 17 | 21 | 400 | < .02 | <2 | 27 | 16 | 6 | 6 | <2 | 180 |
| 341 | 33 | 20 | 23 | 610 | .02 | <2 | 29 | 17 | 8 | 7 | <2 | 160 |
| 342 | 34 | 21 | 24 | 400 | < .02 | <2 | 30 | 18 | 7 | 7 | <2 | 160 |
| 343 | 33 | 22 | 22 | 570 | < .02 | <2 | 29 | 15 | 7 | 7 | <2 | 150 |
| 344 | 30 | 19 | 21 | 340 | < .02 | <2 | 28 | 15 | 7 | 7 | <2 | 180 |
| 345 | 32 | 18 | 18 | 410 | .02 | <2 | 28 | 12 | <4 | 6 | <2 | 180 |
| 346 | 32 | 17 | 21 | 410 | < .02 | <2 | 29 | 15 | 8 | 7 | <2 | 170 |
| 347 | 39 | 25 | 25 | 530 | < .02 | <2 | 33 | 18 | 11 | 8 | <2 | 160 |
| 348 | 35 | 26 | 25 | 360 | .02 | <2 | 32 | 17 | 8 | 8 | <2 | 170 |
| 349 | 39 | 21 | 29 | 520 | .08 | <2 | 37 | 21 | 9 | 9 | <2 | 170 |
| 350 | 32 | 19 | 21 | 330 | .04 | <2 | 27 | 13 | <4 | 7 | <2 | 190 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 351 | 35 | 18 | 25 | 420 | <0.02 | <2 | 32 | 16 | <4 | 7 | <2 | 200 |
| 352 | 34 | 24 | 21 | 280 | < .02 | <2 | 31 | 14 | 18 | 7 | <2 | 210 |
| 353 | 36 | 20 | 21 | 410 | < .02 | <2 | 33 | 15 | <4 | 7 | <2 | 220 |
| 354 | 37 | 21 | 24 | 340 | < .02 | <2 | 32 | 15 | <4 | 7 | <2 | 190 |
| 355 | 40 | 23 | 26 | 370 | < .02 | <2 | 34 | 18 | 9 | 8 | <2 | 180 |
| 356 | 34 | 17 | 32 | 1,000 | < .02 | <2 | 33 | 23 | <4 | 6 | <2 | 180 |
| 357 | 29 | 16 | 16 | 300 | .02 | <2 | 25 | 11 | 4 | 5 | <2 | 190 |
| 358 | 38 | 17 | 21 | 380 | .14 | <2 | 32 | 15 | 8 | 7 | <2 | 190 |
| 359 | 33 | 18 | 21 | 320 | .02 | <2 | 28 | 14 | 5 | 6 | <2 | 190 |
| 360 | 37 | 20 | 22 | 490 | < .02 | <2 | 33 | 17 | 8 | 7 | <2 | 190 |
| 361 | 29 | 18 | 19 | 300 | < .02 | <2 | 25 | 14 | 6 | 6 | <2 | 190 |
| 362 | 37 | 20 | 24 | 580 | < .02 | <2 | 29 | 20 | 6 | 7 | <2 | 180 |
| 363 | 34 | 18 | 21 | 460 | < .02 | <2 | 30 | 16 | 6 | 6 | <2 | 170 |
| 364 | 30 | 20 | 18 | 530 | < .02 | <2 | 28 | 15 | 6 | 6 | <2 | 150 |
| 365 | 31 | 17 | 22 | 310 | < .02 | <2 | 26 | 15 | 9 | 7 | <2 | 160 |
| 366 | 37 | 25 | 24 | 500 | .02 | <2 | 32 | 19 | <4 | 7 | <2 | 150 |
| 367 | 34 | 21 | 23 | 430 | < .02 | <2 | 30 | 19 | 7 | 7 | <2 | 180 |
| 368 | 36 | 21 | 27 | 450 | .02 | <2 | 30 | 21 | 8 | 8 | <2 | 160 |
| 369 | 36 | 17 | 21 | 460 | < .02 | <2 | 30 | 18 | 7 | 7 | <2 | 180 |
| 370 | 36 | 22 | 26 | 370 | .02 | <2 | 33 | 18 | 5 | 8 | <2 | 180 |
| 371 | 35 | 23 | 23 | 490 | .04 | <2 | 31 | 17 | 5 | 8 | <2 | 160 |
| 372 | 36 | 20 | 24 | 430 | < .02 | <2 | 31 | 18 | 9 | 7 | <2 | 170 |
| 373 | 31 | 19 | 18 | 280 | .04 | <2 | 28 | 13 | 8 | 6 | <2 | 150 |
| 374 | 37 | 20 | 25 | 450 | .02 | <2 | 32 | 17 | 5 | 8 | <2 | 170 |
| 375 | 32 | 23 | 18 | 280 | .04 | <2 | 31 | 11 | 8 | 6 | <2 | 160 |
| 376 | 39 | 27 | 27 | 440 | .02 | <2 | 34 | 22 | 11 | 9 | <2 | 150 |
| 377 | 38 | 19 | 24 | 440 | < .02 | <2 | 33 | 17 | 6 | 7 | <2 | 180 |
| 378 | 36 | 17 | 22 | 400 | < .02 | <2 | 30 | 14 | 6 | 6 | <2 | 200 |
| 379 | 35 | 20 | 17 | 330 | < .02 | <2 | 28 | 11 | 7 | 5 | <2 | 210 |
| 380 | 35 | 19 | 21 | 390 | .02 | <2 | 32 | 15 | 4 | 7 | <2 | 190 |
| 381 | 35 | 15 | 18 | 320 | < .02 | <2 | 35 | 12 | <4 | 6 | <2 | 180 |
| 382 | 37 | 19 | 23 | 430 | .02 | <2 | 31 | 15 | 5 | 7 | <2 | 170 |
| 383 | 33 | 19 | 21 | 290 | .04 | <2 | 30 | 14 | <4 | 7 | <2 | 180 |
| 384 | 39 | 23 | 29 | 570 | < .02 | <2 | 35 | 21 | 6 | 8 | <2 | 190 |
| 385 | 35 | 17 | 22 | 430 | < .02 | <2 | 30 | 15 | 6 | 6 | <2 | 170 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 386 | 35 | 21 | 25 | 430 | 0.02 | <2 | 31 | 18 | <4 | 7 | <2 | 160 |
| 387 | 31 | 18 | 19 | 310 | < .02 | <2 | 27 | 14 | 6 | 6 | <2 | 180 |
| 388 | 32 | 20 | 21 | 270 | < .02 | <2 | 28 | 15 | 7 | 6 | <2 | 180 |
| 389 | 31 | 20 | 21 | 380 | .02 | <2 | 26 | 15 | <4 | 7 | <2 | 180 |
| 390 | 36 | 19 | 24 | 370 | < .02 | <2 | 29 | 17 | 5 | 7 | <2 | 190 |
| 391 | 36 | 19 | 22 | 430 | < .02 | <2 | 32 | 16 | <4 | 7 | <2 | 200 |
| 392 | 38 | 24 | 30 | 330 | .02 | <2 | 34 | 21 | 6 | 9 | <2 | 190 |
| 393 | 32 | 17 | 18 | 250 | < .02 | <2 | 26 | 13 | 6 | 7 | <2 | 190 |
| 394 | 34 | 18 | 20 | 380 | < .02 | <2 | 31 | 15 | 9 | 6 | <2 | 190 |
| 395 | 35 | 18 | 23 | 410 | < .02 | <2 | 30 | 16 | 4 | 7 | <2 | 180 |
| 396 | 31 | 16 | 19 | 320 | .02 | <2 | 29 | 15 | 8 | 6 | <2 | 210 |
| 397 | 33 | 17 | 20 | 430 | < .02 | <2 | 30 | 16 | 7 | 6 | <2 | 200 |
| 398 | 37 | 17 | 22 | 600 | < .02 | <2 | 33 | 19 | <4 | 7 | <2 | 180 |
| 399 | 37 | 20 | 28 | 500 | < .02 | <2 | 32 | 25 | 7 | 9 | <2 | 170 |
| 400 | 35 | 20 | 26 | 480 | < .02 | <2 | 30 | 22 | 8 | 8 | <2 | 160 |
| 401 | 34 | 19 | 24 | 760 | < .02 | <2 | 29 | 18 | 6 | 7 | <2 | 170 |
| 402 | 35 | 28 | 26 | 1,700 | < .02 | <2 | 32 | 25 | 9 | 7 | <2 | 160 |
| 403 | 31 | 18 | 23 | 950 | .04 | <2 | 28 | 19 | 6 | 7 | <2 | 180 |
| 404 | 35 | 18 | 25 | 490 | .38 | <2 | 29 | 21 | 6 | 7 | <2 | 170 |
| 405 | 34 | 19 | 23 | 410 | .02 | <2 | 30 | 18 | 5 | 7 | <2 | 170 |
| 406 | 38 | 18 | 24 | 560 | < .02 | <2 | 32 | 20 | 6 | 7 | <2 | 160 |
| 407 | 34 | 18 | 23 | 430 | < .02 | <2 | 32 | 18 | 6 | 7 | <2 | 180 |
| 408 | 36 | 23 | 22 | 600 | < .02 | <2 | 33 | 18 | <4 | 6 | <2 | 200 |
| 409 | 32 | 19 | 21 | 330 | < .02 | <2 | 27 | 15 | 7 | 6 | <2 | 180 |
| 410 | 37 | 19 | 19 | 370 | < .02 | <2 | 31 | 14 | 5 | 6 | <2 | 200 |
| 411 | 31 | 15 | 18 | 370 | .06 | <2 | 26 | 13 | 6 | 6 | <2 | 200 |
| 412 | 35 | 14 | 21 | 370 | < .02 | <2 | 27 | 15 | 7 | 6 | <2 | 170 |
| 413 | 34 | 25 | 21 | 630 | .02 | <2 | 30 | 19 | 7 | 7 | <2 | 180 |
| 414 | 38 | 21 | 24 | 560 | < .02 | <2 | 33 | 18 | 11 | 8 | <2 | 160 |
| 415 | 40 | 20 | 24 | 550 | < .02 | <2 | 33 | 20 | 8 | 7 | <2 | 140 |
| 416 | 37 | 18 | 23 | 350 | .02 | <2 | 32 | 15 | 9 | 7 | <2 | 170 |
| 417 | 34 | 18 | 23 | 560 | .02 | <2 | 29 | 19 | 5 | 7 | <2 | 170 |
| 418 | 33 | 18 | 19 | 290 | < .02 | <2 | 27 | 14 | 7 | 6 | <2 | 170 |
| 419 | 35 | 18 | 26 | 490 | .02 | <2 | 28 | 18 | 9 | 7 | <2 | 190 |
| 420 | 34 | 18 | 20 | 390 | .02 | <2 | 29 | 16 | 8 | 7 | <2 | 160 |
| 421 | 30 | 16 | 22 | 370 | < .02 | <2 | 27 | 18 | 4 | 7 | <2 | 190 |
| 422 | 30 | 17 | 21 | 390 | < .02 | <2 | 26 | 14 | 5 | 7 | <2 | 170 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <40 | 10 | <10 | 2.7 | 74 | 19 | 2 | 78 | 1.1 | 23.1 | 12.7 | 10.4 |
| 2 | <40 | 10 | <10 | 2.3 | 52 | 15 | 2 | 54 | 1.5 | 15.0 | 15.0 | < .1 |
| 3 | <40 | 12 | <10 | 2.7 | 74 | 20 | 2 | 60 | 1.5 | 12.1 | 11.9 | .2 |
| 4 | <40 | 9 | <10 | 2.8 | 73 | 19 | 2 | 53 | 2.4 | 13.5 | 13.1 | .4 |
| 5 | <40 | 11 | <10 | 2.6 | 64 | 20 | 2 | 55 | 1.7 | 11.8 | 11.8 | < .1 |
| 6 | <40 | 9 | <10 | 2.3 | 56 | 16 | 2 | 43 | 1.2 | 11.9 | 11.9 | < .1 |
| 7 | <40 | 12 | <10 | 2.6 | 69 | 20 | 2 | 57 | 1.3 | 9.3 | 9.2 | .1 |
| 8 | <40 | 11 | <10 | 2.6 | 71 | 19 | 2 | 48 | .9 | 12.4 | 6.8 | 5.6 |
| 9 | <40 | 8 | <10 | 1.9 | 54 | 16 | 2 | 40 | .8 | 44.6 | 9.9 | 34.7 |
| 10 | <40 | 8 | <10 | 2.6 | 48 | 15 | 2 | 32 | 1.1 | 8.8 | 8.8 | < .1 |
| 11 | <40 | 14 | <10 | 2.9 | 94 | 21 | 3 | 62 | 1.5 | 13.9 | 12.8 | 1.1 |
| 12 | <40 | 9 | <10 | 2.7 | 50 | 16 | 2 | 83 | 1.1 | 19.5 | 19.3 | .2 |
| 13 | <40 | 10 | <10 | 2.5 | 64 | 20 | 2 | 53 | 1.3 | 9.8 | 9.8 | < .1 |
| 14 | <40 | 13 | <10 | 3.2 | 60 | 20 | 3 | 45 | .8 | 11.7 | 9.5 | 2.2 |
| 15 | <40 | 12 | <10 | 3.1 | 77 | 21 | 2 | 66 | .8 | 16.6 | 12.4 | 4.2 |
| 16 | <40 | 12 | <10 | 3.1 | 76 | 22 | 3 | 55 | 1.0 | 4.4 | 4.0 | .4 |
| 17 | <40 | 11 | <10 | 2.6 | 63 | 18 | 2 | 39 | .9 | 9.6 | 8.4 | 1.2 |
| 18 | <40 | 13 | <10 | 3.0 | 70 | 20 | 2 | 47 | 1.1 | 8.6 | 8.3 | .3 |
| 19 | <40 | 10 | <10 | 2.9 | 70 | 20 | 3 | 49 | 1.7 | 11.2 | 11.0 | .2 |
| 20 | <40 | 10 | <10 | 2.7 | 61 | 19 | 2 | 50 | 1.2 | 20.0 | 10.7 | 9.3 |
| 21 | <40 | 11 | <10 | 3.0 | 84 | 20 | 2 | 56 | 1.8 | 16.4 | 15.8 | .6 |
| 22 | <40 | 12 | <10 | 2.6 | 68 | 20 | 3 | 49 | 1.6 | 18.4 | 14.1 | 4.3 |
| 23 | <40 | 9 | <10 | 2.7 | 82 | 18 | 2 | 49 | 1.1 | 17.5 | 17.5 | < .1 |
| 24 | <40 | 13 | <10 | 2.9 | 72 | 20 | 2 | 60 | 1.1 | 14.6 | 14.6 | < .1 |
| 25 | <40 | 13 | <10 | 3.0 | 74 | 21 | 2 | 60 | 1.5 | 12.8 | 12.8 | < .1 |
| 26 | <40 | 12 | <10 | 2.9 | 84 | 20 | 2 | 66 | 1.3 | 19.5 | 19.2 | .3 |
| 27 | <40 | 12 | <10 | 2.9 | 80 | 20 | 2 | 59 | 1.3 | 12.5 | 11.1 | 1.4 |
| 28 | <40 | 13 | <10 | 2.6 | 69 | 21 | 2 | 63 | 2.7 | 26.7 | 26.7 | < .1 |
| 29 | <40 | 11 | <10 | 2.7 | 70 | 20 | 2 | 54 | 1.7 | 13.0 | 13.0 | < .1 |
| 30 | <40 | 15 | <10 | 3.3 | 69 | 22 | 3 | 53 | 1.3 | 8.3 | 8.2 | .1 |
| 31 | <40 | 12 | <10 | 3.0 | 86 | 21 | 2 | 74 | 1.1 | 15.0 | 15.0 | < .1 |
| 32 | <40 | 11 | <10 | 2.7 | 69 | 19 | 2 | 58 | .7 | 16.6 | 16.6 | < .1 |
| 33 | <40 | 10 | <10 | 2.8 | 78 | 21 | 2 | 60 | .7 | 6.5 | 6.5 | < .1 |
| 34 | <40 | 11 | <10 | 2.8 | 71 | 20 | 3 | 62 | 1.4 | 12.9 | 12.9 | < .1 |
| 35 | <40 | 13 | <10 | 2.9 | 80 | 24 | 3 | 87 | 2.1 | 32.8 | 32.7 | .1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | <40 | 12 | <10 | 2.8 | 75 | 19 | 2 | 65 | 1.1 | 17.0 | 16.9 | 0.1 |
| 37 | <40 | 10 | <10 | 1.9 | 57 | 18 | 2 | 62 | .6 | 38.2 | 14.3 | 23.9 |
| 38 | <40 | 11 | <10 | 3.0 | 46 | 16 | 2 | 70 | .6 | 6.8 | .9 | 5.9 |
| 39 | <40 | 11 | <10 | 2.8 | 54 | 18 | 2 | 39 | 1.3 | 10.7 | 10.1 | .6 |
| 40 | <40 | 11 | <10 | 2.8 | 50 | 18 | 2 | 50 | 1.0 | 5.5 | 5.4 | .1 |
| 41 | <40 | 10 | <10 | 2.7 | 63 | 19 | 2 | 57 | 1.2 | 19.1 | 16.7 | 2.4 |
| 42 | <40 | 15 | <10 | 3.5 | 67 | 20 | 2 | 47 | .7 | 16.9 | 14.6 | 2.3 |
| 43 | <40 | 10 | <10 | 2.9 | 69 | 20 | 3 | 44 | .7 | 12.9 | 9.2 | 3.7 |
| 44 | <40 | 12 | <10 | 2.9 | 76 | 19 | 2 | 49 | 1.5 | 15.0 | 11.0 | 4.0 |
| 45 | <40 | 13 | <10 | 3.0 | 82 | 21 | 3 | 50 | 2.0 | 14.2 | 14.2 | < .1 |
| 46 | <40 | 11 | <10 | 2.4 | 83 | 18 | 2 | 69 | 1.1 | 27.3 | 14.9 | 12.4 |
| 47 | <40 | 9 | <10 | 2.6 | 82 | 16 | 2 | 55 | .9 | 12.8 | 11.8 | 1.0 |
| 48 | <40 | 11 | <10 | 2.9 | 78 | 19 | 2 | 53 | 1.0 | 13.5 | 13.2 | .3 |
| 49 | <40 | 11 | <10 | 3.0 | 82 | 22 | 3 | 82 | 1.3 | 13.9 | 13.4 | .5 |
| 50 | <40 | 10 | <10 | 2.4 | 61 | 17 | 2 | 47 | 1.1 | 13.6 | 13.5 | .1 |
| 51 | <40 | 11 | <10 | 2.8 | 71 | 20 | 2 | 53 | 1.3 | 8.2 | 8.2 | < .1 |
| 52 | <40 | 12 | <10 | 2.9 | 65 | 19 | 2 | 48 | .8 | 10.7 | 10.4 | .3 |
| 53 | <40 | 11 | <10 | 2.8 | 72 | 21 | 3 | 60 | .7 | 15.2 | 8.3 | 6.9 |
| 54 | <40 | 11 | <10 | 3.2 | 110 | 23 | 3 | 64 | 1.6 | 18.9 | 13.2 | 5.7 |
| 55 | <40 | 13 | <10 | 2.8 | 78 | 22 | 3 | 66 | 1.1 | 15.9 | 15.9 | < .1 |
| 56 | <40 | 11 | <10 | 2.7 | 67 | 21 | 2 | 59 | 1.5 | 11.6 | 11.5 | .1 |
| 57 | <40 | 12 | <10 | 2.9 | 81 | 22 | 3 | 85 | 2.7 | 27.0 | 26.9 | .1 |
| 58 | <40 | 12 | <10 | 2.9 | 83 | 21 | 2 | 77 | 1.7 | 25.7 | 25.5 | .2 |
| 59 | <40 | 12 | <10 | 2.7 | 76 | 21 | 2 | 72 | 1.5 | 17.0 | 15.4 | 1.6 |
| 60 | <40 | 10 | <10 | 2.7 | 72 | 18 | 2 | 62 | 1.7 | 14.8 | 14.8 | < .1 |
| 61 | <40 | 11 | <10 | 2.7 | 72 | 20 | 2 | 58 | 1.2 | 12.6 | 12.6 | < .1 |
| 62 | <40 | 11 | <10 | 2.6 | 74 | 20 | 2 | 75 | 1.9 | 17.4 | 17.4 | < .1 |
| 63 | <40 | 11 | <10 | 2.5 | 62 | 20 | 2 | 58 | 1.4 | 13.3 | 13.3 | < .1 |
| 64 | <40 | 11 | <10 | 2.7 | 65 | 18 | 2 | 92 | .8 | 15.0 | 10.8 | 4.2 |
| 65 | <40 | 10 | <10 | 2.6 | 58 | 17 | 2 | 48 | .7 | 16.1 | 14.0 | 2.1 |
| 66 | <40 | 12 | <10 | 3.0 | 72 | 20 | 2 | 50 | 1.0 | 15.2 | 14.1 | 1.1 |
| 67 | <40 | 11 | <10 | 2.9 | 74 | 20 | 2 | 65 | .8 | 13.9 | 12.5 | 1.4 |
| 68 | <40 | 11 | <10 | 2.5 | 64 | 17 | 2 | 50 | 2.2 | 38.3 | 12.5 | 25.8 |
| 69 | <40 | 9 | <10 | 2.6 | 61 | 17 | 2 | 45 | 1.3 | 13.8 | 13.4 | .4 |
| 70 | <40 | 7 | <10 | 1.9 | 63 | 15 | 2 | 76 | 1.5 | 51.9 | 14.5 | 37.4 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | <40 | 12 | <10 | 2.8 | 94 | 24 | 3 | 75 | 1.5 | 14.8 | 12.6 | 2.2 |
| 72 | <40 | 13 | <10 | 3.1 | 100 | 24 | 3 | 100 | 1.6 | 12.3 | 11.9 | .4 |
| 73 | <40 | 10 | <10 | 2.9 | 81 | 21 | 2 | 69 | 1.5 | 19.4 | 14.8 | 4.6 |
| 74 | <40 | 12 | <10 | 3.1 | 70 | 21 | 2 | 49 | 2.1 | 18.2 | 18.1 | .1 |
| 75 | <40 | 13 | <10 | 3.3 | 100 | 26 | 3 | 83 | .8 | 11.9 | 8.4 | 3.5 |
| 76 | <40 | 11 | <10 | 3.0 | 73 | 21 | 2 | 50 | .8 | 22.3 | 11.1 | 11.2 |
| 77 | <40 | 9 | <10 | 2.3 | 61 | 16 | 2 | 49 | 1.1 | 44.0 | 15.1 | 28.9 |
| 78 | <40 | 13 | <10 | 3.1 | 70 | 21 | 2 | 52 | 1.2 | 11.0 | 10.9 | .1 |
| 79 | <40 | 10 | <10 | 2.5 | 63 | 18 | 2 | 53 | .8 | 28.4 | 18.4 | 10.0 |
| 80 | <40 | 9 | <10 | 2.2 | 58 | 17 | 2 | 54 | .7 | 33.2 | 9.2 | 24.0 |
| 81 | <40 | 10 | <10 | 2.7 | 64 | 18 | 2 | 60 | 1.4 | 20.5 | 13.4 | 7.1 |
| 82 | <40 | 10 | <10 | 2.7 | 56 | 17 | 2 | 37 | .8 | 12.2 | 10.0 | 2.2 |
| 83 | <40 | 12 | <10 | 2.8 | 71 | 19 | 2 | 54 | 1.1 | 28.1 | 17.3 | 10.8 |
| 84 | <40 | 12 | <10 | 2.9 | 67 | 19 | 2 | 58 | .8 | 17.2 | 14.5 | 2.7 |
| 85 | <40 | 11 | <10 | 3.0 | 76 | 20 | 2 | 54 | .8 | 14.1 | 12.3 | 1.8 |
| 86 | <40 | 12 | <10 | 3.0 | 72 | 22 | 3 | 54 | .7 | 18.2 | 13.0 | 5.2 |
| 87 | <40 | 12 | <10 | 3.0 | 70 | 20 | 2 | 50 | .9 | 14.1 | 10.5 | 3.6 |
| 88 | <40 | 10 | <10 | 2.8 | 76 | 22 | 2 | 68 | 1.4 | 13.6 | 13.6 | < .1 |
| 89 | <40 | 12 | <10 | 2.8 | 66 | 20 | 3 | 54 | 1.4 | 14.0 | 11.6 | 2.4 |
| 90 | <40 | 12 | <10 | 2.8 | 77 | 19 | 2 | 160 | 1.8 | 23.5 | 21.4 | 2.1 |
| 91 | <40 | 13 | <10 | 3.0 | 92 | 23 | 3 | 84 | 1.3 | 21.2 | 17.6 | 3.6 |
| 92 | <40 | 11 | <10 | 2.6 | 85 | 22 | 2 | 63 | 3.3 | 34.5 | 12.8 | 21.7 |
| 93 | <40 | 12 | <10 | 2.6 | 110 | 26 | 3 | 78 | 1.5 | 22.3 | 10.5 | 11.8 |
| 94 | <40 | 10 | <10 | 1.5 | 120 | 31 | 3 | 110 | 2.7 | 29.9 | 6.4 | 23.5 |
| 95 | <40 | 11 | <10 | 2.5 | 51 | 17 | 2 | 210 | .7 | 17.9 | 17.4 | .5 |
| 96 | <40 | 9 | <10 | 2.4 | 70 | 17 | 2 | 78 | 1.5 | 40.8 | 12.2 | 28.6 |
| 97 | <40 | 12 | <10 | 2.5 | 66 | 18 | 2 | 58 | 1.0 | 21.3 | 10.9 | 10.4 |
| 98 | <40 | 13 | <10 | 3.0 | 90 | 20 | 3 | 93 | 1.1 | 10.9 | 8.5 | 2.4 |
| 99 | <40 | 11 | <10 | 2.9 | 84 | 20 | 2 | 93 | .8 | 10.3 | 8.0 | 2.3 |
| 100 | <40 | 12 | <10 | 3.2 | 91 | 19 | 3 | 310 | 1.1 | 25.7 | 13.9 | 11.8 |
| 101 | <40 | 12 | <10 | 3.0 | 74 | 19 | 2 | 67 | .8 | 18.4 | 17.3 | 1.1 |
| 102 | <40 | 11 | <10 | 3.2 | 85 | 22 | 3 | 83 | 1.5 | 15.5 | 14.5 | 1.0 |
| 103 | <40 | 12 | <10 | 2.9 | 85 | 22 | 3 | 79 | .7 | 16.0 | 12.1 | 3.9 |
| 104 | <40 | 15 | <10 | 3.4 | 73 | 25 | 3 | 57 | 2.0 | 16.8 | 11.2 | 5.6 |
| 105 | <40 | 14 | <10 | 3.5 | 93 | 23 | 3 | 83 | 1.9 | 17.2 | 14.2 | 3.0 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 106 | <40 | 15 | <10 | 3.1 | 67 | 20 | 3 | 48 | 0.8 | 7.2 | 6.4 | 0.8 |
| 107 | <40 | 10 | <10 | 2.9 | 61 | 18 | 2 | 47 | 1.1 | 7.3 | 6.5 | .8 |
| 108 | <40 | 9 | <10 | 2.3 | 68 | 21 | 2 | 54 | .9 | 34.3 | 12.5 | 21.8 |
| 109 | <40 | 11 | <10 | 2.2 | 65 | 18 | 2 | 56 | .8 | 37.8 | 15.9 | 21.9 |
| 110 | <40 | 9 | <10 | 2.7 | 59 | 17 | 2 | 46 | .6 | 2.8 | 2.7 | .1 |
| 111 | <40 | 12 | <10 | 3.0 | 73 | 20 | 2 | 56 | .8 | 16.7 | 12.3 | 4.4 |
| 112 | <40 | 13 | <10 | 2.9 | 68 | 20 | 3 | 73 | 1.1 | 13.0 | 12.7 | .3 |
| 113 | <40 | 9 | <10 | 2.4 | 58 | 18 | 2 | 44 | 1.2 | 21.5 | 13.8 | 7.7 |
| 114 | <40 | 11 | <10 | 2.8 | 82 | 22 | 3 | 64 | 1.4 | 7.5 | 7.5 | < .1 |
| 115 | <40 | 5 | <10 | 1.2 | 36 | 11 | 1 | 44 | 1.3 | 75.3 | 10.5 | 64.8 |
| 116 | <40 | 10 | <10 | 2.8 | 66 | 20 | 2 | 56 | 1.1 | 13.4 | 11.4 | 2.0 |
| 117 | <40 | 11 | <10 | 2.8 | 72 | 17 | 2 | 57 | 1.3 | 16.5 | 16.5 | < .1 |
| 118 | <40 | 11 | <10 | 2.7 | 74 | 22 | 3 | 60 | .8 | 24.3 | 11.6 | 12.7 |
| 119 | <40 | 9 | <10 | 2.7 | 61 | 18 | 2 | 45 | .8 | 11.3 | 10.1 | 1.2 |
| 120 | <40 | 10 | <10 | 2.7 | 63 | 19 | 2 | 46 | .9 | 13.1 | 12.5 | .6 |
| 121 | <40 | 13 | <10 | 3.1 | 67 | 21 | 3 | 61 | .6 | 16.5 | 14.1 | 2.4 |
| 122 | <40 | 13 | <10 | 2.9 | 73 | 22 | 3 | 49 | 1.3 | 14.4 | 11.0 | 3.4 |
| 123 | <40 | 12 | <10 | 3.1 | 80 | 20 | 2 | 75 | 2.3 | 15.0 | 13.8 | 1.2 |
| 124 | <40 | 11 | <10 | 2.7 | 82 | 18 | 2 | 220 | 1.9 | 26.3 | 22.7 | 3.6 |
| 125 | <40 | 12 | <10 | 3.0 | 78 | 19 | 2 | 66 | .6 | 11.6 | 6.7 | 4.9 |
| 126 | <40 | 12 | <10 | 2.8 | 98 | 22 | 3 | 87 | 1.1 | 23.1 | 18.4 | 4.7 |
| 127 | <40 | 11 | <10 | 2.7 | 85 | 19 | 2 | 88 | 1.2 | 24.0 | 13.0 | 11.0 |
| 128 | <40 | 10 | <10 | 3.1 | 81 | 18 | 3 | 61 | 1.0 | 2.3 | 2.1 | .2 |
| 129 | <40 | 12 | <10 | 2.8 | 73 | 19 | 2 | 57 | 1.5 | 15.5 | 15.0 | .5 |
| 130 | <40 | 11 | <10 | 2.8 | 82 | 20 | 3 | 72 | 1.5 | 24.4 | 23.5 | .9 |
| 131 | <40 | 10 | <10 | 2.9 | 79 | 20 | 2 | 51 | 1.1 | 3.5 | 3.4 | .1 |
| 132 | <40 | 13 | <10 | 3.1 | 83 | 20 | 2 | 50 | .8 | 9.1 | 8.0 | 1.1 |
| 133 | <40 | 12 | <10 | 3.0 | 66 | 19 | 2 | 42 | 1.3 | 11.7 | 10.0 | 1.7 |
| 134 | <40 | 12 | <10 | 2.5 | 68 | 19 | 2 | 55 | 1.7 | 24.8 | 9.5 | 15.3 |
| 135 | <40 | 12 | <10 | 3.0 | 94 | 22 | 2 | 58 | 1.7 | 8.0 | 7.4 | .6 |
| 136 | <40 | 11 | <10 | 3.0 | 70 | 19 | 2 | 46 | 1.7 | 15.8 | 14.8 | 1.0 |
| 137 | <40 | 12 | <10 | 3.0 | 68 | 20 | 2 | 53 | 1.9 | 15.5 | 14.1 | 1.4 |
| 138 | <40 | 11 | <10 | 2.8 | 67 | 20 | 2 | 46 | 1.0 | 13.5 | 13.1 | .4 |
| 139 | <40 | 17 | <10 | 4.0 | 76 | 24 | 3 | 62 | 1.1 | 7.7 | 6.8 | .9 |
| 140 | <40 | 12 | <10 | 3.0 | 72 | 22 | 3 | 73 | 1.2 | 9.9 | 6.8 | 3.1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | <40 | 11 | <10 | 2.5 | 46 | 17 | 2 | 42 | 0.8 | 38.7 | 12.2 | 26.5 |
| 142 | <40 | 10 | <10 | 2.5 | 65 | 18 | 2 | 57 | .8 | 29.9 | 18.0 | 11.9 |
| 143 | <40 | 11 | <10 | 2.7 | 74 | 20 | 2 | 65 | .9 | 20.0 | 15.6 | 4.4 |
| 144 | <40 | 8 | <10 | 2.4 | 53 | 15 | 2 | 45 | .8 | 12.1 | 11.1 | 1.0 |
| 145 | <40 | 11 | <10 | 2.4 | 56 | 17 | 2 | 43 | .6 | 26.0 | 8.5 | 17.5 |
| 146 | <40 | 8 | <10 | 1.6 | 47 | 11 | 1 | 44 | 1.7 | 60.6 | 8.3 | 52.3 |
| 147 | <40 | 11 | <10 | 2.8 | 69 | 21 | 2 | 51 | 1.0 | 12.3 | 9.9 | 2.4 |
| 148 | <40 | 14 | <10 | 3.4 | 78 | 21 | 3 | 51 | 1.4 | 13.7 | 13.6 | .1 |
| 149 | <40 | 12 | <10 | 2.9 | 74 | 21 | 2 | 49 | .6 | 13.2 | 11.4 | 1.8 |
| 150 | <40 | 11 | <10 | 2.5 | 63 | 19 | 2 | 49 | .9 | 10.6 | 8.4 | 2.2 |
| 151 | <40 | 9 | <10 | 2.3 | 58 | 17 | 2 | 55 | .7 | 20.8 | 15.1 | 5.7 |
| 152 | <40 | 10 | <10 | 2.7 | 91 | 23 | 3 | 71 | 1.0 | 22.0 | 11.9 | 10.1 |
| 153 | <40 | 9 | <10 | 2.5 | 92 | 19 | 2 | 75 | 1.5 | 18.0 | 12.0 | 6.0 |
| 154 | <40 | 11 | <10 | 2.8 | 81 | 20 | 2 | 53 | 1.1 | 20.9 | 14.3 | 6.6 |
| 155 | <40 | 14 | <10 | 3.2 | 97 | 23 | 3 | 75 | 1.6 | 14.7 | 14.2 | .5 |
| 156 | <40 | 13 | <10 | 2.5 | 110 | 23 | 3 | 78 | 1.5 | 15.0 | 11.3 | 3.7 |
| 157 | <40 | 10 | <10 | 2.8 | 61 | 16 | 2 | 39 | 1.6 | 14.6 | 14.6 | < .1 |
| 158 | <40 | 12 | <10 | 3.0 | 89 | 21 | 2 | 77 | .8 | 18.4 | 17.7 | .7 |
| 159 | <40 | 12 | <10 | 2.6 | 69 | 18 | 2 | 58 | 1.2 | 24.3 | 10.5 | 13.8 |
| 160 | <40 | 11 | <10 | 2.6 | 86 | 23 | 3 | 61 | 1.3 | 22.3 | 13.3 | 9.0 |
| 161 | <40 | 10 | <10 | 2.6 | 57 | 15 | 2 | 37 | 1.4 | 12.4 | 11.6 | .8 |
| 162 | <40 | 12 | <10 | 2.9 | 99 | 21 | 3 | 60 | 1.7 | 13.2 | 12.1 | 1.1 |
| 163 | <40 | 11 | <10 | 3.0 | 88 | 20 | 2 | 73 | 1.4 | 7.7 | 6.8 | .9 |
| 164 | <40 | 13 | <10 | 3.1 | 69 | 20 | 3 | 51 | 1.1 | 20.2 | 16.7 | 3.5 |
| 165 | <40 | 10 | <10 | 2.8 | 60 | 18 | 2 | 35 | .8 | 8.3 | 7.1 | 1.2 |
| 166 | <40 | 13 | <10 | 3.4 | 100 | 21 | 3 | 53 | 1.9 | 16.7 | 14.5 | 2.2 |
| 167 | <40 | 11 | <10 | 2.7 | 84 | 19 | 3 | 73 | .7 | 11.3 | 3.3 | 8.0 |
| 168 | <40 | 12 | <10 | 3.0 | 80 | 22 | 2 | 69 | .8 | 21.5 | 17.4 | 4.1 |
| 169 | <40 | 10 | <10 | 2.0 | 62 | 18 | 2 | 55 | .8 | 40.7 | 8.6 | 32.1 |
| 170 | <40 | 13 | <10 | 3.1 | 93 | 22 | 3 | 60 | 1.1 | 25.8 | 18.3 | 7.5 |
| 171 | <40 | 12 | <10 | 2.8 | 72 | 19 | 2 | 50 | .9 | 13.8 | 12.4 | 1.4 |
| 172 | <40 | 12 | <10 | 2.7 | 63 | 19 | 2 | 47 | 1.3 | 13.3 | 12.2 | 1.1 |
| 173 | <40 | 11 | <10 | 2.7 | 79 | 20 | 3 | 49 | .9 | 21.6 | 7.8 | 13.8 |
| 174 | <40 | 10 | <10 | 2.6 | 63 | 18 | 2 | 50 | 1.1 | 27.1 | 12.4 | 14.7 |
| 175 | <40 | 11 | <10 | 2.8 | 67 | 19 | 2 | 51 | .8 | 23.5 | 12.7 | 10.8 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 176 | <40 | 12 | <10 | 2.7 | 65 | 19 | 2 | 43 | 1.1 | 24.8 | 7.8 | 17.0 |
| 177 | <40 | 11 | <10 | 2.7 | 75 | 19 | 2 | 52 | .7 | 26.8 | 18.9 | 7.9 |
| 178 | <40 | 12 | <10 | 2.5 | 68 | 20 | 2 | 200 | .6 | 22.4 | 8.4 | 14.0 |
| 179 | <40 | 9 | <10 | 2.1 | 60 | 17 | 2 | 55 | .8 | 40.4 | 16.3 | 24.1 |
| 180 | <40 | 11 | <10 | 3.0 | 75 | 21 | 3 | 53 | 1.5 | 9.9 | 9.9 | < .1 |
| 181 | <40 | 10 | <10 | 2.6 | 72 | 20 | 2 | 49 | 1.0 | 9.8 | 7.6 | 2.2 |
| 182 | <40 | 12 | <10 | 3.0 | 83 | 22 | 3 | 80 | .7 | 17.3 | 7.8 | 9.5 |
| 183 | <40 | 12 | <10 | 2.6 | 72 | 20 | 3 | 66 | .8 | 26.9 | 12.9 | 14.0 |
| 184 | <40 | 9 | <10 | 2.5 | 63 | 17 | 2 | 38 | .7 | 36.1 | 19.3 | 16.8 |
| 185 | <40 | 10 | <10 | 2.6 | 59 | 18 | 2 | 42 | 1.8 | 14.9 | 13.6 | 1.3 |
| 186 | <40 | 12 | <10 | 2.9 | 96 | 21 | 3 | 58 | 1.5 | 13.8 | 11.6 | 2.2 |
| 187 | <40 | 9 | <10 | 3.0 | 79 | 20 | 3 | 52 | 1.6 | 8.5 | 7.7 | .8 |
| 188 | <40 | 11 | <10 | 2.9 | 92 | 19 | 2 | 60 | 1.1 | 17.2 | 14.3 | 2.9 |
| 189 | <40 | 10 | <10 | 2.9 | 74 | 19 | 2 | 50 | 1.4 | 13.0 | 10.0 | 3.0 |
| 190 | <40 | 9 | <10 | 2.9 | 83 | 21 | 3 | 55 | 1.9 | 10.4 | 10.1 | .3 |
| 191 | <40 | 12 | <10 | 3.4 | 69 | 19 | 3 | 43 | .7 | 8.2 | 7.0 | 1.2 |
| 192 | <40 | 10 | <10 | 2.7 | 70 | 18 | 2 | 43 | 1.2 | 11.9 | 11.7 | .2 |
| 193 | <40 | 11 | <10 | 2.9 | 75 | 21 | 3 | 43 | 2.0 | 16.1 | 15.1 | 1.0 |
| 194 | <40 | 12 | <10 | 3.2 | 100 | 21 | 3 | 60 | 1.5 | 19.9 | 19.7 | .2 |
| 195 | <40 | 15 | <10 | 3.6 | 130 | 28 | 3 | 73 | 1.4 | 12.9 | 12.1 | .8 |
| 196 | <40 | 12 | <10 | 3.1 | 78 | 21 | 2 | 50 | 1.3 | 9.9 | 9.3 | .6 |
| 197 | <40 | 11 | <10 | 2.6 | 88 | 19 | 2 | 62 | 1.7 | 27.5 | 11.7 | 15.8 |
| 198 | <40 | 12 | <10 | 2.9 | 71 | 19 | 2 | 53 | 2.3 | 15.9 | 15.9 | < .1 |
| 199 | <40 | 9 | <10 | 2.6 | 61 | 18 | 2 | 57 | .8 | 21.6 | 9.0 | 12.6 |
| 200 | <40 | 10 | <10 | 2.7 | 64 | 18 | 2 | 42 | 1.2 | 17.0 | 17.0 | < .1 |
| 201 | <40 | 11 | <10 | 2.7 | 74 | 20 | 2 | 57 | .8 | 25.2 | 11.5 | 13.7 |
| 202 | <40 | 12 | <10 | 2.7 | 66 | 19 | 2 | 46 | .9 | 13.1 | 11.9 | 1.2 |
| 203 | <40 | 11 | <10 | 2.5 | 57 | 17 | 2 | 53 | 1.5 | 10.0 | 9.7 | .3 |
| 204 | <40 | 11 | <10 | 2.6 | 69 | 19 | 2 | 46 | .6 | 8.9 | 8.5 | .4 |
| 205 | <40 | 10 | <10 | 2.4 | 57 | 17 | 2 | 49 | .7 | 19.8 | 5.0 | 14.8 |
| 206 | <40 | 12 | <10 | 2.8 | 68 | 20 | 3 | 54 | .7 | 12.3 | 10.0 | 2.3 |
| 207 | <40 | 11 | <10 | 2.9 | 74 | 21 | 3 | 54 | .7 | 14.8 | 13.8 | 1.0 |
| 208 | <40 | 10 | <10 | 2.8 | 70 | 20 | 2 | 54 | 1.1 | 15.3 | 11.5 | 3.8 |
| 209 | <40 | 11 | <10 | 2.9 | 84 | 20 | 2 | 49 | 1.2 | 12.6 | 11.8 | .8 |
| 210 | <40 | 12 | <10 | 3.2 | 91 | 23 | 2 | 55 | 1.4 | 13.0 | 10.0 | 3.0 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 211 | <40 | 10 | <10 | 2.7 | 95 | 20 | 2 | 56 | 1.5 | 18.7 | 12.3 | 6.4 |
| 212 | <40 | 12 | <10 | 2.9 | 80 | 19 | 2 | 52 | 1.2 | 11.5 | 10.2 | 1.3 |
| 213 | <40 | 12 | <10 | 3.3 | 77 | 21 | 2 | 58 | 1.4 | 16.3 | 15.5 | .8 |
| 214 | <40 | 12 | <10 | 3.0 | 68 | 21 | 3 | 57 | 1.0 | 12.0 | 11.8 | .2 |
| 215 | <40 | 10 | <10 | 3.0 | 80 | 22 | 3 | 58 | 1.1 | 15.7 | 12.5 | 3.2 |
| 216 | <40 | 10 | <10 | 2.8 | 73 | 21 | 2 | 50 | 1.7 | 10.2 | 10.2 | < .1 |
| 217 | <40 | 11 | <10 | 3.0 | 74 | 20 | 2 | 55 | 1.7 | 20.0 | 19.5 | .5 |
| 218 | <40 | 11 | <10 | 3.0 | 74 | 18 | 2 | 47 | 1.3 | 15.7 | 15.4 | .3 |
| 219 | <40 | 9 | <10 | 2.8 | 70 | 20 | 2 | 56 | 1.3 | 19.6 | 18.3 | 1.3 |
| 220 | <40 | 11 | <10 | 2.8 | 72 | 20 | 2 | 50 | .8 | 15.3 | 14.4 | .9 |
| 221 | <40 | 8 | <10 | 2.6 | 50 | 15 | 2 | 39 | .9 | 10.4 | 10.2 | .2 |
| 222 | <40 | 10 | <10 | 2.7 | 68 | 18 | 2 | 56 | .6 | 29.5 | 11.7 | 17.8 |
| 223 | <40 | 10 | <10 | 3.2 | 60 | 17 | 2 | 40 | .8 | 7.0 | 7.0 | < .1 |
| 224 | <40 | 13 | <10 | 3.0 | 64 | 21 | 3 | 60 | 1.1 | 12.1 | 10.7 | 1.4 |
| 225 | <40 | 12 | <10 | 2.7 | 62 | 19 | 2 | 52 | .8 | 14.1 | 11.7 | 2.4 |
| 226 | <40 | 11 | <10 | 3.2 | 72 | 22 | 3 | 120 | 2.3 | 7.8 | 7.8 | < .1 |
| 227 | <40 | 9 | <10 | 2.6 | 120 | 19 | 2 | 57 | 1.8 | 35.3 | 10.6 | 24.7 |
| 228 | <40 | 10 | <10 | 2.7 | 55 | 17 | 2 | 40 | .8 | 7.7 | 7.7 | < .1 |
| 229 | <40 | 12 | <10 | 2.7 | 80 | 21 | 3 | 79 | 1.5 | 12.4 | 12.4 | < .1 |
| 230 | <40 | 12 | <10 | 2.8 | 62 | 19 | 2 | 49 | 1.1 | 14.0 | 14.0 | < .1 |
| 231 | <40 | 12 | <10 | 2.9 | 57 | 20 | 2 | 34 | 1.0 | 6.8 | 6.6 | .2 |
| 232 | <40 | 12 | <10 | 2.7 | 60 | 18 | 2 | 54 | 1.5 | 12.9 | 12.7 | .2 |
| 233 | <40 | 11 | <10 | 2.5 | 61 | 19 | 2 | 43 | 1.1 | 8.7 | 8.7 | < .1 |
| 234 | <40 | 9 | <10 | 2.6 | 56 | 17 | 2 | 43 | 1.1 | 13.4 | 13.2 | .2 |
| 235 | <40 | 10 | <10 | 2.7 | 60 | 18 | 2 | 40 | .7 | 10.7 | 9.5 | 1.2 |
| 236 | <40 | 10 | <10 | 2.5 | 59 | 17 | 2 | 42 | 1.0 | 10.6 | 9.9 | .7 |
| 237 | <40 | 10 | <10 | 2.8 | 64 | 18 | 2 | 36 | 1.3 | 11.3 | 10.8 | .5 |
| 238 | <40 | 13 | <10 | 3.4 | 84 | 21 | 2 | 65 | 1.4 | 12.6 | 12.2 | .4 |
| 239 | <40 | 10 | <10 | 2.4 | 89 | 20 | 2 | 47 | 1.7 | 11.4 | 11.0 | .4 |
| 240 | <40 | 12 | <10 | 2.7 | 97 | 22 | 3 | 62 | 2.4 | 6.3 | 5.3 | 1.0 |
| 241 | <40 | 10 | <10 | 2.5 | 70 | 18 | 2 | 53 | .7 | 29.6 | 9.4 | 20.2 |
| 242 | <40 | 11 | <10 | 2.7 | 86 | 19 | 2 | 60 | 1.1 | 11.0 | 10.5 | .5 |
| 243 | <40 | 12 | <10 | 2.9 | 95 | 20 | 2 | 50 | 1.2 | 11.9 | 11.1 | .8 |
| 244 | <40 | 11 | <10 | 2.7 | 63 | 19 | 2 | 78 | 1.1 | 11.3 | 11.0 | .3 |
| 245 | <40 | 12 | <10 | 2.8 | 65 | 17 | 2 | 50 | 1.3 | 16.1 | 15.4 | .7 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 246 | <40 | 10 | <10 | 2.7 | 67 | 20 | 2 | 50 | 1.6 | 12.5 | 12.3 | 0.2 |
| 247 | <40 | 11 | <10 | 2.9 | 89 | 25 | 3 | 57 | 1.9 | 15.1 | 13.8 | 1.3 |
| 248 | <40 | 10 | <10 | 2.8 | 54 | 18 | 2 | 39 | 1.2 | 15.4 | 15.3 | .1 |
| 249 | <40 | 10 | <10 | 2.7 | 78 | 20 | 2 | 72 | 1.3 | 21.3 | 16.5 | 4.8 |
| 250 | <40 | 14 | <10 | 2.9 | 76 | 20 | 2 | 65 | .8 | 17.1 | 16.4 | .7 |
| 251 | <40 | 11 | <10 | 2.4 | 63 | 17 | 2 | 52 | 2.6 | 22.8 | 21.4 | 1.4 |
| 252 | <40 | 13 | <10 | 2.7 | 74 | 20 | 3 | 57 | 1.5 | 14.0 | 14.0 | < .1 |
| 253 | <40 | 13 | <10 | 3.3 | 74 | 24 | 3 | 56 | 1.4 | 13.5 | 13.5 | < .1 |
| 254 | <40 | 14 | <10 | 3.2 | 69 | 20 | 3 | 61 | .8 | 7.4 | 7.4 | < .1 |
| 255 | <40 | 12 | <10 | 2.7 | 55 | 16 | 2 | 41 | 1.1 | 6.6 | 6.6 | < .1 |
| 256 | <40 | 12 | <10 | 2.9 | 71 | 18 | 2 | 98 | 1.1 | 14.1 | 14.1 | < .1 |
| 257 | <40 | 12 | <10 | 2.7 | 68 | 20 | 2 | 53 | 1.1 | 15.1 | 15.1 | < .1 |
| 258 | <40 | 11 | <10 | 2.5 | 77 | 18 | 2 | 47 | 2.5 | 26.3 | 11.3 | 15.0 |
| 259 | <40 | 12 | <10 | 2.7 | 75 | 18 | 2 | 45 | 1.9 | 20.3 | 14.7 | 5.6 |
| 260 | <40 | 11 | <10 | 2.9 | 65 | 20 | 3 | 42 | 1.3 | 11.7 | 11.7 | < .1 |
| 261 | <40 | 11 | <10 | 2.9 | 65 | 20 | 2 | 47 | 1.5 | 12.7 | 12.7 | < .1 |
| 262 | <40 | 11 | <10 | 2.9 | 75 | 20 | 2 | 54 | 1.4 | 16.0 | 15.8 | .2 |
| 263 | <40 | 8 | <10 | 2.6 | 51 | 18 | 2 | 39 | 1.3 | 9.2 | 8.6 | .6 |
| 264 | <40 | 9 | <10 | 2.6 | 56 | 15 | 2 | 48 | .8 | 11.5 | 10.8 | .7 |
| 265 | <40 | 9 | <10 | 2.4 | 67 | 17 | 2 | 55 | 1.3 | 20.2 | 19.8 | .4 |
| 266 | <40 | 12 | <10 | 3.1 | 78 | 20 | 3 | 54 | 1.9 | 12.1 | 11.7 | .4 |
| 267 | <40 | 11 | <10 | 2.7 | 73 | 20 | 2 | 57 | 1.6 | 17.0 | 13.8 | 3.2 |
| 268 | <40 | 11 | <10 | 2.8 | 79 | 19 | 2 | 50 | 1.5 | 14.1 | 13.9 | .2 |
| 269 | <40 | 12 | <10 | 3.3 | 85 | 22 | 3 | 61 | .8 | 15.1 | 12.6 | 2.5 |
| 270 | <40 | 11 | <10 | 2.7 | 73 | 19 | 2 | 58 | 1.1 | 18.0 | 17.6 | .4 |
| 271 | <40 | 12 | <10 | 2.7 | 75 | 19 | 2 | 53 | 1.1 | 12.0 | 11.7 | .3 |
| 272 | <40 | 13 | <10 | 3.4 | 65 | 20 | 2 | 39 | .9 | 6.9 | 6.8 | .1 |
| 273 | <40 | 12 | <10 | 2.8 | 72 | 20 | 2 | 63 | 1.1 | 20.4 | 20.4 | < .1 |
| 274 | <40 | 11 | <10 | 2.5 | 94 | 19 | 2 | 63 | 2.7 | 29.9 | 10.2 | 19.7 |
| 275 | <40 | 11 | <10 | 2.8 | 73 | 19 | 2 | 57 | 1.3 | 14.4 | 14.4 | < .1 |
| 276 | <40 | 11 | <10 | 2.9 | 68 | 21 | 3 | 91 | 1.5 | 8.6 | 8.6 | < .1 |
| 277 | <40 | 10 | <10 | 2.9 | 59 | 18 | 2 | 49 | 1.0 | 11.7 | 11.7 | < .1 |
| 278 | <40 | 14 | <10 | 3.0 | 82 | 21 | 2 | 73 | 2.0 | 15.4 | 15.4 | < .1 |
| 279 | <40 | 11 | <10 | 2.8 | 73 | 20 | 2 | 77 | 1.3 | 18.3 | 18.3 | < .1 |
| 280 | <40 | 10 | <10 | 2.5 | 75 | 19 | 2 | 86 | 1.6 | 18.1 | 18.1 | < .1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 281 | <40 | 15 | <10 | 3.0 | 63 | 20 | 3 | 54 | 1.3 | 12.8 | 11.4 | 1.4 |
| 282 | <40 | 12 | <10 | 2.5 | 67 | 20 | 2 | 62 | 1.1 | 8.9 | 8.9 | < .1 |
| 283 | <40 | 11 | <10 | 2.8 | 88 | 21 | 3 | 86 | .8 | 11.6 | 10.7 | .9 |
| 284 | <40 | 10 | <10 | 2.7 | 68 | 18 | 2 | 55 | 1.5 | 17.8 | 16.9 | .9 |
| 285 | <40 | 12 | <10 | 2.8 | 68 | 20 | 2 | 51 | 1.3 | 10.5 | 10.5 | < .1 |
| 286 | <40 | 12 | <10 | 2.7 | 68 | 21 | 3 | 56 | 1.3 | 9.5 | 9.5 | < .1 |
| 287 | <40 | 12 | <10 | 2.9 | 81 | 22 | 2 | 65 | 1.4 | 10.4 | 10.4 | < .1 |
| 288 | <40 | 10 | <10 | 2.8 | 62 | 18 | 2 | 54 | 1.3 | 11.7 | 11.6 | .1 |
| 289 | <40 | 10 | <10 | 2.8 | 66 | 20 | 2 | 52 | 1.7 | 13.4 | 13.3 | .1 |
| 290 | <40 | 10 | <10 | 2.7 | 62 | 17 | 2 | 47 | .7 | 7.2 | 7.2 | < .1 |
| 291 | <40 | 22 | 30 | 1.3 | 40 | 20 | 3 | 500 | .9 | 5.8 | 5.6 | .2 |
| 292 | <40 | 12 | <10 | 2.8 | 75 | 19 | 2 | 64 | 1.4 | 20.5 | 20.5 | < .1 |
| 293 | <40 | 12 | <10 | 2.8 | 71 | 20 | 2 | 59 | 1.3 | 12.3 | 12.3 | < .1 |
| 294 | <40 | 10 | <10 | 2.5 | 72 | 19 | 2 | 60 | .8 | 14.9 | 14.6 | .3 |
| 295 | <40 | 12 | <10 | 2.9 | 79 | 18 | 2 | 59 | 1.2 | 12.3 | 12.3 | < .1 |
| 296 | <40 | 12 | <10 | 2.9 | 65 | 18 | 2 | 46 | 1.4 | 11.0 | 11.0 | < .1 |
| 297 | <40 | 10 | <10 | 2.8 | 58 | 17 | 2 | 36 | .8 | 11.6 | 11.5 | .1 |
| 298 | <40 | 10 | <10 | 2.8 | 78 | 19 | 2 | 51 | 1.2 | 16.0 | 15.2 | .8 |
| 299 | <40 | 9 | <10 | 2.8 | 63 | 18 | 2 | 43 | 1.0 | 11.6 | 11.6 | < .1 |
| 300 | <40 | 10 | <10 | 2.8 | 82 | 22 | 2 | 92 | 3.9 | 35.3 | 34.3 | 1.0 |
| 301 | <40 | 13 | <10 | 3.0 | 75 | 19 | 2 | 80 | 1.9 | 19.8 | 19.8 | < .1 |
| 302 | <40 | 10 | <10 | 2.6 | 67 | 18 | 2 | 47 | 1.4 | 6.8 | 6.8 | < .1 |
| 303 | <40 | 11 | <10 | 2.8 | 80 | 21 | 2 | 61 | 1.7 | 10.9 | 10.9 | < .1 |
| 304 | <40 | 12 | <10 | 3.0 | 76 | 21 | 2 | 63 | 1.5 | 12.2 | 12.2 | < .1 |
| 305 | <40 | 11 | <10 | 2.9 | 75 | 20 | 2 | 57 | 1.5 | 12.8 | 12.8 | < .1 |
| 306 | <40 | 11 | <10 | 2.2 | 63 | 17 | 2 | 56 | 1.6 | 15.2 | 15.2 | < .1 |
| 307 | <40 | 11 | <10 | 3.0 | 84 | 22 | 3 | 62 | 1.1 | 3.7 | 3.7 | < .1 |
| 308 | <40 | 12 | <10 | 2.7 | 64 | 20 | 2 | 79 | 1.9 | 15.8 | 15.8 | < .1 |
| 309 | <40 | 10 | <10 | 2.6 | 70 | 20 | 2 | 58 | 1.3 | 10.2 | 10.2 | < .1 |
| 310 | <40 | 10 | <10 | 2.6 | 71 | 19 | 2 | 57 | 1.8 | 12.9 | 12.9 | < .1 |
| 311 | <40 | 16 | <10 | 3.6 | 57 | 22 | 3 | 36 | .8 | 5.7 | 5.3 | .4 |
| 312 | <40 | 15 | <10 | 3.0 | 63 | 25 | 3 | 54 | .8 | 7.9 | 7.8 | .1 |
| 313 | <40 | 12 | <10 | 2.8 | 67 | 21 | 2 | 58 | .9 | 7.9 | 7.7 | .2 |
| 314 | <40 | 12 | <10 | 3.1 | 70 | 21 | 2 | 53 | 1.1 | 9.0 | 9.0 | < .1 |
| 315 | <40 | 12 | 10 | 2.9 | 74 | 20 | 2 | 79 | 1.3 | 14.4 | 12.0 | 2.4 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 316 | <40 | 12 | <10 | 2.7 | 64 | 22 | 2 | 52 | 1.1 | 13.7 | 13.7 | <0.1 |
| 317 | <40 | 11 | <10 | 2.9 | 63 | 21 | 3 | 71 | .9 | 14.1 | 14.1 | < .1 |
| 318 | <40 | 12 | <10 | 2.7 | 70 | 20 | 2 | 65 | 1.1 | 11.7 | 11.1 | .6 |
| 319 | <40 | 12 | <10 | 2.8 | 59 | 20 | 2 | 61 | 1.1 | 13.1 | 13.0 | .1 |
| 320 | <40 | 11 | <10 | 2.8 | 59 | 19 | 2 | 55 | 1.1 | 13.3 | 13.3 | < .1 |
| 321 | <40 | 12 | <10 | 2.9 | 65 | 20 | 2 | 51 | 1.3 | 11.3 | 11.3 | < .1 |
| 322 | <40 | 13 | <10 | 2.9 | 70 | 21 | 3 | 58 | 1.3 | 12.2 | 12.2 | < .1 |
| 323 | <40 | 13 | <10 | 3.0 | 62 | 20 | 2 | 50 | .7 | 4.7 | 4.6 | .1 |
| 324 | <40 | 11 | <10 | 2.6 | 63 | 20 | 2 | 70 | 1.3 | 19.3 | 19.3 | < .1 |
| 325 | <40 | 12 | <10 | 2.9 | 79 | 22 | 2 | 71 | 1.3 | 12.4 | 12.2 | .2 |
| 326 | <40 | 11 | <10 | 2.7 | 74 | 20 | 2 | 60 | 1.2 | 10.1 | 10.1 | < .1 |
| 327 | <40 | 13 | <10 | 2.8 | 68 | 20 | 2 | 61 | 1.7 | 13.7 | 13.7 | < .1 |
| 328 | <40 | 12 | <10 | 2.8 | 67 | 18 | 2 | 63 | 1.7 | 17.1 | 17.1 | < .1 |
| 329 | <40 | 12 | <10 | 2.9 | 80 | 22 | 3 | 75 | 1.3 | 17.9 | 17.9 | < .1 |
| 330 | <40 | 10 | <10 | 2.6 | 56 | 17 | 2 | 47 | 1.1 | 10.9 | 10.9 | < .1 |
| 331 | <40 | 10 | <10 | 2.9 | 74 | 22 | 3 | 63 | 1.2 | 24.9 | 24.8 | .1 |
| 332 | <40 | 12 | <10 | 3.0 | 77 | 20 | 2 | 61 | 1.6 | 14.7 | 14.7 | < .1 |
| 333 | <40 | 11 | <10 | 2.9 | 76 | 21 | 2 | 65 | 1.4 | 11.6 | 11.6 | < .1 |
| 334 | <40 | 8 | <10 | 2.4 | 61 | 16 | 2 | 49 | 1.5 | 12.4 | 12.4 | < .1 |
| 335 | <40 | 10 | <10 | 2.8 | 69 | 19 | 2 | 52 | 1.4 | 17.4 | 15.7 | 1.7 |
| 336 | <40 | 11 | <10 | 2.9 | 73 | 20 | 2 | 52 | 1.5 | 12.6 | 12.5 | .1 |
| 337 | <40 | 11 | <10 | 2.5 | 75 | 18 | 2 | 57 | 1.2 | 17.2 | 17.0 | .2 |
| 338 | <40 | 11 | <10 | 3.0 | 71 | 19 | 2 | 55 | 1.5 | 13.0 | 13.0 | < .1 |
| 339 | <40 | 15 | <10 | 3.1 | 100 | 30 | 3 | 73 | 1.5 | 11.8 | 9.7 | 2.1 |
| 340 | <40 | 10 | <10 | 2.8 | 66 | 17 | 2 | 47 | 1.1 | 10.3 | 10.3 | < .1 |
| 341 | <40 | 11 | <10 | 2.8 | 70 | 18 | 2 | 54 | 1.4 | 13.4 | 13.3 | .1 |
| 342 | <40 | 12 | <10 | 2.9 | 78 | 19 | 2 | 61 | 1.3 | 16.0 | 16.0 | < .1 |
| 343 | <40 | 9 | <10 | 2.7 | 65 | 19 | 2 | 56 | 1.3 | 19.5 | 19.5 | < .1 |
| 344 | <40 | 10 | <10 | 2.6 | 66 | 18 | 2 | 54 | 1.1 | 10.2 | 10.2 | < .1 |
| 345 | <40 | 10 | <10 | 2.6 | 55 | 17 | 2 | 42 | 1.5 | 8.3 | 8.3 | < .1 |
| 346 | <40 | 10 | <10 | 2.5 | 66 | 19 | 2 | 52 | 1.7 | 16.0 | 16.0 | < .1 |
| 347 | <40 | 13 | <10 | 3.1 | 77 | 23 | 3 | 85 | 1.5 | 22.8 | 22.8 | < .1 |
| 348 | <40 | 12 | <10 | 2.7 | 75 | 21 | 2 | 100 | 2.5 | 21.2 | 21.0 | .2 |
| 349 | <40 | 14 | <10 | 2.9 | 87 | 25 | 3 | 290 | 1.9 | 16.7 | 16.7 | < .1 |
| 350 | <40 | 9 | <10 | 2.5 | 61 | 19 | 2 | 56 | 1.6 | 10.8 | 10.8 | < .1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 351 | <40 | 11 | <10 | 2.6 | 70 | 20 | 2 | 57 | 1.1 | 8.2 | 8.1 | 0.1 |
| 352 | <40 | 11 | <10 | 2.7 | 62 | 21 | 2 | 82 | 1.4 | 9.5 | 9.5 | < .1 |
| 353 | <40 | 12 | <10 | 2.4 | 60 | 20 | 2 | 56 | .9 | 8.6 | 8.6 | < .1 |
| 354 | <40 | 11 | <10 | 2.5 | 61 | 21 | 2 | 65 | 1.3 | 13.2 | 13.2 | < .1 |
| 355 | <40 | 14 | <10 | 3.0 | 74 | 22 | 2 | 61 | 1.1 | 5.2 | 5.0 | .2 |
| 356 | <40 | 8 | <10 | 2.2 | 60 | 19 | 2 | 46 | .7 | 32.3 | 11.7 | 20.6 |
| 357 | <40 | 10 | <10 | 2.3 | 49 | 16 | 2 | 41 | 1.1 | 7.2 | 7.2 | < .1 |
| 358 | <40 | 12 | <10 | 2.9 | 69 | 20 | 2 | 51 | 1.4 | 10.6 | 10.6 | < .1 |
| 359 | <40 | 11 | <10 | 2.5 | 62 | 17 | 2 | 58 | 1.0 | 11.2 | 11.2 | < .1 |
| 360 | <40 | 11 | <10 | 3.0 | 69 | 20 | 2 | 54 | 1.3 | 8.4 | 8.4 | < .1 |
| 361 | <40 | 9 | <10 | 2.4 | 58 | 17 | 2 | 54 | 1.3 | 10.3 | 10.2 | .1 |
| 362 | <40 | 12 | <10 | 2.9 | 78 | 20 | 2 | 59 | 1.4 | 10.8 | 10.8 | < .1 |
| 363 | <40 | 11 | <10 | 2.8 | 69 | 18 | 2 | 51 | 1.4 | 12.7 | 12.7 | < .1 |
| 364 | <40 | 10 | <10 | 2.6 | 62 | 16 | 2 | 41 | 1.1 | 11.8 | 11.7 | .1 |
| 365 | <40 | 10 | <10 | 2.7 | 68 | 18 | 2 | 57 | 1.3 | 16.9 | 16.9 | < .1 |
| 366 | <40 | 10 | <10 | 2.8 | 78 | 18 | 2 | 65 | 1.5 | 13.2 | 13.2 | < .1 |
| 367 | <40 | 10 | <10 | 2.8 | 73 | 19 | 2 | 55 | 1.3 | 10.6 | 10.6 | < .1 |
| 368 | <40 | 10 | <10 | 2.9 | 88 | 20 | 2 | 85 | 2.5 | 20.0 | 20.0 | < .1 |
| 369 | <40 | 12 | <10 | 2.7 | 72 | 20 | 2 | 50 | 1.4 | 6.5 | 6.5 | < .1 |
| 370 | <40 | 13 | <10 | 3.0 | 82 | 21 | 3 | 72 | 1.5 | 15.0 | 15.0 | < .1 |
| 371 | <40 | 11 | <10 | 2.8 | 76 | 21 | 2 | 67 | 1.6 | 15.1 | 15.1 | < .1 |
| 372 | <40 | 10 | <10 | 3.0 | 75 | 20 | 2 | 83 | 1.5 | 17.9 | 17.9 | < .1 |
| 373 | <40 | 11 | <10 | 2.6 | 56 | 19 | 2 | 59 | 2.0 | 21.5 | 21.5 | < .1 |
| 374 | <40 | 11 | <10 | 2.8 | 74 | 21 | 2 | 65 | 1.6 | 14.2 | 14.2 | < .1 |
| 375 | <40 | 11 | <10 | 2.4 | 54 | 18 | 2 | 57 | 1.9 | 20.2 | 20.2 | < .1 |
| 376 | <40 | 13 | <10 | 2.5 | 83 | 24 | 3 | 120 | 2.1 | 39.4 | 39.4 | < .1 |
| 377 | <40 | 11 | <10 | 2.8 | 73 | 21 | 2 | 65 | 1.4 | 14.7 | 14.7 | < .1 |
| 378 | <40 | 11 | <10 | 2.6 | 61 | 18 | 2 | 53 | 1.5 | 9.7 | 9.7 | < .1 |
| 379 | <40 | 10 | <10 | 2.8 | 54 | 17 | 2 | 41 | 1.1 | 8.9 | 8.9 | < .1 |
| 380 | <40 | 11 | <10 | 2.7 | 67 | 19 | 2 | 54 | 1.4 | 13.3 | 13.3 | < .1 |
| 381 | <40 | 11 | <10 | 2.8 | 56 | 19 | 2 | 37 | 1.2 | 8.4 | 8.4 | < .1 |
| 382 | <40 | 11 | <10 | 2.9 | 71 | 19 | 2 | 59 | 1.7 | 15.2 | 15.0 | .2 |
| 383 | <40 | 9 | <10 | 2.7 | 68 | 19 | 2 | 78 | 1.0 | 13.6 | 13.6 | < .1 |
| 384 | <40 | 13 | <10 | 3.0 | 87 | 20 | 2 | 68 | 1.1 | 8.3 | 8.3 | < .1 |
| 385 | <40 | 10 | <10 | 2.7 | 66 | 17 | 2 | 57 | 1.7 | 13.6 | 13.6 | < .1 |

**Table 5.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of first- and second-order streams, 1987*--Continued

| Map-reference number (fig. 2) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 386 | <40 | 11 | <10 | 2.9 | 67 | 19 | 2 | 60 | 1.1 | 8.3 | 7.1 | 1.2 |
| 387 | <40 | 10 | <10 | 2.5 | 58 | 17 | 2 | 46 | 1.5 | 13.3 | 13.3 | < .1 |
| 388 | <40 | 9 | <10 | 2.7 | 67 | 17 | 2 | 120 | 1.0 | 13.6 | 13.6 | < .1 |
| 389 | <40 | 9 | <10 | 2.8 | 67 | 18 | 2 | 59 | 1.1 | 12.1 | 12.1 | < .1 |
| 390 | <40 | 10 | <10 | 2.7 | 71 | 19 | 2 | 66 | 1.1 | 9.5 | 9.3 | .2 |
| 391 | <40 | 11 | <10 | 2.8 | 65 | 21 | 2 | 53 | 1.1 | 8.8 | 8.7 | .1 |
| 392 | <40 | 13 | <10 | 2.8 | 88 | 23 | 3 | 100 | 2.5 | 16.0 | 16.0 | < .1 |
| 393 | <40 | 10 | <10 | 2.2 | 58 | 17 | 2 | 48 | 1.9 | 12.2 | 12.2 | < .1 |
| 394 | <40 | 11 | <10 | 3.0 | 64 | 20 | 2 | 51 | 1.1 | 10.4 | 10.4 | < .1 |
| 395 | <40 | 11 | <10 | 2.6 | 71 | 18 | 2 | 61 | 1.3 | 11.8 | 11.8 | < .1 |
| 396 | <40 | 10 | <10 | 2.7 | 61 | 18 | 2 | 47 | 1.3 | 4.6 | 4.6 | < .1 |
| 397 | <40 | 11 | <10 | 2.7 | 64 | 18 | 2 | 51 | .8 | 7.4 | 7.4 | < .1 |
| 398 | <40 | 11 | <10 | 2.8 | 71 | 20 | 2 | 52 | .9 | 7.4 | 7.4 | < .1 |
| 399 | <40 | 12 | <10 | 2.7 | 92 | 21 | 2 | 70 | 1.3 | 9.5 | 9.5 | < .1 |
| 400 | <40 | 10 | <10 | 2.6 | 84 | 20 | 2 | 64 | 1.7 | 12.9 | 12.9 | < .1 |
| 401 | <40 | 11 | <10 | 2.8 | 71 | 19 | 2 | 59 | 1.1 | 13.7 | 13.6 | .1 |
| 402 | <40 | 11 | <10 | 2.9 | 84 | 21 | 2 | 62 | 1.3 | 16.8 | 16.3 | .5 |
| 403 | <40 | 11 | <10 | 2.6 | 75 | 19 | 2 | 56 | 1.2 | 14.1 | 13.2 | .9 |
| 404 | <40 | 11 | <10 | 2.8 | 82 | 20 | 2 | 62 | 1.3 | 10.7 | 10.6 | .1 |
| 405 | <40 | 10 | <10 | 2.7 | 77 | 20 | 2 | 57 | .9 | 11.8 | 11.8 | < .1 |
| 406 | <40 | 12 | <10 | 2.9 | 81 | 20 | 2 | 57 | 1.3 | 13.7 | 13.5 | .2 |
| 407 | <40 | 10 | <10 | 2.6 | 76 | 20 | 2 | 59 | 1.7 | 13.5 | 13.5 | < .1 |
| 408 | <40 | 11 | <10 | 2.7 | 68 | 19 | 2 | 56 | 1.2 | 10.7 | 10.7 | < .1 |
| 409 | <40 | 10 | <10 | 2.4 | 66 | 17 | 2 | 68 | 1.5 | 16.0 | 16.0 | < .1 |
| 410 | <40 | 11 | <10 | 2.8 | 60 | 19 | 2 | 55 | 1.8 | 14.0 | 14.0 | < .1 |
| 411 | <40 | 10 | <10 | 2.2 | 56 | 16 | 2 | 44 | .8 | 8.0 | 7.5 | .5 |
| 412 | <40 | 8 | <10 | 2.6 | 65 | 18 | 2 | 55 | 1.3 | 16.2 | 16.2 | < .1 |
| 413 | <40 | 11 | <10 | 2.8 | 72 | 19 | 2 | 62 | 1.4 | 17.6 | 17.6 | < .1 |
| 414 | <40 | 12 | <10 | 3.0 | 75 | 20 | 2 | 75 | 2.0 | 19.9 | 19.9 | < .1 |
| 415 | <40 | 12 | <10 | 2.7 | 73 | 20 | 2 | 53 | 1.3 | 11.2 | 11.2 | < .1 |
| 416 | <40 | 12 | <10 | 2.9 | 67 | 19 | 2 | 59 | 1.4 | 17.0 | 17.0 | < .1 |
| 417 | <40 | 11 | <10 | 2.6 | 78 | 19 | 2 | 61 | 1.7 | 16.7 | 15.4 | 1.3 |
| 418 | <40 | 10 | <10 | 2.5 | 59 | 17 | 2 | 49 | 1.1 | 14.0 | 14.0 | < .1 |
| 419 | <40 | 10 | <10 | 2.6 | 70 | 19 | 2 | 63 | 3.3 | 20.5 | 18.5 | 2.0 |
| 420 | <40 | 10 | <10 | 2.8 | 68 | 19 | 2 | 55 | 1.7 | 17.9 | 17.9 | < .1 |
| 421 | <40 | 10 | <10 | 2.3 | 69 | 17 | 2 | 56 | 1.0 | 8.6 | 8.6 | < .1 |
| 422 | <40 | 8 | <10 | 2.5 | 63 | 16 | 2 | 53 | 1.7 | 14.2 | 14.2 | < .1 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*

[Units of measurement: g/kg, grams per kilogram; mg/kg, milligrams per kilogram; µg/g, micrograms per gram; mm, millimeter]

| Map-reference number (fig. 3) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38.0 | 5.8 | 10 | 19 | 0.5 | 600 | 52,000 | 1.0 | 5.3 | 640 | 1 |
| 2 | 28.0 | 7.7 | 8.7 | 20 | .3 | 500 | 58,000 | .9 | 4.9 | 640 | 2 |
| 3 | 27.0 | 5.5 | 11 | 19 | .4 | 500 | 51,000 | 1.1 | 5.5 | 650 | 1 |
| 4 | 9.3 | 5.8 | 12 | 21 | .3 | 700 | 57,000 | 1.0 | 6.5 | 780 | 2 |
| 5 | 11.0 | 7.6 | 10 | 21 | .7 | 900 | 65,000 | 1.1 | 7.9 | 800 | 2 |
| 6 | 9.4 | 7.4 | 9.0 | 23 | .7 | 800 | 66,000 | 1.0 | 6.6 | 820 | 2 |
| 7 | 10.0 | 8.2 | 11 | 22 | .6 | 1,100 | 70,000 | 1.0 | 6.3 | 830 | 2 |
| 8 | 9.6 | 6.8 | 10 | 21 | .4 | 700 | 61,000 | 1.0 | 6.7 | 800 | 2 |
| 9 | 11.0 | 7.7 | 11 | 22 | .9 | 900 | 65,000 | 3.7 | 9.2 | 840 | 2 |
| 10 | 9.9 | 5.3 | 12 | 20 | .9 | 600 | 52,000 | 1.0 | 5.2 | 730 | 1 |
| 11 | 9.1 | 6.2 | 11 | 22 | .2 | 700 | 60,000 | .9 | 6.3 | 760 | 2 |
| 12 | 10.0 | 7.4 | 10 | 21 | .4 | 1,000 | 63,000 | 1.1 | 6.5 | 770 | 2 |
| 13 | 11.0 | 5.5 | 14 | 22 | .6 | 700 | 57,000 | .9 | 4.7 | 770 | 2 |
| 14 | 9.3 | 5.6 | 12 | 21 | .2 | 600 | 58,000 | .8 | 5.4 | 780 | 2 |
| 15 | 10.0 | 6.6 | 12 | 21 | .6 | 600 | 61,000 | 1.1 | 6.3 | 800 | 2 |
| 16 | 9.5 | 6.7 | 10 | 21 | .3 | 700 | 61,000 | 1.1 | 6.0 | 790 | 2 |
| 17 | 10.0 | 5.9 | 11 | 20 | .5 | 600 | 58,000 | 1.0 | 4.4 | 770 | 2 |
| 18 | 9.8 | 5.6 | 12 | 21 | .3 | 600 | 57,000 | 1.3 | 5.5 | 790 | 2 |
| 19 | 8.8 | 5.5 | 12 | 21 | .4 | 500 | 55,000 | 1.0 | 5.5 | 730 | 1 |
| 20 | 9.0 | 7.5 | 7.8 | 20 | .4 | 800 | 66,000 | 1.0 | 7.6 | 710 | 2 |
| 21 | 8.9 | 6.0 | 11 | 20 | .3 | 500 | 58,000 | 1.2 | 5.7 | 750 | 2 |
| 22 | 9.2 | 5.8 | 11 | 21 | .4 | 700 | 60,000 | .8 | 4.8 | 800 | 2 |
| 23 | 8.9 | 5.7 | 11 | 20 | .3 | 600 | 57,000 | 1.1 | 5.7 | 770 | 2 |
| 24 | 24.0 | 15 | 7.6 | 19 | 1.0 | 600 | 62,000 | .9 | 5.8 | 640 | 2 |
| 25 | 13.0 | 7.1 | 10 | 19 | .5 | 600 | 58,000 | 1.1 | 7.0 | 720 | 2 |
| 26 | 10.0 | 5.5 | 10 | 19 | .2 | 400 | 53,000 | .8 | 4.6 | 690 | 1 |
| 27 | 9.8 | 4.8 | 13 | 21 | .2 | 400 | 54,000 | .9 | 4.2 | 760 | 1 |
| 28 | 14.0 | 7.2 | 9.4 | 20 | .4 | 500 | 62,000 | 1.2 | 6.2 | 720 | 2 |
| 29 | 10.0 | 5.0 | 12 | 20 | .3 | 400 | 51,000 | .8 | 4.5 | 710 | 1 |
| 30 | 8.5 | 6.0 | 11 | 21 | .2 | 600 | 62,000 | .8 | 5.2 | 750 | 2 |
| 31 | 9.8 | 4.9 | 10 | 19 | .3 | 600 | 54,000 | 1.3 | 5.2 | 680 | 1 |
| 32 | 9.6 | 5.9 | 11 | 20 | .3 | 500 | 59,000 | 1.1 | 5.7 | 730 | 2 |
| 33 | 12.0 | 6.3 | 8.2 | 19 | .4 | 500 | 65,000 | 1.0 | 6.9 | 650 | 2 |
| 34 | 8.9 | 4.9 | 10 | 20 | .2 | 400 | 58,000 | .9 | 4.9 | 710 | 2 |
| 35 | 20.0 | 8.0 | 8.3 | 19 | .5 | 700 | 62,000 | 1.2 | 7.5 | 690 | 2 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Calcium, total as Ca (g/kg) | Magnesium, total as Mg (g/kg) | Sodium, total as Na (g/kg) | Potassium, total as K (g/kg) | Sulfur, total as S (g/kg) | Phosphorus, total as P (mg/kg) | Aluminum, total as Al (µg/g) | Antimony, total as Sb (µg/g) | Arsenic, total as As (µg/g) | Barium, total as Ba (µg/g) | Beryllium, total as Be (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 12.0 | 4.7 | 9.2 | 17 | 0.3 | 400 | 53,000 | 1.0 | 6.6 | 630 | 1 |
| 37 | 45.0 | 9.6 | 7.0 | 18 | 1.1 | 500 | 59,000 | 1.0 | 7.4 | 600 | 2 |
| 38 | 14.0 | 7.3 | 9.2 | 20 | .2 | 500 | 58,000 | 1.5 | 6.1 | 700 | 2 |
| 39 | 27.0 | 6.1 | 10 | 19 | .6 | 600 | 54,000 | 1.1 | 5.4 | 650 | 1 |
| 40 | 32.0 | 7.7 | 7.5 | 18 | .6 | 500 | 61,000 | 1.3 | 8.4 | 610 | 2 |
| 41 | 40.0 | 7.9 | 7.6 | 18 | .3 | 500 | 56,000 | .9 | 6.6 | 620 | 2 |
| 42 | 30.0 | 5.8 | 10 | 19 | .5 | 700 | 54,000 | 1.0 | 5.4 | 640 | 1 |
| 43 | 48.0 | 12 | 5.7 | 21 | .5 | 600 | 63,000 | 1.2 | 7.5 | 520 | 2 |
| 44 | 17.0 | 7.9 | 7.8 | 19 | .3 | 700 | 61,000 | 1.2 | 8.6 | 620 | 2 |
| 45 | 25.0 | 5.8 | 10 | 19 | .4 | 500 | 52,000 | 1.0 | 5.8 | 650 | 1 |
| 46 | 44.0 | 5.9 | 9.9 | 18 | .4 | 500 | 52,000 | .9 | 5.7 | 630 | 1 |
| 47 | 19.0 | 6.5 | 7.5 | 18 | .5 | 700 | 61,000 | 1.3 | 9.8 | 630 | 2 |
| 48 | 18.0 | 6.7 | 7.7 | 18 | .5 | 700 | 59,000 | 1.0 | 8.6 | 600 | 2 |
| 49 | 15.0 | 5.9 | 8.2 | 18 | .7 | 800 | 61,000 | .9 | 7.4 | 600 | 2 |
| 50 | 28.0 | 5.9 | 10 | 19 | .3 | 500 | 53,000 | 1.0 | 5.5 | 650 | 1 |
| 51 | 24.0 | 6.4 | 8.0 | 17 | .5 | 700 | 56,000 | 1.2 | 9.2 | 670 | 2 |
| 52 | 15.0 | 7.3 | 5.9 | 18 | 1.0 | 1,300 | 74,000 | 2.6 | 17 | 800 | 2 |
| 53 | 25.0 | 6.0 | 10 | 19 | .4 | 500 | 55,000 | .9 | 6.0 | 660 | 2 |
| 54 | 28.0 | 8.5 | 7.6 | 20 | .5 | 700 | 69,000 | 1.0 | 7.5 | 630 | 2 |
| 55 | 25.0 | 6.3 | 9.8 | 19 | .4 | 600 | 56,000 | 1.1 | 6.4 | 650 | 2 |
| 56 | 15.0 | 6.3 | 8.0 | 18 | .5 | 700 | 63,000 | 1.0 | 8.7 | 530 | 2 |
| 57 | 8.9 | 5.4 | 7.6 | 18 | .2 | 600 | 61,000 | .9 | 7.4 | 550 | 2 |
| 58 | 8.3 | 5.5 | 7.6 | 17 | .2 | 500 | 62,000 | 1.4 | 9.6 | 660 | 2 |
| 59 | 29.0 | 8.0 | 7.9 | 19 | .5 | 700 | 62,000 | 1.1 | 8.2 | 630 | 2 |
| 60 | 34.0 | 6.6 | 8.7 | 19 | .7 | 800 | 57,000 | 1.0 | 8.0 | 620 | 2 |
| 61 | 19.0 | 7.4 | 8.0 | 19 | .7 | 1,800 | 64,000 | 2.6 | 8.2 | 660 | 2 |
| 62 | 30.0 | 8.3 | 7.0 | 19 | .5 | 700 | 66,000 | 1.1 | 9.0 | 620 | 2 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <10 | 0.5 | <2 | 78 | 49 | 8 | 12 | <2 | 12 | <8 | <4 | 20,000 |
| 2 | <10 | .4 | <2 | 74 | 61 | 11 | 15 | <2 | 14 | <8 | <4 | 23,000 |
| 3 | <10 | .5 | <2 | 74 | 43 | 7 | 10 | <2 | 11 | <8 | <4 | 18,000 |
| 4 | <10 | 1.0 | <2 | 68 | 48 | 8 | 13 | <2 | 12 | <8 | <4 | 20,000 |
| 5 | <10 | 2.1 | <2 | 64 | 63 | 12 | 20 | <2 | 16 | <8 | <4 | 26,000 |
| 6 | <10 | 1.2 | <2 | 79 | 56 | 13 | 19 | <2 | 16 | <8 | <4 | 27,000 |
| 7 | <10 | 2.4 | <2 | 75 | 73 | 12 | 24 | <2 | 17 | <8 | <4 | 29,000 |
| 8 | <10 | 1.0 | <2 | 58 | 53 | 9 | 16 | <2 | 14 | <8 | <4 | 22,000 |
| 9 | <10 | 2.4 | <2 | 74 | 64 | 13 | 20 | <2 | 15 | <8 | <4 | 27,000 |
| 10 | <10 | 2.9 | <2 | 59 | 42 | 7 | 10 | <2 | 11 | <8 | <4 | 16,000 |
| 11 | <10 | 1.4 | <2 | 75 | 55 | 10 | 17 | <2 | 13 | <8 | <4 | 22,000 |
| 12 | <10 | 1.6 | <2 | 66 | 59 | 11 | 22 | <2 | 15 | <8 | <4 | 25,000 |
| 13 | <10 | 5.2 | <2 | 59 | 46 | 8 | 21 | <2 | 12 | <8 | <4 | 18,000 |
| 14 | <10 | .7 | <2 | 68 | 47 | 9 | 11 | <2 | 13 | <8 | <4 | 20,000 |
| 15 | <10 | 1.3 | <2 | 68 | 34 | 9 | 26 | <2 | 14 | <8 | <4 | 22,000 |
| 16 | <10 | .7 | <2 | 70 | 56 | 10 | 16 | <2 | 14 | <8 | <4 | 23,000 |
| 17 | <10 | .6 | <2 | 74 | 52 | 9 | 15 | <2 | 13 | <8 | <4 | 21,000 |
| 18 | <10 | .4 | <2 | 70 | 45 | 8 | 14 | <2 | 13 | <8 | <4 | 19,000 |
| 19 | <10 | 1.4 | <2 | 65 | 46 | 8 | 11 | <2 | 13 | <8 | <4 | 18,000 |
| 20 | <10 | .7 | <2 | 71 | 54 | 12 | 19 | <2 | 16 | <8 | <4 | 29,000 |
| 21 | <10 | .7 | <2 | 75 | 54 | 10 | 12 | <2 | 13 | <8 | <4 | 22,000 |
| 22 | <10 | .5 | <2 | 67 | 56 | 9 | 13 | <2 | 13 | <8 | <4 | 22,000 |
| 23 | <10 | < .4 | <2 | 91 | 53 | 9 | 11 | <2 | 13 | <8 | <4 | 21,000 |
| 24 | <10 | .8 | <2 | 78 | 65 | 16 | 15 | <2 | 15 | <8 | <4 | 27,000 |
| 25 | <10 | .9 | <2 | 78 | 54 | 11 | 15 | <2 | 14 | <8 | <4 | 23,000 |
| 26 | <10 | .7 | <2 | 85 | 55 | 9 | 14 | <2 | 12 | <8 | <4 | 19,000 |
| 27 | <10 | .8 | <2 | 76 | 42 | 7 | 11 | <2 | 12 | <8 | <4 | 17,000 |
| 28 | <10 | .6 | <2 | 78 | 46 | 11 | 16 | <2 | 14 | <8 | <4 | 24,000 |
| 29 | <10 | 2.7 | <2 | 110 | 44 | 7 | 10 | <2 | 12 | <8 | <4 | 17,000 |
| 30 | <10 | .6 | <2 | 69 | 56 | 9 | 14 | <2 | 14 | <8 | <4 | 23,000 |
| 31 | <10 | .6 | <2 | 82 | 50 | 8 | 12 | <2 | 12 | <8 | <4 | 20,000 |
| 32 | <10 | .9 | <2 | 69 | 50 | 9 | 12 | <2 | 13 | <8 | <4 | 21,000 |
| 33 | <10 | .5 | <2 | 120 | 71 | 11 | 19 | <2 | 16 | <8 | <4 | 29,000 |
| 34 | <10 | .6 | <2 | 64 | 52 | 9 | 17 | <2 | 13 | <8 | <4 | 21,000 |
| 35 | <10 | .5 | <2 | 72 | 65 | 10 | 16 | <2 | 14 | <8 | <4 | 26,000 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Bismuth, total as Bi (µg/g) | Boron, water-soluble as B (µg/g) | Cadmium, total as Cd (µg/g) | Cerium, total as Ce (µg/g) | Chromium, total as Cr (µg/g) | Cobalt, total as Co (µg/g) | Copper, total as Cu (µg/g) | Europium, total as Eu (µg/g) | Gallium, total as Ga (µg/g) | Gold, total as Au (µg/g) | Holmium, total as Ho (µg/g) | Iron, total as Fe (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | <10 | 0.4 | <2 | 72 | 53 | 9 | 10 | <2 | 11 | <8 | <4 | 20,000 |
| 37 | <10 | .8 | <2 | 67 | 63 | 11 | 15 | <2 | 14 | <8 | <4 | 26,000 |
| 38 | <10 | .4 | <2 | 81 | 56 | 10 | 12 | <2 | 13 | <8 | <4 | 23,000 |
| 39 | <10 | .4 | <2 | 68 | 48 | 8 | 12 | <2 | 12 | <8 | <4 | 19,000 |
| 40 | <10 | .8 | <2 | 79 | 78 | 12 | 17 | <2 | 15 | <8 | <4 | 28,000 |
| 41 | <10 | 1.3 | <2 | 68 | 63 | 11 | 15 | <2 | 13 | <8 | <4 | 23,000 |
| 42 | <10 | .6 | <2 | 81 | 54 | 8 | 11 | <2 | 12 | <8 | <4 | 20,000 |
| 43 | <10 | .4 | <2 | 74 | 62 | 13 | 20 | <2 | 16 | <8 | <4 | 29,000 |
| 44 | <10 | .4 | <2 | 75 | 69 | 12 | 18 | <2 | 15 | <8 | <4 | 27,000 |
| 45 | <10 | .4 | <2 | 75 | 47 | 8 | 11 | <2 | 11 | <8 | <4 | 19,000 |
| 46 | <10 | .6 | <2 | 79 | 50 | 8 | 15 | <2 | 12 | <8 | <4 | 20,000 |
| 47 | <10 | .5 | <2 | 83 | 77 | 14 | 16 | <2 | 15 | <8 | <4 | 31,000 |
| 48 | <10 | .5 | <2 | 75 | 71 | 12 | 17 | <2 | 14 | <8 | <4 | 27,000 |
| 49 | <10 | .8 | <2 | 82 | 74 | 12 | 22 | <2 | 15 | <8 | <4 | 29,000 |
| 50 | <10 | .4 | <2 | 74 | 51 | 8 | 12 | <2 | 12 | <8 | <4 | 20,000 |
| 51 | <10 | .7 | <2 | 83 | 72 | 14 | 16 | <2 | 13 | <8 | <4 | 26,000 |
| 52 | <10 | .5 | <2 | 79 | 92 | 17 | 28 | <2 | 19 | <8 | <4 | 43,000 |
| 53 | <10 | .5 | <2 | 75 | 53 | 8 | 12 | <2 | 13 | <8 | <4 | 20,000 |
| 54 | <10 | .7 | <2 | 83 | 73 | 12 | 18 | <2 | 17 | <8 | <4 | 31,000 |
| 55 | <10 | .5 | <2 | 70 | 48 | 9 | 16 | <2 | 13 | <8 | <4 | 21,000 |
| 56 | <10 | .4 | <2 | 92 | 72 | 14 | 18 | <2 | 15 | <8 | <4 | 32,000 |
| 57 | <10 | .4 | <2 | 88 | 77 | 12 | 15 | <2 | 15 | <8 | <4 | 28,000 |
| 58 | <10 | .5 | <2 | 91 | 80 | 12 | 19 | <2 | 15 | <8 | <4 | 29,000 |
| 59 | <10 | .6 | <2 | 67 | 59 | 11 | 17 | <2 | 14 | <8 | <4 | 26,000 |
| 60 | <10 | .5 | <2 | 71 | 61 | 10 | 32 | <2 | 14 | <8 | <4 | 24,000 |
| 61 | <10 | 1.8 | <2 | 78 | 93 | 12 | 48 | <2 | 15 | <8 | <4 | 31,000 |
| 62 | <10 | .9 | <2 | 120 | 82 | 13 | 28 | <2 | 17 | <8 | <4 | 33,000 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 18 | 21 | 410 | <0.02 | <2 | 37 | 16 | <4 | 6 | <2 | 270 |
| 2 | 42 | 22 | 31 | 470 | < .02 | <2 | 36 | 20 | 5 | 7 | <2 | 390 |
| 3 | 43 | 18 | 20 | 360 | .02 | <2 | 35 | 15 | <4 | 6 | <2 | 260 |
| 4 | 39 | 20 | 21 | 360 | .02 | <2 | 31 | 17 | 4 | 6 | <2 | 210 |
| 5 | 37 | 19 | 26 | 1,000 | .02 | <2 | 32 | 23 | <4 | 8 | <2 | 190 |
| 6 | 42 | 29 | 25 | 510 | .02 | <2 | 35 | 23 | <4 | 8 | <2 | 180 |
| 7 | 42 | 35 | 29 | 420 | .10 | <2 | 37 | 25 | 7 | 9 | <2 | 180 |
| 8 | 35 | 21 | 24 | 470 | .02 | <2 | 29 | 19 | 5 | 7 | <2 | 200 |
| 9 | 40 | 23 | 27 | 600 | .06 | <2 | 34 | 23 | 7 | 8 | <2 | 190 |
| 10 | 35 | 16 | 19 | 370 | .02 | <2 | 28 | 14 | 7 | 6 | <2 | 200 |
| 11 | 42 | 20 | 21 | 510 | .02 | <2 | 37 | 17 | 5 | 7 | <2 | 200 |
| 12 | 39 | 28 | 27 | 540 | .06 | <2 | 32 | 21 | 9 | 8 | <2 | 190 |
| 13 | 33 | 30 | 19 | 280 | .12 | <2 | 27 | 14 | 4 | 6 | <2 | 230 |
| 14 | 38 | 23 | 21 | 330 | < .02 | <2 | 31 | 16 | <4 | 6 | <2 | 220 |
| 15 | 39 | 21 | 24 | 430 | < .02 | <2 | 32 | 18 | 5 | 7 | <2 | 210 |
| 16 | 40 | 20 | 25 | 550 | .02 | <2 | 33 | 24 | 4 | 7 | <2 | 200 |
| 17 | 42 | 18 | 21 | 470 | .02 | <2 | 37 | 18 | <4 | 7 | <2 | 190 |
| 18 | 40 | 17 | 21 | 660 | .02 | <2 | 33 | 16 | <4 | 6 | <2 | 210 |
| 19 | 37 | 20 | 20 | 360 | < .02 | <2 | 31 | 15 | 7 | 6 | <2 | 200 |
| 20 | 40 | 20 | 28 | 730 | .08 | <2 | 35 | 23 | 10 | 9 | <2 | 150 |
| 21 | 43 | 20 | 24 | 470 | .02 | <2 | 35 | 18 | <4 | 7 | <2 | 180 |
| 22 | 37 | 17 | 22 | 540 | < .02 | <2 | 31 | 18 | 5 | 7 | <2 | 190 |
| 23 | 51 | 20 | 22 | 600 | < .02 | <2 | 43 | 16 | <4 | 7 | <2 | 200 |
| 24 | 39 | 25 | 32 | 730 | < .02 | <2 | 33 | 24 | <4 | 8 | <2 | 190 |
| 25 | 44 | 23 | 26 | 540 | .02 | <2 | 37 | 19 | 4 | 7 | <2 | 180 |
| 26 | 46 | 17 | 20 | 410 | < .02 | <2 | 40 | 16 | <4 | 6 | <2 | 170 |
| 27 | 42 | 19 | 18 | 320 | < .02 | <2 | 34 | 12 | <4 | 5 | <2 | 230 |
| 28 | 44 | 24 | 26 | 630 | .02 | <2 | 37 | 20 | <4 | 8 | <2 | 190 |
| 29 | 61 | 19 | 17 | 420 | < .02 | <2 | 51 | 13 | <4 | 6 | <2 | 210 |
| 30 | 39 | 19 | 23 | 460 | .02 | <2 | 33 | 18 | 5 | 7 | <2 | 180 |
| 31 | 46 | 18 | 20 | 650 | .02 | <2 | 41 | 15 | 11 | 6 | <2 | 180 |
| 32 | 40 | 23 | 24 | 370 | .04 | <2 | 32 | 16 | 5 | 7 | <2 | 190 |
| 33 | 65 | 22 | 28 | 450 | < .02 | <2 | 58 | 22 | 5 | 9 | <2 | 160 |
| 34 | 36 | 20 | 22 | 410 | < .02 | <2 | 30 | 17 | <4 | 7 | <2 | 170 |
| 35 | 42 | 24 | 29 | 950 | .04 | <2 | 35 | 23 | 5 | 8 | <2 | 210 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Lanthanum, total as La (µg/g) | Lead, total as Pb (µg/g) | Lithium, total as Li (µg/g) | Manganese, total as Mn (µg/g) | Mercury, partial as Hg (µg/g) | Molybdenum, total as Mo (µg/g) | Neodymium, total as Nd (µg/g) | Nickel, total as Ni (µg/g) | Niobium, total as Nb (µg/g) | Scandium, total as Sc (µg/g) | Silver, total as Ag (µg/g) | Strontium, total as Sr (µg/g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 41 | 17 | 22 | 630 | 0.02 | <2 | 34 | 18 | <4 | 6 | <2 | 170 |
| 37 | 38 | 21 | 33 | 620 | .02 | <2 | 33 | 22 | <4 | 8 | <2 | 370 |
| 38 | 46 | 27 | 28 | 500 | .08 | <2 | 39 | 20 | <4 | 7 | <2 | 180 |
| 39 | 40 | 18 | 23 | 380 | < .02 | <2 | 33 | 17 | <4 | 6 | <2 | 250 |
| 40 | 43 | 22 | 37 | 920 | < .02 | <2 | 37 | 29 | <4 | 9 | <2 | 240 |
| 41 | 39 | 21 | 32 | 730 | .04 | <2 | 32 | 23 | 4 | 8 | <2 | 390 |
| 42 | 46 | 16 | 21 | 430 | < .02 | <2 | 38 | 17 | 10 | 7 | <2 | 250 |
| 43 | 40 | 24 | 46 | 680 | < .02 | <2 | 34 | 29 | 5 | 9 | <2 | 240 |
| 44 | 43 | 23 | 35 | 1,100 | .02 | <2 | 36 | 24 | 11 | 8 | <2 | 200 |
| 45 | 43 | 20 | 22 | 450 | < .02 | <2 | 35 | 16 | <4 | 6 | <2 | 240 |
| 46 | 44 | 20 | 21 | 430 | .04 | <2 | 37 | 16 | <4 | 6 | <2 | 290 |
| 47 | 45 | 25 | 34 | 1,300 | < .02 | <2 | 39 | 28 | <4 | 9 | <2 | 170 |
| 48 | 43 | 22 | 35 | 890 | .02 | <2 | 37 | 26 | 7 | 8 | <2 | 180 |
| 49 | 45 | 51 | 32 | 700 | .04 | <2 | 40 | 25 | 5 | 9 | <2 | 150 |
| 50 | 43 | 21 | 24 | 410 | < .02 | <2 | 35 | 18 | <4 | 6 | <2 | 250 |
| 51 | 44 | 31 | 30 | 1,200 | .02 | <2 | 37 | 28 | <4 | 8 | <2 | 210 |
| 52 | 42 | 34 | 42 | 1,200 | .08 | <2 | 36 | 37 | 5 | 11 | <2 | 150 |
| 53 | 43 | 21 | 24 | 460 | .02 | <2 | 37 | 17 | <4 | 6 | <2 | 240 |
| 54 | 47 | 22 | 36 | 710 | < .02 | <2 | 40 | 26 | <4 | 10 | <2 | 220 |
| 55 | 40 | 20 | 26 | 500 | .02 | <2 | 34 | 18 | 6 | 7 | <2 | 230 |
| 56 | 49 | 24 | 41 | 600 | .02 | <2 | 43 | 28 | 6 | 9 | <2 | 140 |
| 57 | 48 | 20 | 32 | 820 | .02 | <2 | 42 | 26 | 12 | 9 | <2 | 130 |
| 58 | 49 | 27 | 33 | 1,000 | .02 | <2 | 43 | 29 | <4 | 9 | <2 | 130 |
| 59 | 40 | 24 | 33 | 680 | .02 | <2 | 32 | 24 | 5 | 8 | <2 | 230 |
| 60 | 39 | 42 | 27 | 570 | .02 | <2 | 34 | 22 | <4 | 8 | <2 | 240 |
| 61 | 42 | 61 | 39 | 500 | .24 | <2 | 35 | 33 | 7 | 9 | 8 | 180 |
| 62 | 63 | 32 | 34 | 760 | .10 | <2 | 55 | 30 | <4 | 10 | <2 | 210 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) | Clay, sediment particles finer than 0.004 mm (percent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <40 | 12 | <10 | 2.9 | 75 | 21 | 2 | 53 | 1.3 | 14.8 | 5.2 | 9.6 | 21 |
| 2 | <40 | 11 | <10 | 3.0 | 72 | 20 | 2 | 66 | 1.5 | 15.4 | 9.2 | 6.2 | 28 |
| 3 | <40 | 11 | <10 | 2.7 | 65 | 20 | 2 | 50 | 1.1 | 10.6 | 4.4 | 6.2 | 17 |
| 4 | <40 | 10 | <10 | 2.7 | 68 | 18 | 2 | 58 | 1.3 | 8.1 | 7.8 | .3 | 17 |
| 5 | <40 | 10 | <10 | 2.7 | 87 | 21 | 2 | 74 | 1.9 | 12.6 | 12.0 | .6 | 27 |
| 6 | <40 | 11 | <10 | 2.9 | 88 | 24 | 3 | 86 | 2.5 | 16.5 | 16.5 | < .1 | 36 |
| 7 | <40 | 13 | <10 | 3.2 | 92 | 24 | 3 | 120 | 2.5 | 18.1 | 17.8 | .3 | 38 |
| 8 | <40 | 9 | <10 | 2.7 | 73 | 19 | 2 | 68 | 1.3 | 10.5 | 10.3 | .2 | 19 |
| 9 | <40 | 10 | <10 | 3.0 | 89 | 22 | 3 | 78 | 2.6 | 13.5 | 13.0 | .5 | 30 |
| 10 | <40 | 8 | <10 | 2.7 | 56 | 17 | 2 | 48 | 1.1 | 6.3 | 5.9 | .4 | 14 |
| 11 | <40 | 11 | <10 | 3.1 | 74 | 21 | 3 | 61 | 1.9 | 10.4 | 10.3 | .1 | 22 |
| 12 | <40 | 11 | <10 | 2.9 | 79 | 21 | 2 | 88 | 1.6 | 13.0 | 12.7 | .3 | 30 |
| 13 | <40 | 8 | <10 | 2.4 | 58 | 17 | 2 | 90 | 1.5 | 8.2 | 8.2 | < .1 | 15 |
| 14 | <40 | 9 | <10 | 2.6 | 66 | 18 | 2 | 55 | 1.2 | 5.6 | 5.6 | < .1 | 19 |
| 15 | <40 | 10 | <10 | 2.7 | 73 | 20 | 2 | 65 | 1.6 | 8.2 | 8.1 | .1 | 19 |
| 16 | <40 | 10 | <10 | 2.9 | 76 | 20 | 2 | 71 | 1.4 | 10.1 | 9.9 | .2 | 22 |
| 17 | <40 | 11 | <10 | 2.8 | 73 | 20 | 2 | 59 | 1.3 | 8.7 | 7.9 | .8 | 22 |
| 18 | <40 | 10 | <10 | 2.7 | 64 | 19 | 2 | 55 | 1.3 | 6.8 | 6.3 | .5 | 15 |
| 19 | <40 | 11 | <10 | 2.8 | 62 | 18 | 2 | 51 | 1.4 | 6.9 | 6.9 | < .1 | 18 |
| 20 | <40 | 13 | <10 | 3.3 | 93 | 24 | 3 | 78 | 2.1 | 15.4 | 15.1 | .3 | 38 |
| 21 | <40 | 11 | <10 | 2.9 | 74 | 20 | 2 | 60 | 1.3 | 8.5 | 8.1 | .4 | 21 |
| 22 | <40 | 10 | <10 | 2.9 | 74 | 19 | 2 | 60 | 1.4 | 8.1 | 7.7 | .4 | 22 |
| 23 | <40 | 13 | <10 | 3.0 | 70 | 22 | 3 | 58 | 1.5 | 7.8 | 7.5 | .3 | 17 |
| 24 | <40 | 11 | <10 | 3.0 | 87 | 21 | 3 | 74 | 1.3 | 20.0 | 11.6 | 8.4 | 30 |
| 25 | <40 | 11 | <10 | 3.0 | 75 | 21 | 3 | 67 | 1.6 | 11.4 | 9.6 | 1.8 | 21 |
| 26 | <40 | 12 | <10 | 3.1 | 65 | 21 | 3 | 47 | 1.5 | 8.9 | 7.6 | 1.3 | 20 |
| 27 | <40 | 10 | <10 | 2.5 | 56 | 19 | 2 | 43 | 1.1 | 4.5 | 4.4 | .1 | 12 |
| 28 | <40 | 12 | <10 | 2.8 | 79 | 22 | 2 | 70 | 1.5 | 12.7 | 10.7 | 2.0 | 30 |
| 29 | <40 | 18 | <10 | 3.4 | 58 | 23 | 3 | 46 | 1.3 | 4.9 | 4.7 | .2 | 10 |
| 30 | <40 | 11 | <10 | 3.1 | 78 | 20 | 2 | 59 | 1.2 | 8.7 | 8.5 | .2 | 23 |
| 31 | <40 | 13 | <10 | 3.4 | 66 | 22 | 3 | 49 | 1.7 | 8.4 | 7.6 | .8 | 21 |
| 32 | <40 | 10 | <10 | 2.8 | 70 | 20 | 2 | 78 | 1.1 | 9.5 | 8.9 | .6 | 22 |
| 33 | <40 | 19 | <10 | 3.9 | 96 | 28 | 3 | 71 | 2.1 | 11.1 | 10.1 | 1.0 | 31 |
| 34 | <40 | 9 | <10 | 2.7 | 70 | 18 | 2 | 65 | 1.3 | 8.0 | 7.5 | .5 | 20 |
| 35 | <40 | 11 | <10 | 3.0 | 80 | 21 | 3 | 74 | 1.4 | 15.8 | 11.5 | 4.3 | 35 |

**Table 6.** *Major-metal, trace-element, and other constituent concentrations determined in streambed sediments of principal streams, 1987*--Continued

| Map-reference number (fig. 3) | Tantalum, total as Ta (µg/g) | Thorium, total as Th (µg/g) | Tin, total as Sn (µg/g) | Titanium, total as Ti (g/kg) | Vanadium, total as V (µg/g) | Yttrium, total as Y (µg/g) | Ytterbium, total as Yb (µg/g) | Zinc, total as Zn (µg/g) | Uranium, partial as U (µg/g) | Carbon, total as C (g/kg) | Carbon, organic as C (g/kg) | Carbon, carbonate as C (g/kg) | Clay, sediment particles finer than 0.004 mm (percent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | <40 | 10 | <10 | 3.1 | 67 | 20 | 2 | 46 | 1.5 | 10.4 | 8.7 | 1.7 | 26 |
| 37 | <40 | 10 | <10 | 2.5 | 78 | 19 | 2 | 63 | 1.3 | 23.7 | 11.6 | 12.1 | 35 |
| 38 | <40 | 13 | <10 | 3.0 | 73 | 21 | 2 | 63 | 1.5 | 8.7 | 6.5 | 2.2 | 28 |
| 39 | <40 | 9 | <10 | 2.6 | 71 | 20 | 2 | 55 | 1.5 | 12.1 | 5.8 | 6.3 | 21 |
| 40 | <40 | 11 | <10 | 3.0 | 87 | 21 | 3 | 69 | 1.2 | 18.2 | 10.7 | 7.5 | 33 |
| 41 | <40 | 10 | <10 | 2.8 | 71 | 19 | 3 | 63 | 1.1 | 19.7 | 9.4 | 10.3 | 31 |
| 42 | <40 | 13 | <10 | 3.6 | 73 | 22 | 3 | 52 | 1.2 | 12.8 | 5.8 | 7.0 | 17 |
| 43 | <40 | 11 | <10 | 3.0 | 80 | 21 | 3 | 71 | 1.0 | 25.2 | 11.6 | 13.6 | 43 |
| 44 | <40 | 11 | <10 | 3.6 | 79 | 21 | 3 | 66 | 1.1 | 14.5 | 11.1 | 3.4 | 33 |
| 45 | <40 | 10 | <10 | 2.8 | 67 | 20 | 3 | 53 | 1.0 | 11.3 | 5.7 | 5.6 | 19 |
| 46 | <40 | 12 | <10 | 2.8 | 68 | 21 | 3 | 52 | 1.7 | 17.1 | 5.9 | 11.2 | 25 |
| 47 | <40 | 12 | <10 | 3.3 | 86 | 22 | 3 | 90 | 1.5 | 13.6 | 9.5 | 4.1 | 37 |
| 48 | <40 | 11 | <10 | 3.4 | 80 | 21 | 3 | 100 | 1.3 | 14.4 | 11.0 | 3.4 | 33 |
| 49 | <40 | 12 | <10 | 3.4 | 81 | 22 | 3 | 110 | 1.4 | 15.2 | 12.2 | 3.0 | 34 |
| 50 | <40 | 12 | <10 | 2.6 | 67 | 20 | 2 | 54 | 1.2 | 12.0 | 5.8 | 6.2 | 19 |
| 51 | <40 | 11 | <10 | 2.9 | 82 | 21 | 2 | 65 | 1.2 | 16.5 | 11.2 | 5.3 | 33 |
| 52 | <40 | 13 | <10 | 3.4 | 120 | 23 | 3 | 96 | 1.7 | 16.7 | 14.5 | 2.2 | 52 |
| 53 | <40 | 11 | <10 | 2.9 | 69 | 20 | 3 | 56 | 1.1 | 11.4 | 6.3 | 5.1 | 19 |
| 54 | <40 | 14 | <10 | 3.2 | 100 | 23 | 3 | 82 | 1.6 | 17.3 | 11.1 | 6.2 | 42 |
| 55 | <40 | 10 | <10 | 2.8 | 71 | 19 | 2 | 58 | 1.1 | 12.3 | 6.9 | 5.4 | 23 |
| 56 | <40 | 13 | <10 | 3.1 | 82 | 22 | 3 | 75 | 1.0 | 14.8 | 12.0 | 2.8 | 30 |
| 57 | <40 | 14 | <10 | 3.9 | 84 | 22 | 3 | 71 | 1.7 | 9.6 | 8.6 | 1.0 | 33 |
| 58 | <40 | 12 | <10 | 3.2 | 91 | 22 | 3 | 74 | 1.1 | 11.5 | 10.9 | .6 | 35 |
| 59 | <40 | 11 | <10 | 2.8 | 88 | 21 | 3 | 76 | 1.1 | 17.9 | 10.8 | 7.1 | 34 |
| 60 | <40 | 11 | <10 | 2.8 | 81 | 21 | 2 | 77 | 1.3 | 17.6 | 9.1 | 8.5 | 28 |
| 61 | <40 | 10 | <10 | 3.3 | 92 | 20 | 3 | 200 | 1.3 | 20.6 | 16.6 | 4.0 | 32 |
| 62 | <40 | 19 | <10 | 3.5 | 110 | 27 | 3 | 100 | 1.6 | 18.8 | 11.4 | 7.4 | 44 |



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