WATER-QUALITY AND BOTTOM-MATERIAL-CHEMISTRY DATA FOR THE YAZOO RIVER BASIN DEMONSTRATION EROSION CONTROL PROJECT, NORTH-CENTRAL MISSISSIPPI, FEBRUARY 1988 - SEPTEMBER 1991

By Larry J. Slack

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CONVERSION FACTORS AND ABBREVIATED WATER-QUALITY UNITS

Multiply	By	To obtain
cubic foot per second (ft^3/s)	0.02832	cubic meter per second
mile (mi)	1.609	kilometer
square mile (mi^2)	2.590	square kilometer

colonies per 100 milliliters	cols./100 mL
microgram per gram	µg/g
microgram per kilogram	µg/kg
microgram per liter	µg/L
microsiemens per centimeter at 25 °C	µS/cm
milligram per liter	mg/L

degree Fahrenheit (°F)	°C=5/9 x (°F - 32)	degree Celsius (°C)

WATER-QUALITY AND BOTTOM-MATERIAL-CHEMISTRY DATA FOR THE YAZOO RIVER BASIN DEMONSTRATION EROSION CONTROL PROJECT, NORTH-CENTRAL MISSISSIPPI, FEBRUARY 1988 - SEPTEMBER 1991

by Larry J. Slack

ABSTRACT

To assist an interagency task force in evaluating the effectiveness of the ongoing data-collection program, this report summarizes the water-quality and bottom-material-chemistry data that were collected at 8 biweekly and 18 intensive sampling sites from February 1988 through September 1991 by the U.S. Geological Survey for the Yazoo River basin Demonstration Erosion Control project in north-central Mississippi. This report also describes variation of chemical data with time and discharge. Because the data have been collected during a short period, and because many of the constituents of interest have censored data (for example, data less than the detection limit), statistical analysis for time trends was determined to be inappropriate. Consequently, the variation of water quality with time and discharge was evaluated by tabular and graphical methods.

INTRODUCTION

Background

In 1984, Congress directed the U.S. Army Corps of Engineers and the U.S. Department of Agriculture, Soil Conservation Service, to establish six demonstration watersheds to address critical erosion and sedimentation problems. One of the six Demonstration Erosion Control (DEC) Projects is in the Yazoo River basin in north-central Mississippi. It is an ongoing joint-agency program of planning, design, construction, monitoring, and evaluation to alleviate flooding, erosion, sedimentation, and water-quality problems by applying environmentally sound management practices in several watersheds located in the bluff hills above the Mississippi River alluvial plain.

In February 1988, at the request of the Interagency Task Force on Yazoo Basin Foothills Erosion and Flood Control, and in cooperation with the Corps of Engineers, the U.S. Geological Survey (USGS) began collecting water-quality and bottom-material-chemistry data for the Yazoo River basin DEC project. Data were to be collected prior to, during, and after watershed-conservation and channel-stability measures have been implemented in the study area.

Purpose and Scope

To assist the task force in evaluating the effectiveness of the ongoing water-quality and bottom-material-chemistry data-collection program, this report summarizes the water-quality and bottom-material-chemistry data that were collected from February 1988 to September 1991 by the USGS for the Yazoo River basin DEC project. Also, this report describes variation of water-quality data with time and discharge.

DESCRIPTION OF STUDY AREA, SAMPLING SITES, AND FREQUENCY OF ANALYSIS

The study area consists of six watersheds in the Yazoo River basin DEC project area in north-central Mississippi. In downstream order, they are the (1) Hotopha Creek, (2) Otoucalofa Creek, (3) Peters (Long) Creek, (4) Hickahala-Senatobia Creek, (5) Batupan Bogue, and (6) Black Creek watersheds. The loess hills of the Yazoo River basin were selected for the DEC project because the area is characterized by having large losses of soil and agrichemicals from agricultural lands and excessive upland and channel erosion by streams with unstable, deeply incised channels. The sparsely populated study area consists largely of forests, pastures, and small farms.

Between February 1988 and September 1991, water-quality and (or) bottom-material-chemistry samples were collected at 21 sites (fig. 1). USGS station (downstream order) numbers, names, latitude-longitude locations, and drainage areas are listed in table 1. Drainage areas range from 2.25 mi^2 for Town Creek at Water Valley (site 6) to 240 mi^2 for Batupan Bogue at Grenada (site 15).

Frequency of water-quality and bottom-material sampling, by general category, is summarized in table 2 for each site. Biweekly water-quality sampling began in February 1988 at eight sites for field determination of specific conductance, pH, temperature, and dissolved oxygen and laboratory determination of nutrients. Semiannually (during high and low flow), samples are collected for determination of common constituents and trace elements in water and trace elements in bottom material at five of the eight sites. Annually, samples are collected for determination of herbicides (in February or March) and insecticides (in April or May) in water, and insecticides (in June through September) in bottom material at all eight sites.

Intensive (once every 6 hours during a 48-hour period) sampling is conducted twice a year at 18 sites, six sites in each of three watersheds: Otoucalofa Creek, Hickahala-Senatobia Creek, and Black Creek. Field determinations are performed and samples are collected for determination of nutrients and bacteria. Samples collected for determination of common constituents and trace elements in water and trace elements in bottom material (at the five biweekly sampling sites discussed in the previous paragraph) are collected during the 48-hour studies.

WATER-QUALITY AND BOTTOM-MATERIAL-CHEMISTRY DATA

For the convenience of the reader, the data are grouped first by stations having the same frequency of analysis, and second by type of analysis. Consequently, first the water-quality data or aggregate summaries of the data are presented for the biweekly sampling sites--in the following general order: field determinations (aggregate summary, table 3), common chemical properties or constituents (aggregate summary, table 4), nutrients plus color and silica (aggregate summary, table 5), trace elements (table 6), and organic compounds (tables 7 to 10). Next, the bottom-material-chemistry data are presented--in the following general order: trace elements (table 11) and organic compounds (table 12).

SUMMARY OF WATER-QUALITY AND BOTTOM-MATERIAL-CHEMISTRY DATA

Water-Quality Data at Biweekly Sampling Sites

A statistical summary of selected water-quality data for each of the eight biweekly sampling sites is presented in table 13. The data are presented in the following general order: (1) field determinations, (2) common chemical properties or constituents, (3) nutrients plus color and silica, and (4) trace elements (five sites). A summary table for organic compounds is not presented because there were few values for each determination, and because many values were less than the detection limit. The following section summarizes some of the more important determinations.

To aid the reader, the distribution of selected property values or constituent concentrations for the eight biweekly sampling sites is shown in side-by-side boxplots in figure 2. A boxplot is useful for visually examining the central tendency and dispersion of a group of data or for comparing groups of data. An example of a boxplot is shown in figure 2A. The median value is plotted as a horizontal line, and a box is drawn from the 25th percentile to the 75th percentile. The box length equals the interquartile range (the 75th percentile minus the 25th percentile) or IQR. Vertical lines or "whiskers" are drawn from the quartiles to two "adjacent" values. The upper adjacent value is defined as the largest data point less than or equal to the upper quartile plus 1.5 times the IQR. Similarly, the lower adjacent value is the smallest data point greater than or equal to the lower quartile minus 1.5 times the IQR. Values more extreme in either direction than the adjacent values are plotted individually. Those values equal to 1.5 to 3.0 times the IQR are called "outside values" and are represented by an asterisk. Values greater than 3.0 times the IQR are called "far-out values" and are represented by a circle.

Instantaneous discharge (streamflow) corresponding to the water-quality sampling at the eight biweekly sites ranged from 2.1 ft^3/s at Peters (Long) Creek (site 8) to 21,100 ft^3/s at Batupan Bogue (site 15); the median for 1,616 values was 30.0 ft^3/s (tables 3 and 13). Median discharge ranged from 9.3 ft^3/s at Senatobia Creek (site 14) to 155 ft^3/s at Batupan Bogue (site 15). As shown in figure 2B, there was substantial variation in high-flow (greater than the 75th percentile) discharge from site to site. For example, although the 75th-percentile discharge at Harland Creek (60.0 ft^3/s, site 20) was about 1.1 times the 75th-percentile discharge at Hotopha Creek (55.5 ft^3/s, site 1), the 95th-percentile discharge at Harland Creek (3,115 ft^3/s) was about 10 times the 95th-percentile discharge at Hotopha Creek (311 ft^3/s) (table 13).

Water in the study area is slightly mineralized (tables 3 and 13 and fig. 2C). Specific conductance at the eight biweekly sites ranged from 13 $\mu S/cm$

at Otoucalofa Creek Canal (site 7) to 409 µS/cm at Harland Creek (site 20); the median for 1,578 values was 78 µS/cm. The specific conductance is quite similar for water at Hotopha Creek (site 1), Otoucalofa Creek Canal (site 7), Peters Creek (site 8), and to a lesser extent, Hickahala Creek (site 12) and Senatobia Creek (site 14); the 75th-percentile specific conductance value is less than 100 µS/cm at each of these sites. Water at Hickahala Creek generally is the least mineralized for any of the eight sites; 25th-, 50th-, 75th-, and 95th-percentile conductance values were smaller for Hickahala Creek than for the other sites. Water at Harland Creek (site 20) generally is the most mineralized for any of the eight sites; 50th-, 75th-, and 95th-percentile conductance values were larger (in increasing order) for Batupan Bogue (site 15), Fannegusha Creek (site 17), and Harland Creek (site 20) than for the other sites.

Water in the study area generally is slightly acidic or slightly basic, as shown in tables 3 and 13 and figure 2D. The pH at the eight biweekly sites ranged from 5.7 standard units at Harland Creek (site 20) to 9.4 units at Senatobia Creek (site 14); the median for 1,603 values was 7.0 units. The interquartile range (middle 50 percent of the values) was within 0.4 pH unit of neutral (pH 7.0) for six of the sites: Hotopha Creek (site 1), Otoucalofa Creek Canal (site 7), Peters Creek (site 8), Hickahala Creek (site 12), Senatobia Creek (site 14), and Batupan Bogue (site 15). The interquartile range was within 0.8 pH unit of neutral for the other two sites: Fannegusha Creek (site 17) and Harland Creek (site 20), both of which had a 75th-percentile pH of 7.8 units.

Water temperature at the eight biweekly sites ranged from 3.0 °C at Senatobia Creek (site 14) and Batupan Bogue (site 15) to 38.0 °C at Hotopha Creek (site 1); the median for 1,580 values was 21.0 °C (tables 3 and 13).

Dissolved oxygen is important because it is necessary for aquatic life; a deficiency in dissolved oxygen can result from assimilation of organic wastes or rapid growth and decay of algae. The dissolved-oxygen concentration of water in the study area generally is acceptable for most purposes (greater than 5 mg/L), as shown in tables 3 and 13 and figure 2E. Dissolved-oxygen concentrations at the eight biweekly sites ranged from 4.3 mg/L at Peters Creek (site 8) to 13.4 mg/L at Otoucalofa Creek Canal (site 7); the median for 1,611 values was 8.5 mg/L. Dissolved-oxygen concentrations generally were similar for each of the sites. At all eight sites, more than 95 percent of the dissolved-oxygen concentrations were greater than 6.0 mg/L.

Sources of fecal coliform bacteria generally include effluent from sewage-treatment plants and runoff from pastures, feedlots, and urban areas. The presence of fecal coliform bacteria indicates contamination of water by wastes from humans and other warm-blooded animals. The fecal coliform concentrations (density) at the five sites which were also intensive sites ranged from 5 cols./100 mL at Otoucalofa Creek Canal (site 7), Senatobia Creek (site 14), and Harland Creek (site 20) to 32,000 cols./100 mL at Hickahala Creek (site 12); the median for 358 values was 315 cols./100 mL (tables 3 and 13).

Sources of fecal streptococcal bacteria generally include effluent from sewage-treatment plants and runoff from pastures, feedlots, and urban areas. The presence of fecal streptococcal bacteria indicates contamination of water by wastes from humans and other warm-blooded animals. The fecal streptococci concentrations (density) at the five sites which were also intensive sites ranged from 12 cols./100 mL at Otoucalofa Creek Canal (site 7) to 39,000 cols./100 mL at Senatobia Creek (site 14); the median for 359 values was 400 cols./100 mL (tables 3 and 13).

Although fecal coliform and fecal streptococcal bacteria share many of the same sources, fecal coliform concentrations generally are larger for wastes from humans than for wastes from other warm-blooded animals. In contrast, fecal streptococci concentrations generally are larger for wastes from other warm-blooded animals than for wastes from humans. Generally, a fecal coliform:fecal streptococci ratio of 4.0 or larger indicates the presence of domestic waste; a fecal coliform:fecal streptococci ratio of 1.0 or smaller indicates the presence of wastes from other warm-blooded animals. The fecal coliform:fecal streptococci ratios at the five sites which were also intensive sites ranged from about 0.01 to 17; the median for 357 data pairs was about 0.59 (table 3).

Major nonpoint sources of nitrite plus nitrate generally are agricultural and urban runoff; a major point source is wastewater discharge. Nitrite plus nitrate is a plant nutrient that, in excess, can cause algal blooms and excessive growth of higher aquatic plants in bodies of water and can cause water to be unsuitable for public supply. Water in the study area had substantial differences from site to site in total nitrite plus nitrate concentrations, but had considerably less than the 10-mg/L maximum contaminant level (for nitrate-nitrogen) for drinking water, as shown in tables 5 and 13 and figure 2F. Practically all of the nitrite plus nitrate usually exists as nitrate. Nitrite plus nitrate concentrations, as nitrogen, ranged from the lower detection limit (about 0.02 mg/L) at all sites to 2.1 mg/L at Senatobia Creek (site 14); the median for 1,099 values was 0.15 mg/L. Ninety-five percent of the nitrite plus nitrate concentrations was less than 0.3 mg/L at Hotopha Creek (site 1), Batupan Bogue (site 15), Fannegusha Creek (site 17), and Harland Creek (site 20). The 95th-percentile nitrite plus nitrate concentration was less than 1.0 mg/L at Peters and Hickahala Creeks (sites 8 and 12), 1.1 mg/L at Otoucalofa Creek Canal (site 7), and 1.6 mg/L at Senatobia Creek (site 14). Otoucalofa Creek Canal (site 7), Batupan Bogue (site 15), and Fannegusha Creek (site 17) had nitrite plus nitrate concentrations that exceeded 3 interquartile ranges (the difference between the 75th-percentile and 25th-percentile concentrations).

Major nonpoint sources of ammonia generally are agricultural and urban runoff; a major point source is wastewater discharge. Ammonia is a plant nutrient that, like nitrite plus nitrate, in excess can cause algal blooms and excessive growth of higher aquatic plants in bodies of water and can cause water to be unsuitable for public supply. Water in the study area generally had similar total ammonia concentrations, as shown in tables 5 and 13 and figure 2G. Ninety-five percent of the ammonia-nitrogen concentrations was 0.12 mg/L or less at seven of the eight sites, but Otoucalofa Creek Canal (site 7), which receives domestic waste, had a 95th-percentile ammonia-nitrogen concentration of about 2.2 mg/L. Ammonia concentrations, as nitrogen, ranged from near the lower detection limit (about 0.01 mg/L) at all sites to 5.0 mg/L at Otoucalofa Creek Canal (site 7); the median of 1,099 values was 0.03 mg/L. All but one of the sites had ammonia-nitrogen concentrations that exceeded 3 interquartile ranges, but because the interquartile ranges generally were small this was important only for two sites: Otoucalofa Creek Canal, where at least 11 ammonia-nitrogen concentrations exceeded 3 interquartile ranges; and Senatobia Creek (site 14), which had a maximum ammonia-nitrogen concentration exceeded only at Otoucalofa Creek Canal, and which (as stated in the previous paragraph) had the largest nitrite plus nitrate concentration.

Phosphorus occurs in some rocks and sediments, but in the study area phosphorus generally is associated with agricultural and urban runoff and municipal wastewater discharge. Phosphorus is another plant nutrient that, in excess, can cause algal blooms and excessive growth of higher aquatic plants in bodies of water and can cause water to be unsuitable for public supply. The National Technical Advisory Committee (1968) recommends a maximum of 0.05 mg/L total phosphorus for water entering impoundments, although any total phosphorus concentration greater than 0.01 mg/L in lakes can promote nuisance algal growth. Mackenthum (1969) recommends a maximum of 0.1 mg/L to prevent algal blooms in streams. Water in the study area generally had similar total phosphorus concentrations, as shown in tables 5 and 13 and figure 2H. The median total phosphorus concentration was 0.12 mg/L or less at seven of the eight sites; Otoucalofa Creek Canal (site 7), which receives domestic waste, had a median concentration of 0.36 mg/L. Total phosphorus concentrations ranged from the lower detection limit (0.01 mg/L) at Hotopha Creek (site 1) and Harland Creek (site 20) to 2.3 mg/L at Otoucalofa Creek Canal (site 7); the median of 1,098 values was 0.09 mg/L. Frequently, one or more phosphorus concentrations exceeded 3 interquartile ranges at each of the eight sites. Total orthophosphorus concentrations generally were slightly smaller than total phosphorus concentrations, but followed the same pattern (fig. 2I).

Although organic carbon can be added to streams by agricultural and urban runoff and municipal wastewater discharge, inorganic carbon is readily available in the environment as carbon dioxide or bicarbonate. Water in the study area generally had similar total organic carbon concentrations, as shown in tables 5 and 13 and figure 2J. The median total organic carbon concentration was 3.5 mg/L or less at all eight sites. The 95th-percentile total organic carbon concentration was less than 10 mg/L at all eight sites and was smallest for Otoucalofa Creek Canal (site 7), which receives domestic waste. Total organic carbon concentrations ranged from about the lower detection limit (0.1 mg/L) at Hotopha Creek (site 1), Otoucalofa Creek Canal (site 7), and Senatobia Creek (site 14) to 19 mg/L at Senatobia Creek; the median of 1,085 values was 2.7 mg/L.

With the exception of aluminum, iron, and manganese, total or total recoverable trace-element concentrations generally were small (tables 6 and 13) for all five sites sampled semiannually (Otoucalofa Creek Canal, Hickahala Creek, Senatobia Creek, Fannegusha Creek, and Harland Creek). The 75th-percentile total or total recoverable concentration of arsenic, cadmium, chromium, cobalt, copper, lead, mercury, selenium, and zinc was less than or equal to five times the detection limit for the 39 samples (37 samples for selenium). Aluminum concentrations ranged from 70 to 24,000 μg/L; the median for 36 values was 445 μg/L. Iron concentrations ranged from 200 to 41,000 μg/L; the median for 39 values was 2,000 μg/L. Manganese concentrations ranged from 70 to 2,500 μg/L; the median for 39 values was 210 μg/L. Except for the maximum aluminum and iron concentrations at Octoucalofa Creek Canal (which were about one-tenth of the maximum concentrations for the other four sites), the minimum, median, and maximum concentrations of aluminum, iron, and manganese were roughly equal (same order of magnitude) at all five sites. There was no obvious areal pattern of distribution for any trace elements.

Possible contamination of water in the study area by herbicides and insecticides is a major interest of the DEC studies. However, most of the samples collected at the eight sites had total recoverable concentrations of chlorophenoxy acid herbicides, dicamba, and picloram (benzoic acid herbicides) that were less than the detection limit (table 7). Of the chlorophenoxy acid herbicides, only 2,4-D and 2,4,5-T were detected in concentrations greater than the detection limits. Infrequent samples (one out of three or four samples) at six of the eight sites had detectable concentrations of 2,4-D. These concentrations ranged from 0.02 μg/L [twice the detection limit] at Senatobia Creek (site 14) and Fannegusha Creek (site 17) to 4.0 μg/L at Otoucalofa Creek Canal (site 7)--much less than the maximum contaminant level of 70 μg/L for drinking water (U.S. Environmental Protection Agency, 1991a). In single samples, a 2,4-D concentration of 0.03 μg/L was detected at Hotopha Creek (site 1), 0.35 μg/L at Batupan Bogue (site 15) and 0.60 μg/L at Hickahala Creek (site 12). Similarly, more than the detection limit but less than 0.10 μg/L of 2,4,5-T was detected in single samples at Otoucalofa Creek Canal and Batupan Bogue. Dicamba was detected in two samples from

Otoucalofa Creek (0.02 and 2.0 μg/L) and in one sample at Batupan Bogue (0.02 μg/L). Picloram was not detected in concentrations larger than the detection limit in any of the samples.

Similarly, most of water samples collected at the eight sites had total recoverable concentrations of triazine herbicides that were less than the detection limit (table 8). An atrazine concentration of 3.1 μg/L was detected in a single sample from Hotopha Creek (site 1) and 0.80 μg/L from Fannegusha Creek (site 17)--much less than the maximum contaminant level of 70 μg/L for drinking water (U.S. Environmental Protection Agency, 1991a). The only other triazine herbicide present in concentrations larger than the detection limit was alachlor, 0.6 μg/L in a single sample from Fannegusha Creek.

All water samples collected at the eight sites had total recoverable concentrations of carbamate insecticides that were less than the detection limit (table 9). Similarly, practically all water samples had total recoverable concentrations of organochlorine compounds and organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor that were less than the detection limit (table 10). The detection limit for the organochlorine compounds was exceeded for only one sample--DDT (0.02 μg/L, or twice the detection limit) at Senatobia Creek (site 14).

Bottom-Material-Chemistry Data

The trace-element bottom-material-chemistry data (table 11) for five sampling sites are summarized in table 14. With the exception of iron and manganese, total or total recoverable trace-element concentrations in bottom material generally were small for all five sites sampled semiannually (Otoucalofa Creek Canal, Hickahala Creek, Senatobia Creek, Fannegusha Creek, and Harland Creek). The maximum concentrations of arsenic, cadmium, chromium, cobalt, copper, selenium, and zinc were less than 50 μg/g for all samples. The maximum lead concentration was less than 100 μg/g. The maximum mercury concentration was 0.17 μg/g for Hickahala Creek (site 12); all other mercury values at this site were 0.03 μg/g or less. The mercury concentration was 0.04 μg/g or less at all other sites. Aluminum was not determined in the bottom material. Iron concentrations generally were large at all sites and ranged from 350 μg/g at Fannegusha Creek (site 17) to 8,200 μg/g at Hickahala Creek; the median for 38 values was 1,250 μg/g. The median iron concentrations were roughly equal (same order of magnitude) for all sites; the median iron concentrations ranged from 770 μg/g to 1,850 μg/g. Manganese concentrations were also large, but generally were much smaller than the iron concentrations. Manganese concentrations ranged from 3 μg/g at Fannegusha Creek (site 17) to 5,600 μg/g at Otoucalofa Creek Canal (site 7); the median for 38 values was 69 μg/g. Like the iron concentrations, the median manganese concentrations were roughly equal for all five sites; they ranged from 54 µg/g to 140 µg/g. There was no obvious areal pattern of distribution for any trace elements.

The organic bottom-material-chemistry data for the eight sites are presented in table 12. Because there were few values for each determination, and because many values were less than the detection limit, a summary table for organic compounds was not included. Total concentrations of aldrin, diazinon, endrin, ethion, PCB, PCN, heptachlor epoxide, heptachlor, lindane, malathion, methyl trithion, methyl parathion, parathion, and trithion in bottom material were less than or equal to the detection limit for all samples at all sites. Only one of thirty-two samples (at Otoucalofa Creek Canal) had chlordane (1.0 µg/kg) or perthane (2.0 µg/kg) present in a concentration exceeding the detection limit. Maximum concentrations of DDD (6.8 µg/kg), DDE (8.3 µg/kg), DDT (6.0 µg/kg), dieldrin (0.4 µg/kg), endosulfan (0.3 µg/kg), and toxaphene (60 µg/kg) also were detected at this site. DDD, DDE, and DDT in concentrations exceeding the detection limit also occurred occasionally at Hickahala Creek (site 12), Senatobia Creek (site 14), Batupan Bogue (site 15), Fannegusha Creek (site 17), and Harland Creek (site 20). The detection limit for DDT was also exceeded at Peters Creek (site 8) once (0.2 µg/kg). Methoxychlor concentrations were less than 1.0 µg/kg in all samples. The detection limit for mirex was exceeded only once at one site--Batupan Bogue (0.4 µg/kg). Toxaphene was also detected (20 µg/kg) in single samples from Senatobia Creek and Batupan Bogue.

VARIATION OF WATER QUALITY AND BOTTOM-MATERIAL CHEMISTRY WITH TIME AND DISCHARGE

Water-Quality Variation at Biweekly Sampling Sites

Water-quality data generally have seasonality, are skewed, and are serially correlated (Crawford and others, 1983). Typically, a minimum of 5 years of contiguous annual values of streamflow and water-quality data are considered necessary for trend tests (Lanfear and Alexander, 1990); a minimum of 10 years sometimes is preferred (Hirsch and Slack, 1984; Schertz, 1990). Because the data for this study have been collected during such a short period (approximately 3 and 1/2 years), and because many of the constituents of interest have censored data (for example, concentrations of less than the lower detection limit), statistical analysis for time trends was determined to be inappropriate. Consequently, the variation of water quality with time and discharge was evaluated by tabular and graphical methods. Any trends inferred, because of the shortness of record, may not necessarily be representative of long-term trends.

Discharge during water-quality sampling varied considerably from year to year for each of the eight biweekly sampling sites (fig. 3A). The maximum water quality sample-related discharge (February 1988 through September 1991) occurred in 1989 at Hotopha Creek (site 1), Peters Creek (site 8), Fannegusha Creek (site 17), and Harland Creek (site 20) (table 15). The maximum sample-related discharge occurred in 1990 at Hickahala Creek (site 12) and Senatobia Creek (site 14). The maximum sample-related discharge occurred in 1991 at Otoucalofa Creek Canal (site 7) and Batupan Bogue (site 15). Because more sediment data than water-quality data were collected, the maximum water quality sample-related discharge did not always correspond with the maximum sediment-related discharge.

Many water-quality properties or constituents varied considerably from year to year for each of the eight biweekly sampling sites (as shown in fig. 3 and table 15). These variations were substantial for specific conductance, pH, and concentrations of total nitrite plus nitrate, as nitrogen, phosphorus, orthophosphorus, and total organic carbon. Many of these properties or constituents have a fairly strong relation with discharge. The initial runoff caused by intense or prolonged rainfall usually flushes many of the soluble (and many insoluble) constituents and contains relatively large concentrations of dissolved solids (hence large specific conductance values), nutrients, and trace elements. As the rain continues, the runoff becomes more diluted (less material is available to be transported in or by the water), and concentrations typically decrease.

To evaluate changes in water quality with time, the large variation in discharge was accounted for by plotting the water-quality constituent or property and the log of the instantaneous discharge. The relative positions of the plotted data points were used to indicate whether the relation between the water-quality constituent and discharge had remained the same or changed with time.

Specific conductance generally varies inversely with discharge at each of the eight biweekly sampling sites, as shown in figure 4A. There was considerable scatter in each of the annual plots for calendar years 1988, 1989, 1990, and 1991. No consistent shift in the relation between specific conductance and instantaneous discharge was obvious for any of the sites from 1988 to 1991. Similarly, annual median specific conductance values from 1988 to 1991 generally had no obvious pattern of change at each of the biweekly sampling sites (fig. 5B).

Similar to specific conductance, pH generally varies inversely with discharge at each of the eight biweekly sampling sites, as shown in figure 4B. No consistent shift in the relation between pH and instantaneous discharge was obvious for any of the sites from 1988 to 1991. Furthermore, annual median pH values from 1988 to 1991 generally had no obvious pattern of change at each of the biweekly sampling sites (fig. 5C).

There was considerable variation in the dissolved oxygen-instantaneous discharge relation, both at specific sites and from site to site (fig. 4C). Dissolved-oxygen concentrations generally vary directly with discharge at each of the sites. The relation is nebulous, though, and no consistent shift in the relation between dissolved-oxygen concentration and instantaneous discharge was obvious for any of the biweekly sampling sites from 1988 to 1991. Furthermore, annual median dissolved-oxygen concentrations generally had no obvious pattern of change at each of the biweekly sampling sites (fig. 5D).

There was considerable variation in the total nitrite plus nitrate nitrogen-instantaneous discharge relation, both at specific sites and from site to site (fig. 4D). Concentrations of total nitrite plus nitrate generally increased with discharge at 7 of the 8 biweekly sites, but the scatter was sufficiently large that any variation with time would be masked and likely not obvious. In contrast, though, the total nitrite plus nitrate concentration generally decreased with discharge for one site--Otoucalofa Creek Canal (site 7), which receives domestic waste. Similarly, annual median total nitrite plus nitrate-nitrogen concentrations generally decreased slightly from 1988 to 1991 at Otoucalofa Creek Canal (site 7) (fig. 5E) but generally had no obvious change or increased slightly at each of the other biweekly sampling sites.

Although the total ammonia-nitrogen concentrations generally were small, the ammonia-instantaneous discharge relation generally exhibited less scatter than the nitrate-instantaneous discharge relation (fig. 4). No consistent shift in the relation between total ammonia-nitrogen concentration and instantaneous discharge was obvious for any of the biweekly sampling sites from 1988 to 1991. Similar to the nitrate-discharge relation, ammonia concentrations generally increased with discharge except for Otoucalofa Creek Canal (site 7) where ammonia concentrations generally decreased with discharge. Furthermore, annual median total ammonia-nitrogen concentrations generally decreased from 1988 to 1991 at Otoucalofa Creek Canal (site 7; fig. 5F) but had no obvious change or increased slightly at each of the other biweekly sampling sites.

The total phosphorus concentrations generally were small, but total phosphorus concentrations generally increased with discharge at each of the eight biweekly sampling sites except for Otoucalofa Creek Canal (site 7; fig. 4F). Total phosphorus concentrations generally decreased with discharge at Otoucalofa Creek Canal. No consistent shift in the relation between total phosphorus concentration and instantaneous discharge was obvious for any of the biweekly sampling sites from 1988 to 1991. Although annual median total phosphorus concentrations generally decreased from 1988 to 1991 at

Otoucalofa Creek Canal (site 7) and Fannegusha Creek (site 17; fig. 5G), annual median total phosphorus concentrations generally had no obvious change or increased slightly at each of the other biweekly sampling sites.

The total orthophosphorus concentrations generally were small, but like total phosphorus concentrations, orthophosphorus concentrations generally increased with discharge at each of the eight biweekly sampling sites except for Otoucalofa Creek Canal (site 7; fig. 4G). Total orthophosphorus concentrations generally decreased with discharge at Otoucalofa Creek Canal. No consistent shift in the total orthophosphorus-instantaneous discharge relation from 1988 to 1991 was obvious for any of the sites. Similar to total phosphorus concentrations, annual median total orthophosphorus concentrations generally decreased from 1988 to 1991 at Otoucalofa Creek Canal (site 7) and Fannegusha Creek (site 17; fig. 5H). Annual median total orthophosphorus concentrations generally had no obvious change or increased slightly at each of the other biweekly sampling sites.

Total or total recoverable aluminum, iron, and manganese concentrations in water generally vary directly with discharge at each of the five sampling sites. Because the data for individual stations are limited but have the same general pattern, they are aggregated for all five sites in figures 4H, 4I, and 4J. No consistent shift in the relation of aluminum, iron, or manganese and instantaneous discharge was obvious for any of the sites from 1988 to 1991.

There were no obvious trends in total or total recoverable concentrations of chlorophenoxy acid herbicides, dicamba, picloram, triazine herbicides, carbamate insecticides, organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, or methoxychlor in water samples at any of the eight sites. Because many of the values were less than the detection limit, though, no trend was expected.

Bottom-Material Chemistry Variation

There were no obvious trends in total or total recoverable concentrations of trace elements in bottom material at any of the five sites (table 11). Similarly, except for DDD, DDE, and DDT, there were no obvious trends for organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material at any of the eight sites (table 12). Although the concentrations of DDD, DDE, and DDT, when detectable, were small, concentrations of each of these constituents appear to be increasing at Otoucalofa Creek Canal (site 7), Senatobia Creek (site 14), Fannegusha Creek (site 17), and Harland Creek (site 20). Also, DDT concentrations increased slightly at Peters Creek (site 8) (from <0.1 μg/kg to 0.2 μg/kg) and at Hickahala Creek (site 12) (from <0.1 μg/kg to 0.6 μg/kg) from 1988 to 1991. DDD, DDE, and DDT concentrations were less than or equal to the detection limit at Batupan

Bogue (site 15) from 1988 to 1990; however, DDD, DDE, and DDT concentrations (though small) were much larger than the detection limit in 1991.

Water-Quality Variation at Intensive Sampling Sites

To evaluate accurately long-term changes in water quality with time, short-term changes have to be understood also. Short-term changes can be determined from the data obtained during intensive sampling conducted twice a year (at high and low flow) at 18 sites in the Otoucalofa Creek, Hickahala-Senatobia Creek, and Black Creek watersheds. The following section discusses, as an example of the usefulness of such information, water-quality variation at intensive sampling sites in the Hickahala-Senatobia Creek watershed during April 3-5, 1989 (high flow). There were substantial differences in water-quality variation patterns during other high-flow and low-flow conditions. These differences were even more substantial from basin to basin. Any trends inferred at the intensive sampling sites, because of the shortness of record, may not necessarily be representative of long-term trends. Consequently, these or other trends at the intensive sampling sites will be evaluated as additional data become available.

From about 6:00 p.m. (referred to as 0 hours in fig. 6) on April 3 until about 6:00 p.m. (referred to as 48 hours in fig. 6) on April 5, 1989, sampling was conducted once every 6 hours during a 48-hour period at the following sites: Hickahala Creek near Independence (site 9), Hickahala Creek near Looxahoma (site 10), James Wolf Creek near Looxahoma (site 11), Hickahala Creek near Senatobia (site 12), Senatobia Creek near Como (site 13), and Senatobia Creek near Senatobia (site 14). Sample-related discharge at 0 hours was virtually at low or base flow conditions at all six sites (fig. 6A). Six hours later, sample-related discharge was virtually unchanged at five of the six sites; sample-related discharge had increased slightly at Hickahala Creek near Senatobia (site 12). At 12 hours, sample-related discharge had increased at all six sites and peaked at Hickahala Creek near Independence (site 9), Hickahala Creek near Looxahoma (site 10), and Senatobia Creek near Como (site 13). At 18 hours, sample-related discharge peaked at James Wolf Creek near Looxahoma (site 11) and at Hickahala Creek near Senatobia (site 12). At 24 hours, sample-related discharge peaked at Senatobia Creek near Senatobia (site 14). By 30 hours, sample-related discharge had decreased to near 0-hour values at Hickahala Creek near Independence (site 9), James Wolf Creek near Looxahoma (site 11), and Senatobia Creek near Como (site 13). By 48 hours, sample-related discharge had decreased to near 0-hour values at the other three sites.

Substantial variations in water quality occurred at each of the intensive sampling sites in the Hickahala-Senatobia Creek watershed during April 3-5, 1989 (fig. 6). Changes in various water-quality properties or constituents did not always occur simultaneously or consistently, with changes in sample-related discharge. For example at 6 hours, specific conductance increased slightly (but to maximum values for the 48-hour period, or storm event) at sites 9, 10, and 14, but decreased slightly at sites 11 and 13, and remained unchanged at site 12. The minimum specific conductance occurred simultaneously with the maximum sample-related discharge at sites 10, 12, and 13. However, the minimum specific conductance occurred 30 hours after the maximum sample-related discharge at site 9, and 6 hours after at sites 11 and 14 (figs. 6A and 6B).

The minimum fecal coliform concentration occurred at 0 or 6 hours at all six intensive sampling sites (fig. 6C). The maximum fecal coliform concentration occurred simultaneously with the maximum sample-related discharge at sites 10, 11, and 13. However, the maximum fecal coliform concentration occurred 6 hours after the maximum sample-related discharge at sites 9 and 12, and 6 hours before at site 14 (figs. 6A and 6C).

The maximum total nitrite plus nitrate concentration occurred 6 to 18 hours prior to the maximum sample-related discharge at five of the six intensive sampling sites (figs. 6A and 6F); the maximum concentration occurred simultaneously with the maximum sample-related discharge at site 9. The minimum concentration occurred at least 6 hours after the maximum sample-related discharge at all six sites.

The maximum total ammonia concentration occurred simultaneously with the maximum sample-related discharge at five of the six intensive sampling sites (figs. 6A and 6G); the maximum concentration occurred 6 hours prior to the maximum sample-related discharge at site 12. The minimum concentration generally occurred during the first or last 12 hours of the 48-hour sampling period at all six sites.

The maximum total phosphorus concentration occurred simultaneously with the maximum sample-related discharge at sites 9, 10, and 11 (figs. 6A and 6H). The maximum concentration occurred 6 hours prior to the maximum sample-related discharge at sites 12 and 14, and 6 hours after at site 13. The minimum concentration generally occurred during the first or last 6 hours of the 48-hour sampling period at all six sites.

The variation of specific conductance, fecal coliform, fecal streptococci, fecal coliform: fecal streptococci ratio, total nitrite plus nitrate, total ammonia, and total phosphorus with sample-related discharge was substantial at each of the six intensive sampling sites in the Hickahala-Senatobia Creek watershed during April 3-5, 1989 (fig. 7). However, there was no consistent shift in the discharge-water quality relation from site to site. Similarly, the variation of specific conductance, fecal coliform, fecal streptococci, fecal coliform: fecal streptococci ratio, total nitrite plus nitrate, total ammonia, and total phosphorus with runoff (sample-related discharge, in cubic feet per second, divided by drainage area, in square miles) was substantial at each of the six intensive sampling sites (fig. 8). There was no consistent shift in the relation from site to site.

SUMMARY

To assist an interagency task force in evaluating the effectiveness of the ongoing data-collection program, this report summarizes the water-quality and bottom-material-chemistry data that were collected from February 1988 to September 1991 by the USGS for the Yazoo River basin DEC project. Also, this report describes data variation with time and discharge. The study area consists of the Hotopha Creek, Otoucalofa Creek, Peters (Long) Creek, Hickahala-Senatobia Creek, Batupan Bogue, and Black Creek watersheds in north-central Mississippi. Because the data for this study have been collected during a short period (approximately 3½ years), and because many of the constituents of interest have censored data (for example, concentrations of less than the lower detection limit), statistical analysis for time trends was determined to be inappropriate. Consequently, the variation of water quality with time and discharge was evaluated by tabular and graphical methods. Any trends inferred, because of the shortness of record, may not necessarily be representative of long-term trends.

Water in the study area is slightly mineralized and generally is acceptable for most purposes. Specific conductance at the eight biweekly sampling sites ranged from 13 µS/cm to 409 µS/cm. Water generally is the least mineralized in Hickahala Creek and the most mineralized in Harland Creek. The water generally is slightly acidic or slightly basic. The pH at the biweekly sites ranged from 5.7 units to 9.4 units.

Dissolved-oxygen concentrations at the biweekly sites ranged from 4.3 mg/L to 13.4 mg/L. At all eight sites, more than 95 percent of the dissolved-oxygen concentrations was greater than 6.0 mg/L. Fecal coliform concentrations ranged from 5 cols./100 mL to 32,000 cols./100 mL. Fecal streptococci concentrations ranged from 12 cols./100 mL to 39,000 cols./100 mL.

Water in the study area had substantial differences from site to site in nutrient concentrations, but total nitrite plus nitrate concentrations were considerably less than the 10-mg/L maximum contaminant level (for nitrate-nitrogen) for drinking water. Nitrite plus nitrate concentrations, as nitrogen, ranged from the lower detection limit at all sites to 2.1 mg/L. Ninety-five percent of the ammonia-nitrogen concentrations was 0.12 mg/L or less at seven of the eight sites, but Otoucalofa Creek Canal, which receives domestic waste, had a median ammonia-nitrogen concentration of about 0.3 mg/L and a maximum of 5.0 mg/L. The median total phosphorus concentration was 0.12 mg/L or less at seven of the eight sites, but Otoucalofa Creek Canal had a

median concentration of 0.36 mg/L and a maximum of 2.3 mg/L. The median total organic carbon concentration was 3.5 mg/L or less at all eight sites.

With the exception of aluminum, iron, and manganese, total or total recoverable trace-element concentrations in water generally were small. Aluminum concentrations ranged from 70 to 24,000 μg/L; the median was 445 μg/L. Iron concentrations ranged from 200 to 41,000 μg/L; the median was 2,000 μg/L. Manganese concentrations ranged from 70 to 2,500 μg/L; the median was 210 μg/L. There was no obvious areal pattern of distribution for any trace elements.

Most water samples collected at the eight sites had concentrations of organic compounds that were less than the detection limit. Infrequent samples sites had detectable, but small, concentrations of 2,4-D; 2,4,5 -T; dicamba; atrazine; and alachlor.

With the exception of iron and manganese (aluminum was not determined), trace-element concentrations in bottom material generally were small. Iron concentrations ranged from 350 μg/g to 8,200 μg/g; the median was 1,250 μg/g. Manganese concentrations ranged from 3 μg/g to 5,600 μg/g; the median was 69 μg/g. There was no obvious areal pattern of distribution for any trace elements.

Concentrations of organic compounds in bottom material generally were less than or equal to the detection limit for all samples. Only one sample had chlordane and perthane present in a concentration exceeding the detection limit. DDD, DDE, DDT, dieldrin, endosulfan, and toxaphene also occurred occasionally in concentrations exceeding the detection limit.

Discharge and many water-quality constituents or properties varied considerably from year to year and site to site. Variations were substantial for specific conductance, pH, and concentrations of total nitrite plus nitrate nitrogen, phosphorus, orthophosphorus, and total organic carbon.

Specific conductance and pH generally vary inversely with discharge at each of the biweekly sampling sites. At all eight sites, concentrations of dissolved oxygen generally vary directly with instantaneous discharge. At seven of the eight biweekly sites, concentrations of total nitrite plus nitrate, total ammonia, total phosphorus, and total orthophosphorus vary directly with discharge; concentrations of these constituents generally decreased with discharge at Otoucalofa Creek Canal.

Total or total recoverable aluminum, iron, and manganese concentrations in water generally vary directly with discharge, but no consistent shift in the relation of aluminum, iron, or manganese and instantaneous discharge was obvious for any of the sites from 1988 to 1991.

There were no obvious trends in concentrations of trace elements, chlorophenoxy acid herbicides, dicamba, picloram, triazine herbicides, carbamate insecticides, organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, or methoxychlor in water samples at any of the sites.

Except for DDD, DDE, and DDT, there were no obvious trends in concentrations of trace elements, organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material. Although the concentrations of DDD, DDE, and DDT, when detectable, were small, concentrations of each of these constituents appear to be increasing at Otoucalofa Creek Canal, Senatobia Creek, Fannegusha Creek, and Harland Creek.

Short-term changes in water quality can be determined from the data obtained during intensive sampling conducted twice a year (at high and low flow) at 18 sites in the Otoucalofa Creek, Hickahala-Senatobia Creek, and Black Creek watersheds. Changes in various water-quality properties or constituents do not always occur simultaneously or consistently, with changes in discharge. Consequently, these or other trends at the intensive sampling sites will be evaluated as additional data become available.

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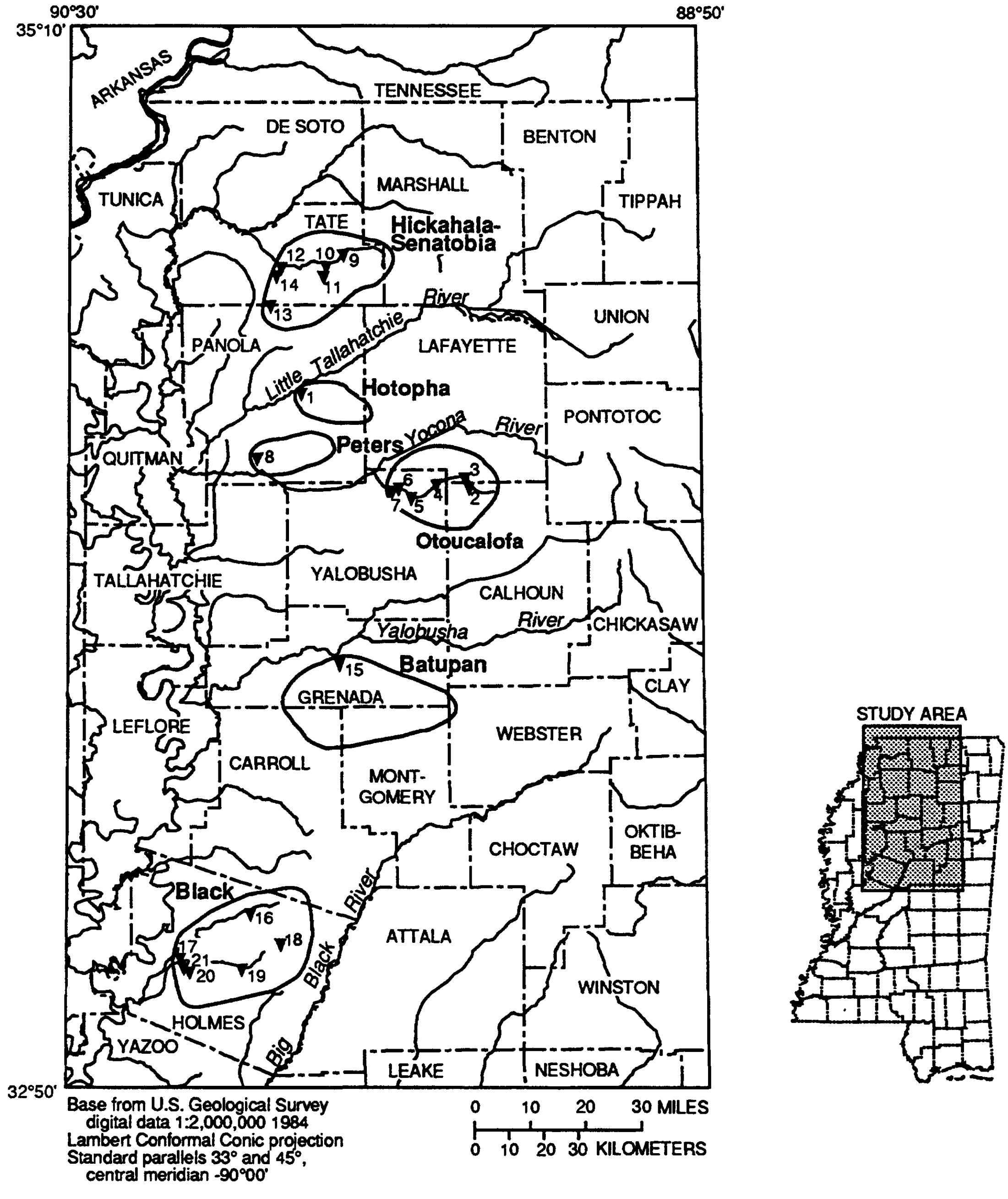


EXPLANATION

▼8 WATER-QUALITY SAMPLING SITE AND NUMBER (see table 1)

Hotopha — WATERSHED BOUNDARY AND NAME

Figure 1.--Map showing location of study area and water-quality sampling sites.

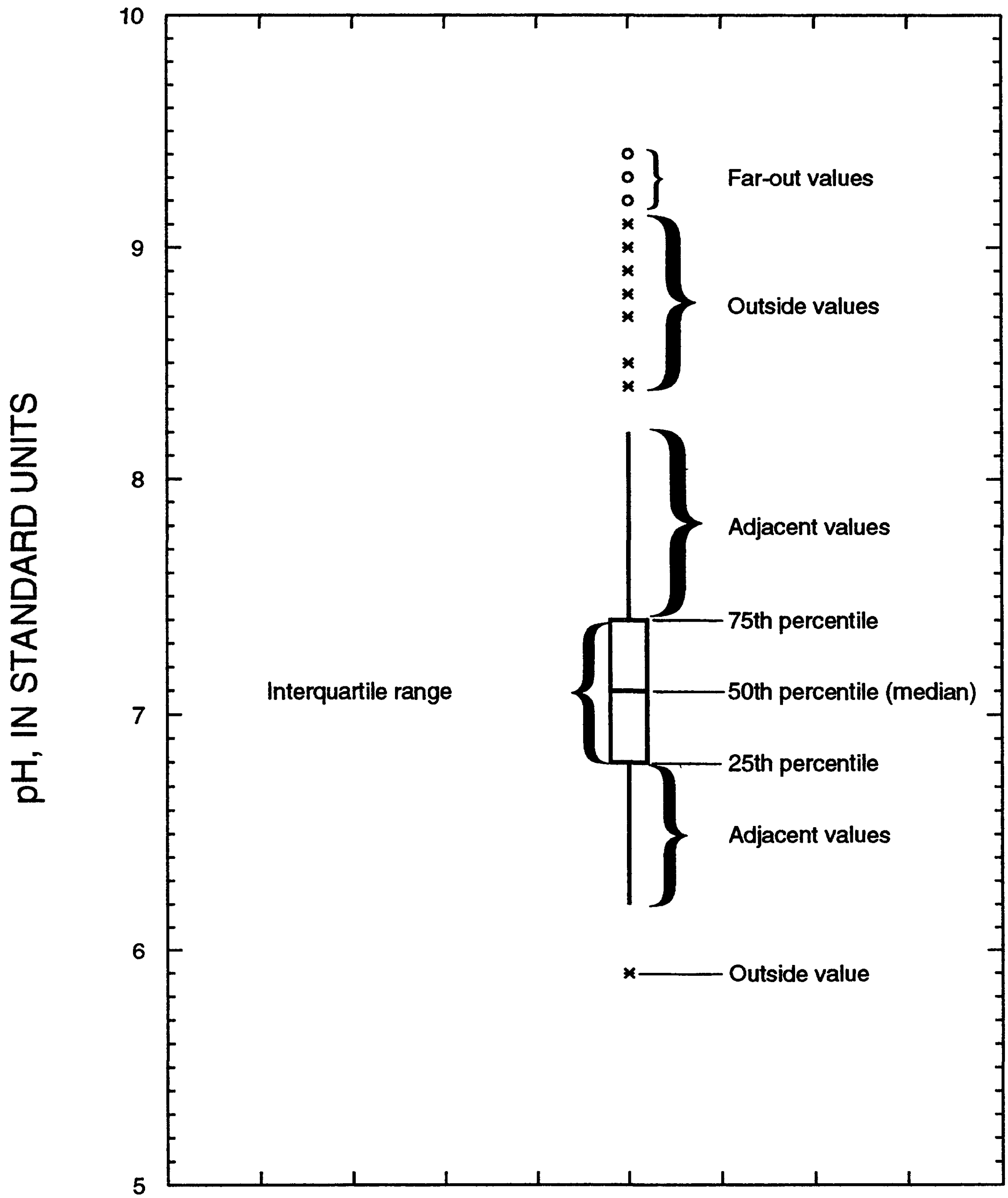


Figure 2A.--Boxplot example.

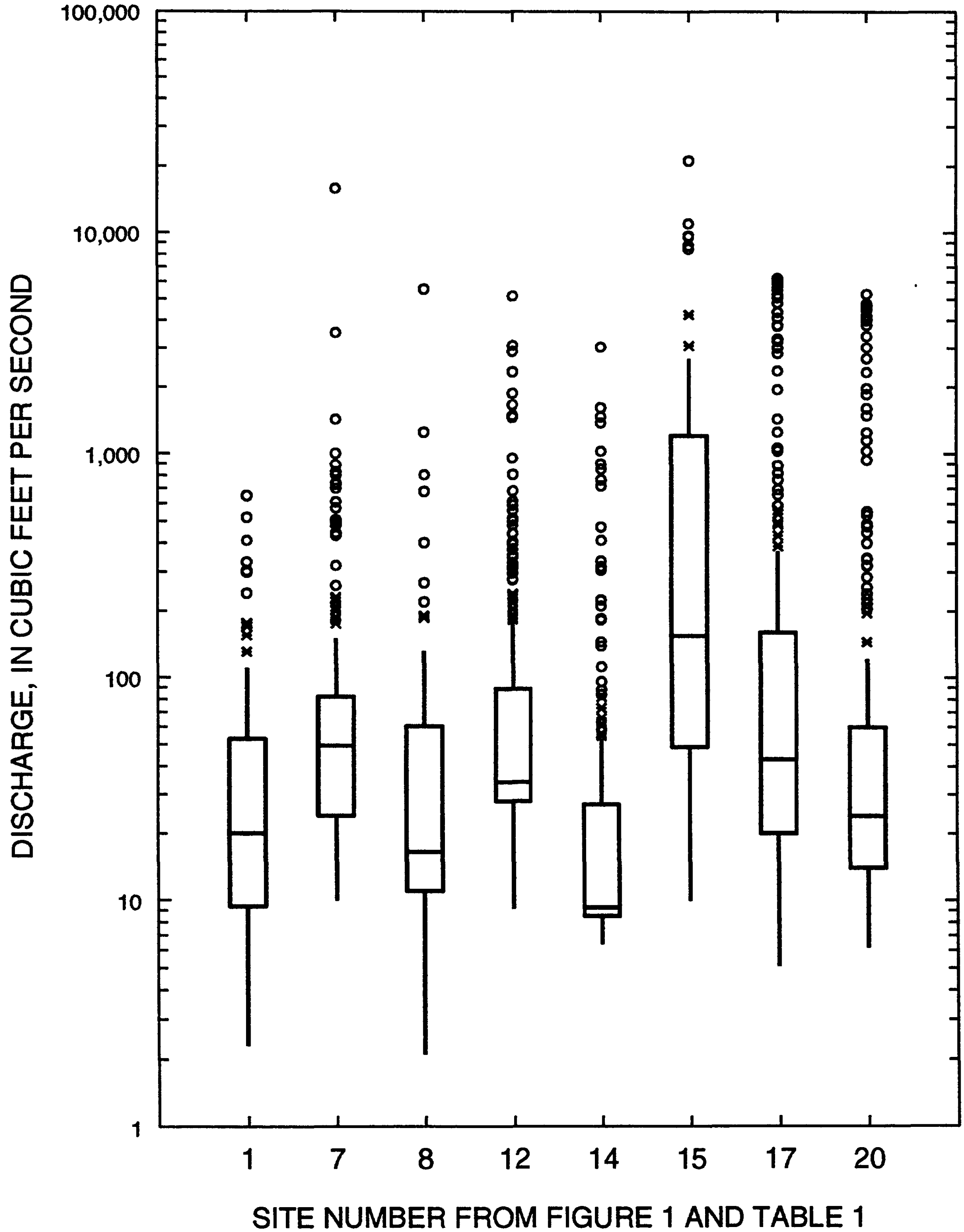


Figure 2B.--Distribution of discharge values at biweekly sampling sites.

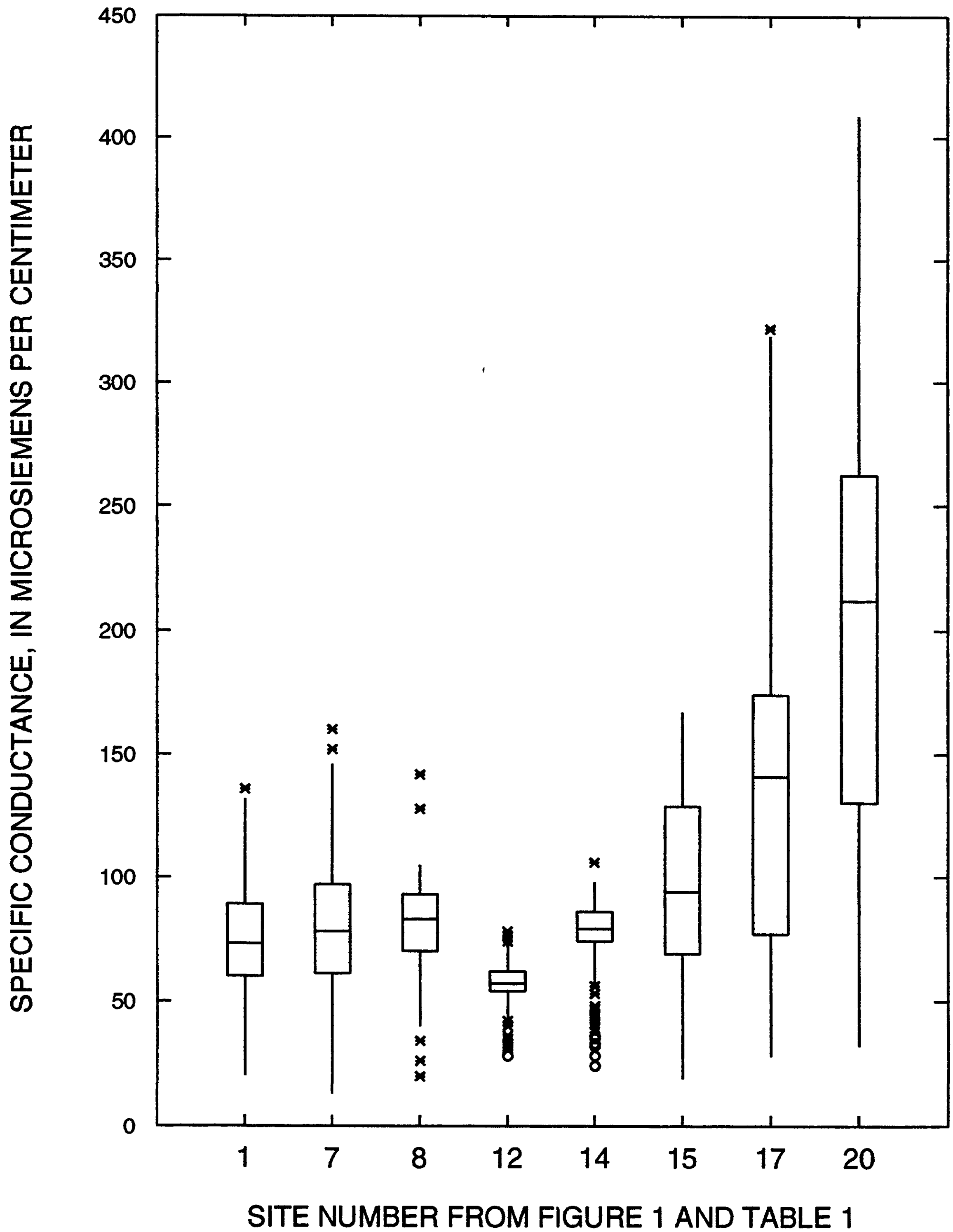


Figure 2C.--Distribution of specific conductance values at biweekly sampling sites.

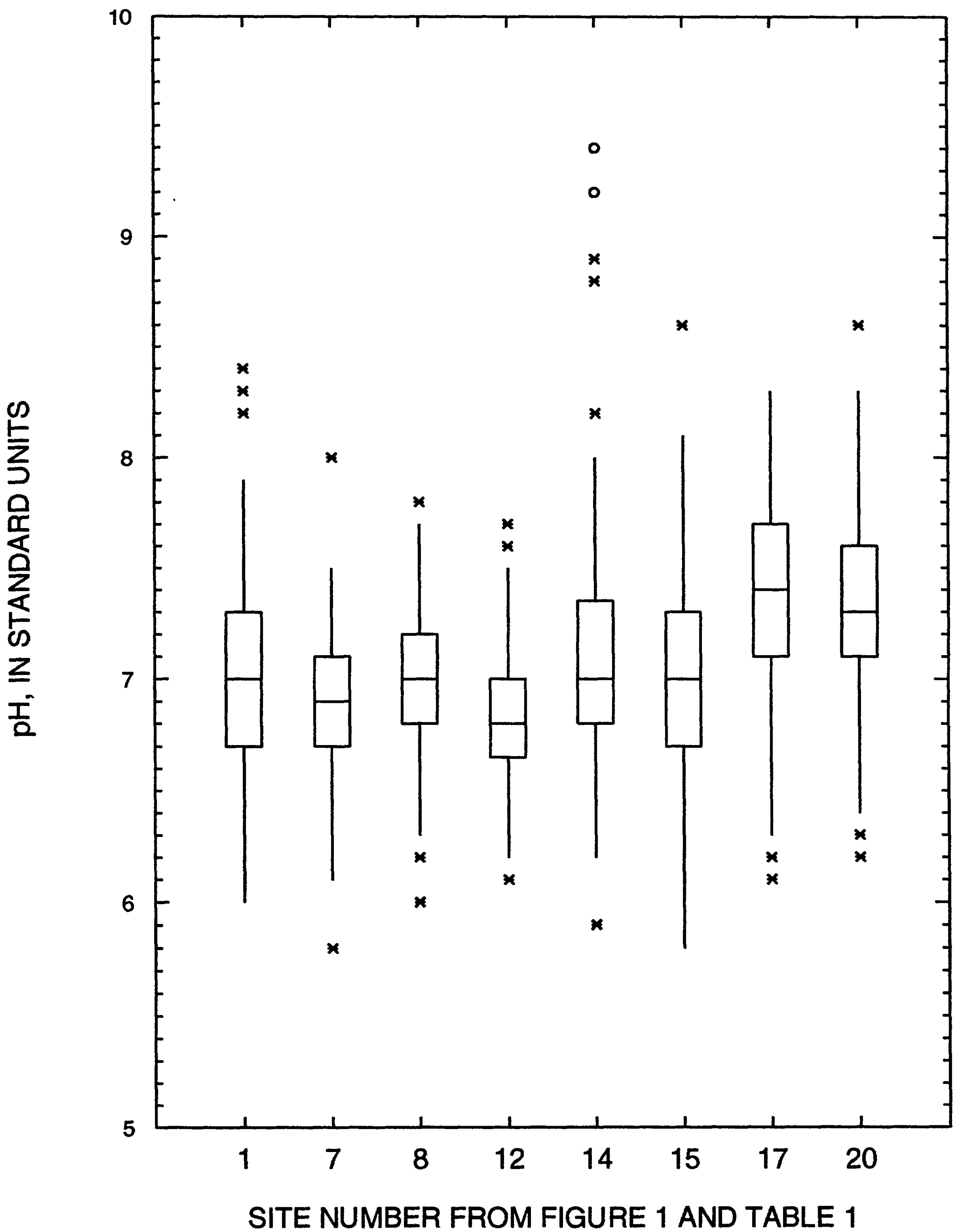


Figure 2D.--Distribution of pH values
at biweekly sampling sites.

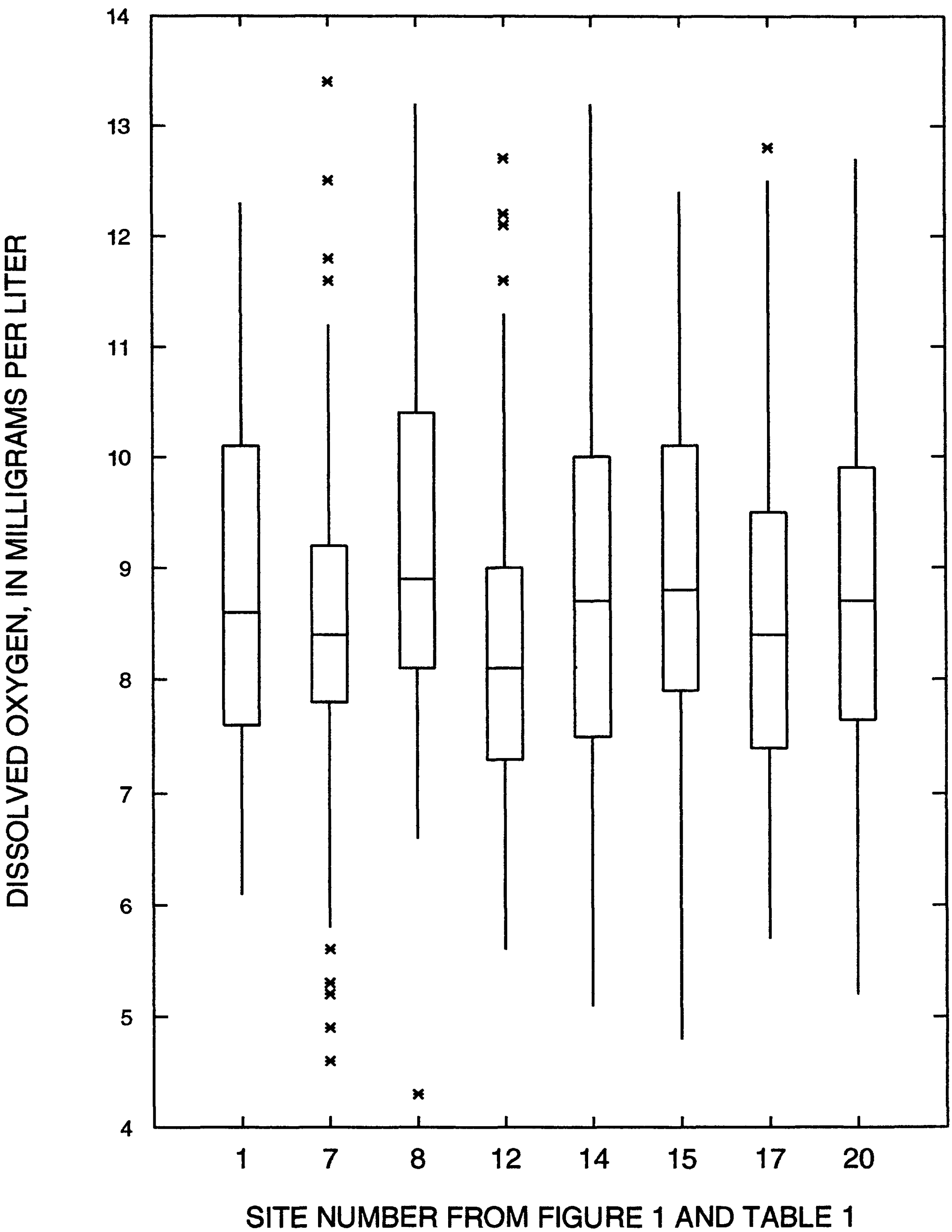


Figure 2E.--Distribution of dissolved oxygen values at biweekly sampling sites.

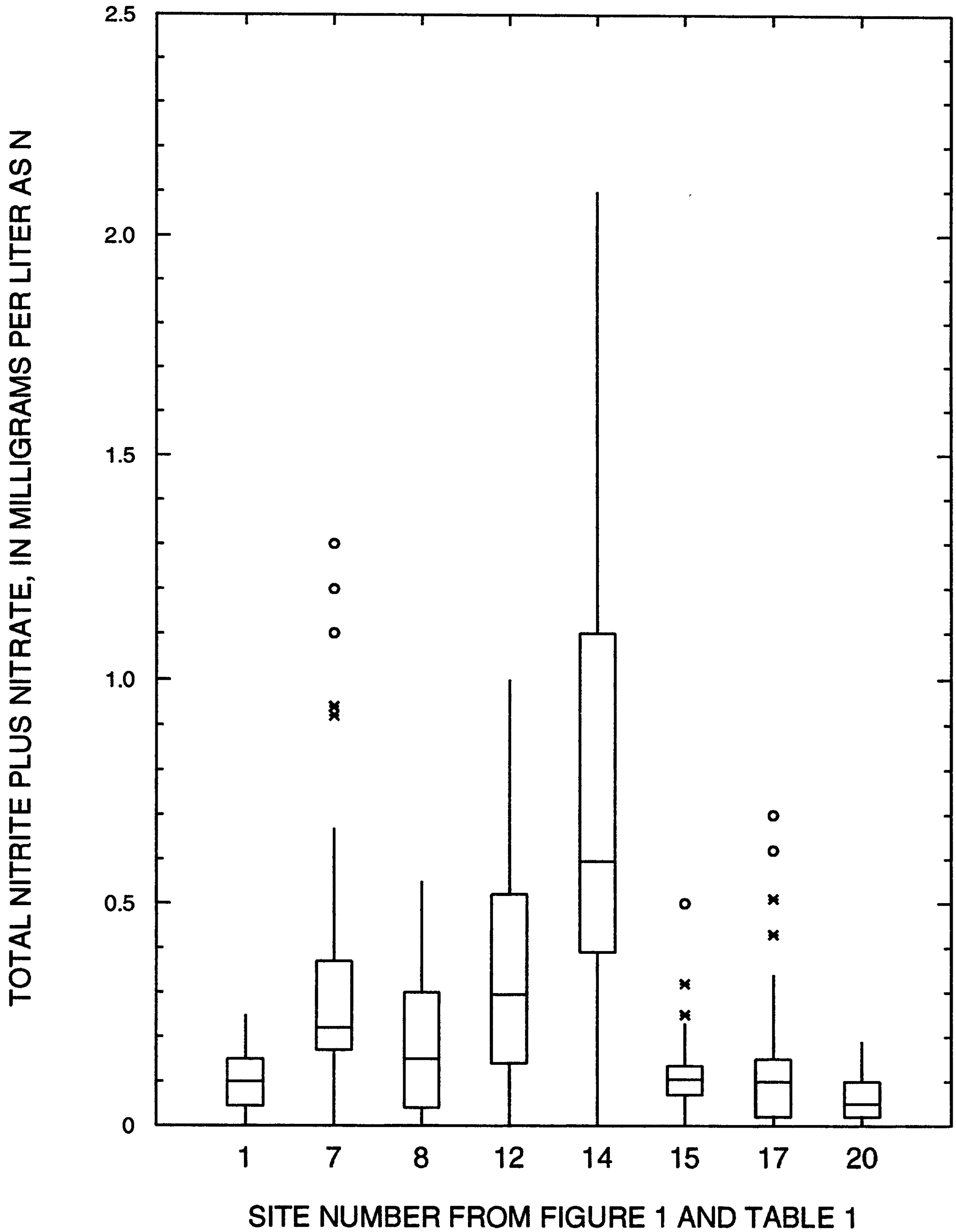


Figure 2F.--Distribution of total nitrite plus nitrate values at biweekly sampling sites.

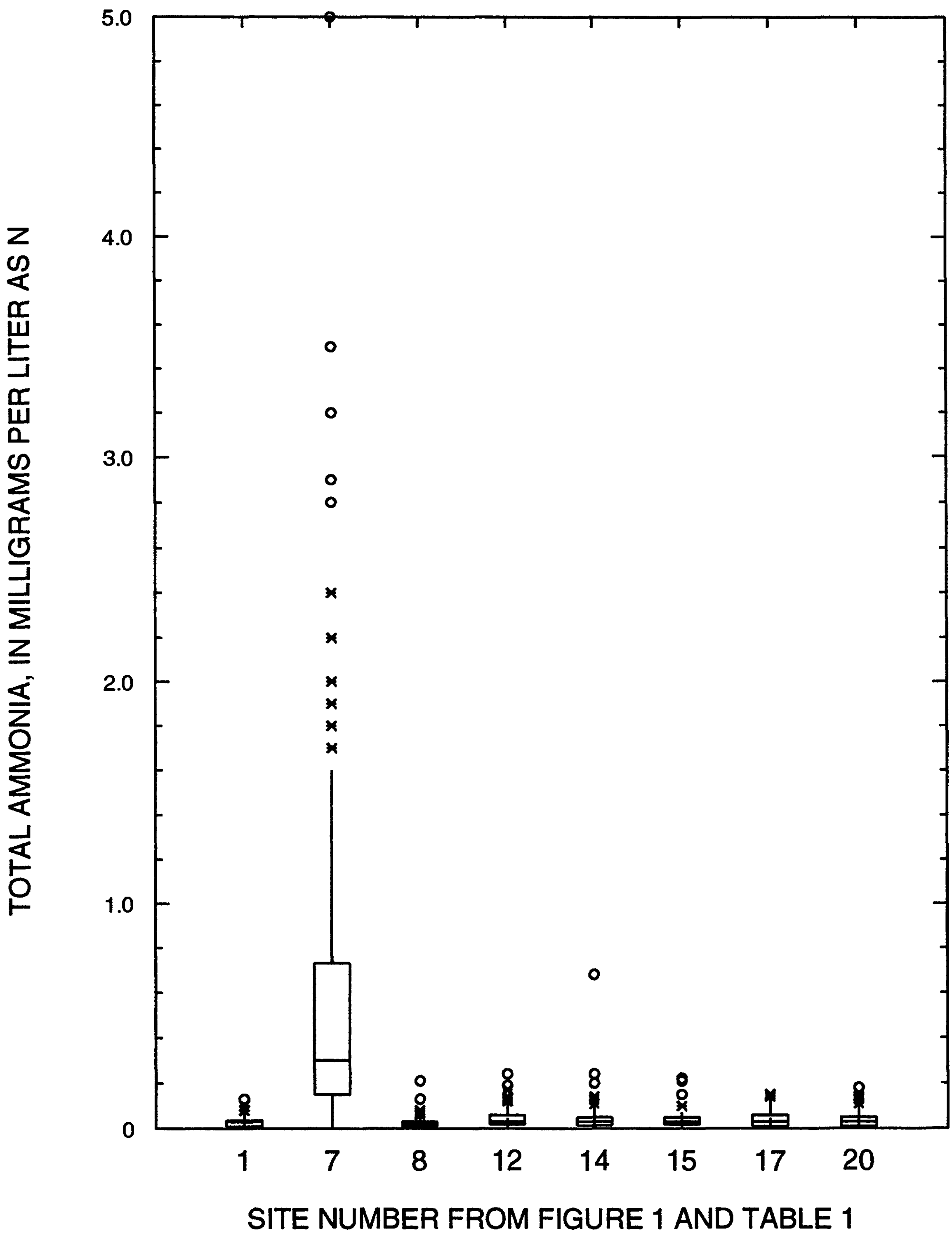


Figure 2G.--Distribution of total ammonia values at biweekly sampling sites.

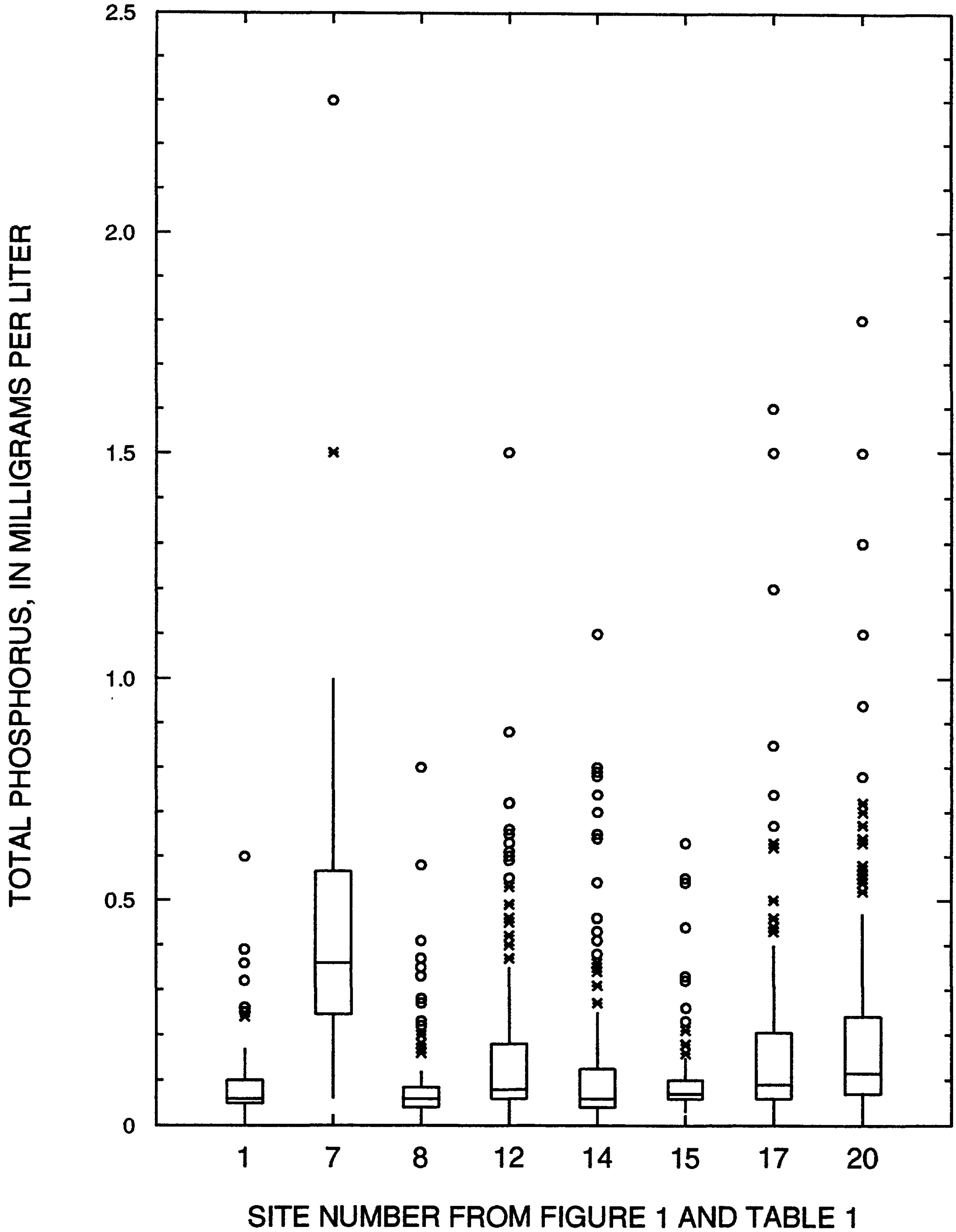


Figure 2H.--Distribution of total phosphorus values at biweekly sampling sites.

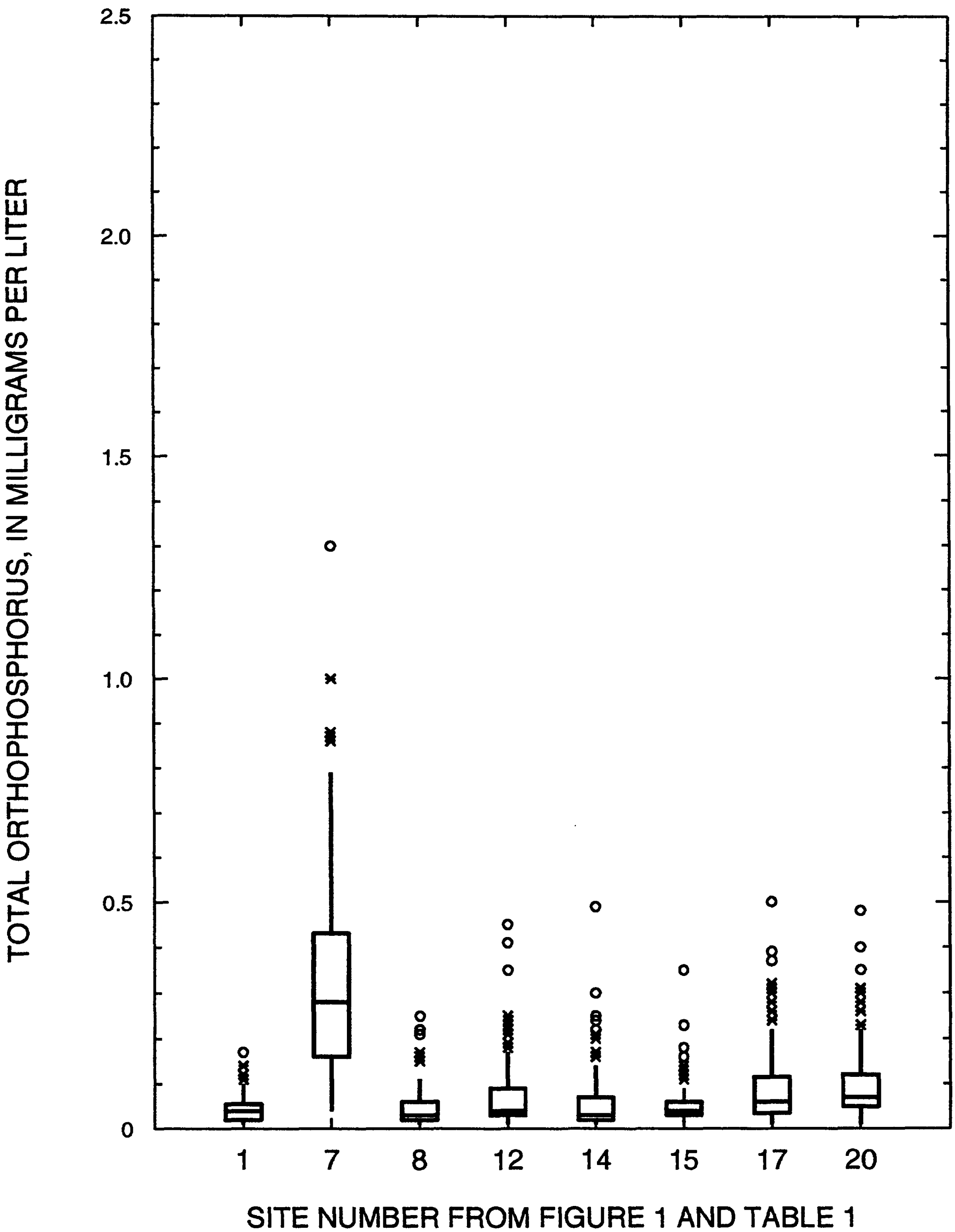


Figure 2l.--Distribution of total orthophosphorus values at biweekly sampling sites.

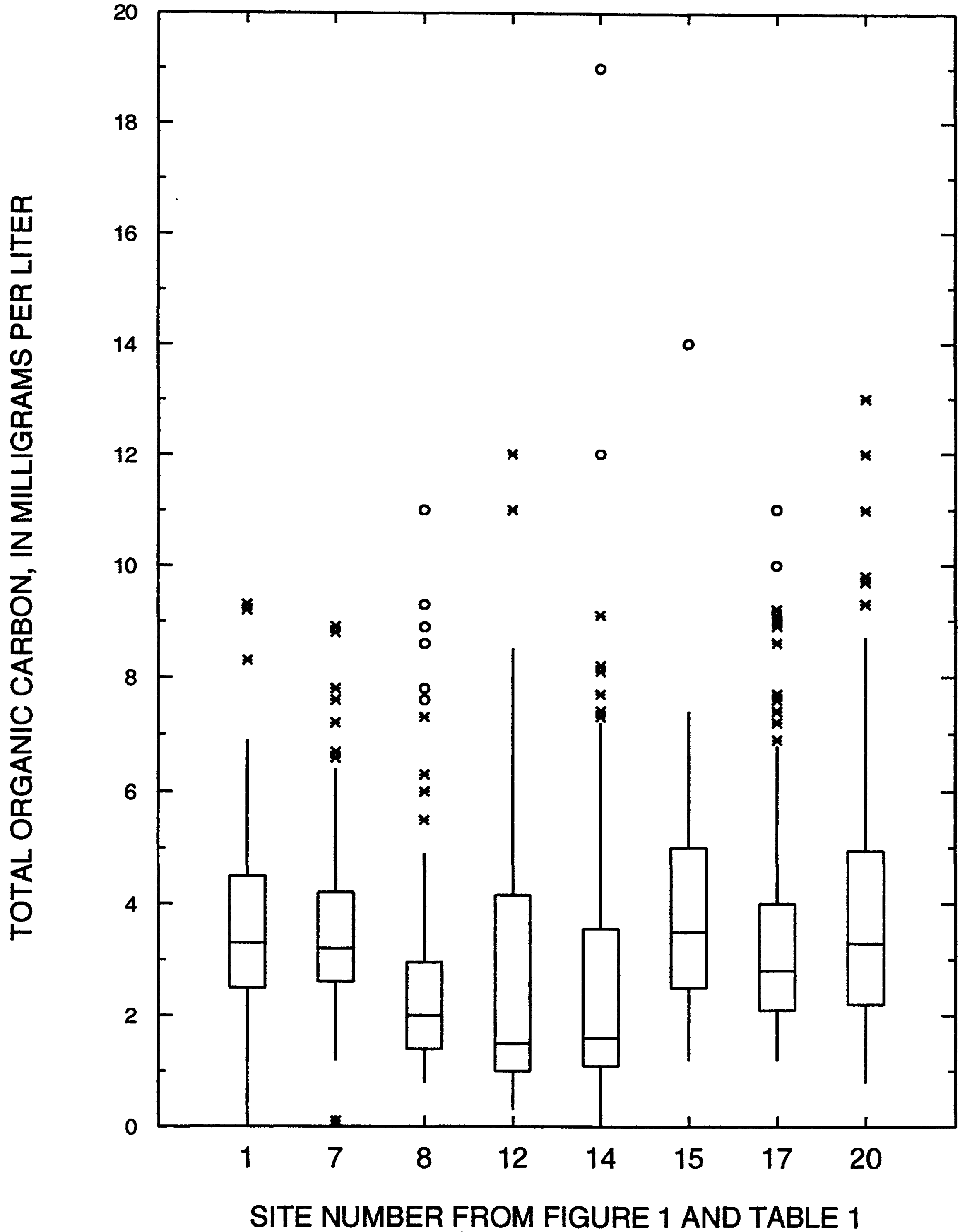


Figure 2J.--Distribution of total organic carbon values at biweekly sampling sites.

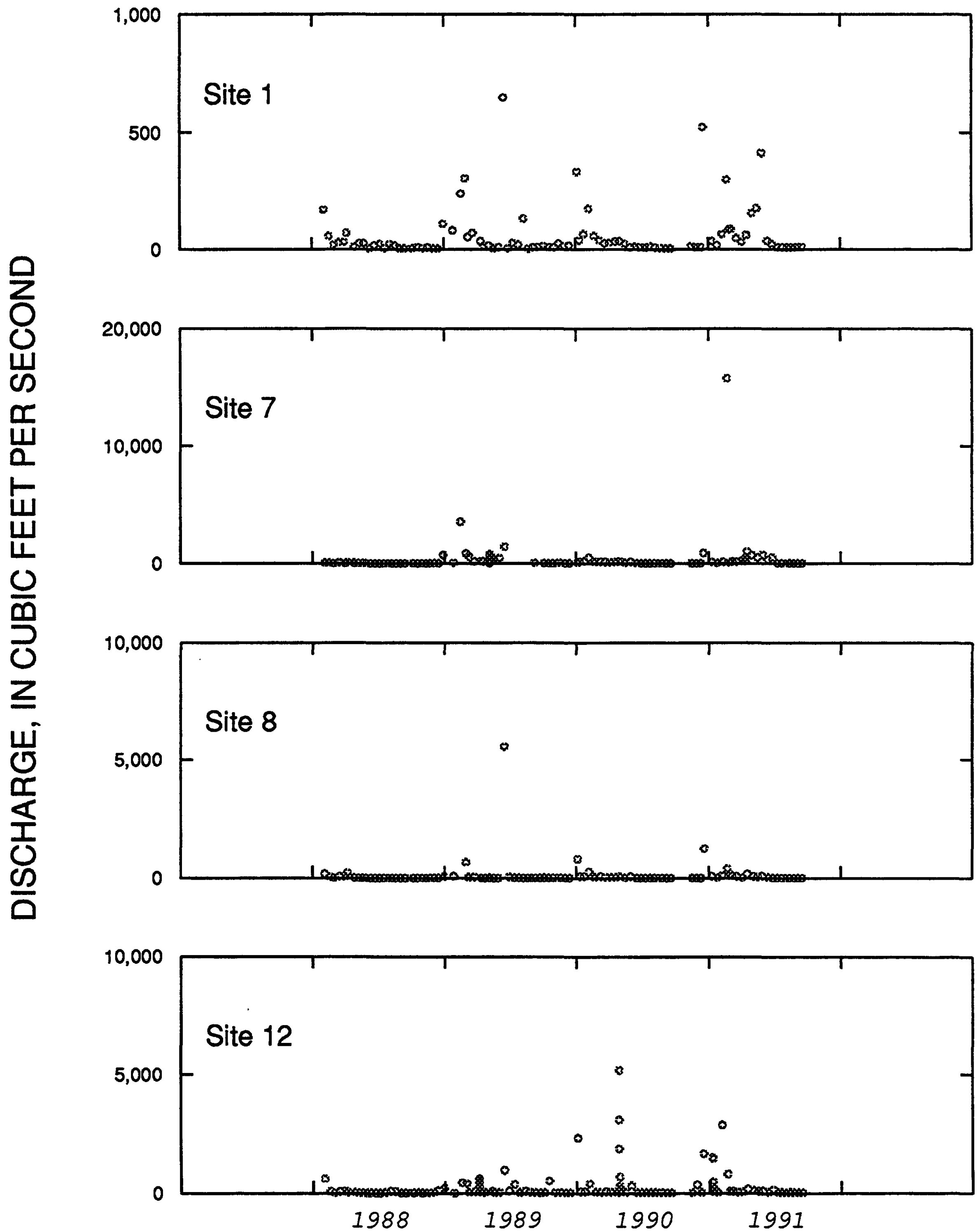


Figure 3A.--Hydrographs of discharge at biweekly sampling sites.

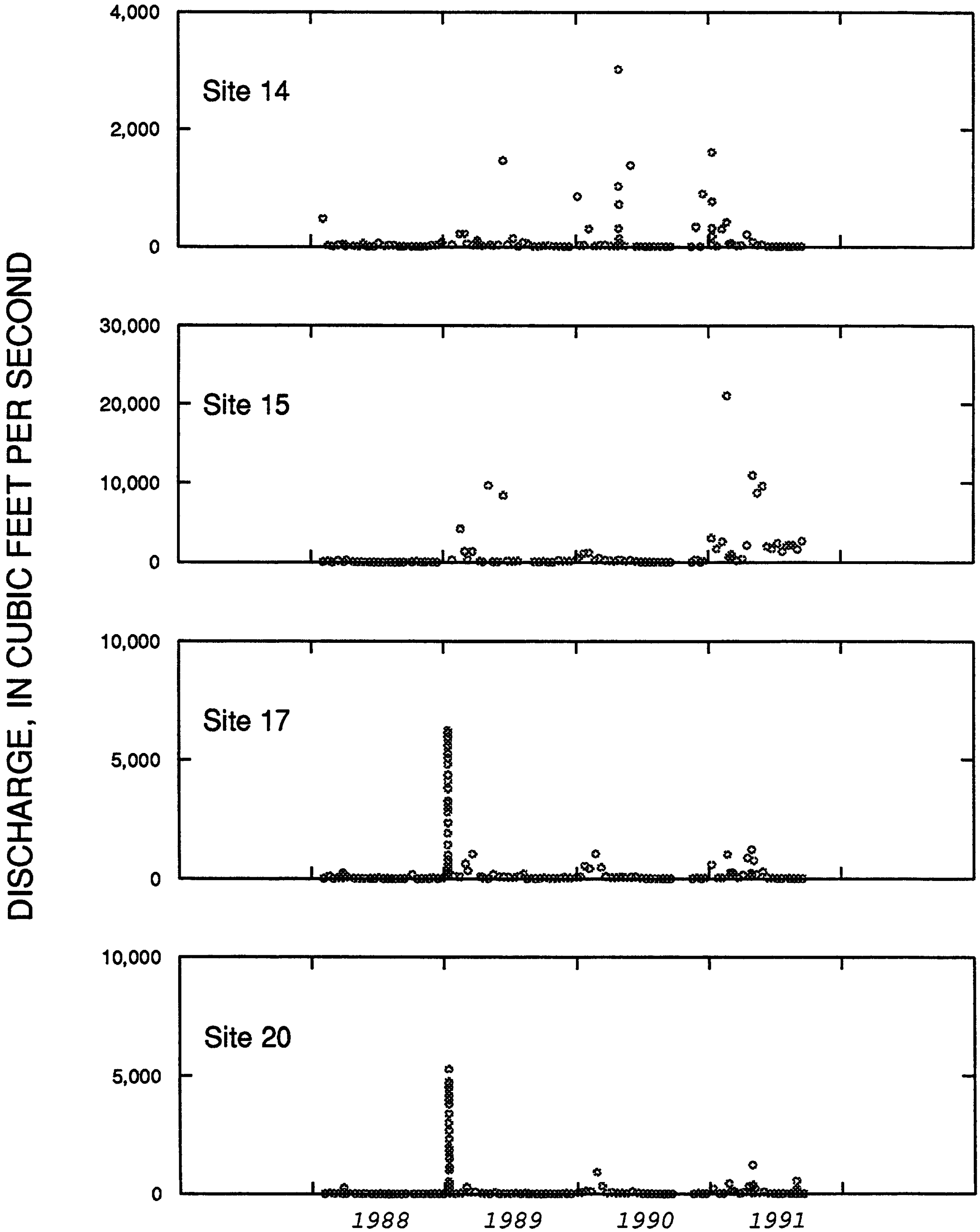


Figure 3A.--Hydrographs of discharge at biweekly sampling sites --Continued.

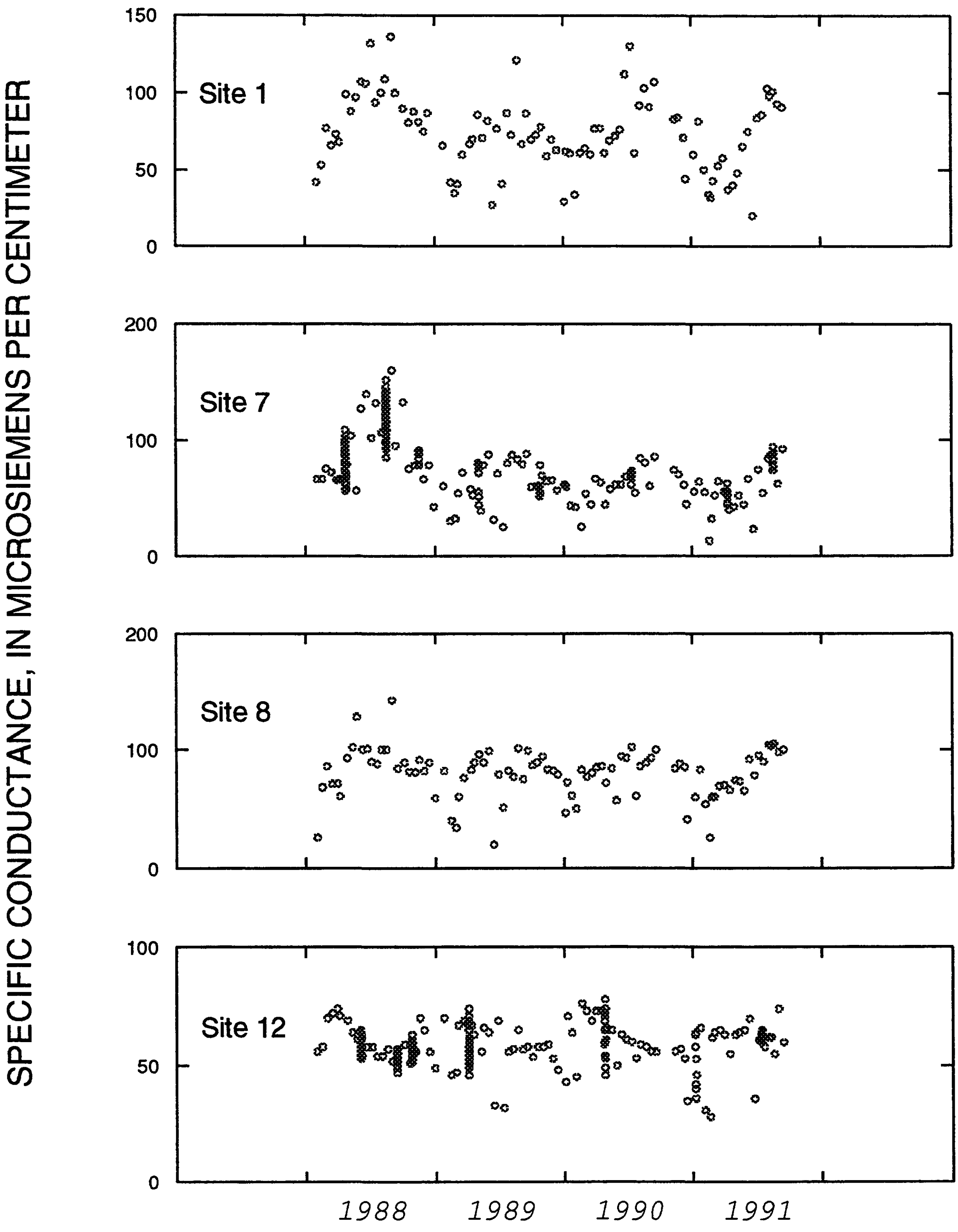


Figure 3B.--Hydrographs of specific conductance at biweekly sampling sites.

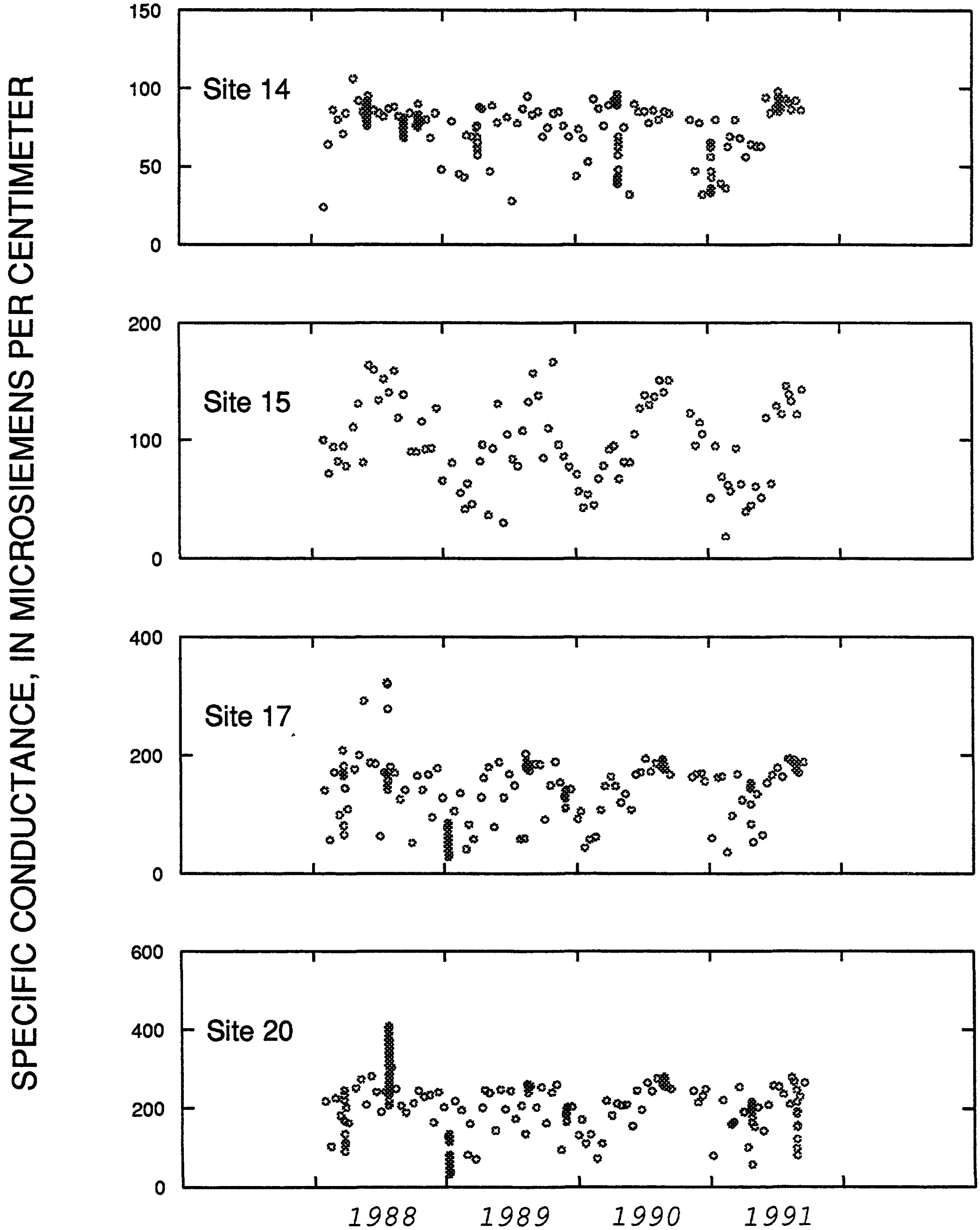


Figure 3B.--Hydrographs of specific conductance at biweekly sampling sites--Continued.

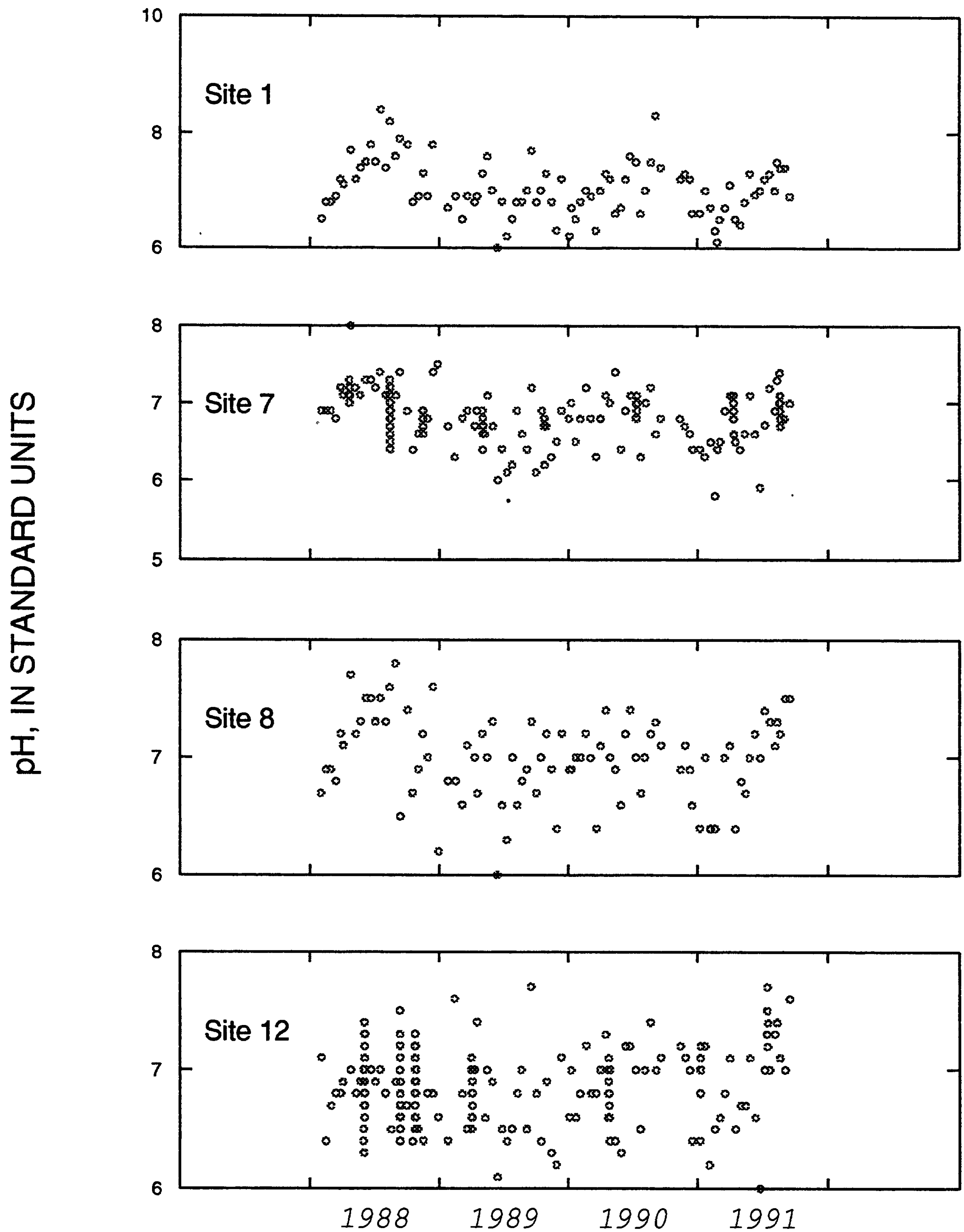


Figure 3C.--Hydrographs of pH at biweekly sampling sites.

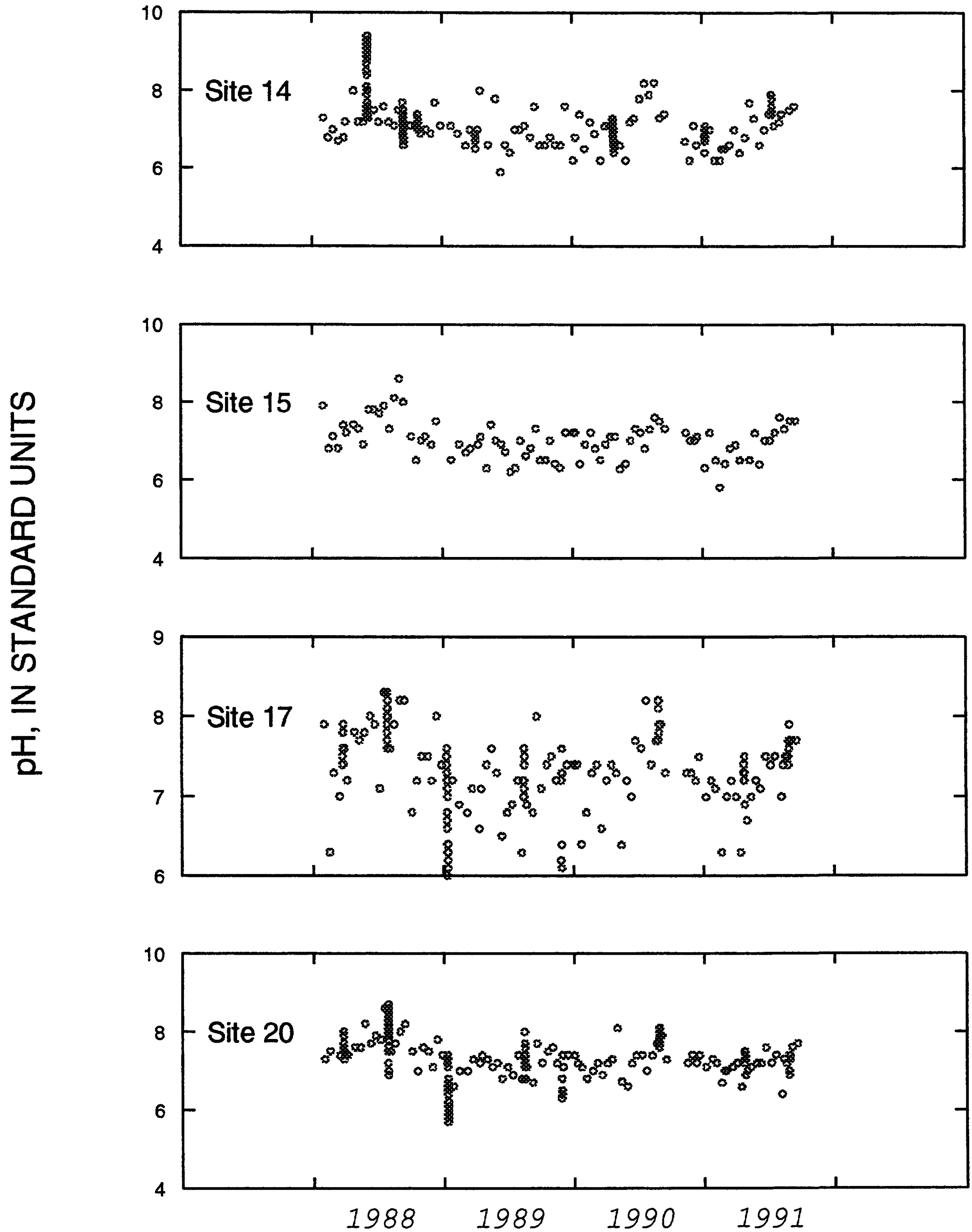


Figure 3C.--Hydrographs of pH at biweekly sampling sites--Continued.

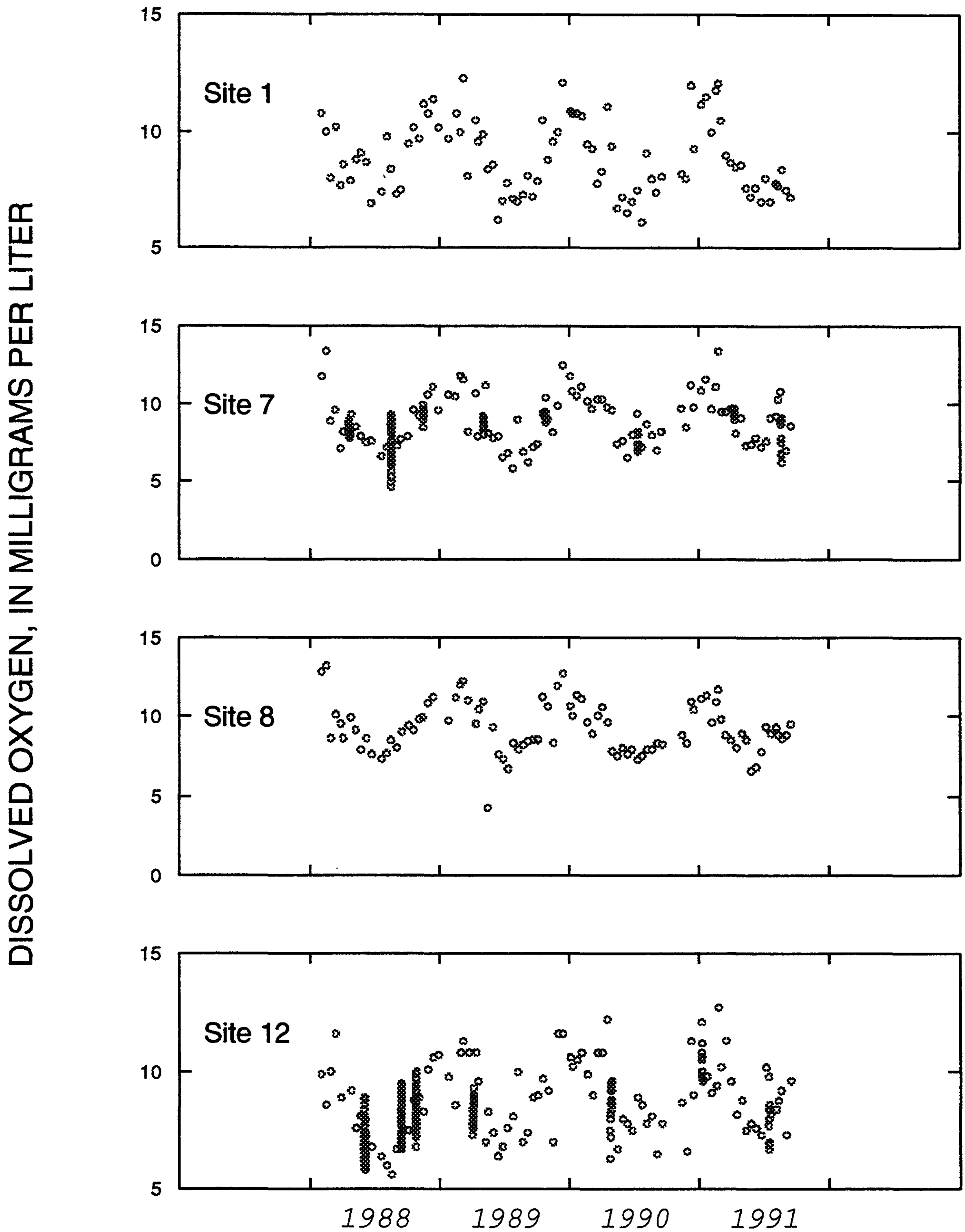


Figure 3D.--Hydrographs of dissolved oxygen at biweekly sampling sites.

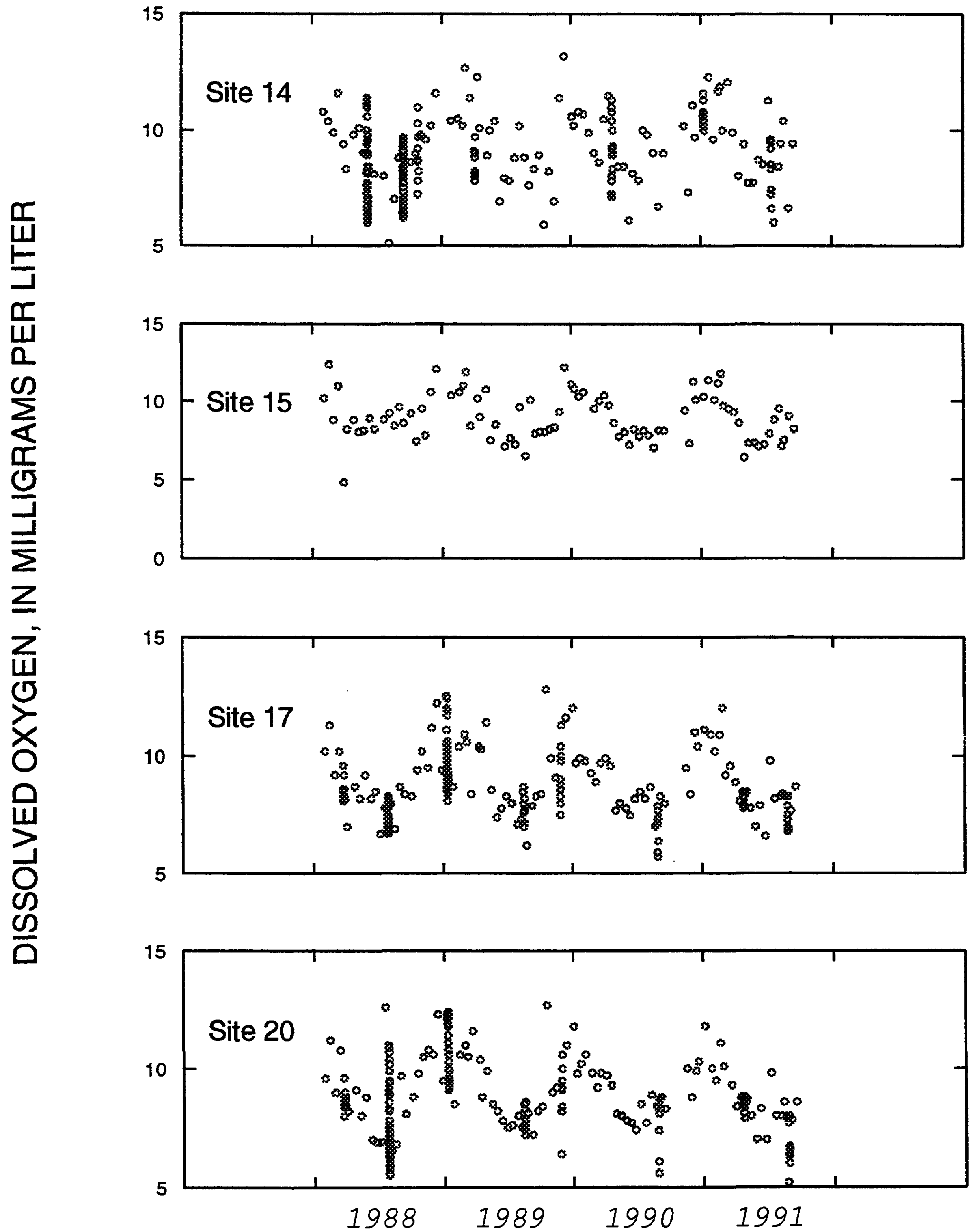


Figure 3D.--Hydrographs of dissolved oxygen at biweekly sampling sites--Continued.

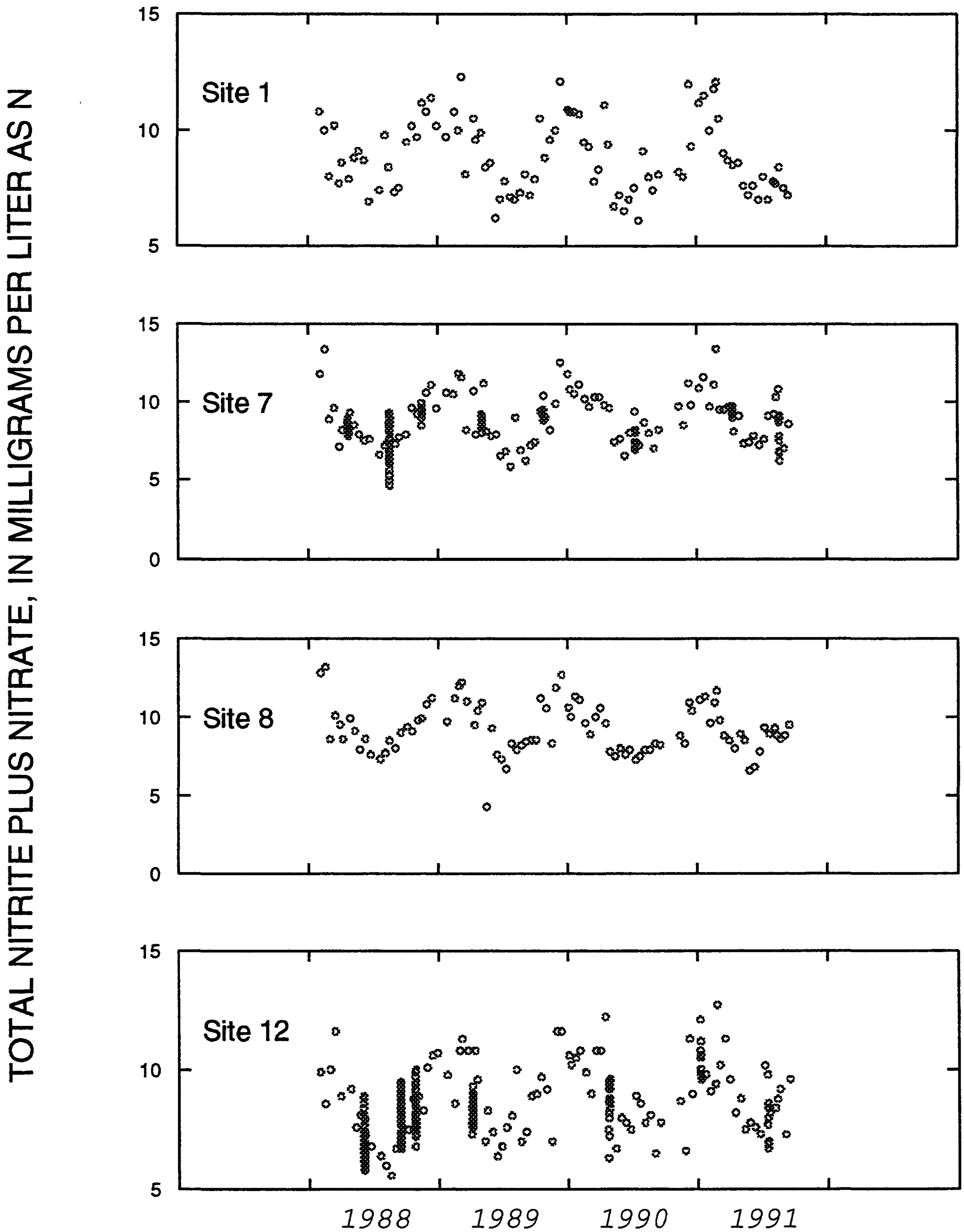


Figure 3E.--Hydrographs of total nitrite plus nitrate at biweekly sampling sites.

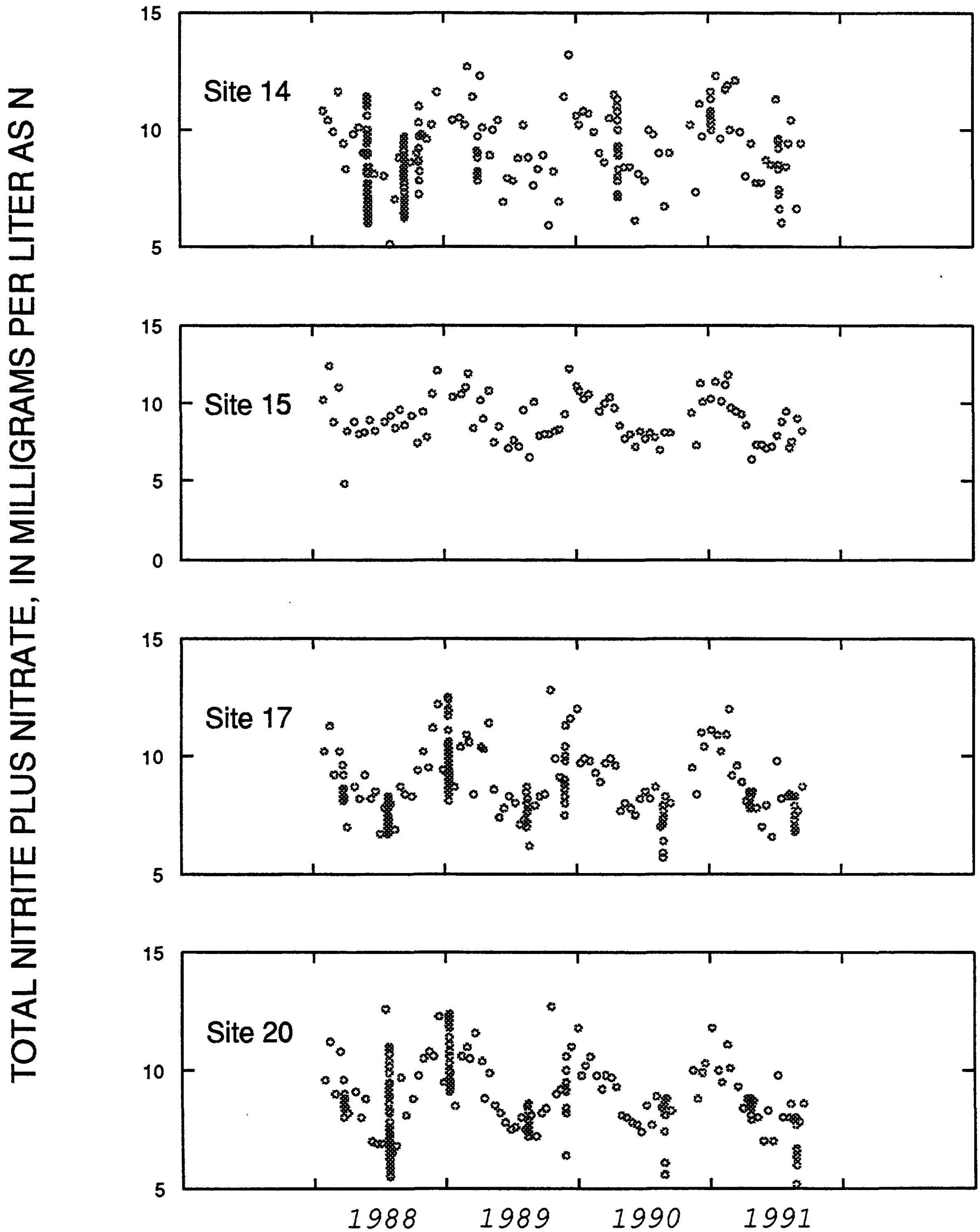


Figure 3E.--Hydrographs of total nitrite plus nitrate at biweekly sampling sites--Continued.

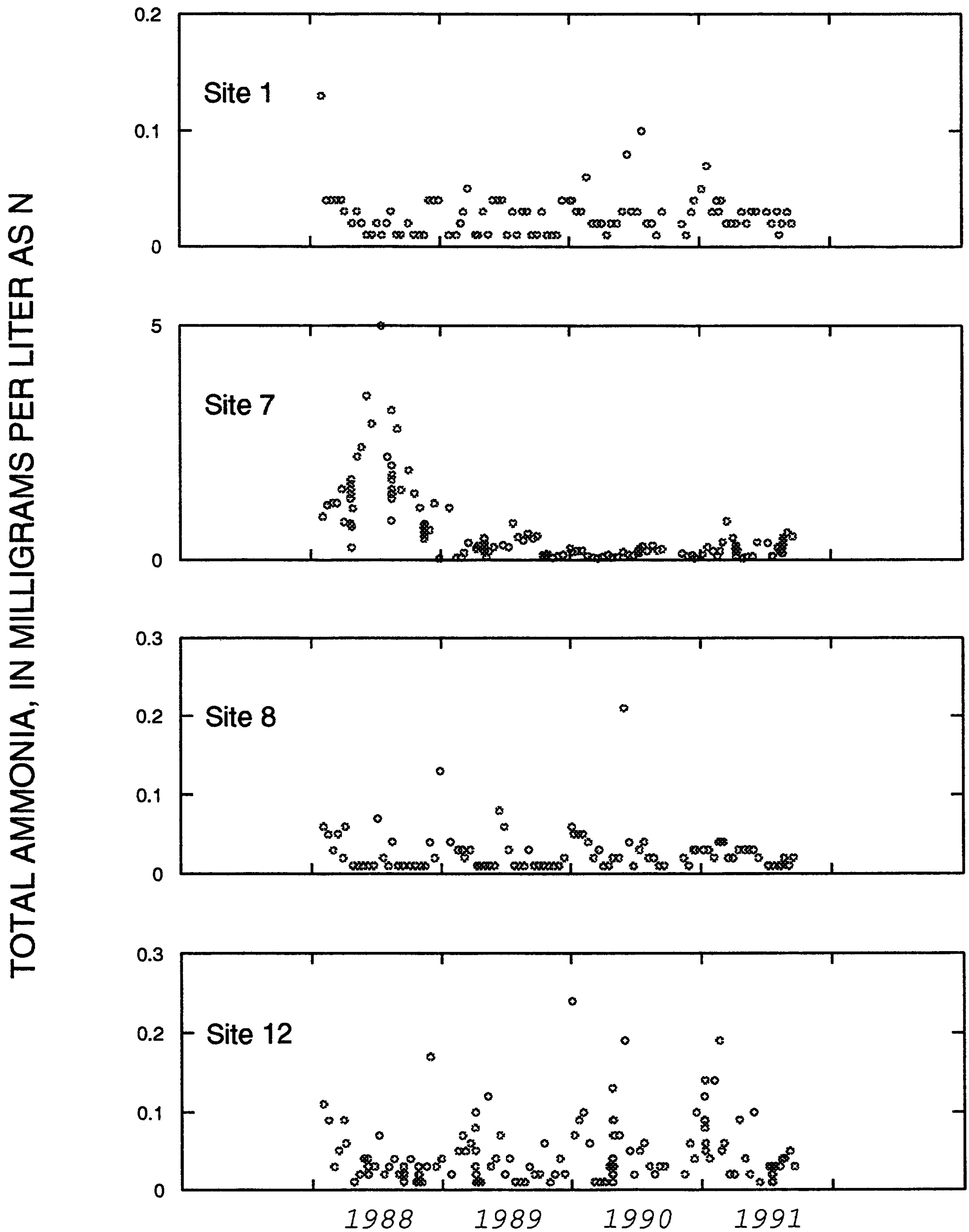


Figure 3F.--Hydrographs of total ammonia at biweekly sampling sites.

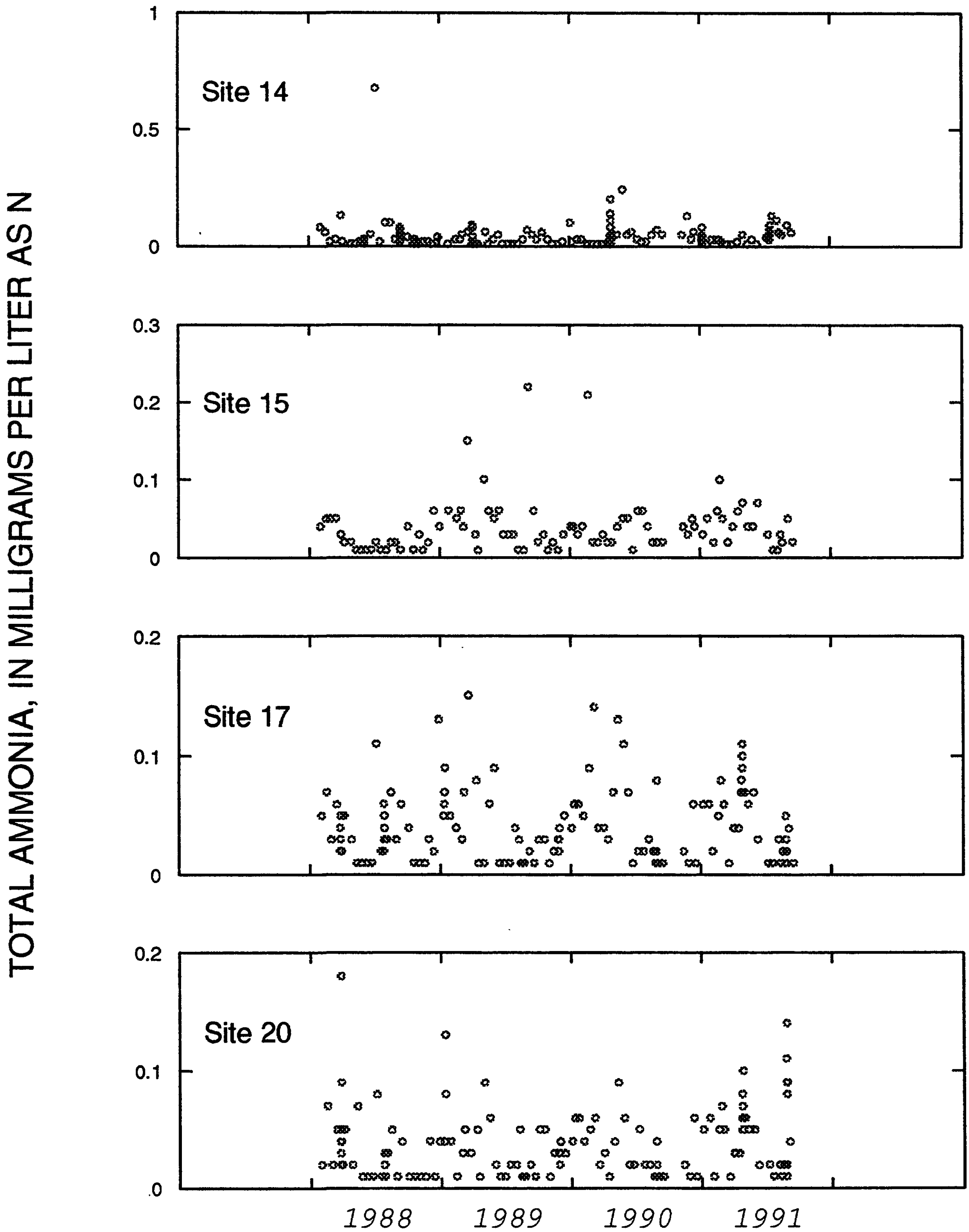


Figure 3F.--Hydrographs of total ammonia at biweekly sampling sites--Continued.

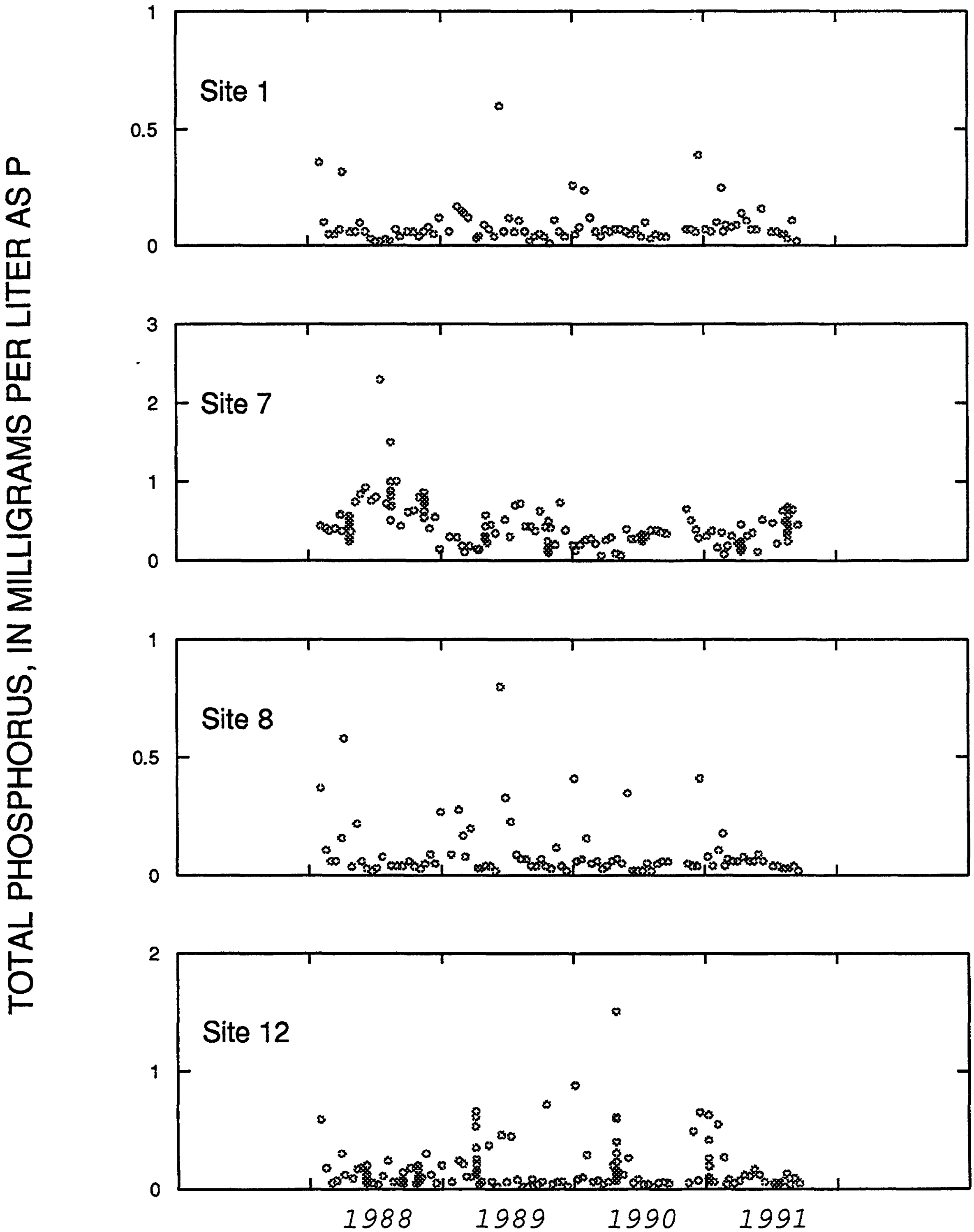


Figure 3G.--Hydrographs of total phosphorus at biweekly sampling sites.

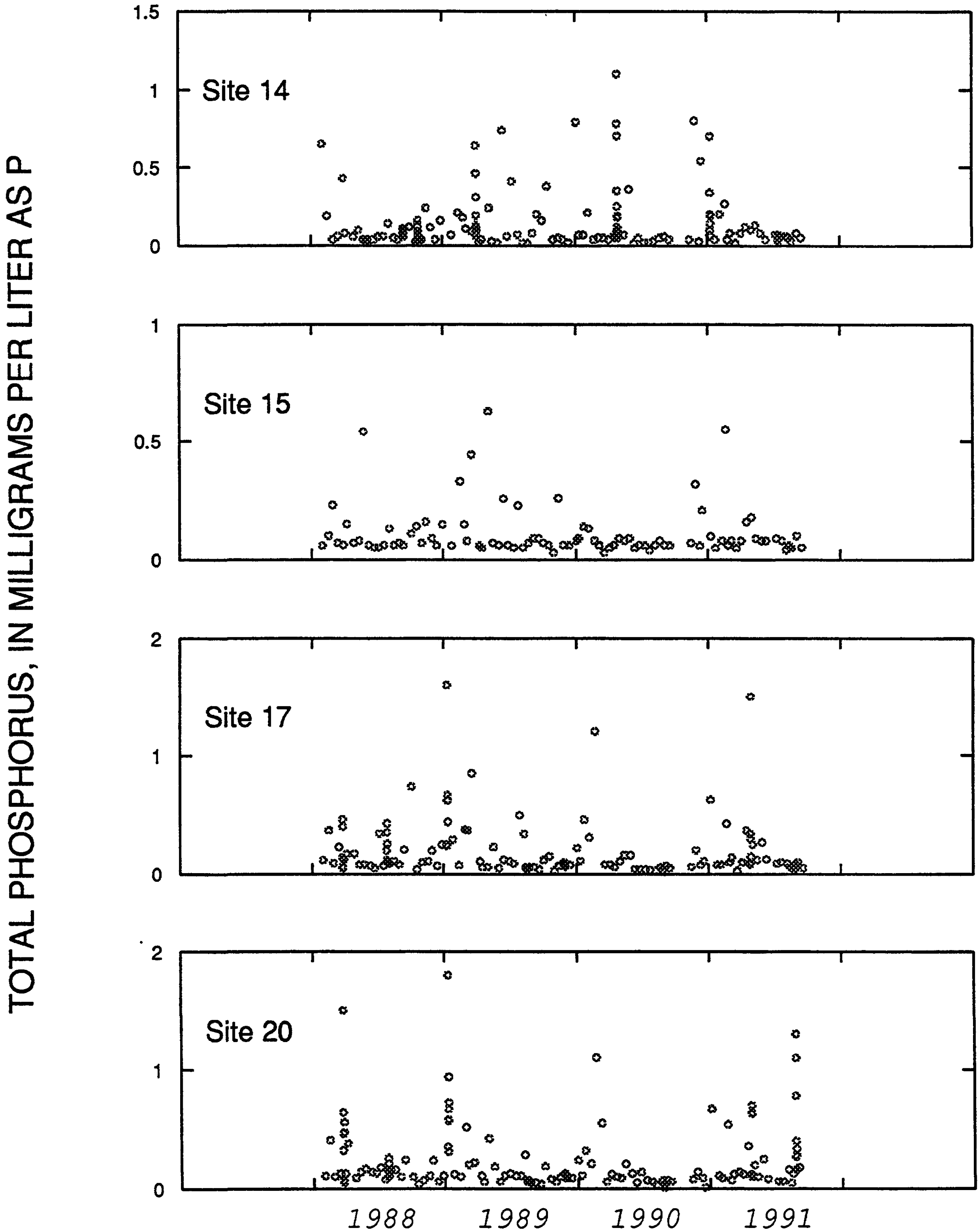


Figure 3G.--Hydrographs of total phosphorus at biweekly sampling sites--Continued.

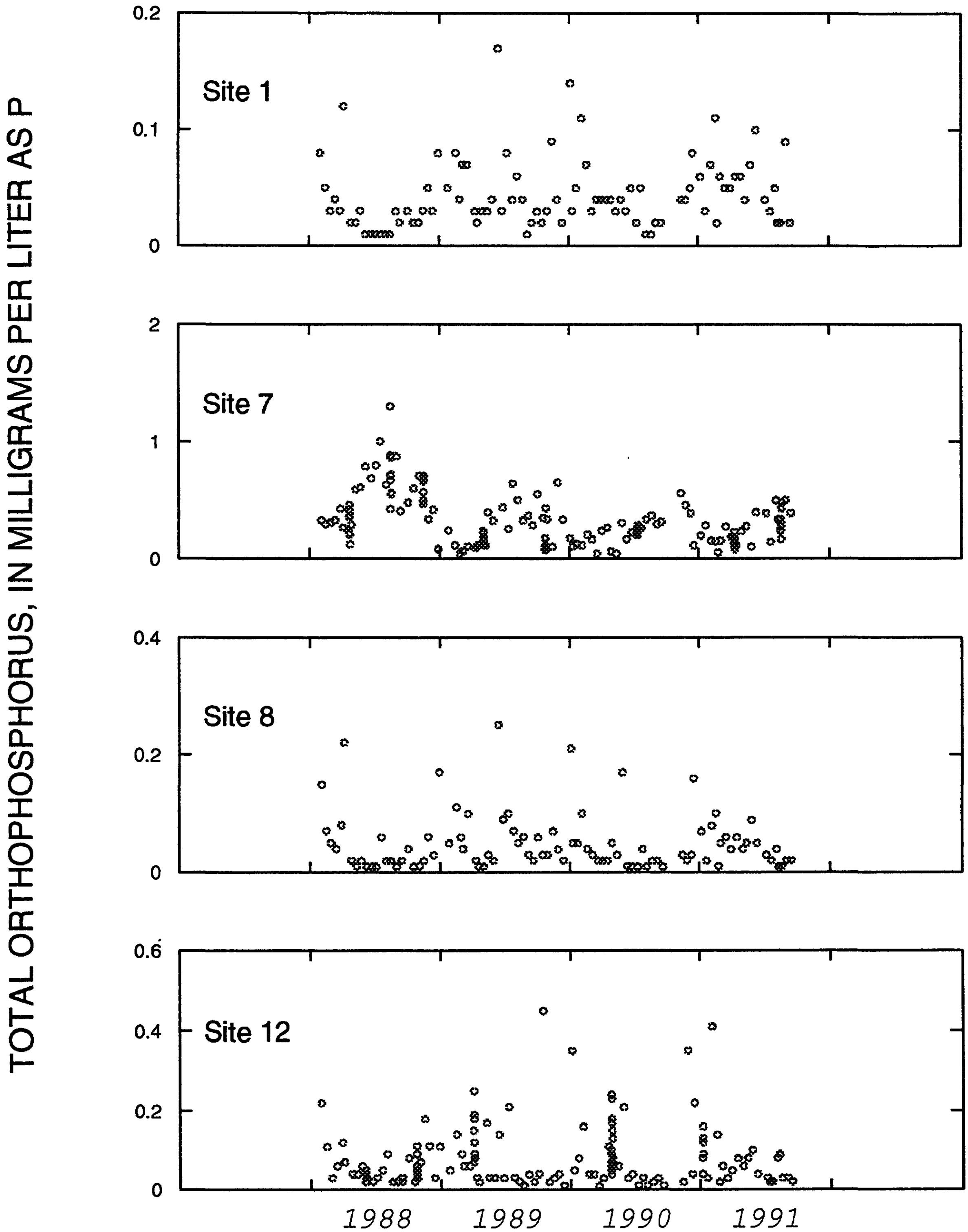


Figure 3H.--Hydrographs of total orthophosphorus at biweekly sampling sites.

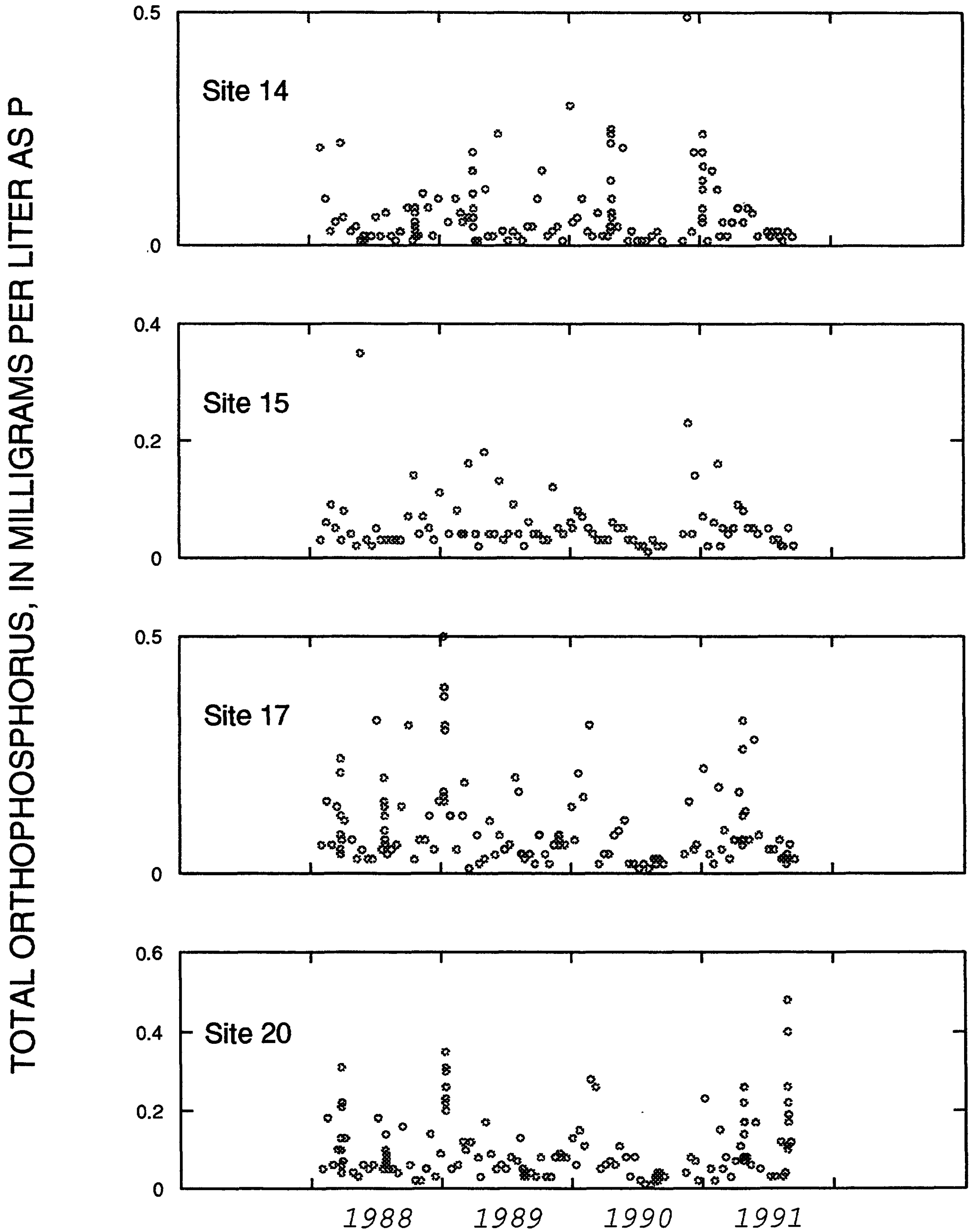


Figure 3H.--Hydrographs of total orthophosphorus at biweekly sampling sites--Continued.

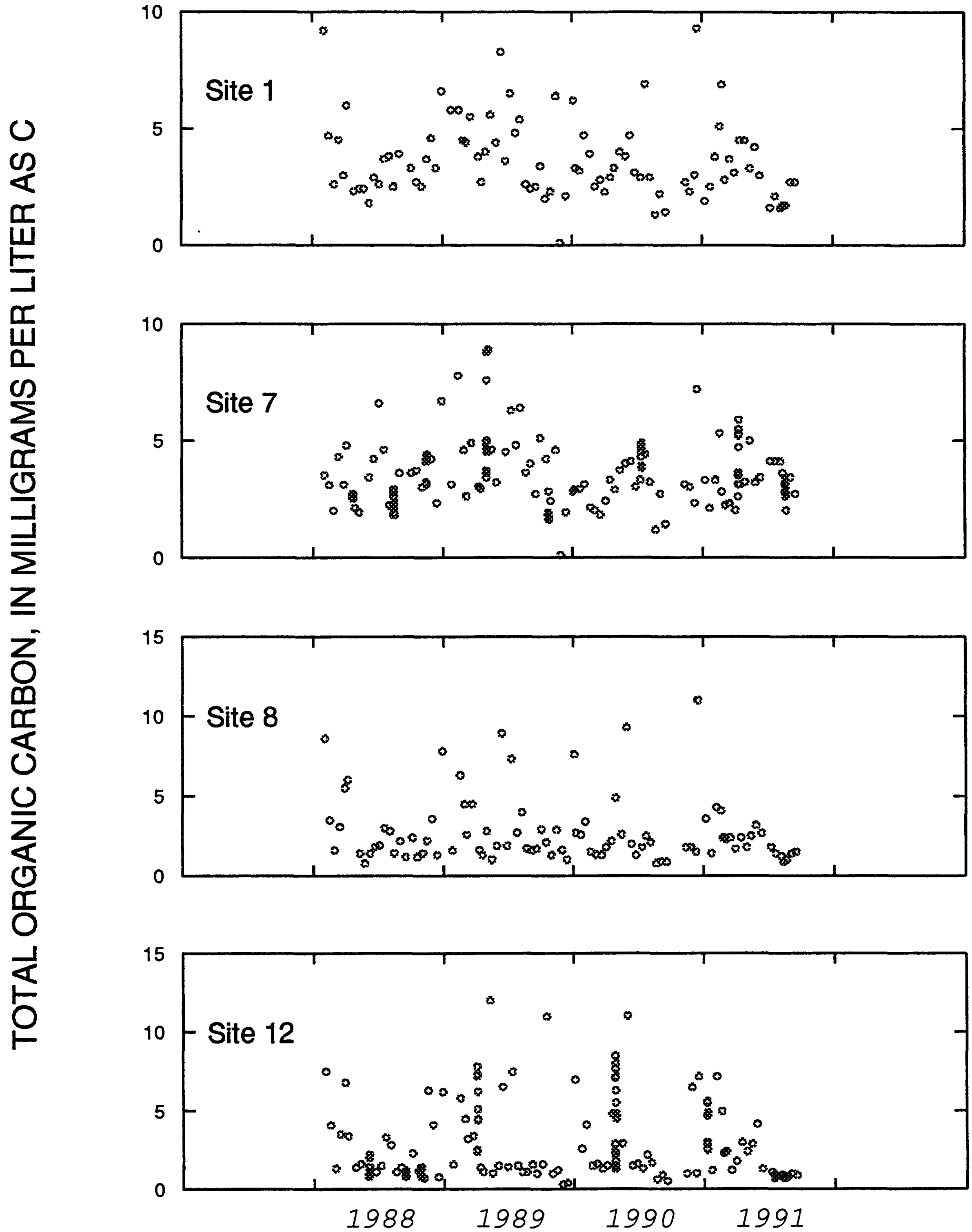


Figure 3I.--Hydrographs of total organic carbon at biweekly sampling sites.

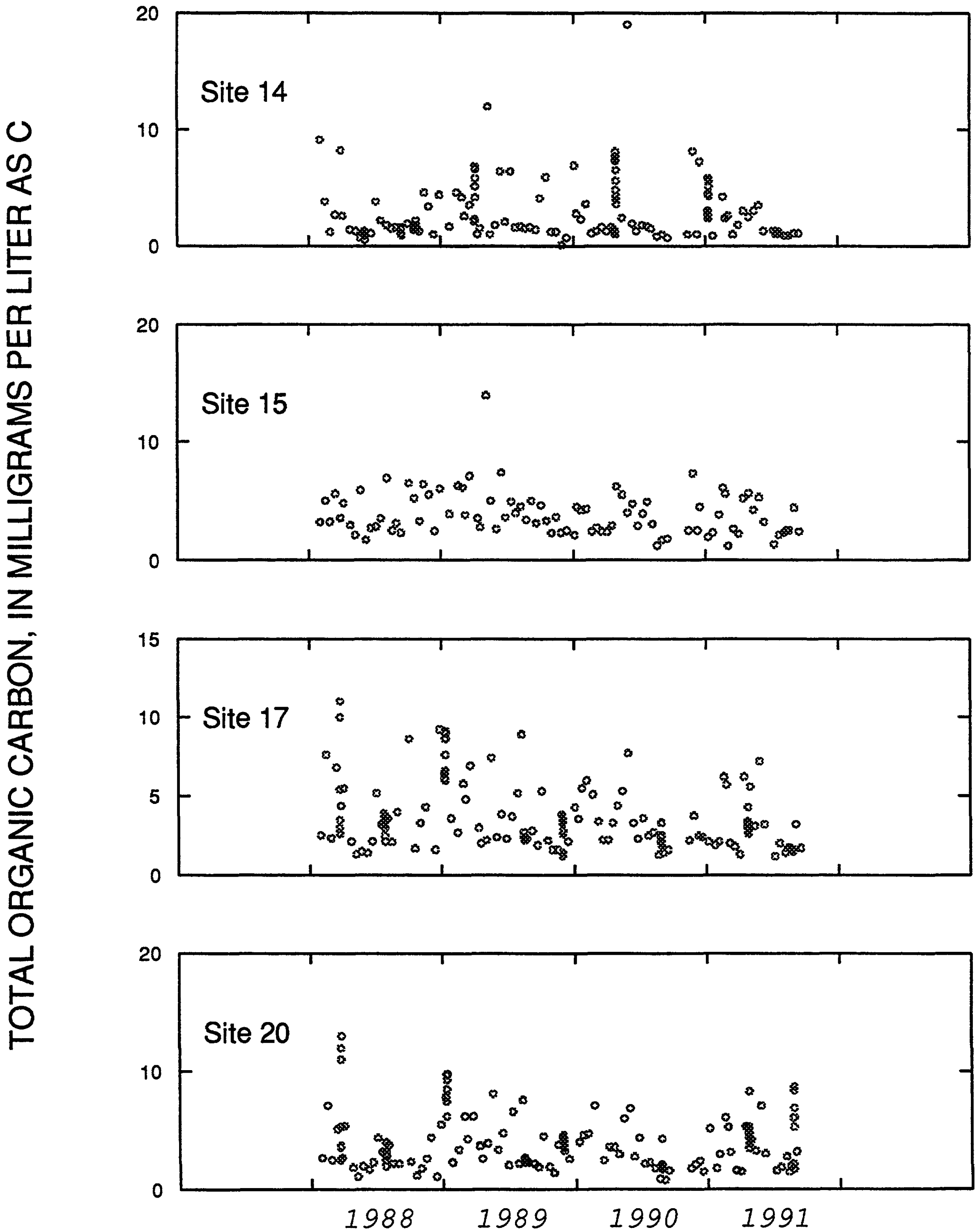


Figure 3I.--Hydrographs of total organic carbon at biweekly sampling sites--Continued.

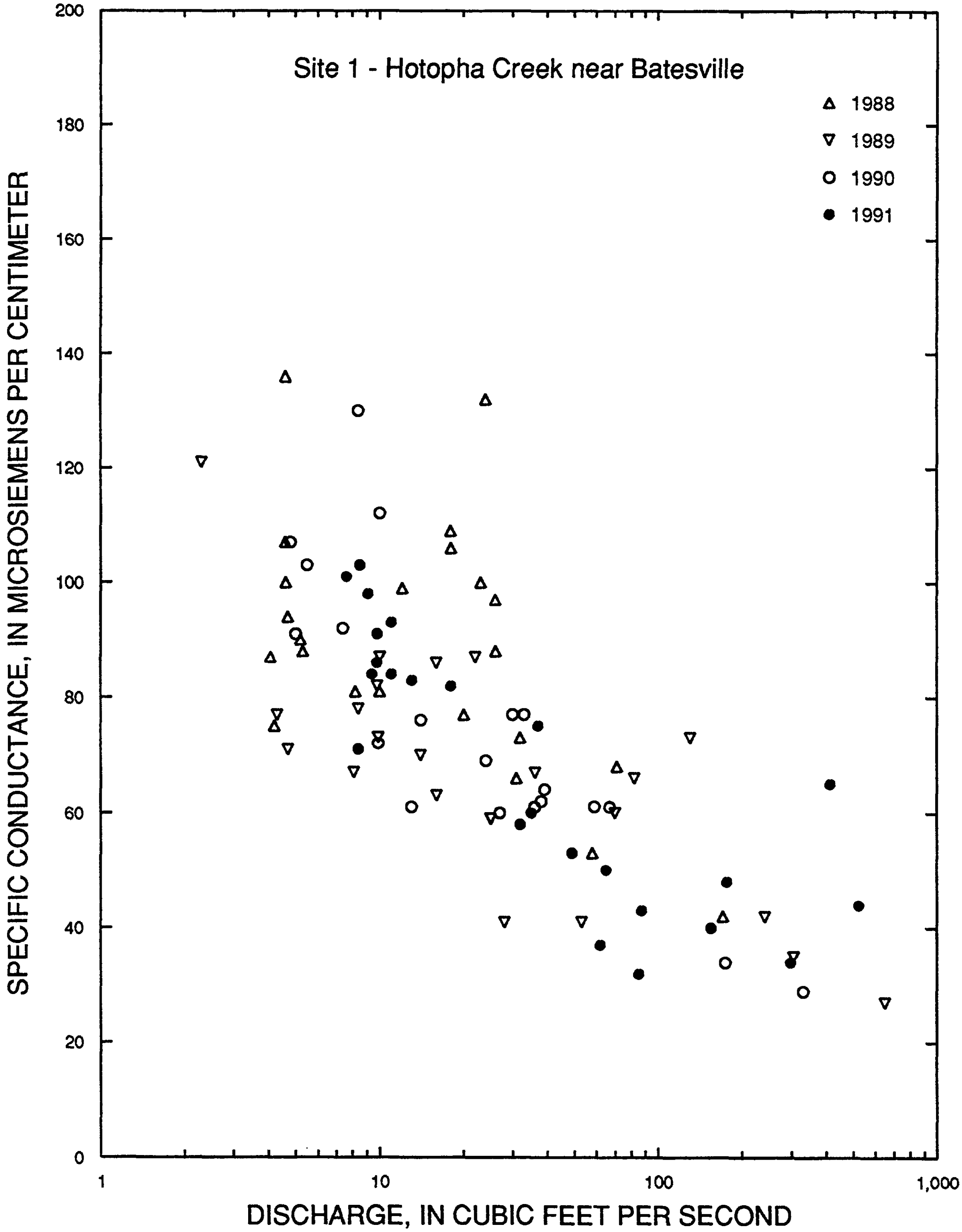


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites.

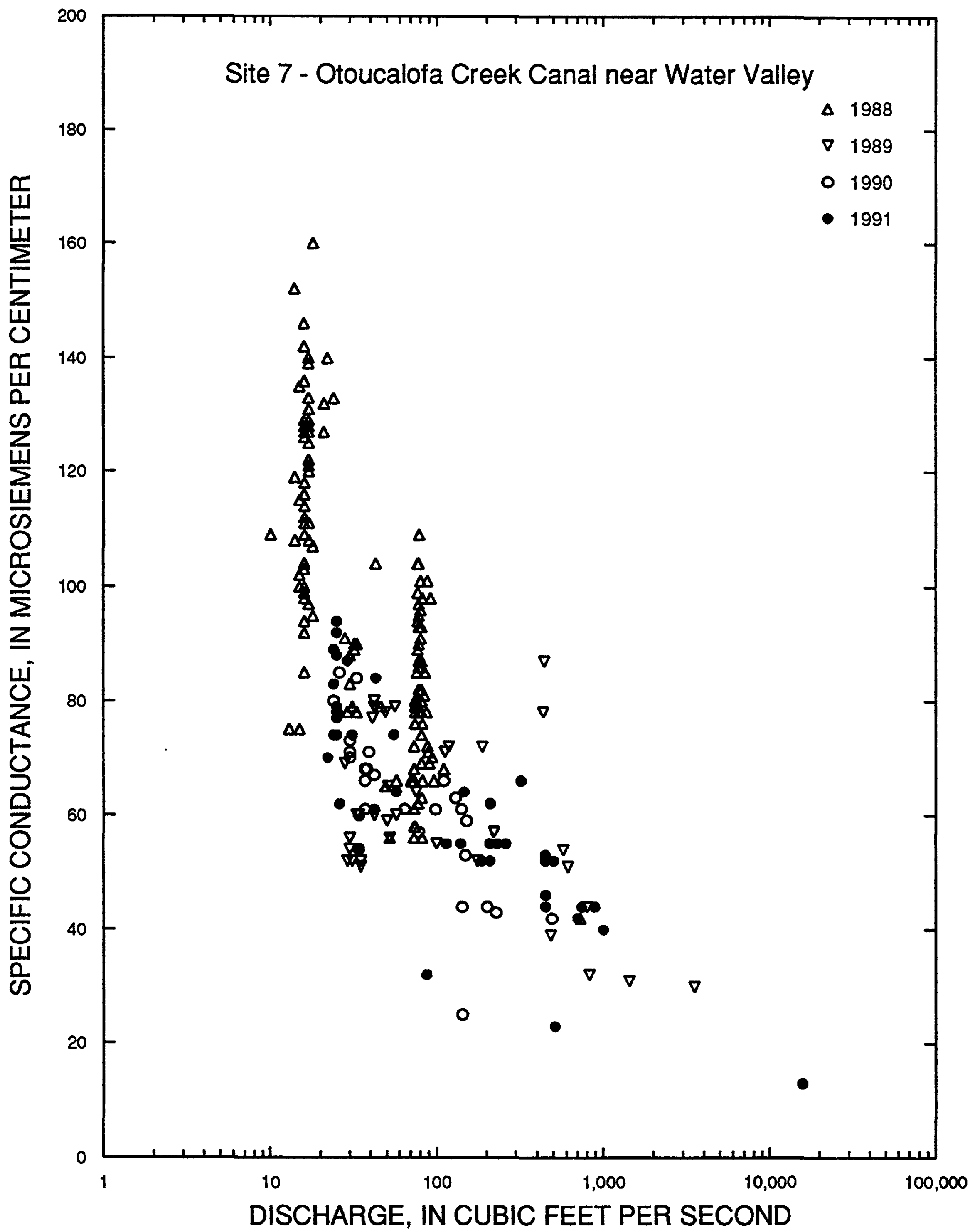


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

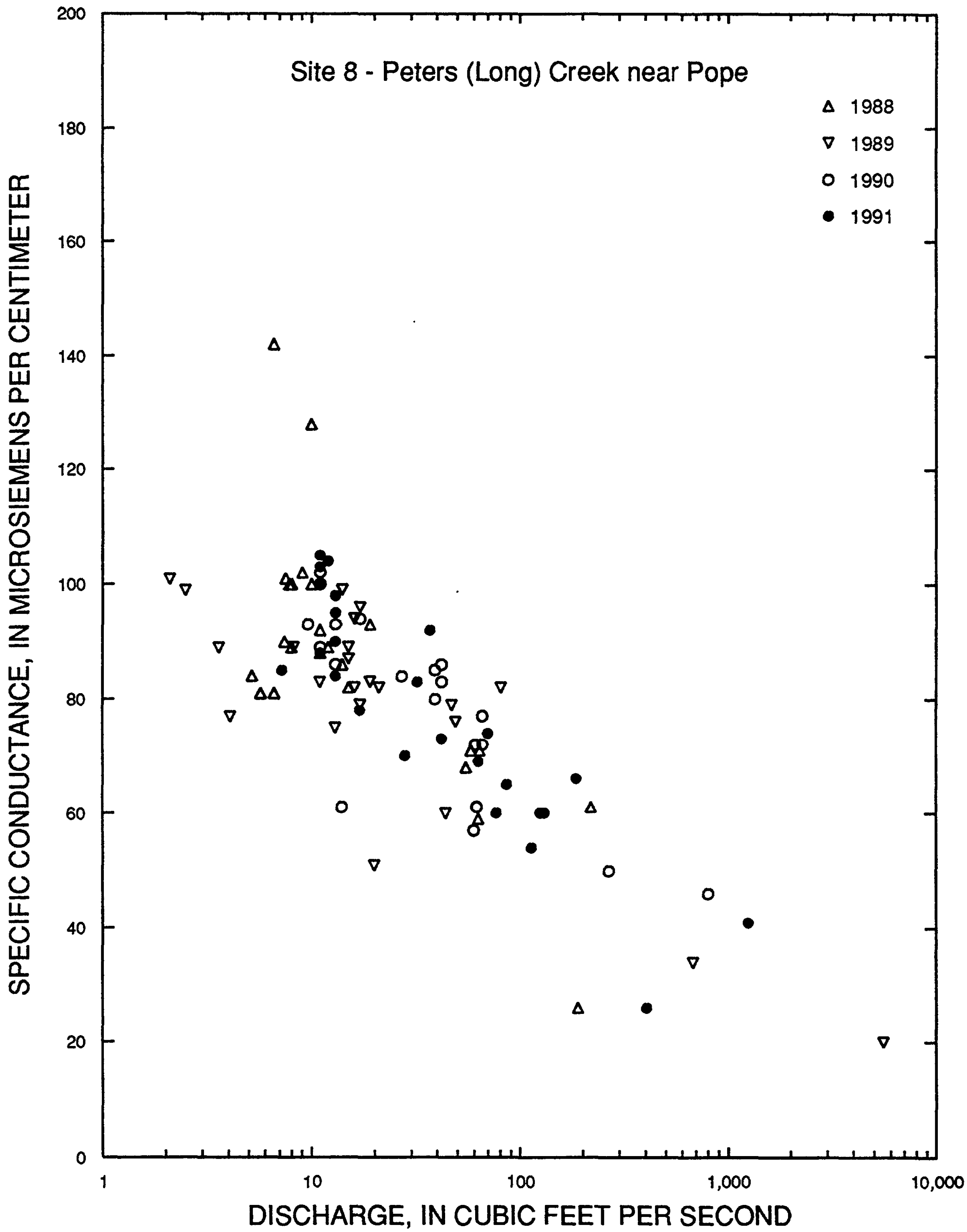


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

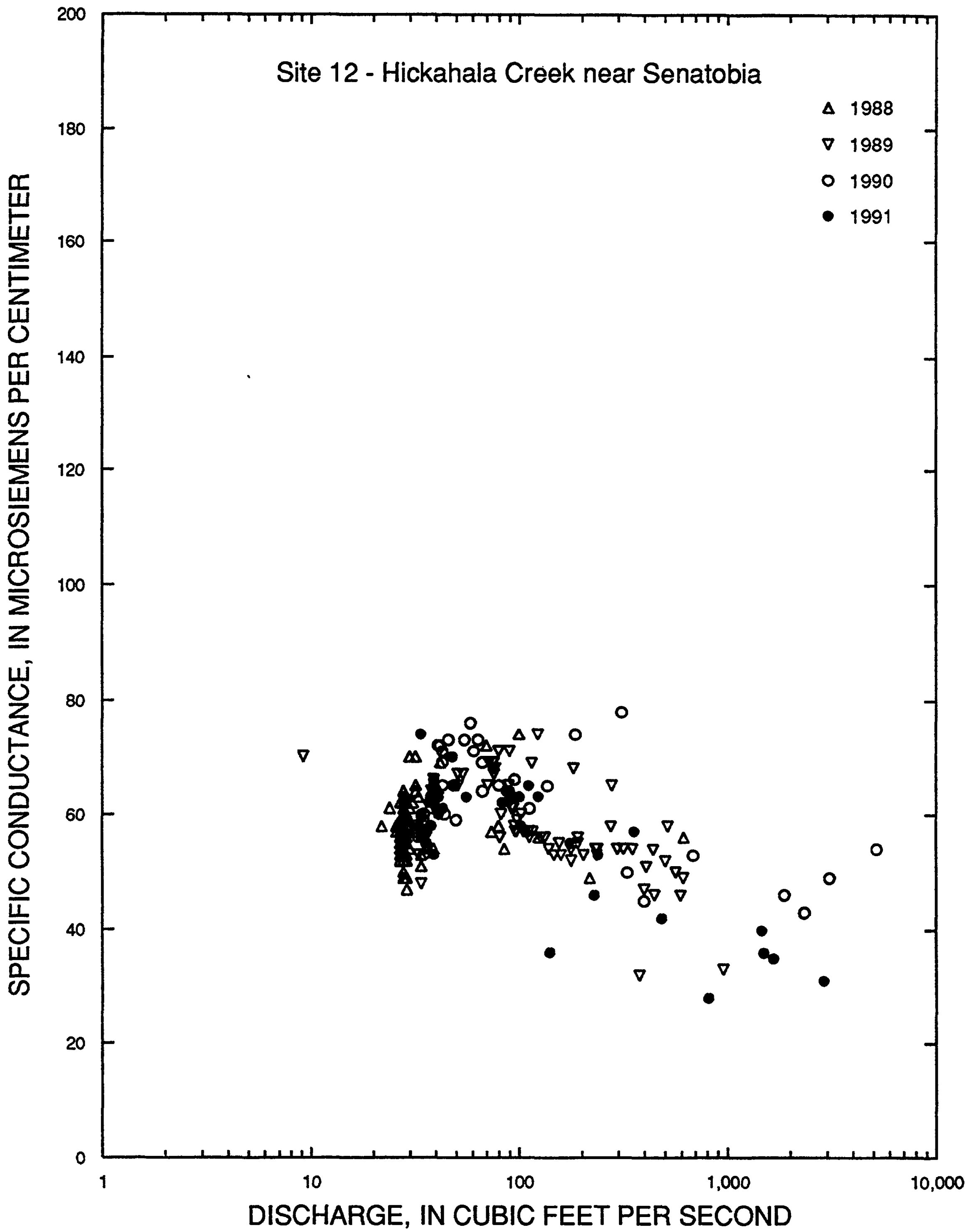


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

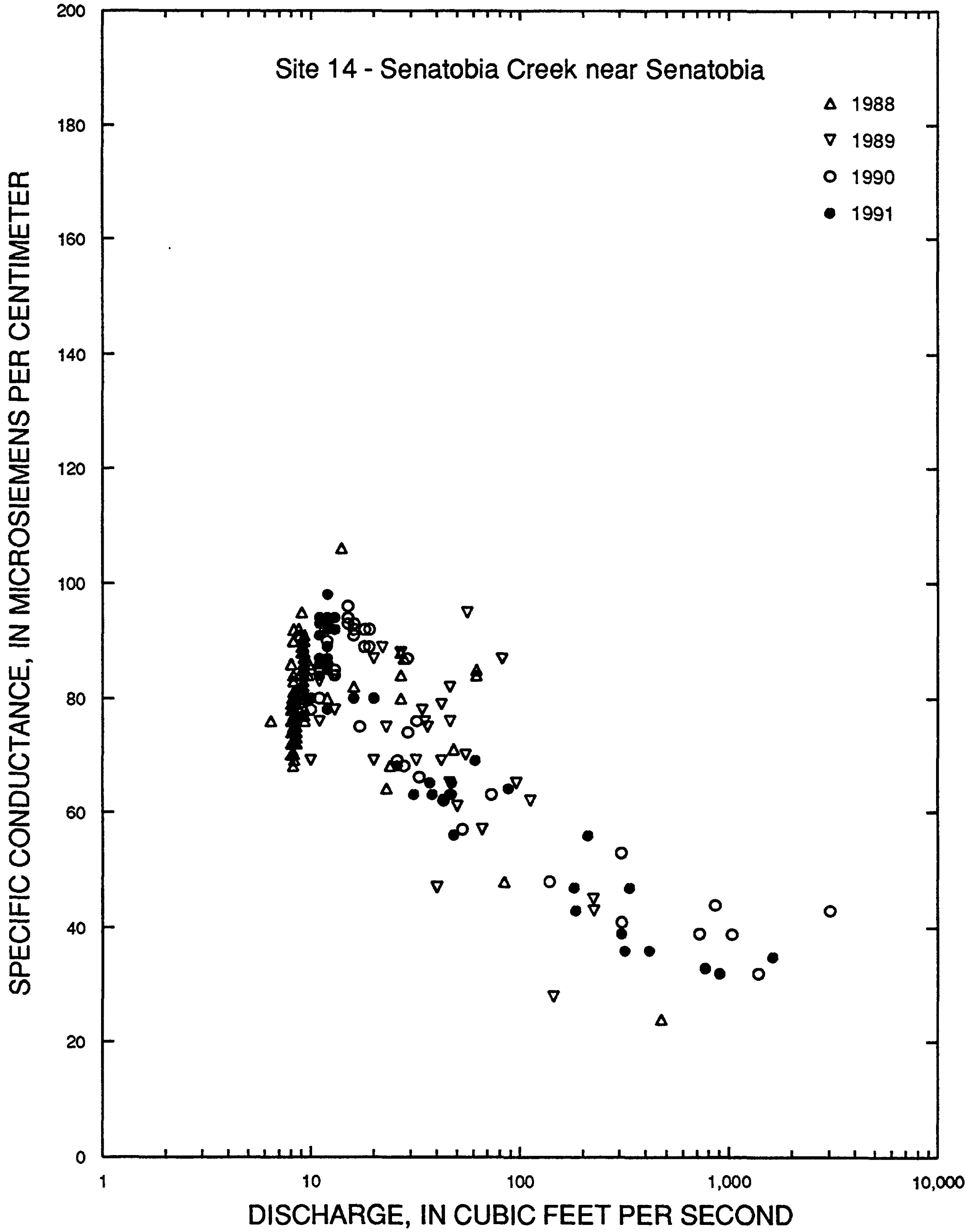


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

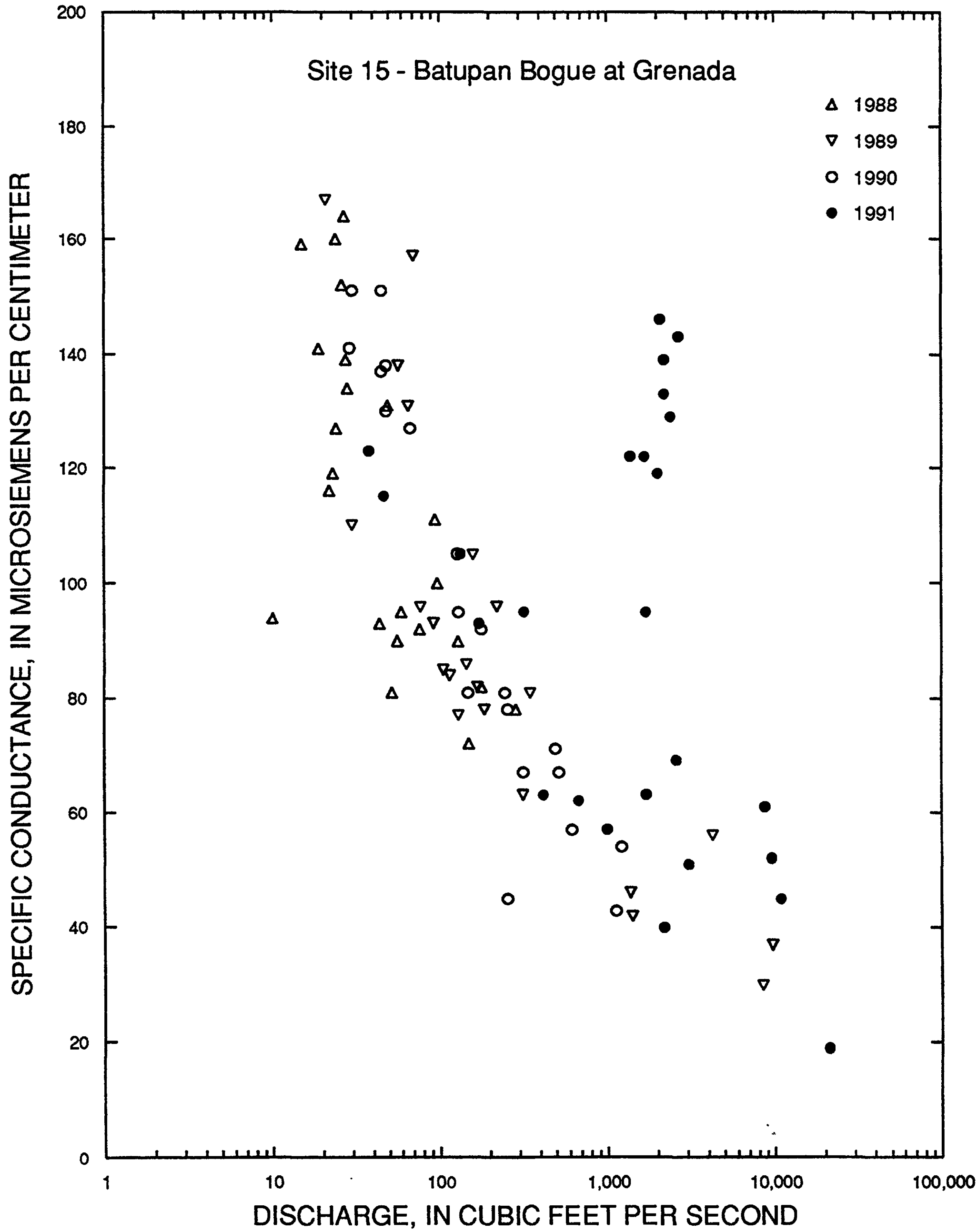


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

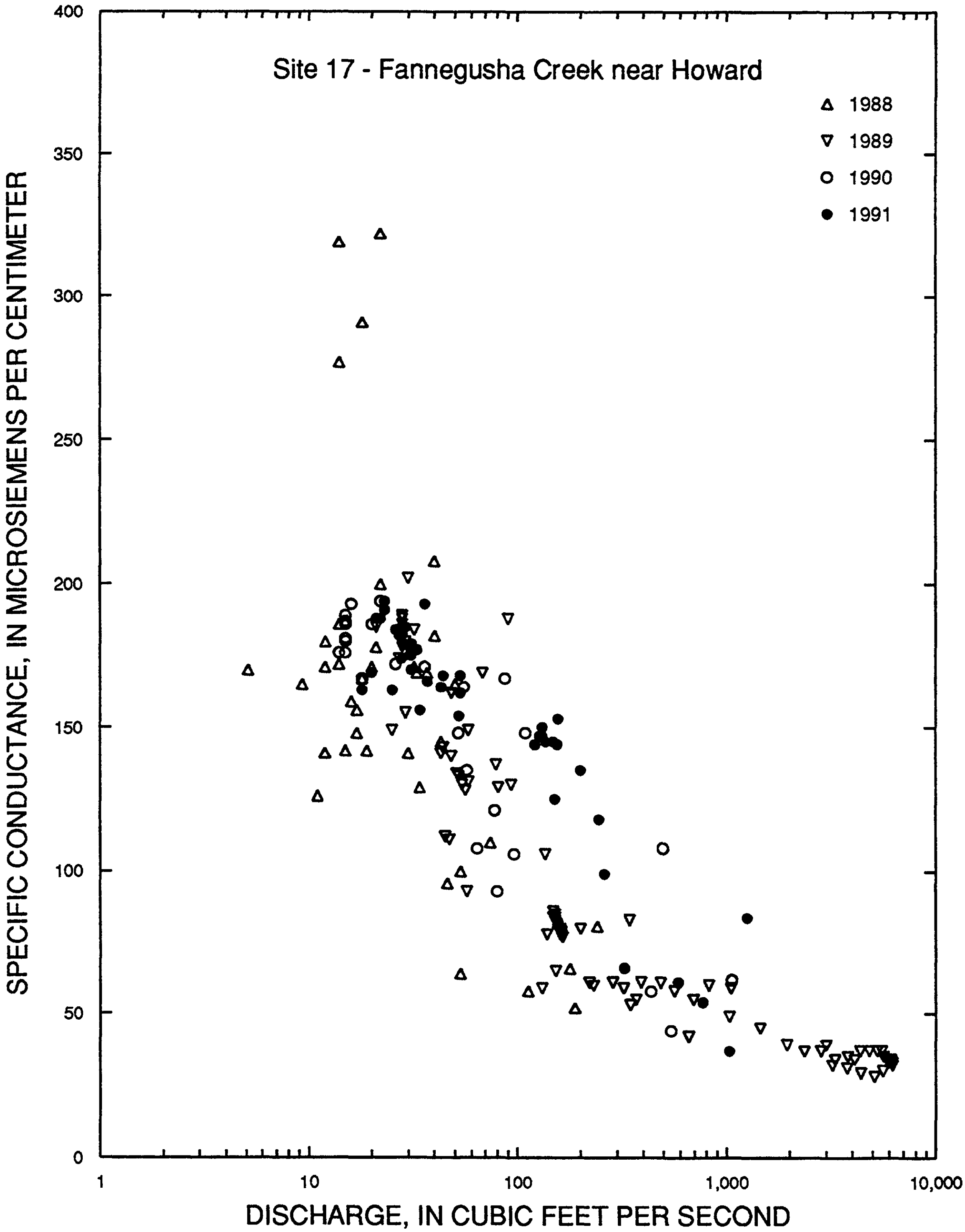


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

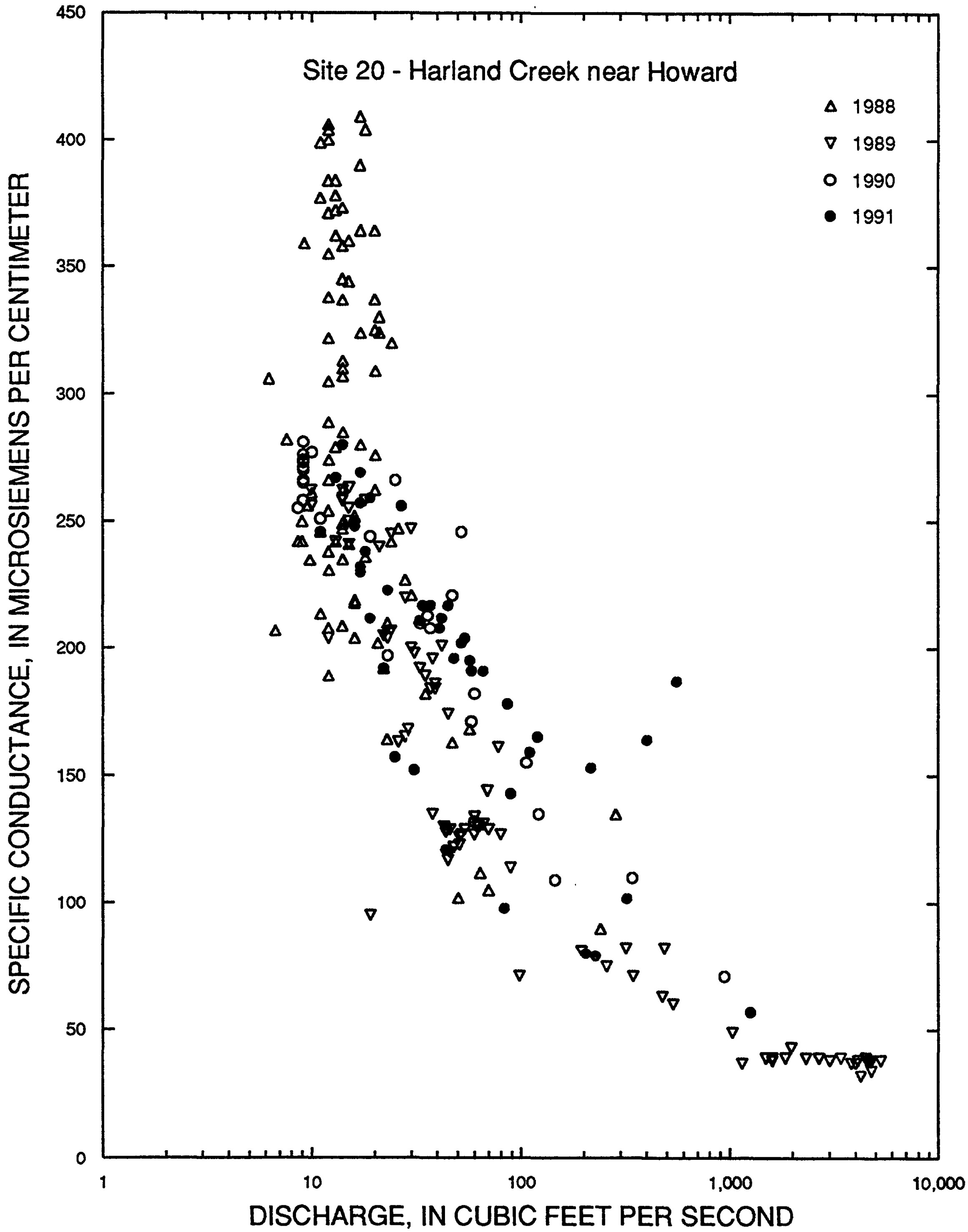


Figure 4A.--Relation of discharge and specific conductance at biweekly sampling sites--Continued.

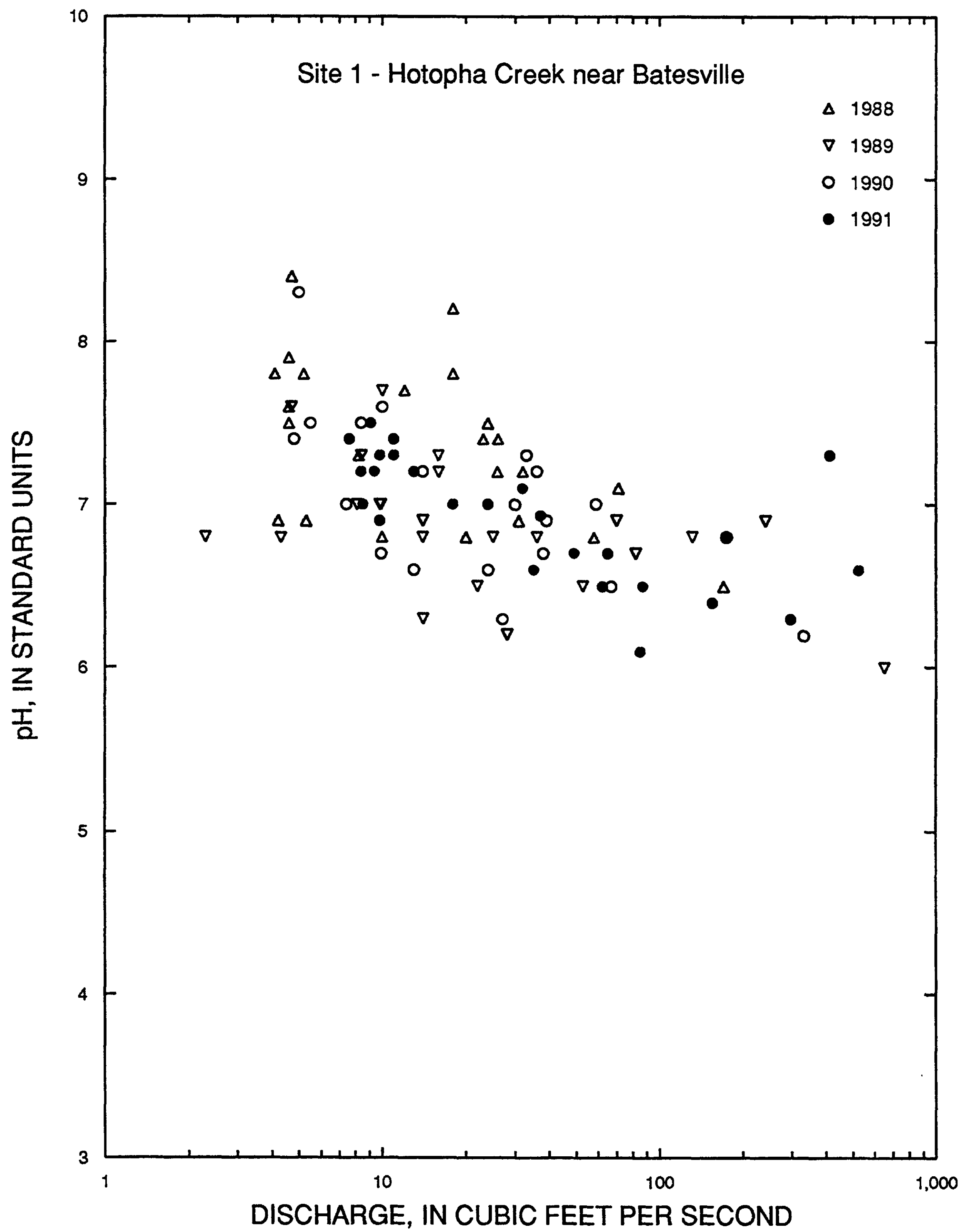


Figure 4B.--Relation of discharge and pH
at biweekly sampling sites.

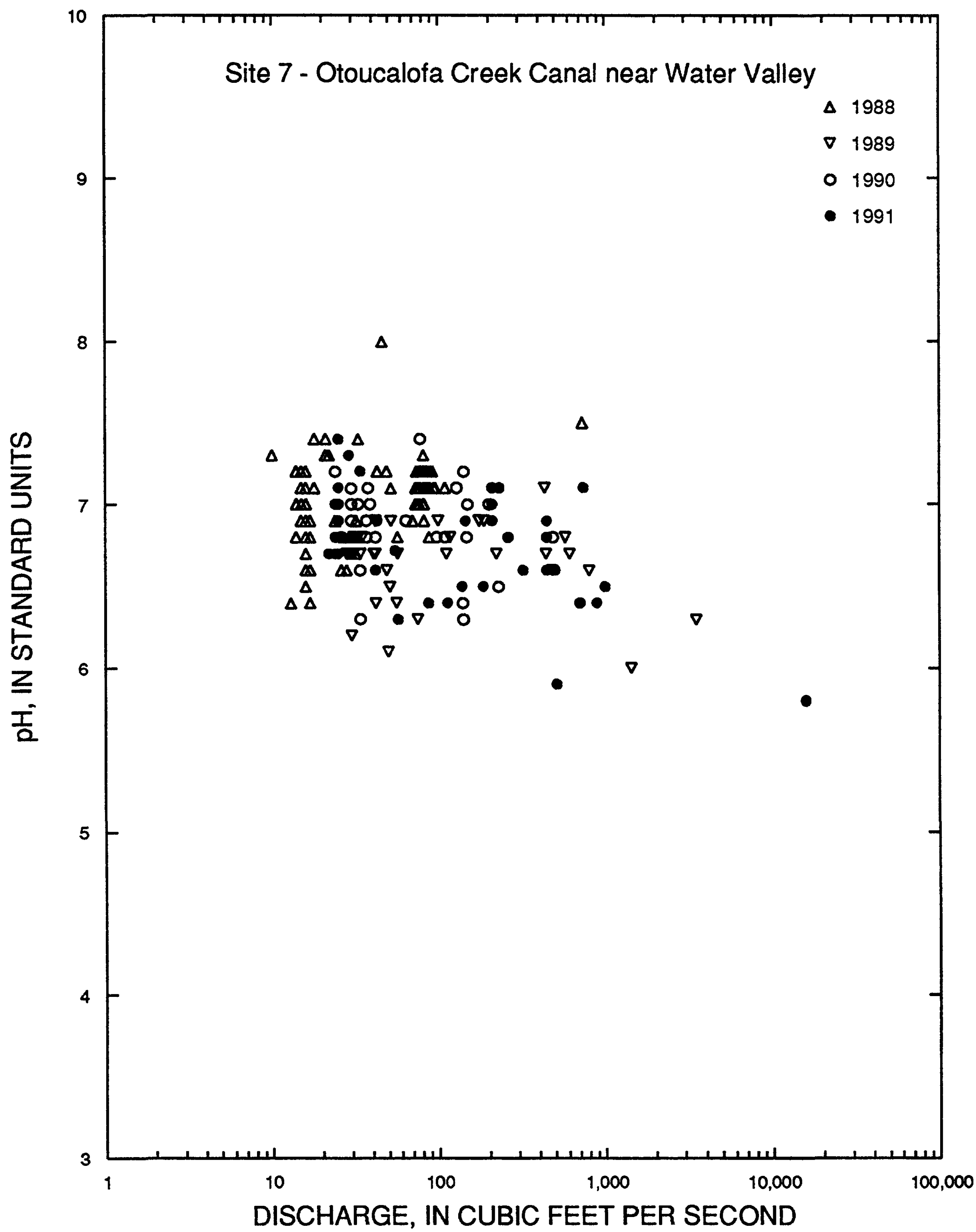


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

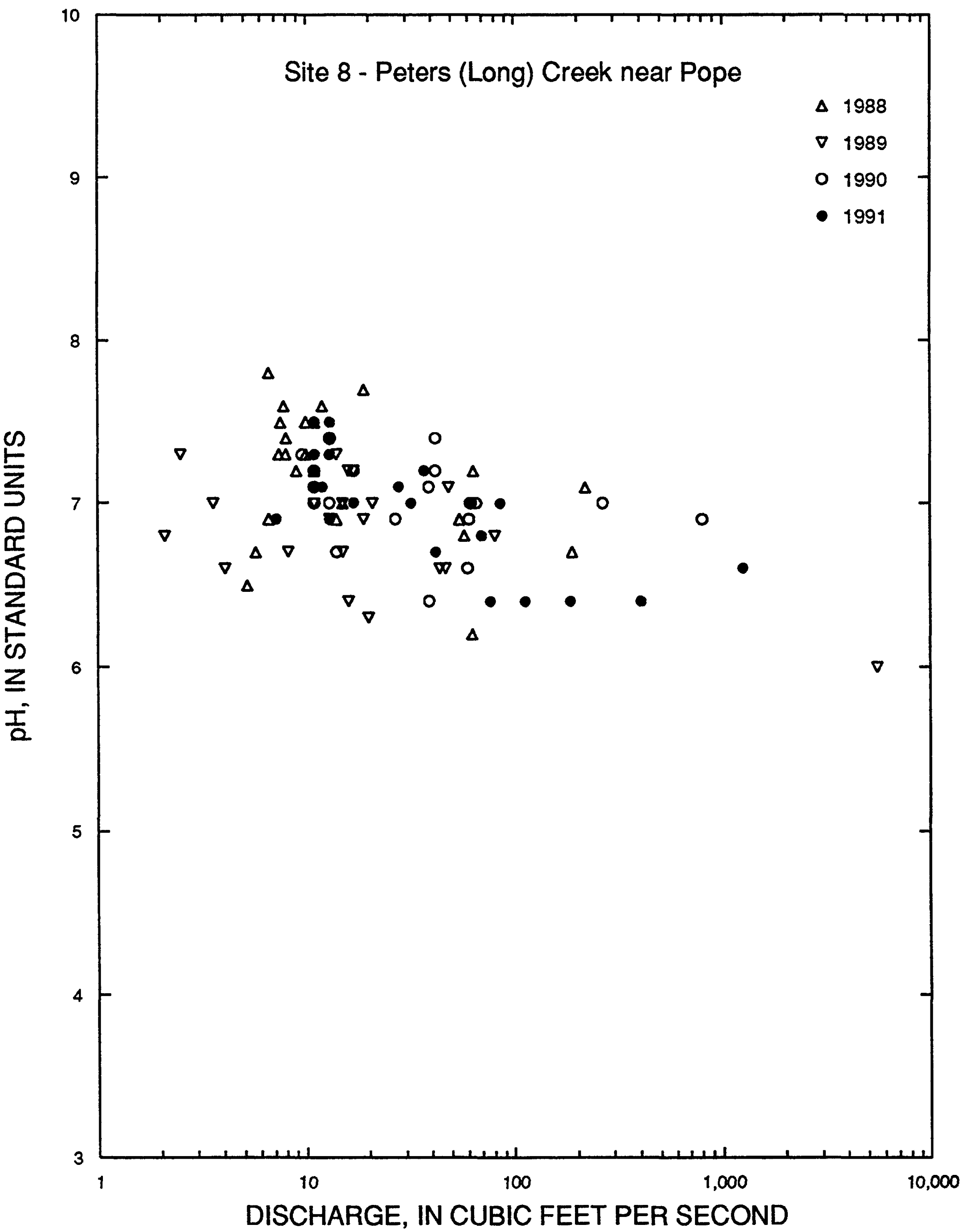


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

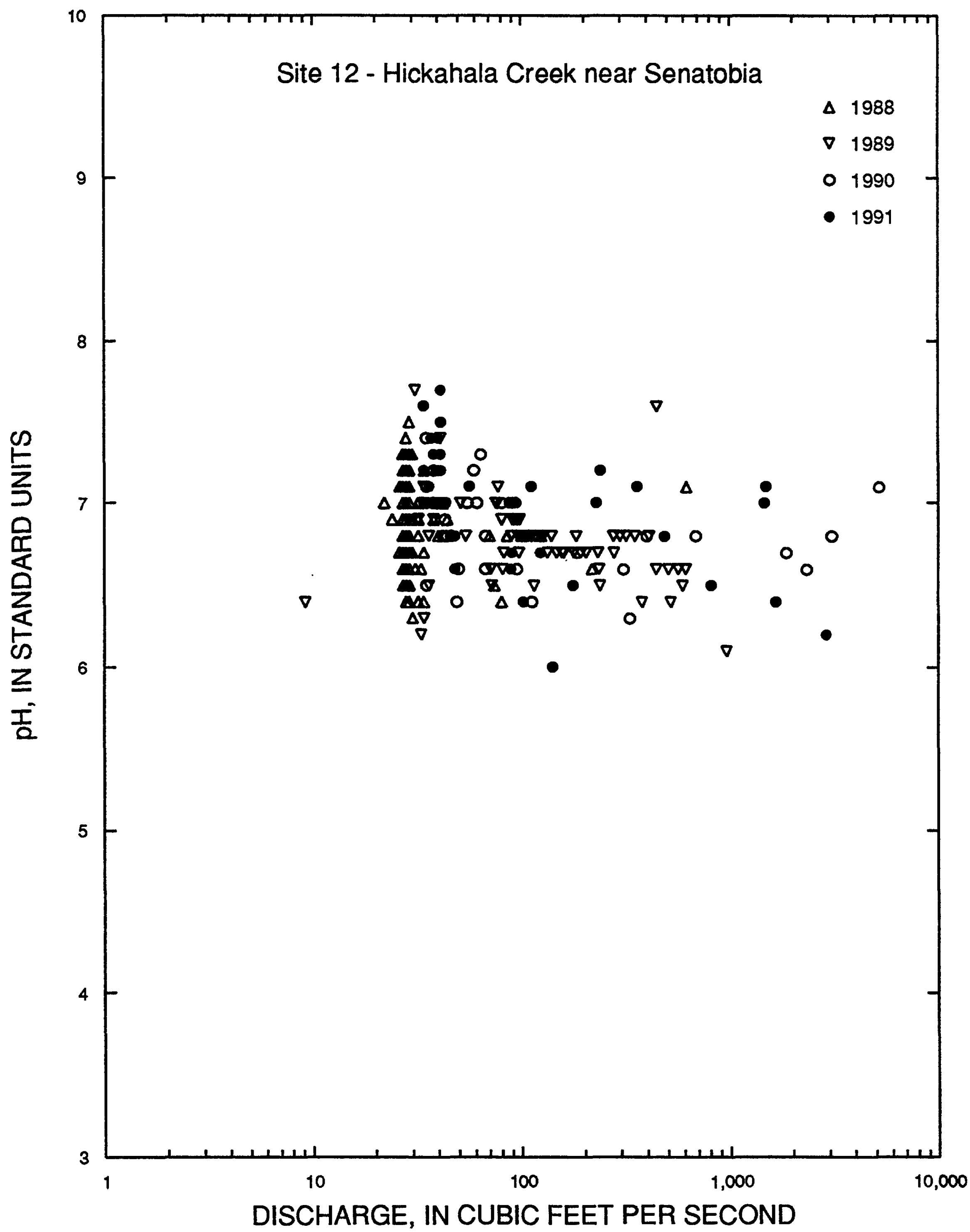


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

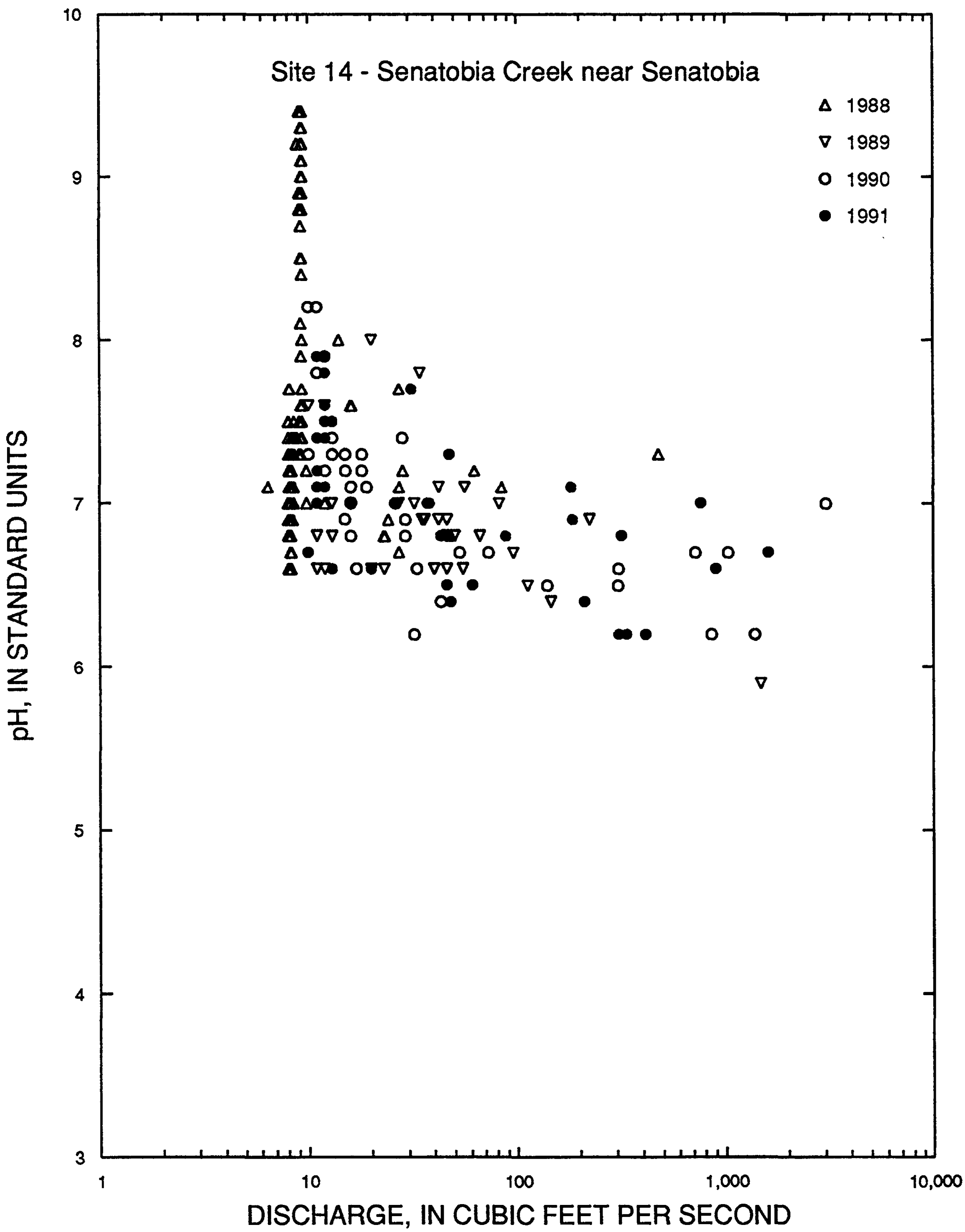


Figure 4B.--Relation of discharge and pH
at biweekly sampling sites--Continued.

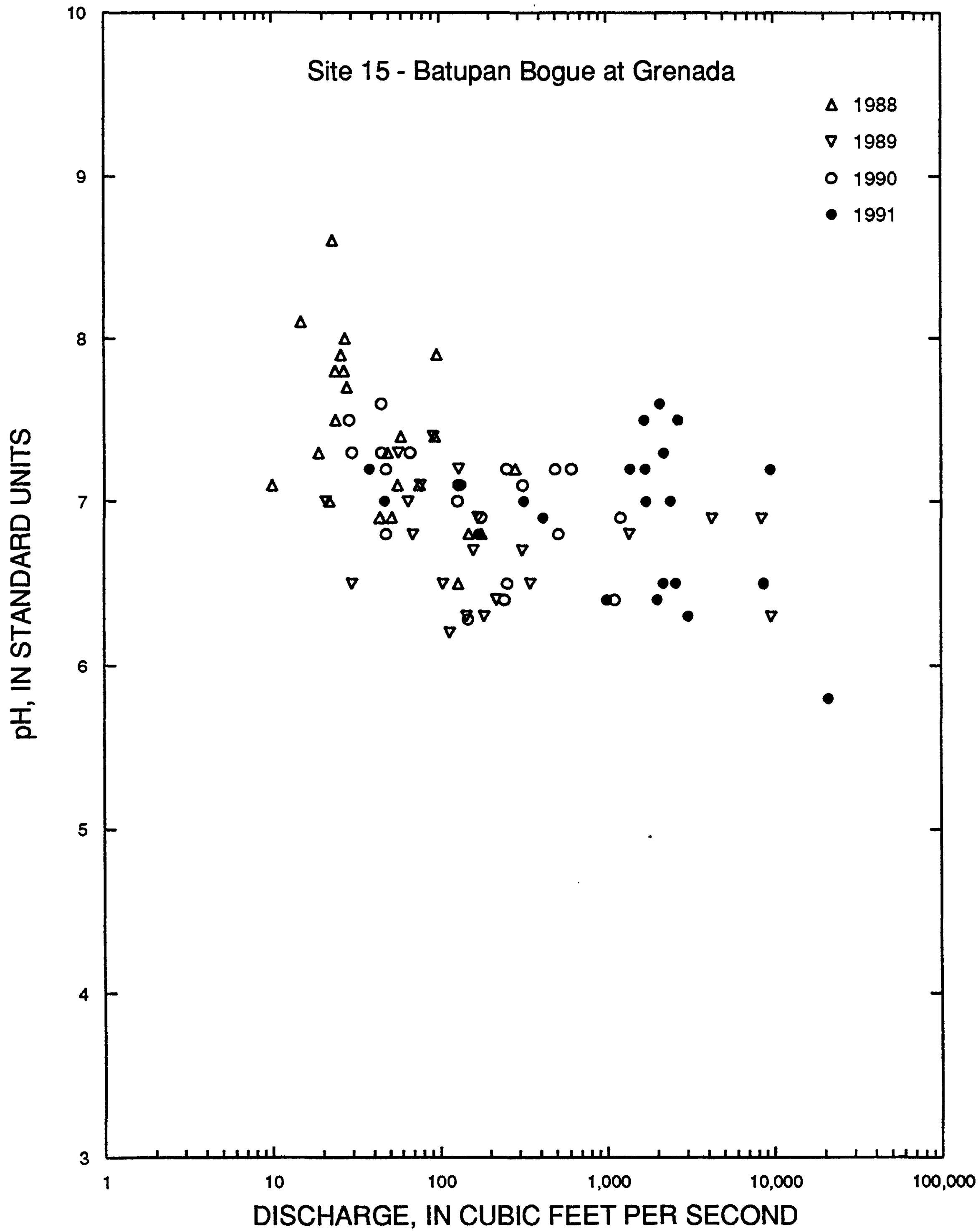


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

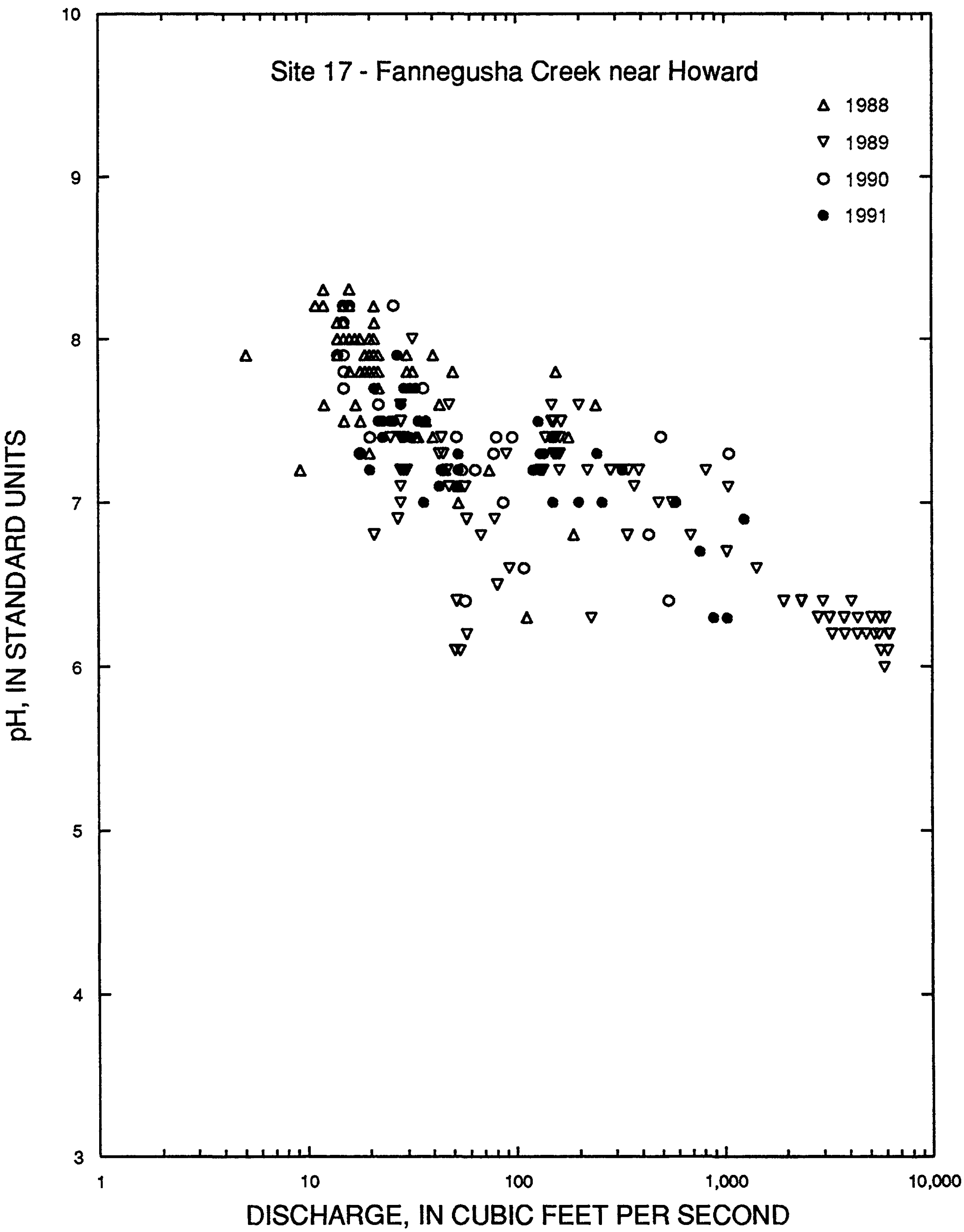


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

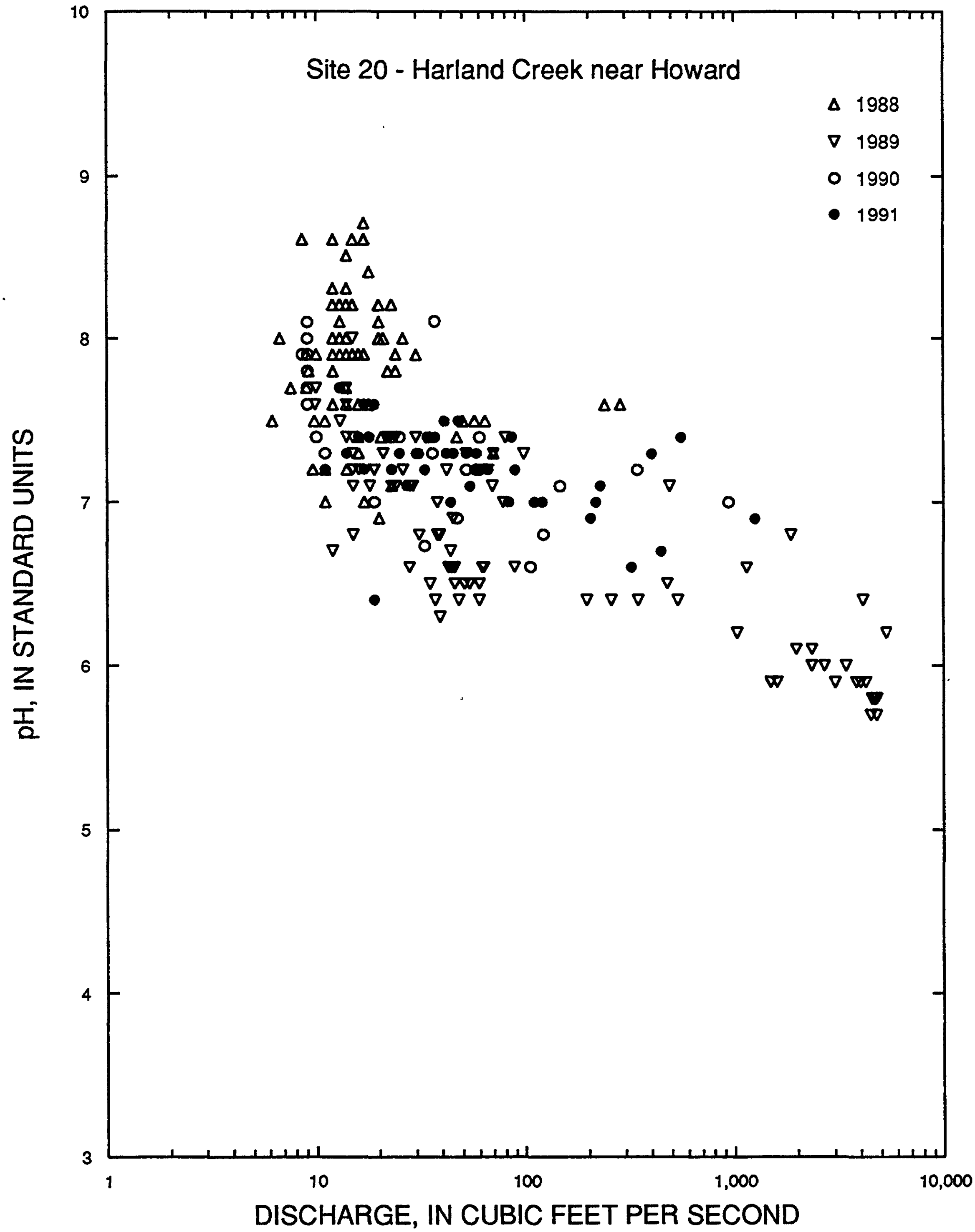


Figure 4B.--Relation of discharge and pH at biweekly sampling sites--Continued.

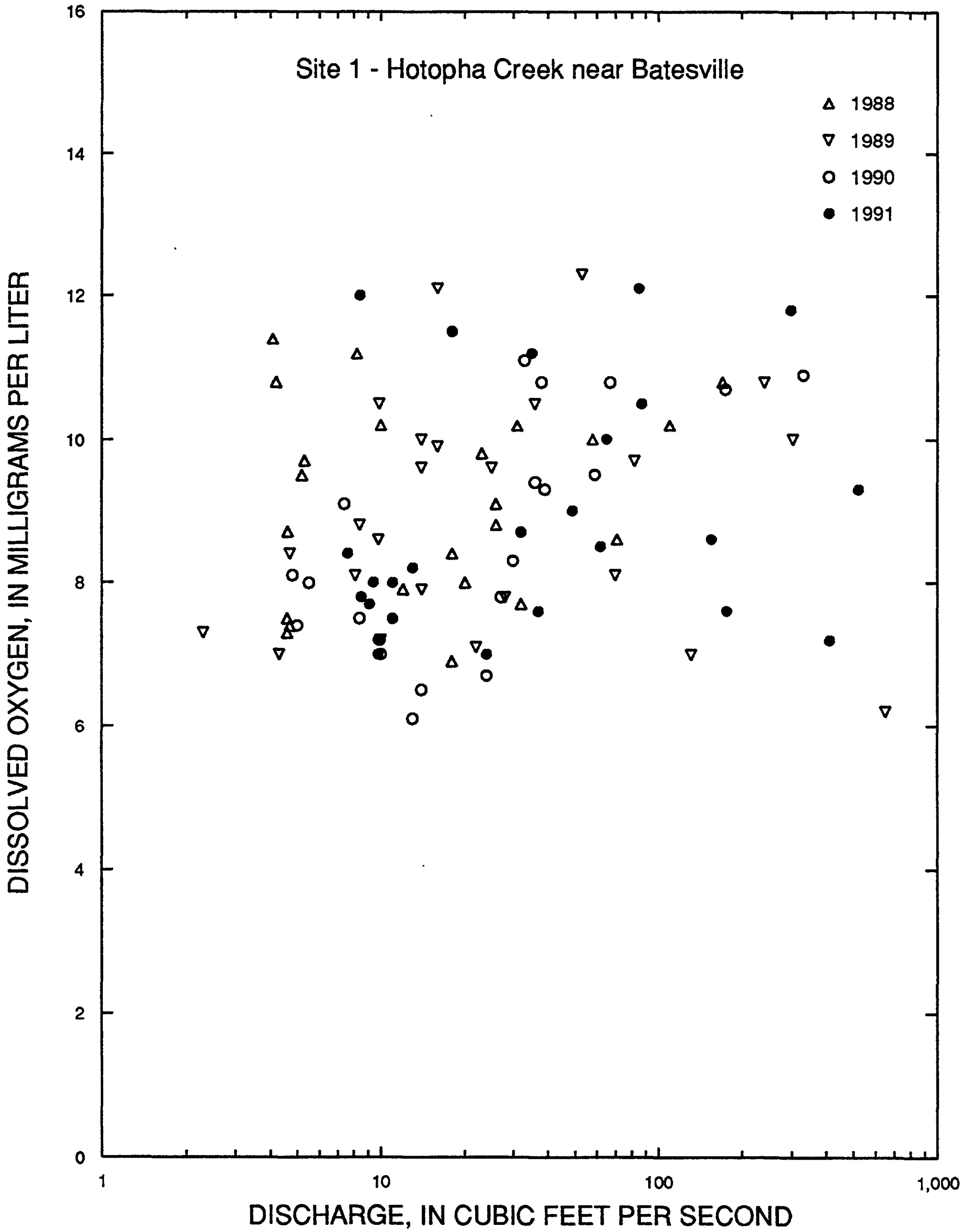


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites.

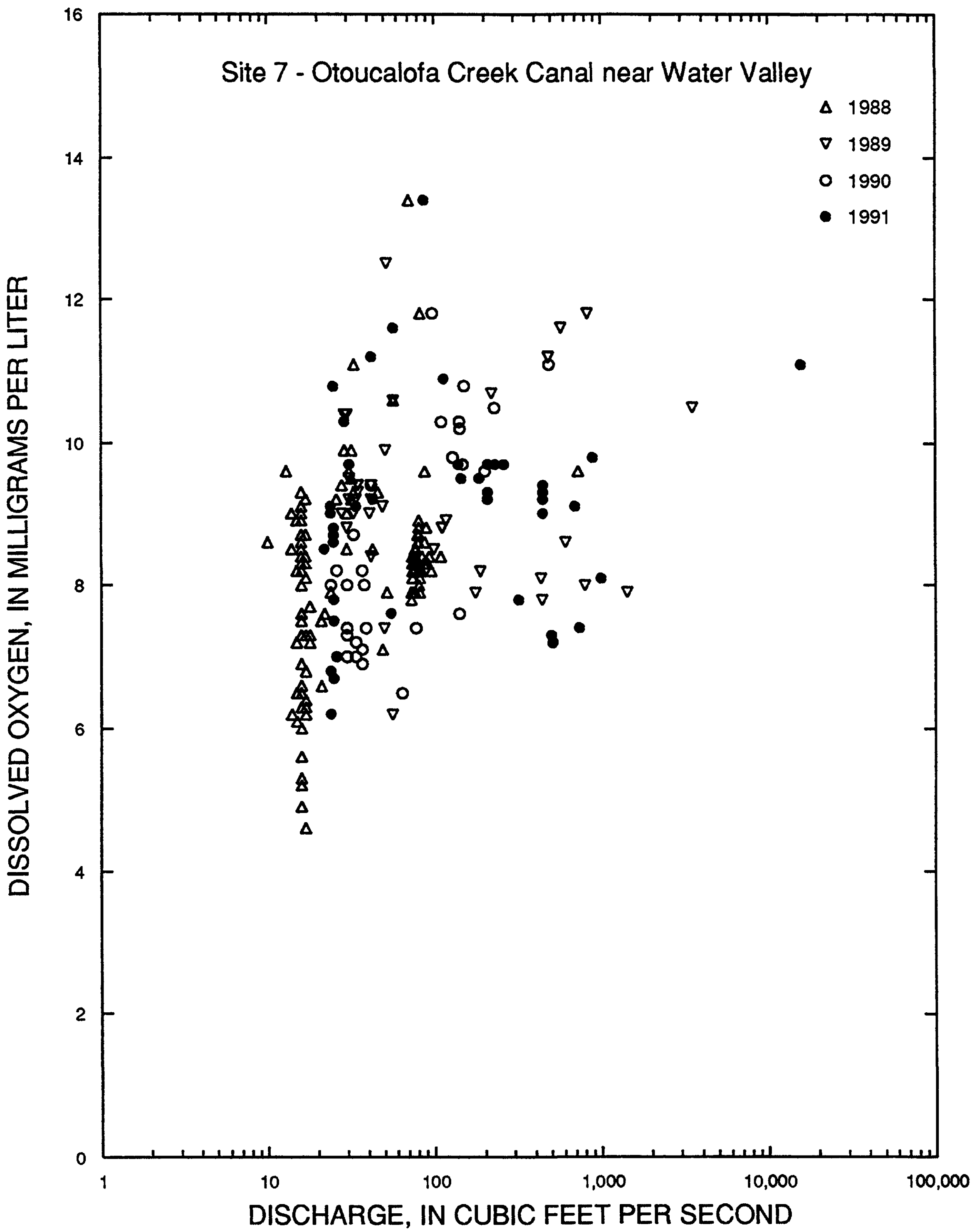


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

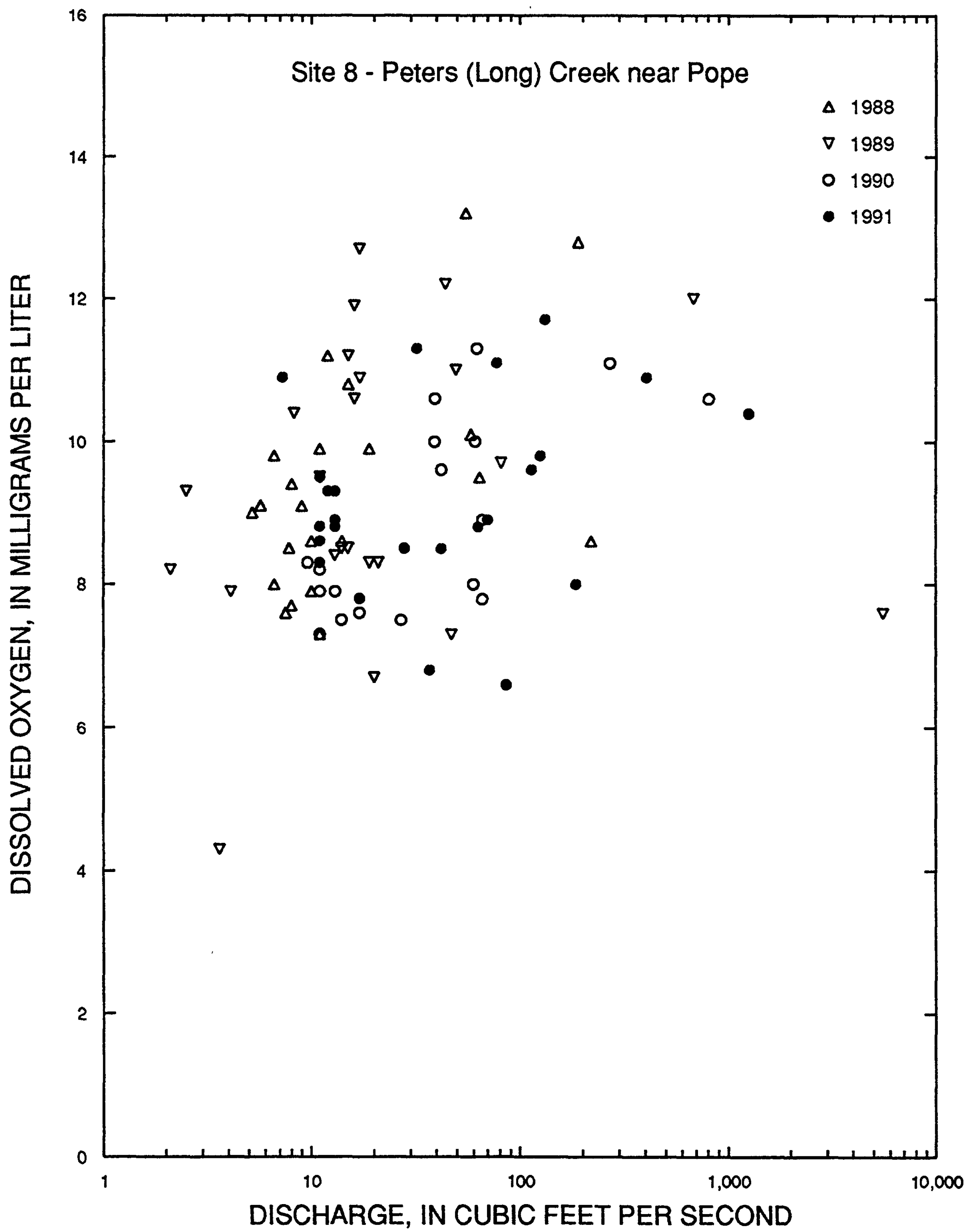


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

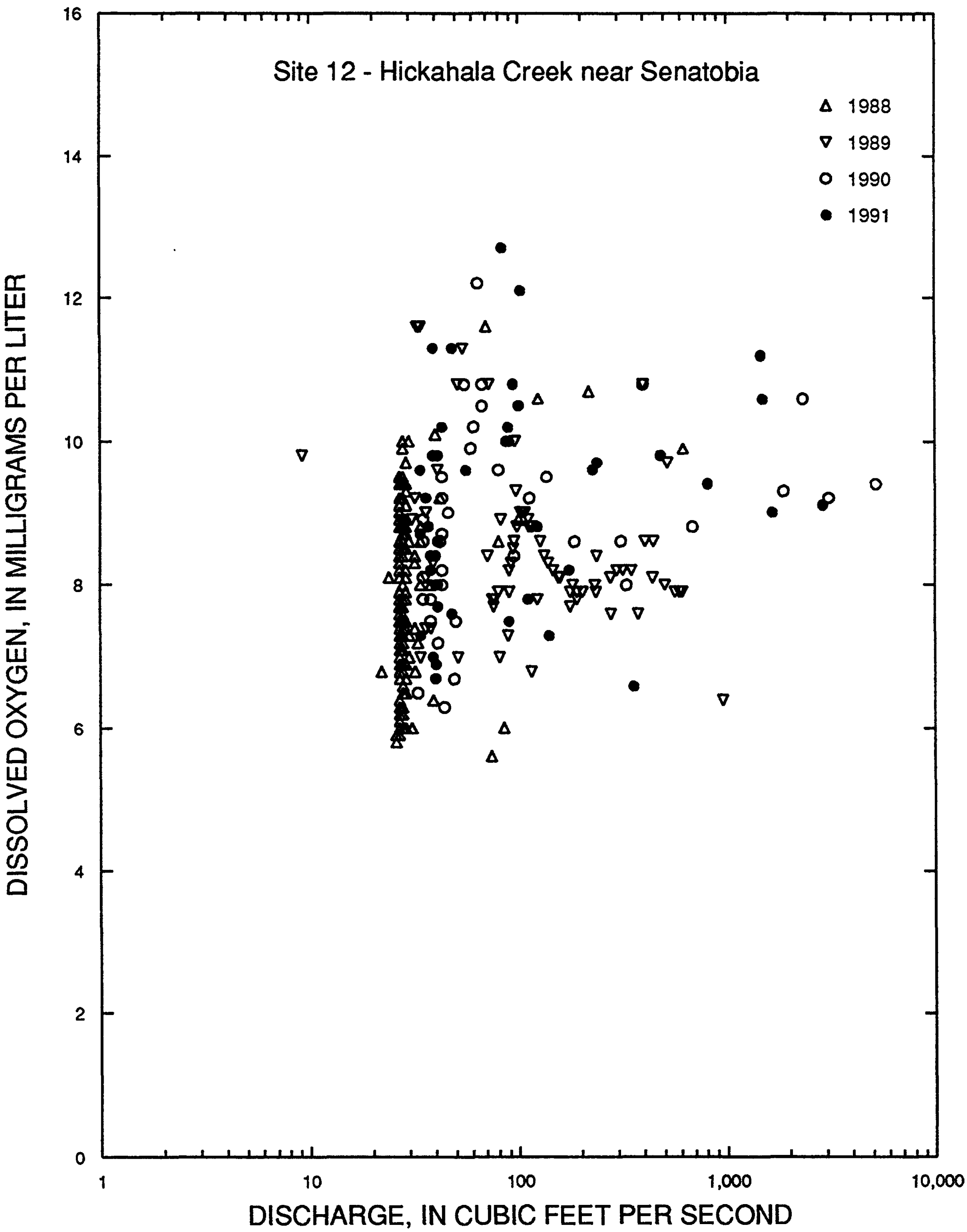


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

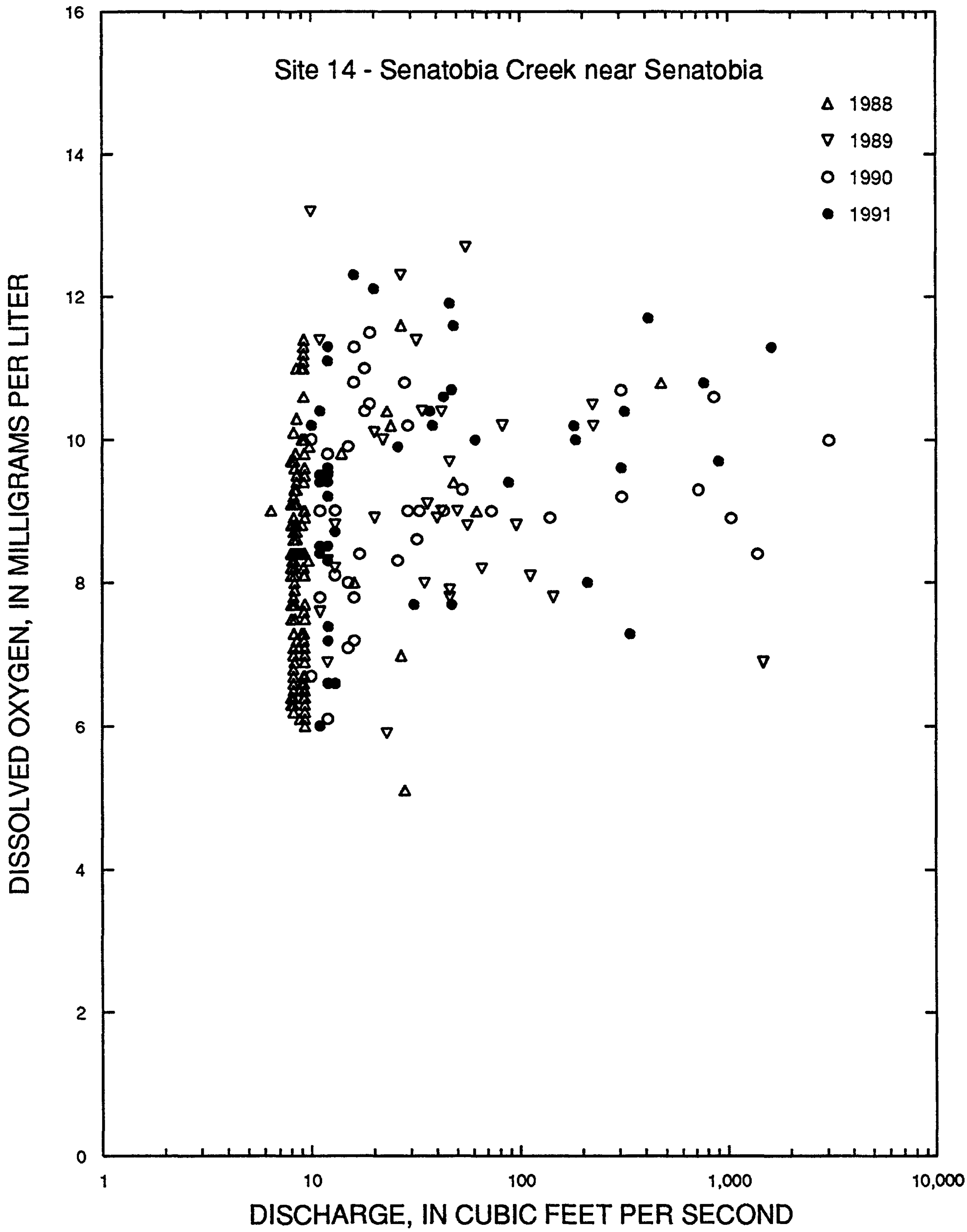


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

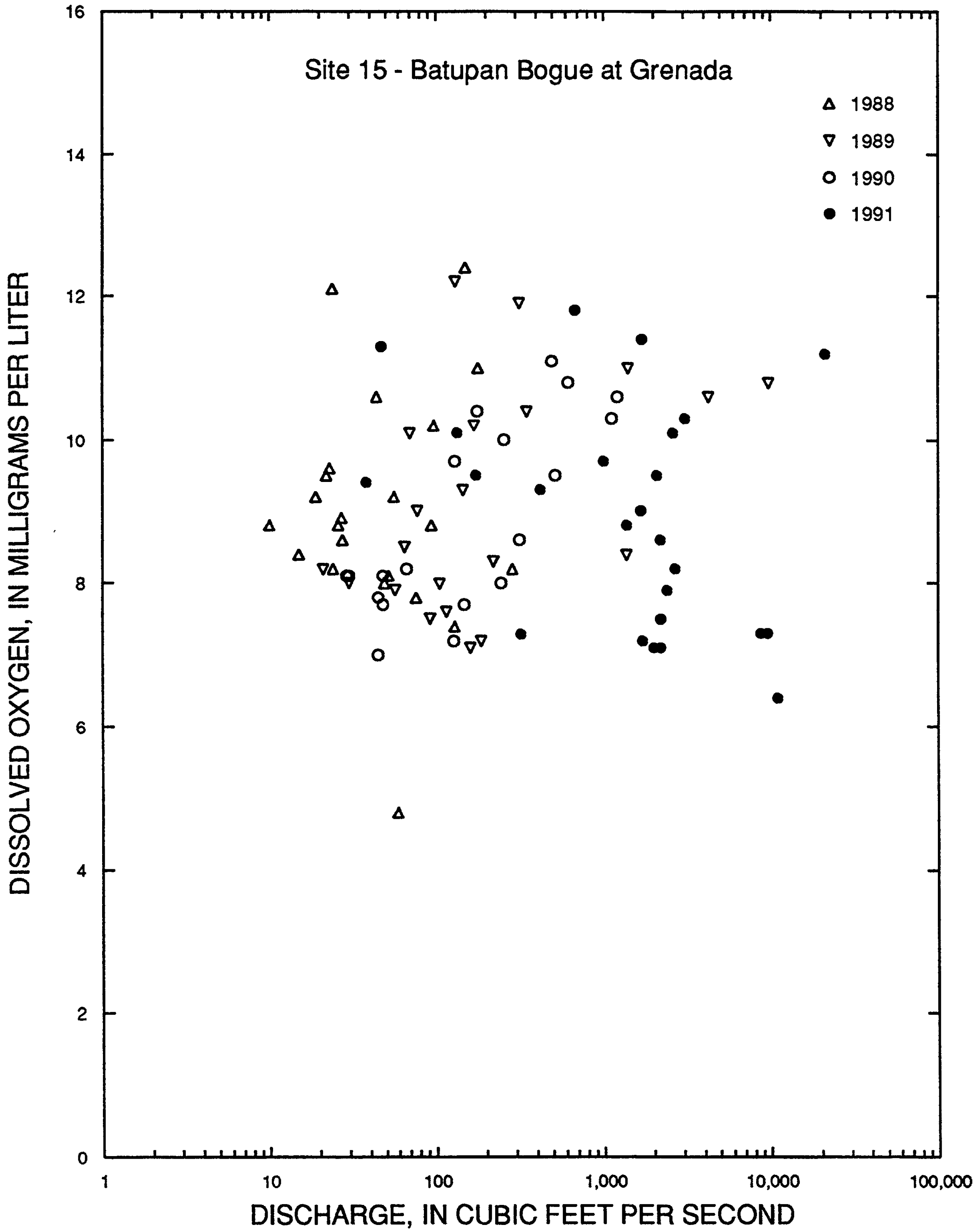


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

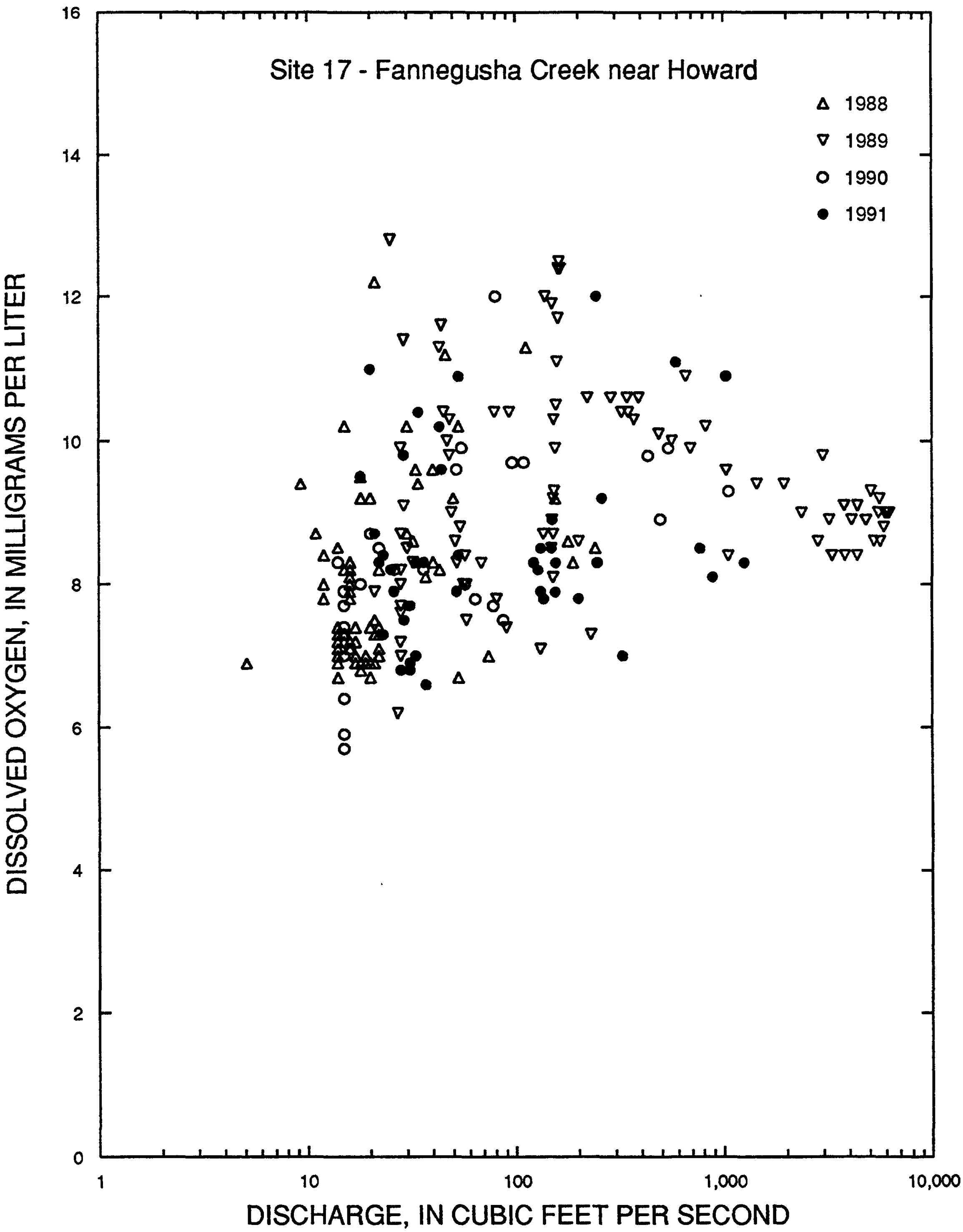


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

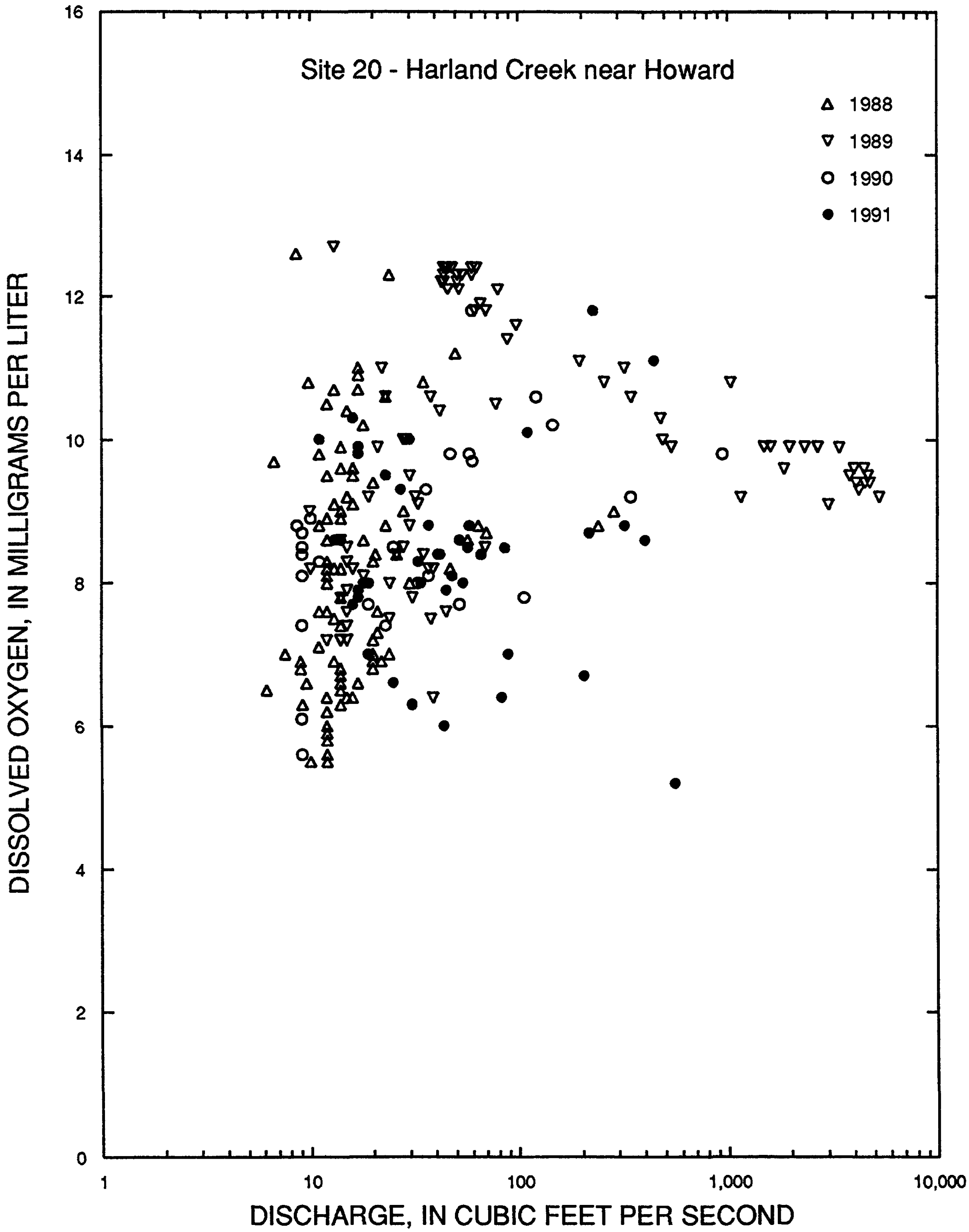


Figure 4C.--Relation of discharge and dissolved oxygen at biweekly sampling sites--Continued.

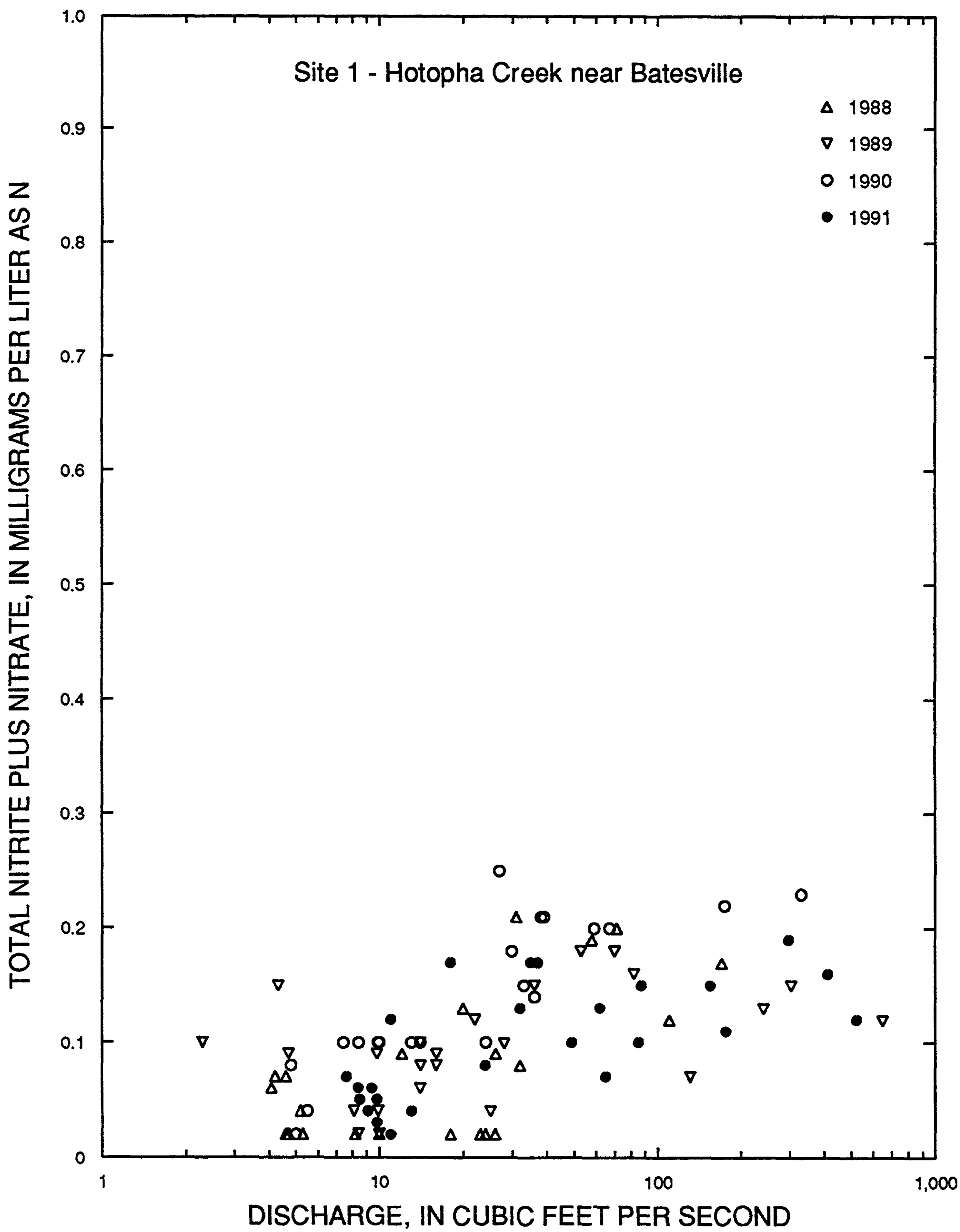


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites.

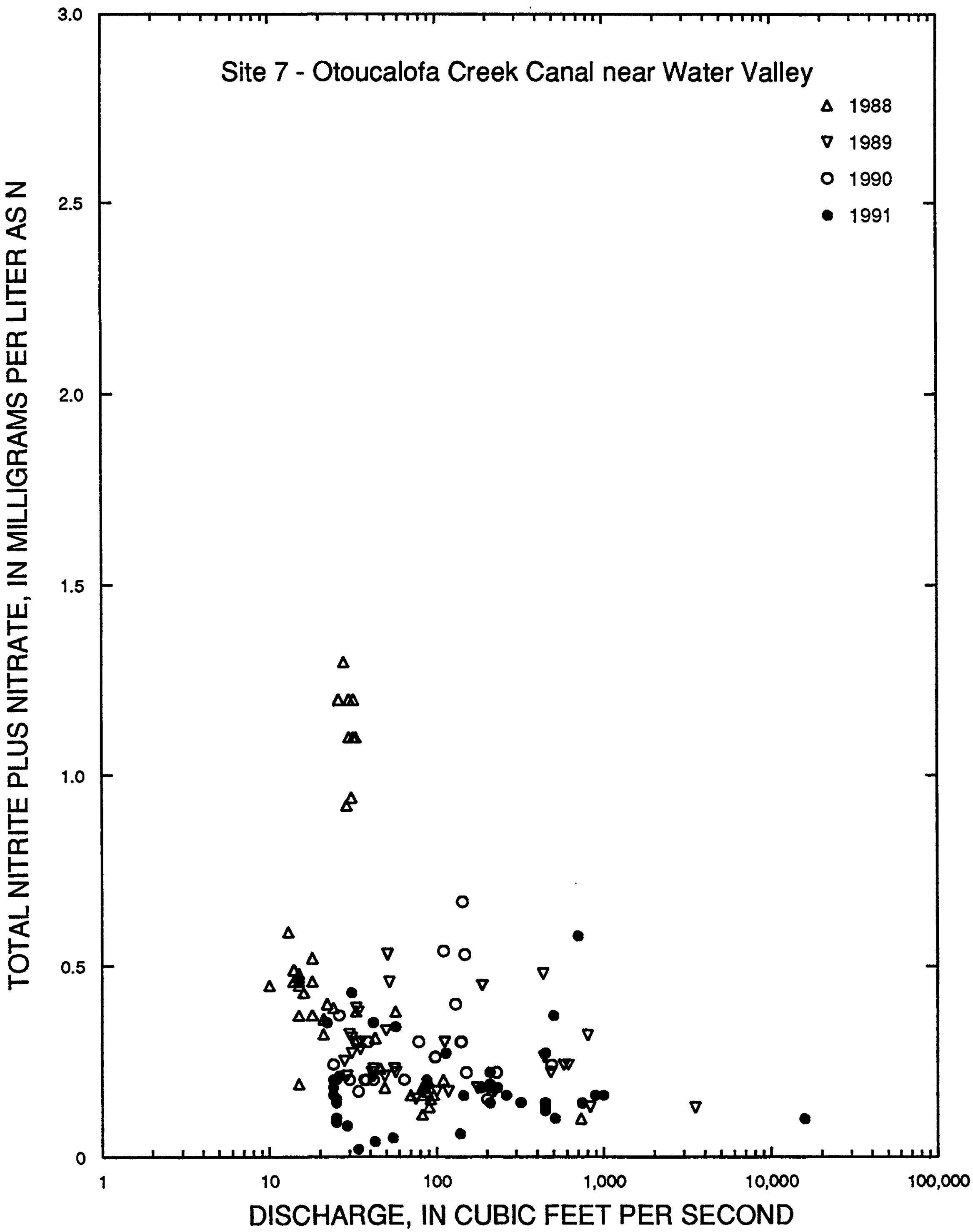


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

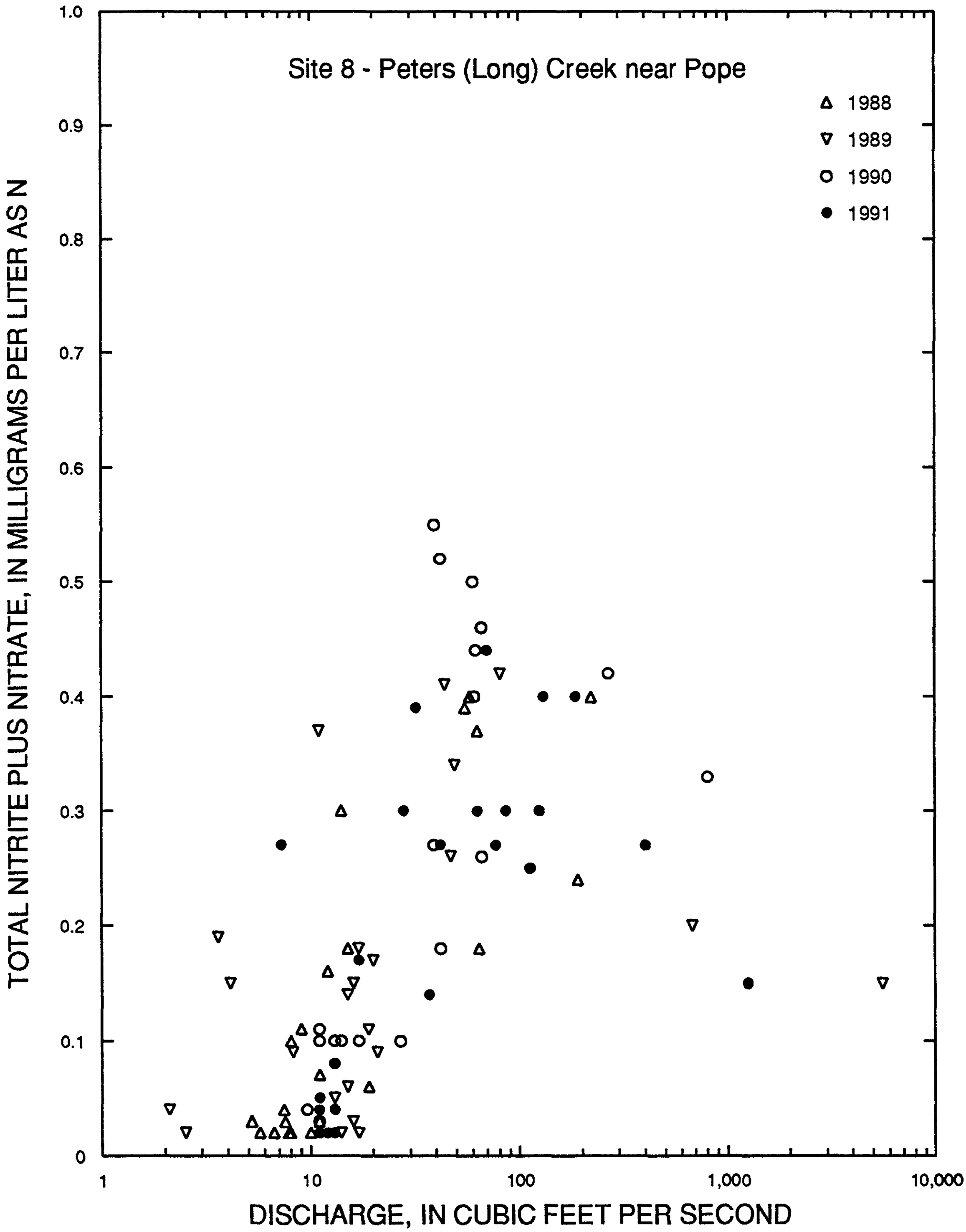


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

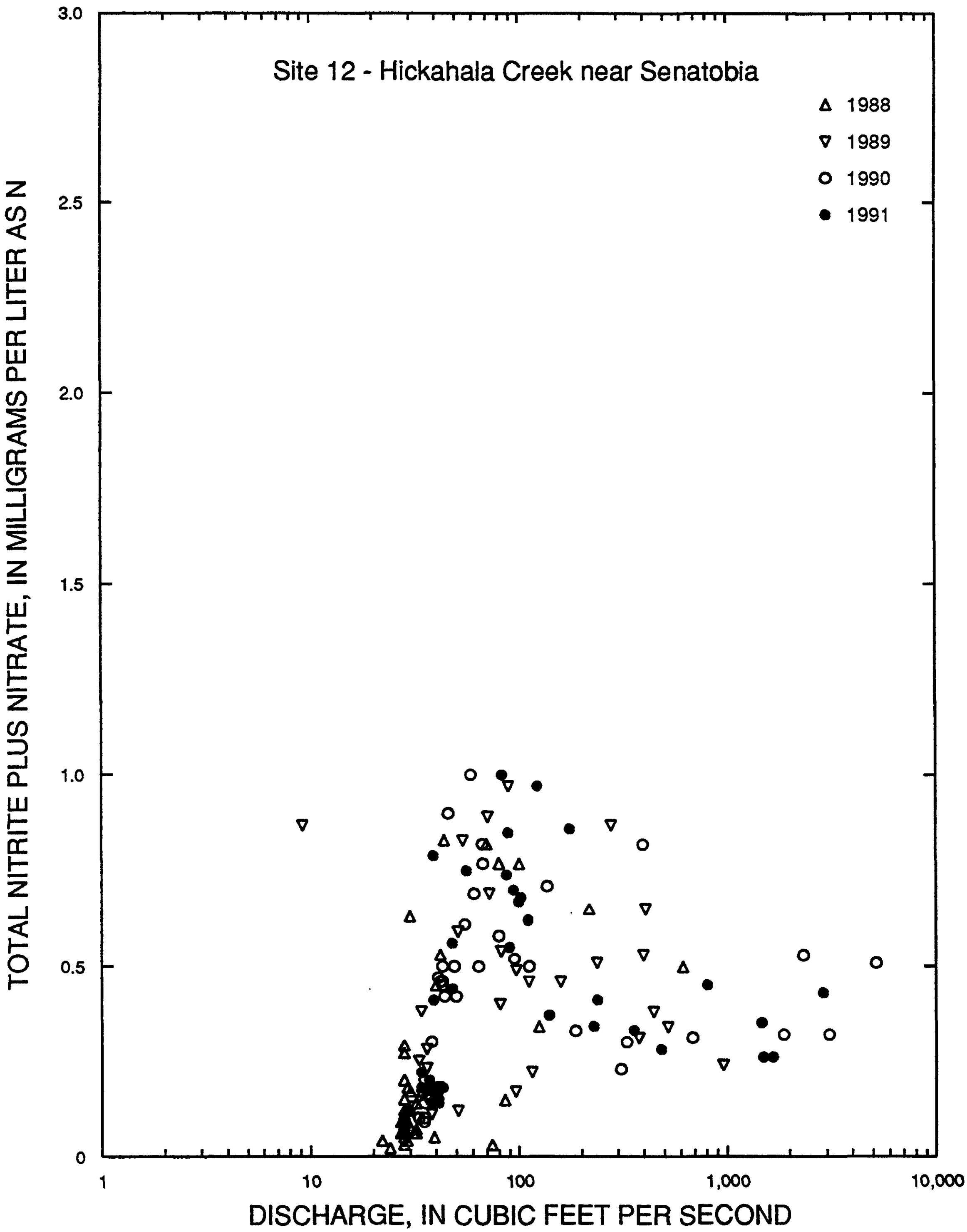


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

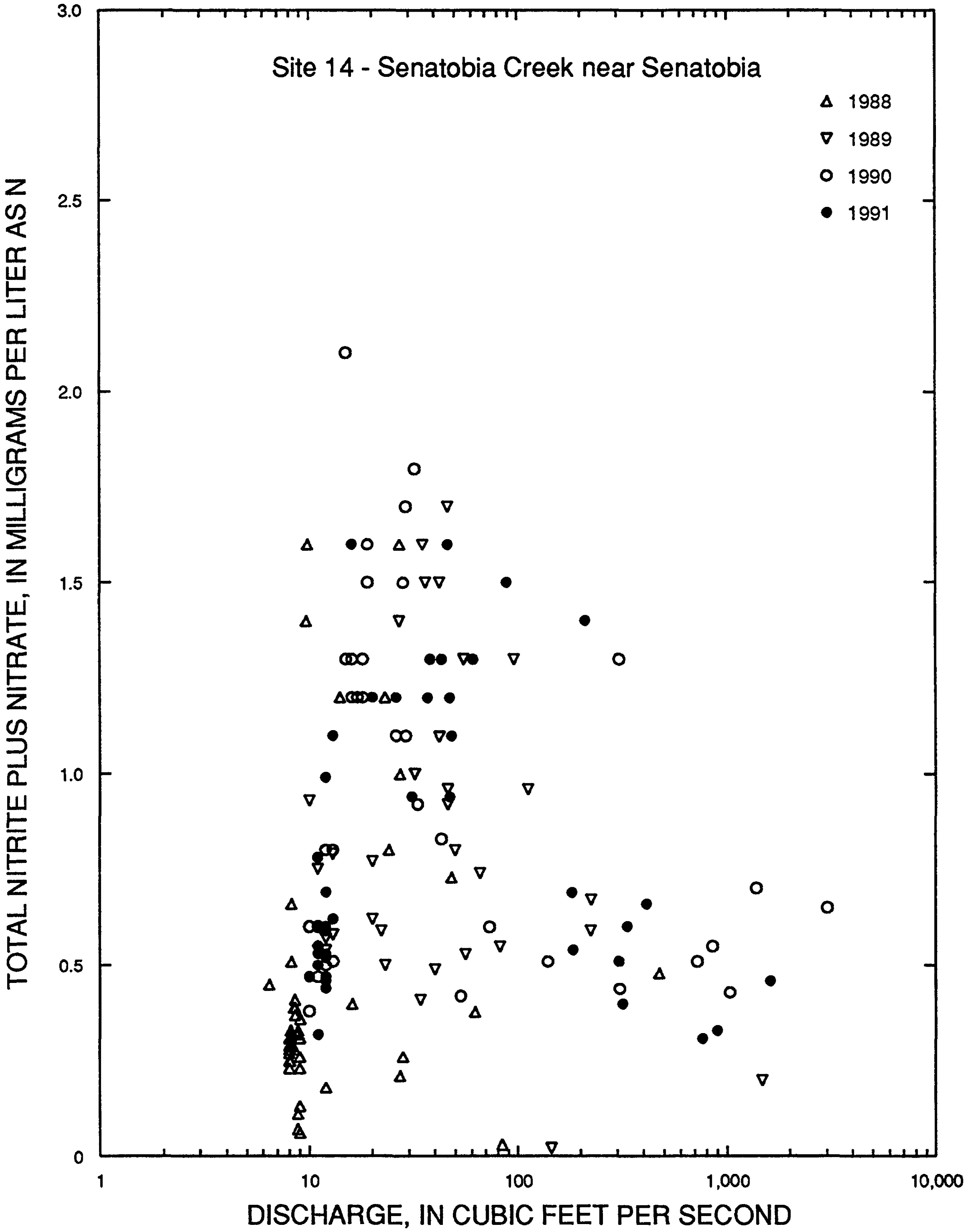


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

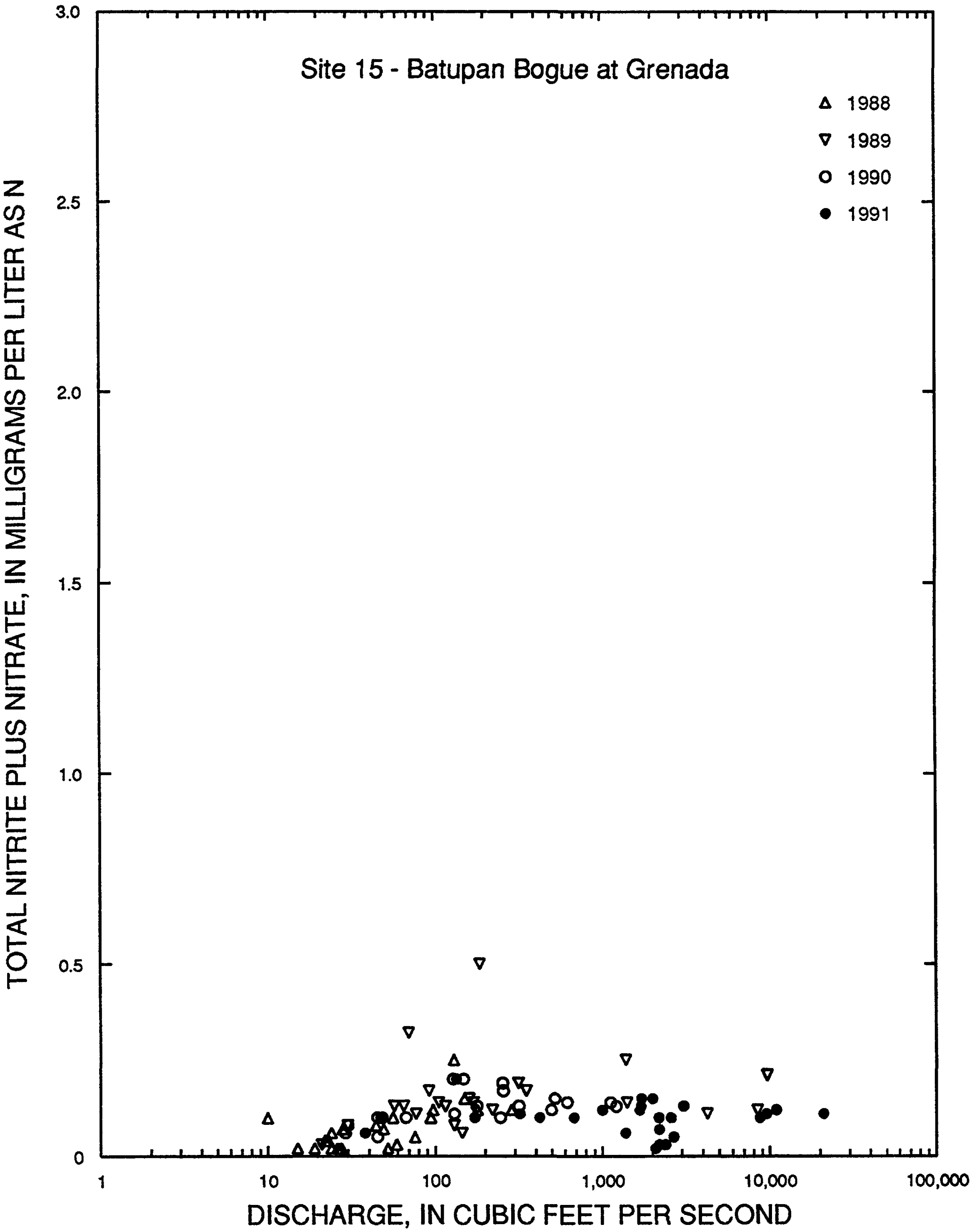


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

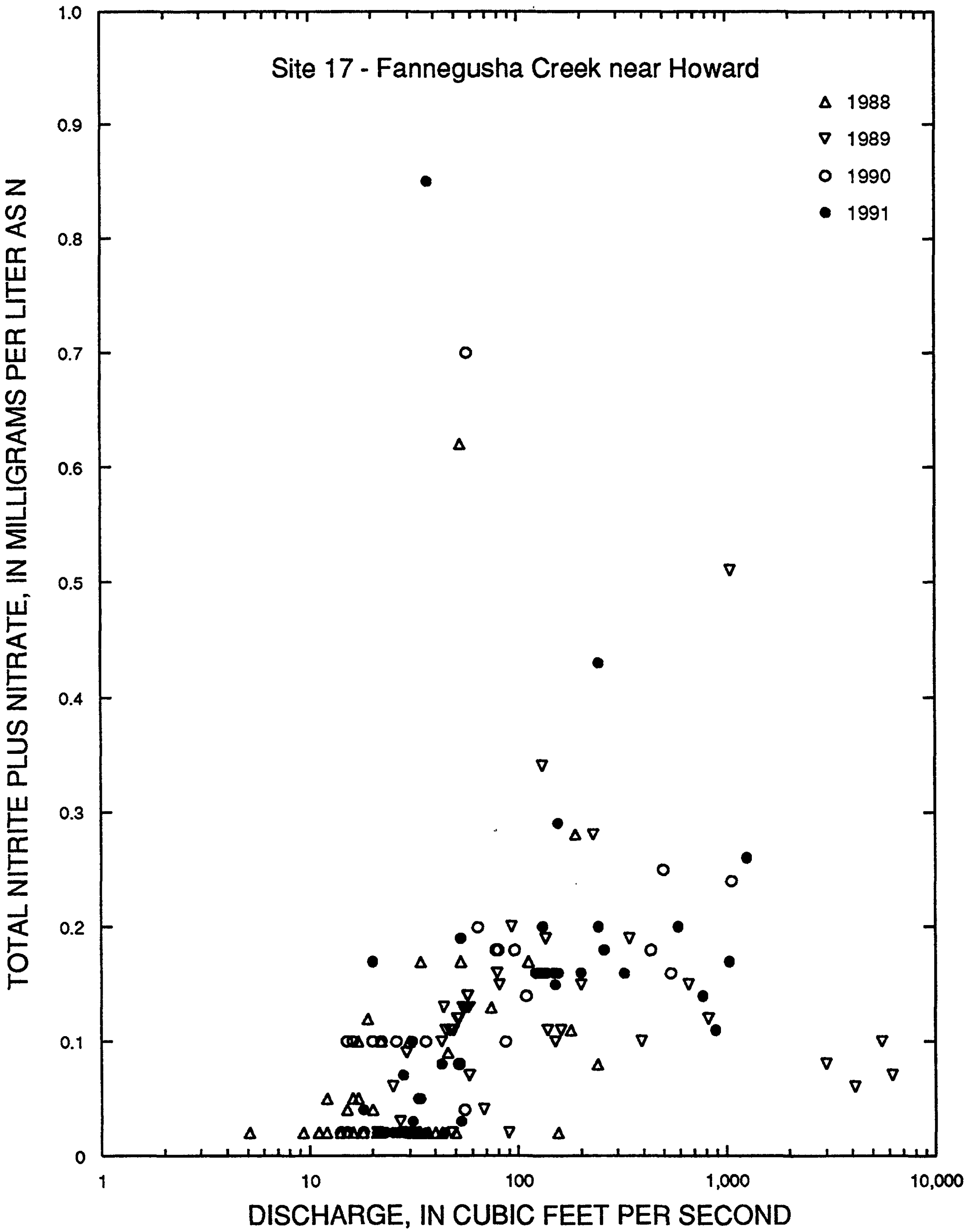


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

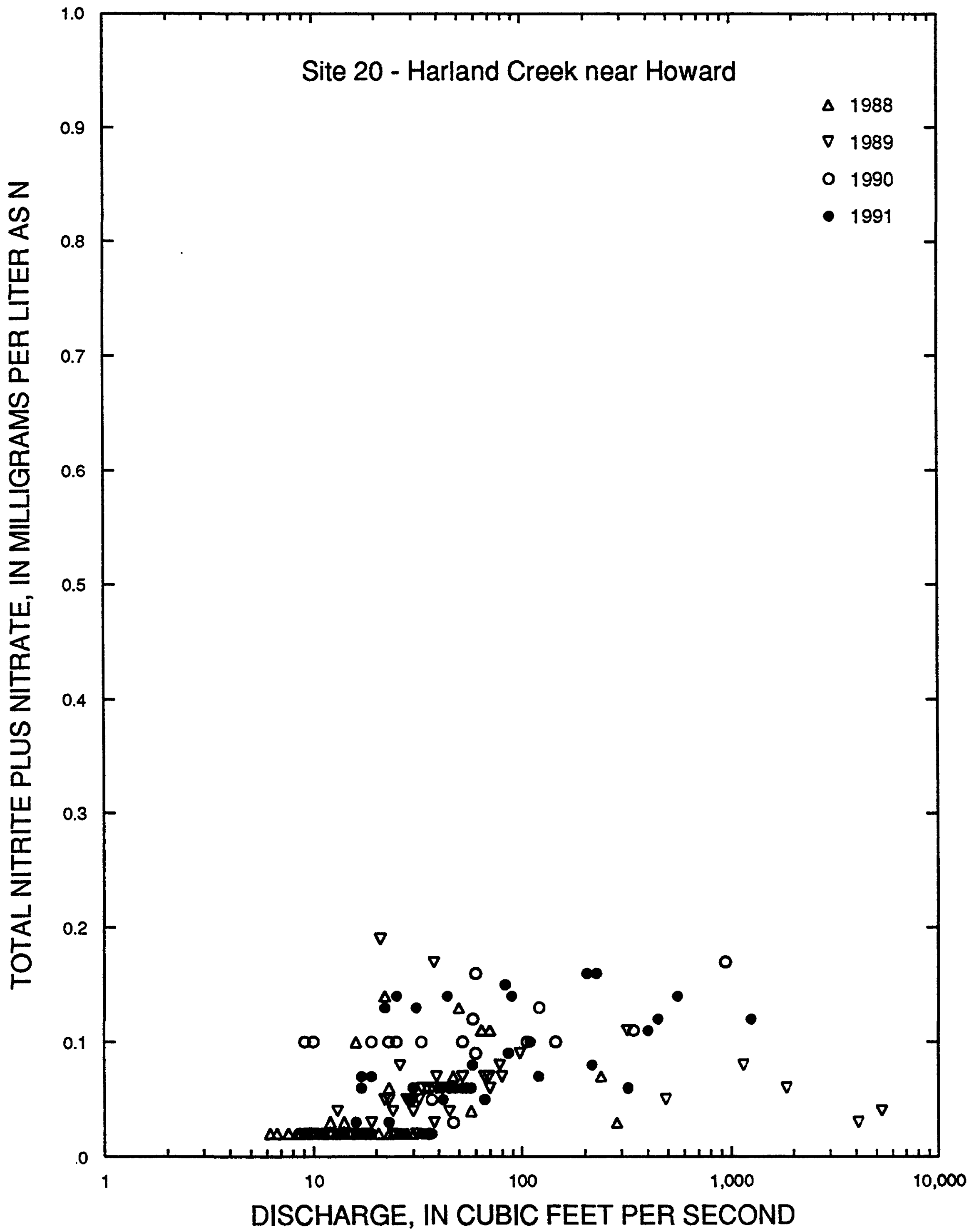


Figure 4D.--Relation of discharge and total nitrite plus nitrate at biweekly sampling sites--Continued.

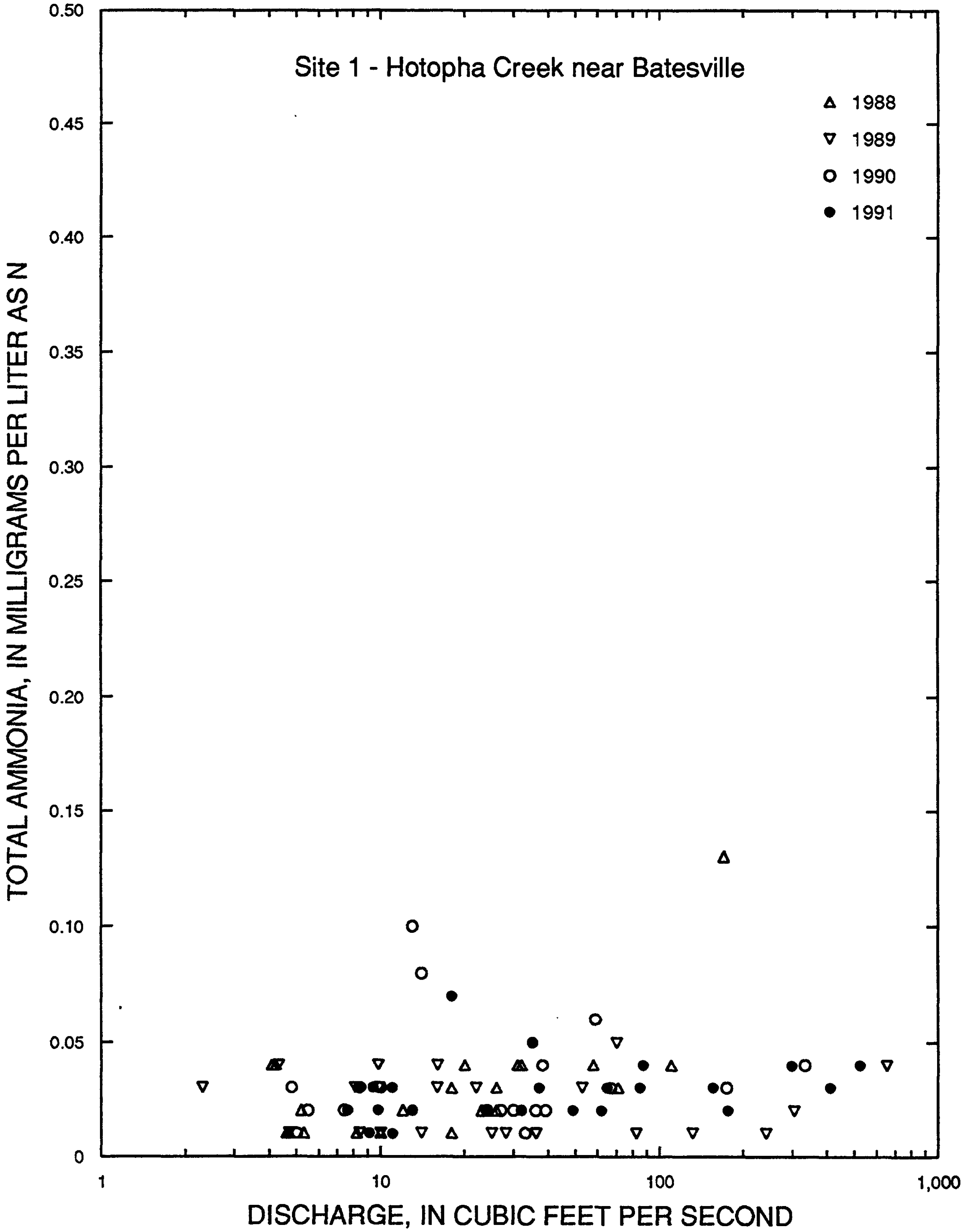


Figure 4E.--Relation of discharge and total ammonia at biweekly sampling sites.

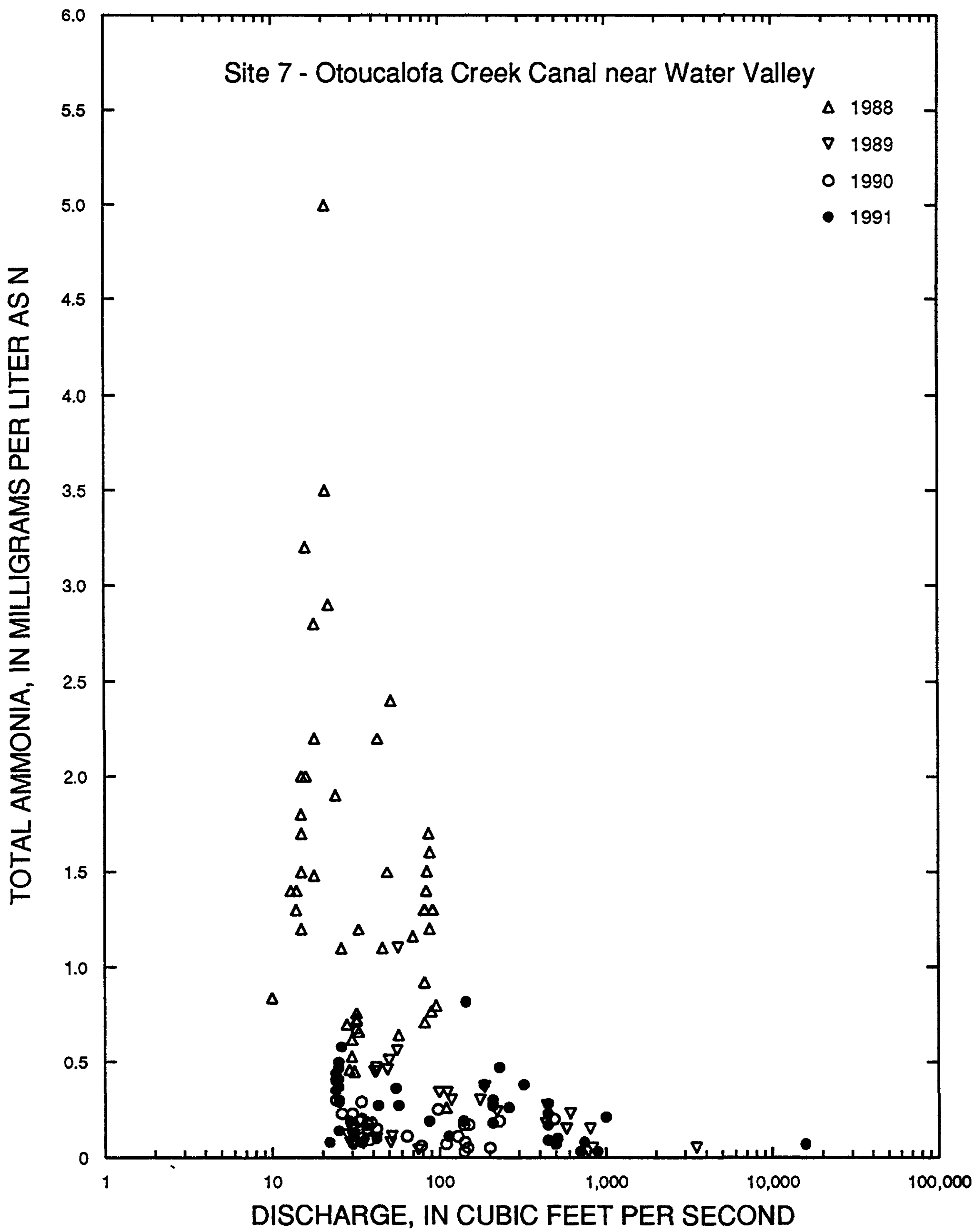


Figure 4E.--Relation of discharge and total ammonia at biweekly sampling sites--Continued.

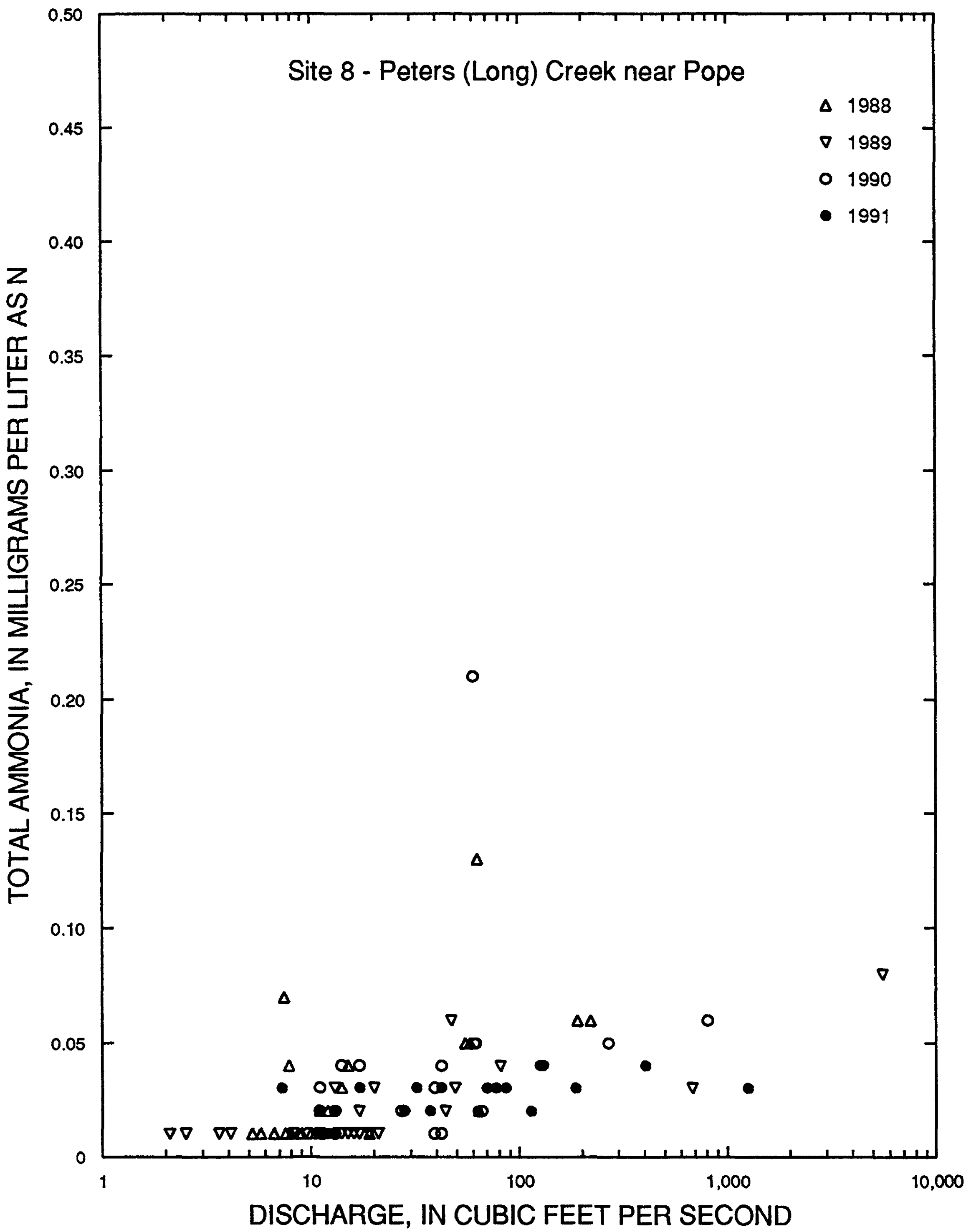
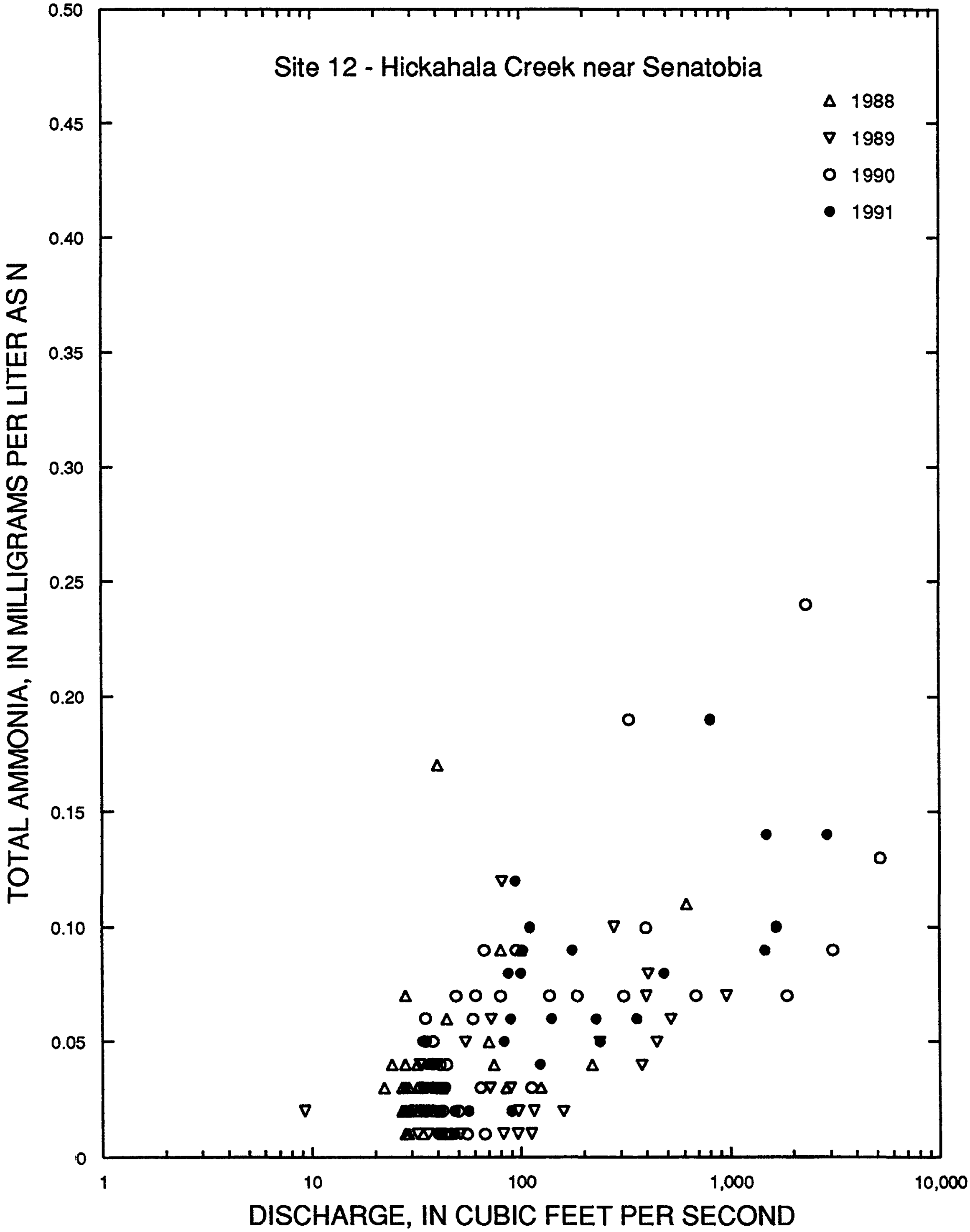


Figure 4E.--Relation of discharge and total ammonia at biweekly sampling sites--Continued.



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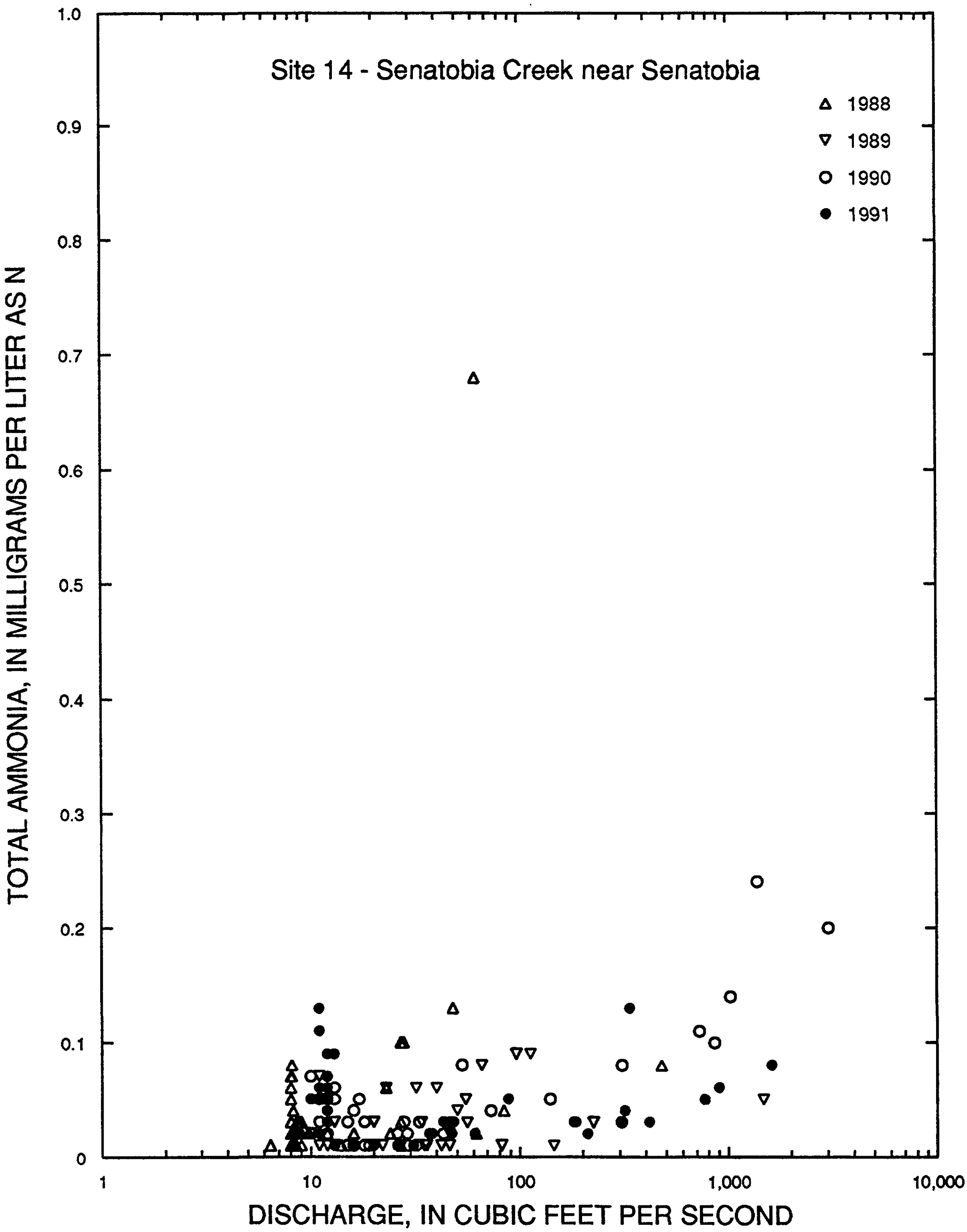

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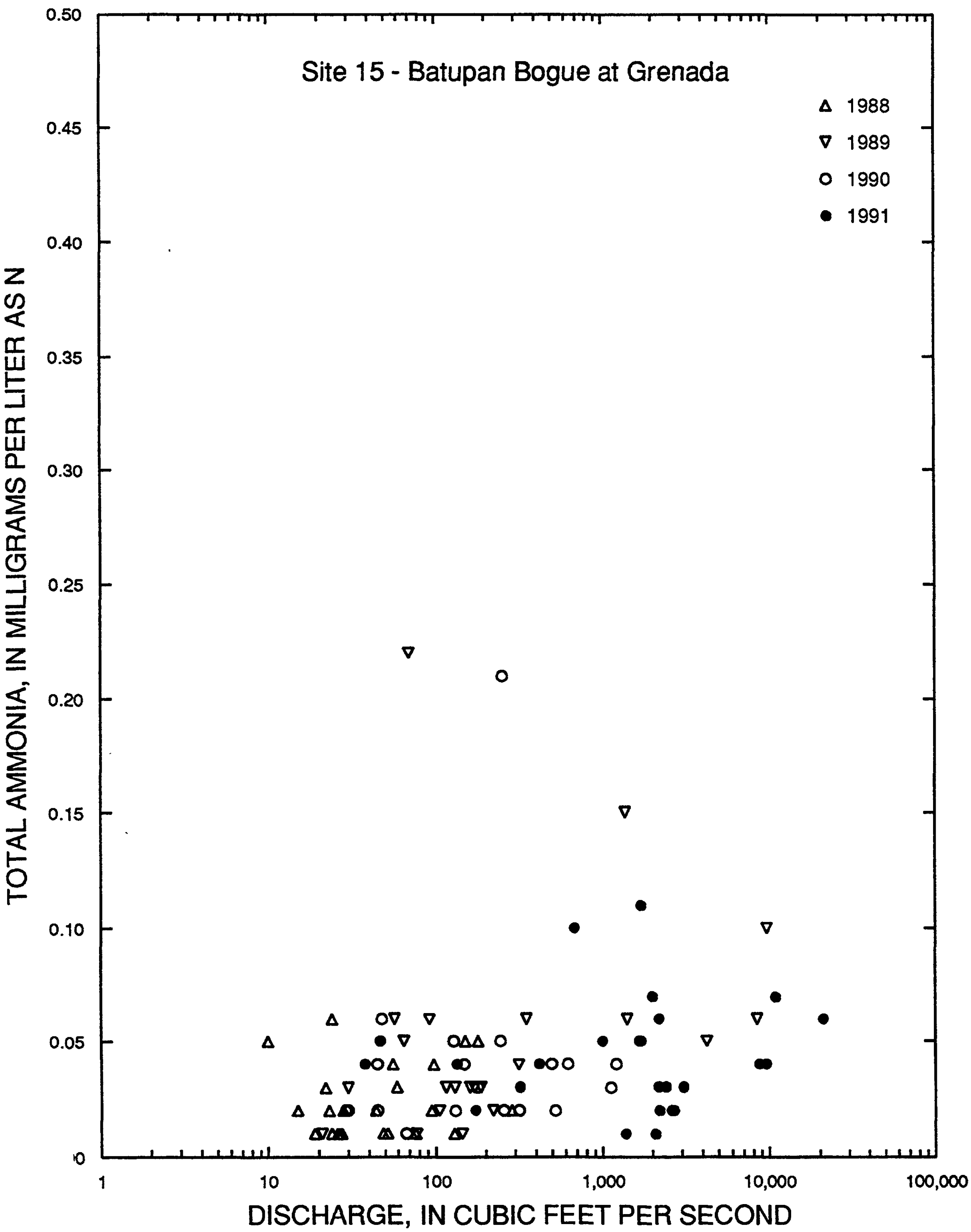

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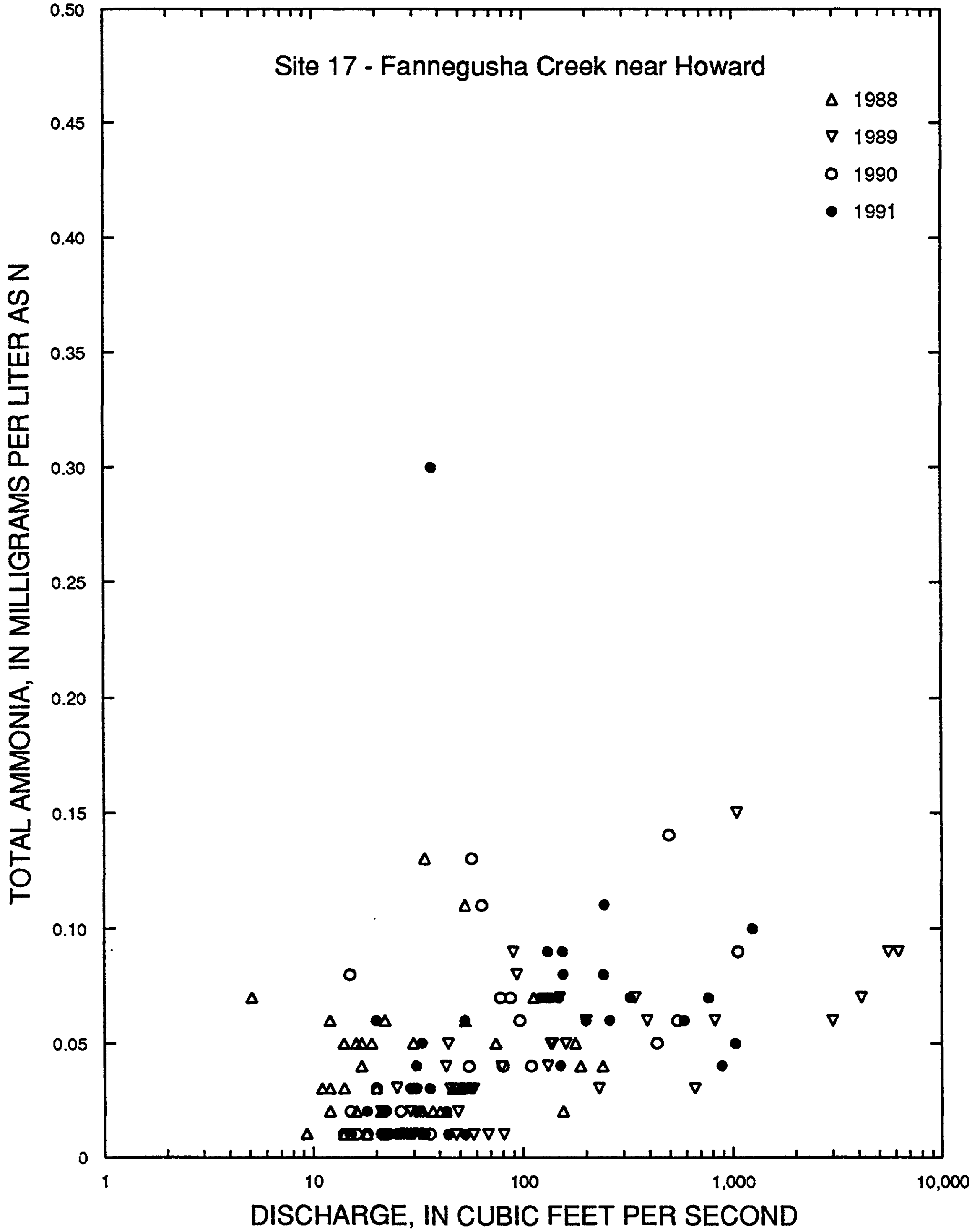


Figure 4E.--Relation of discharge and total ammonia at biweekly sampling sites--Continued.

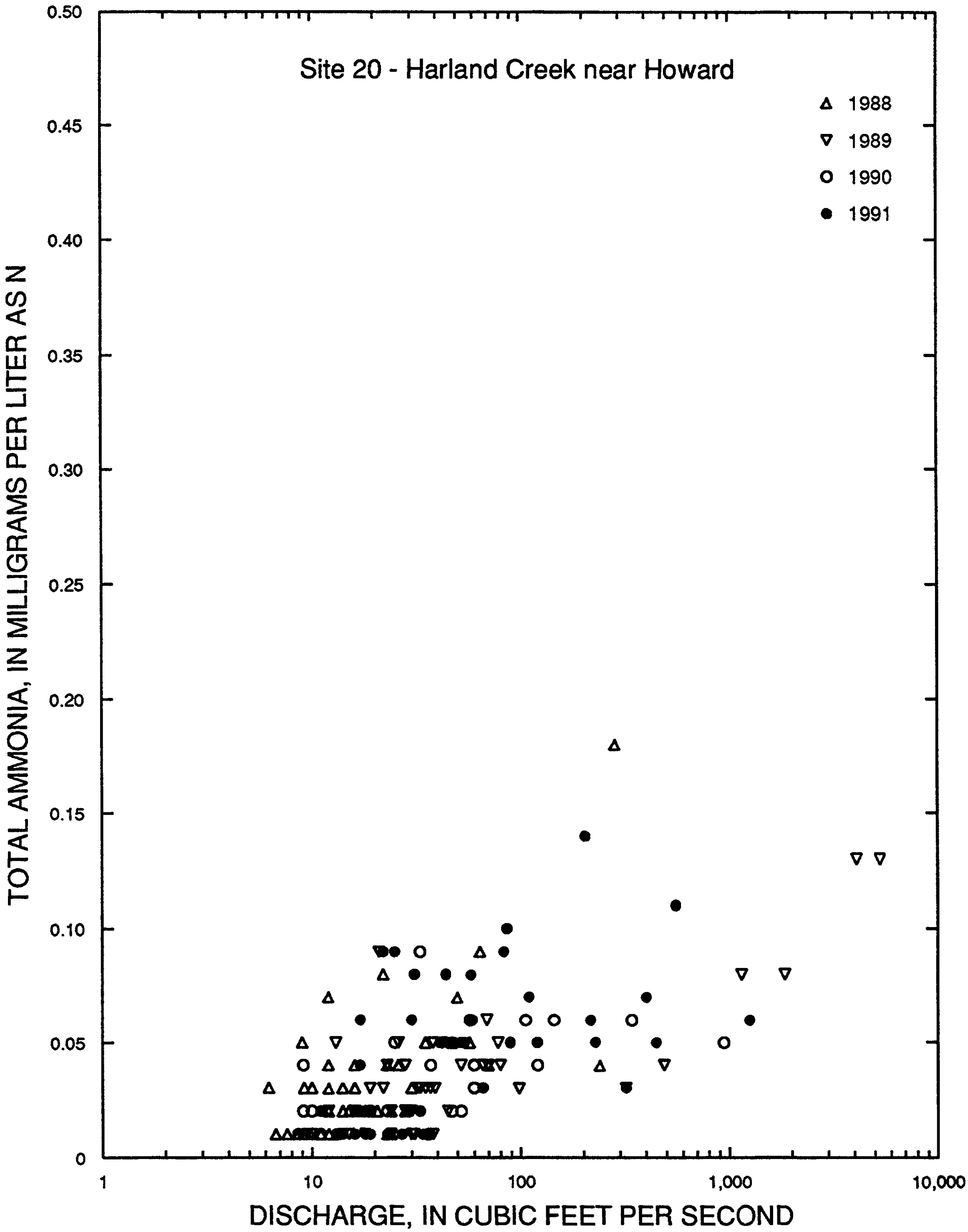


Figure 4E.--Relation of discharge and total ammonia at biweekly sampling sites--Continued.

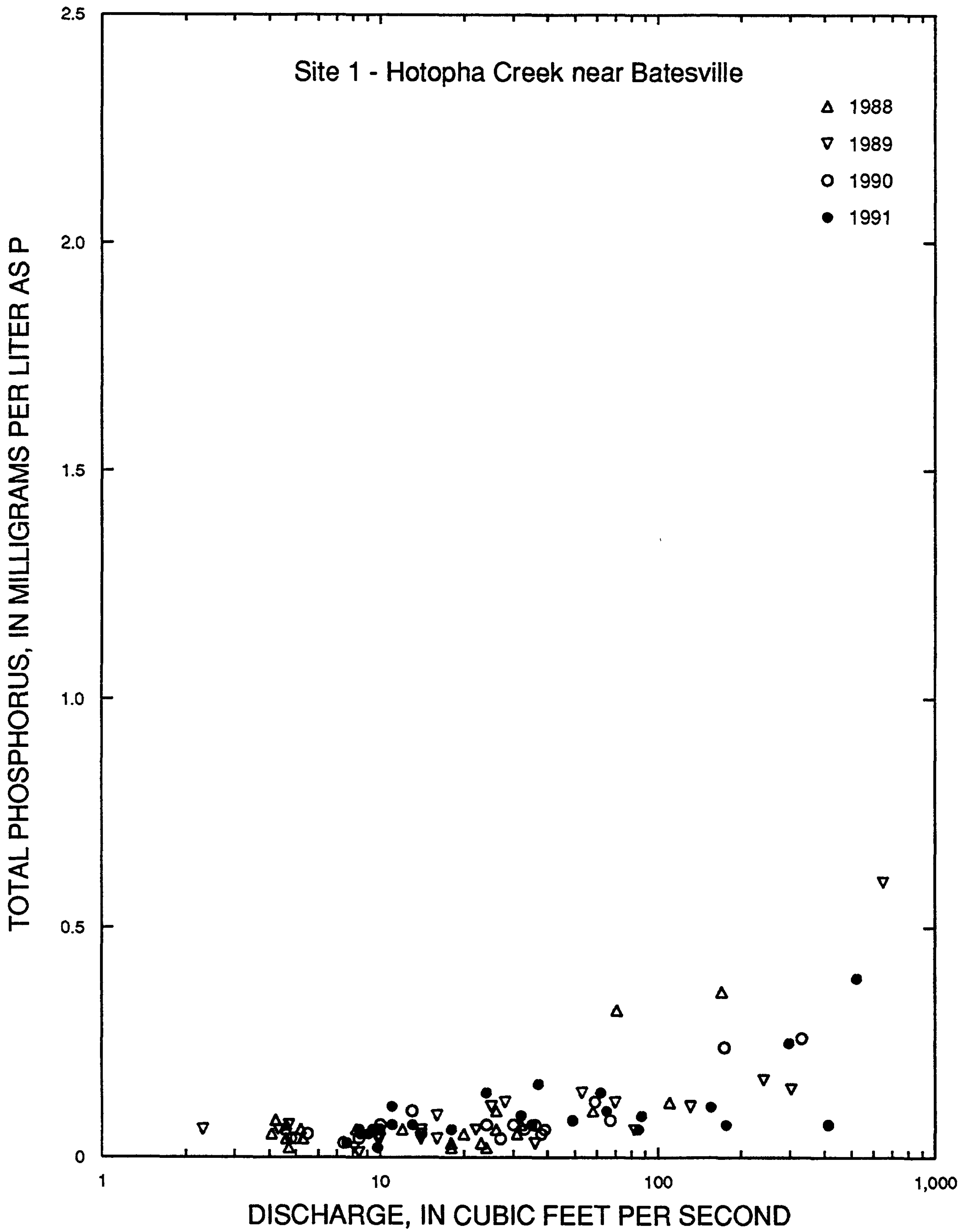
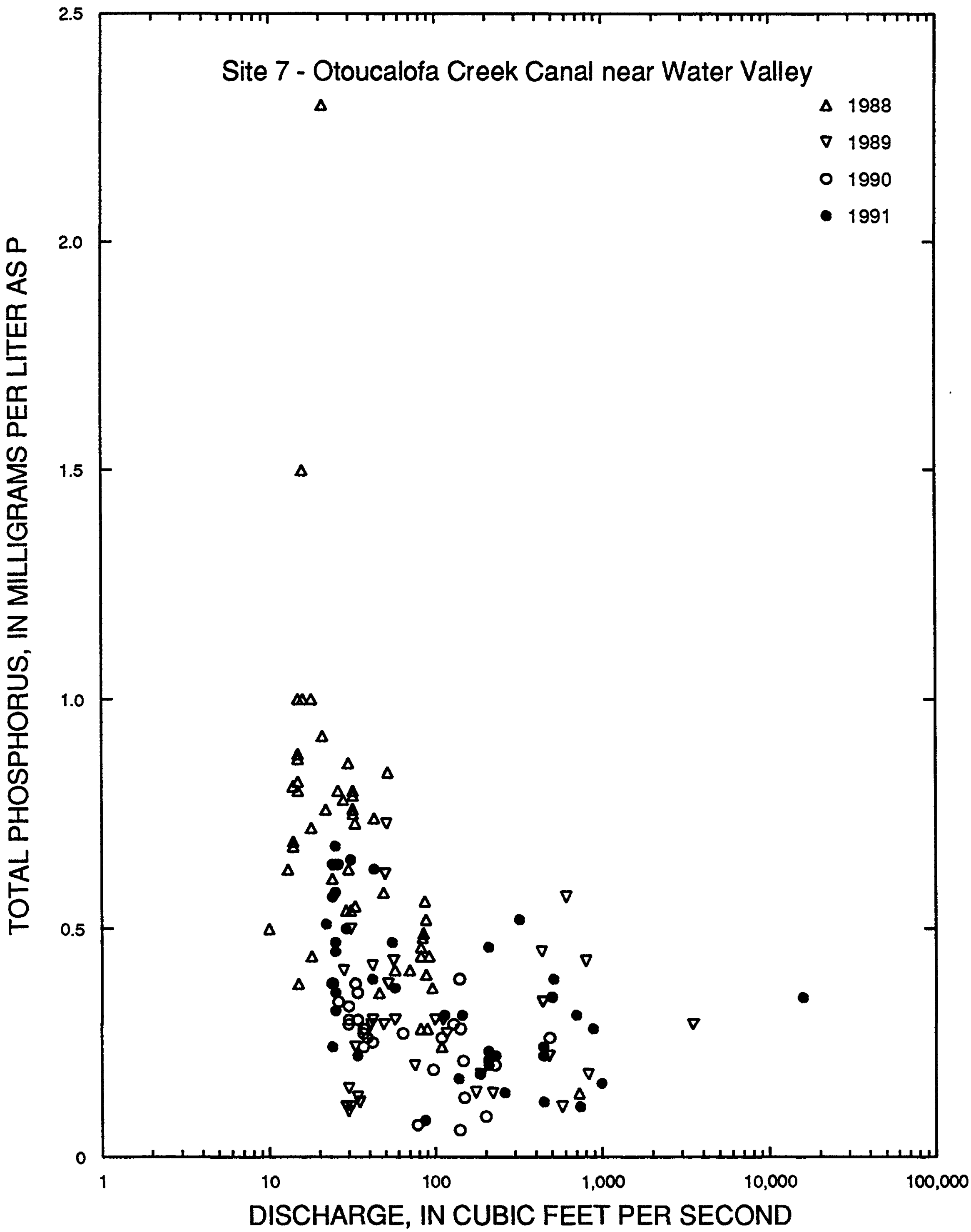


Figure 4F.--Relation of discharge and total phosphorus at biweekly sampling sites.



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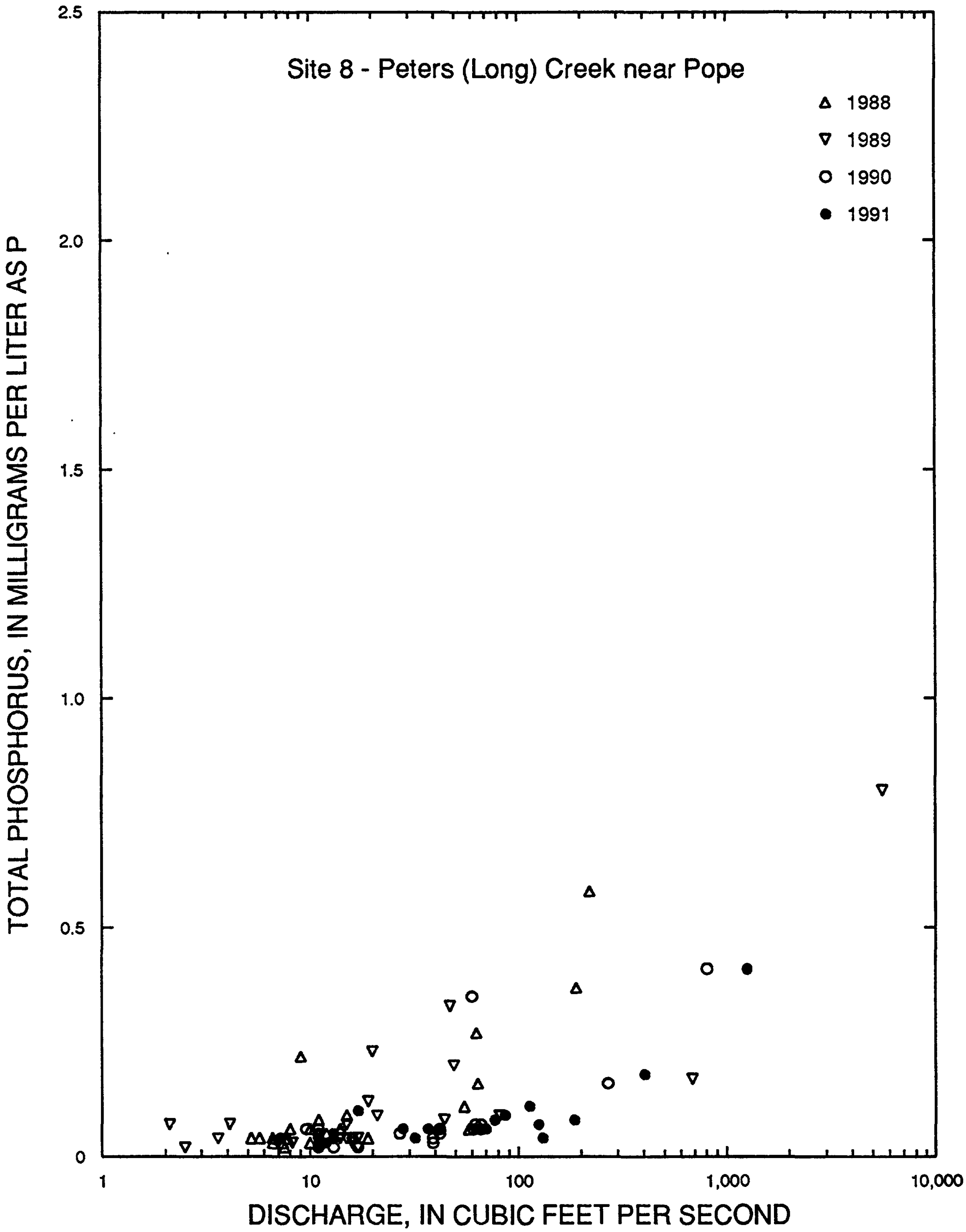

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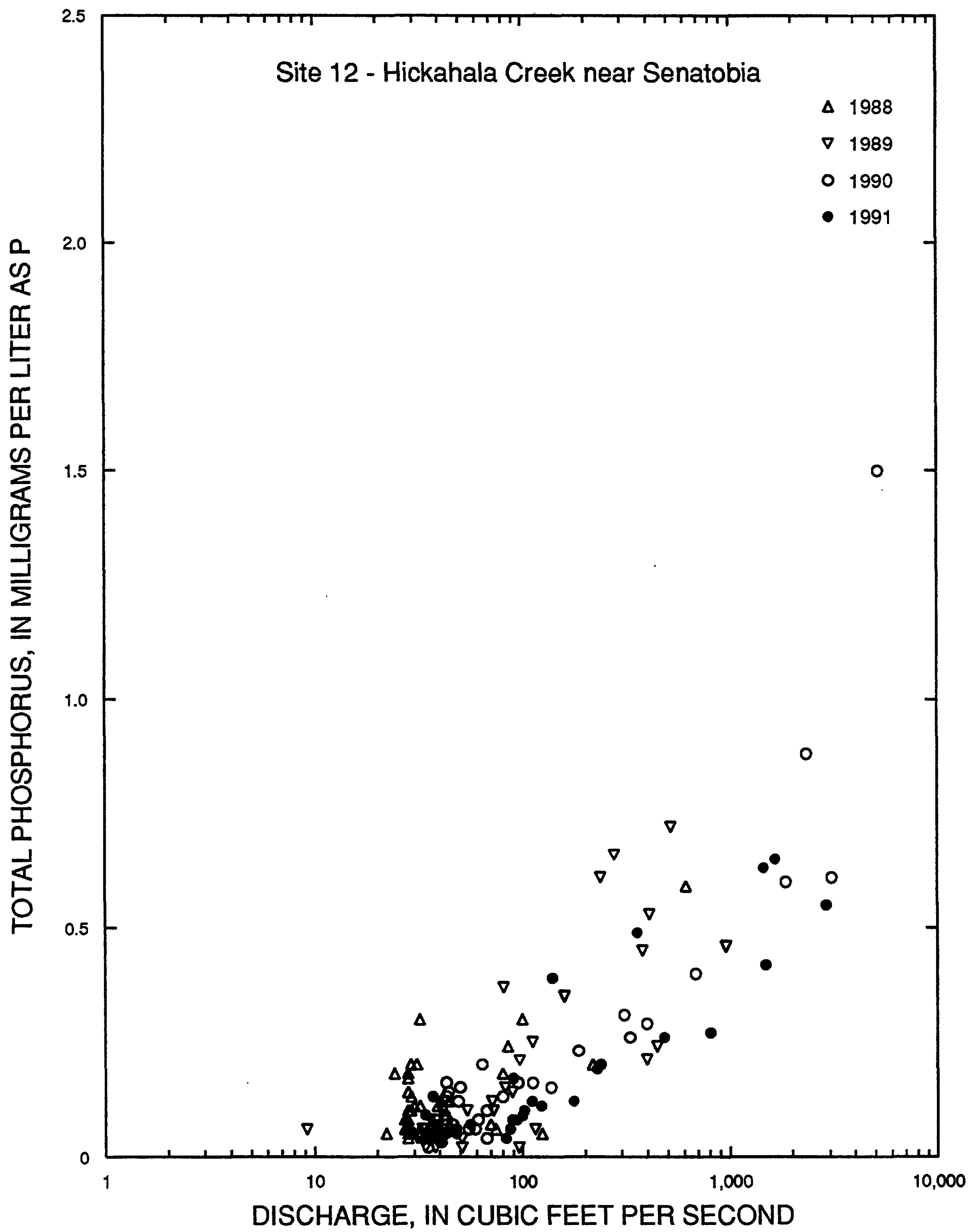

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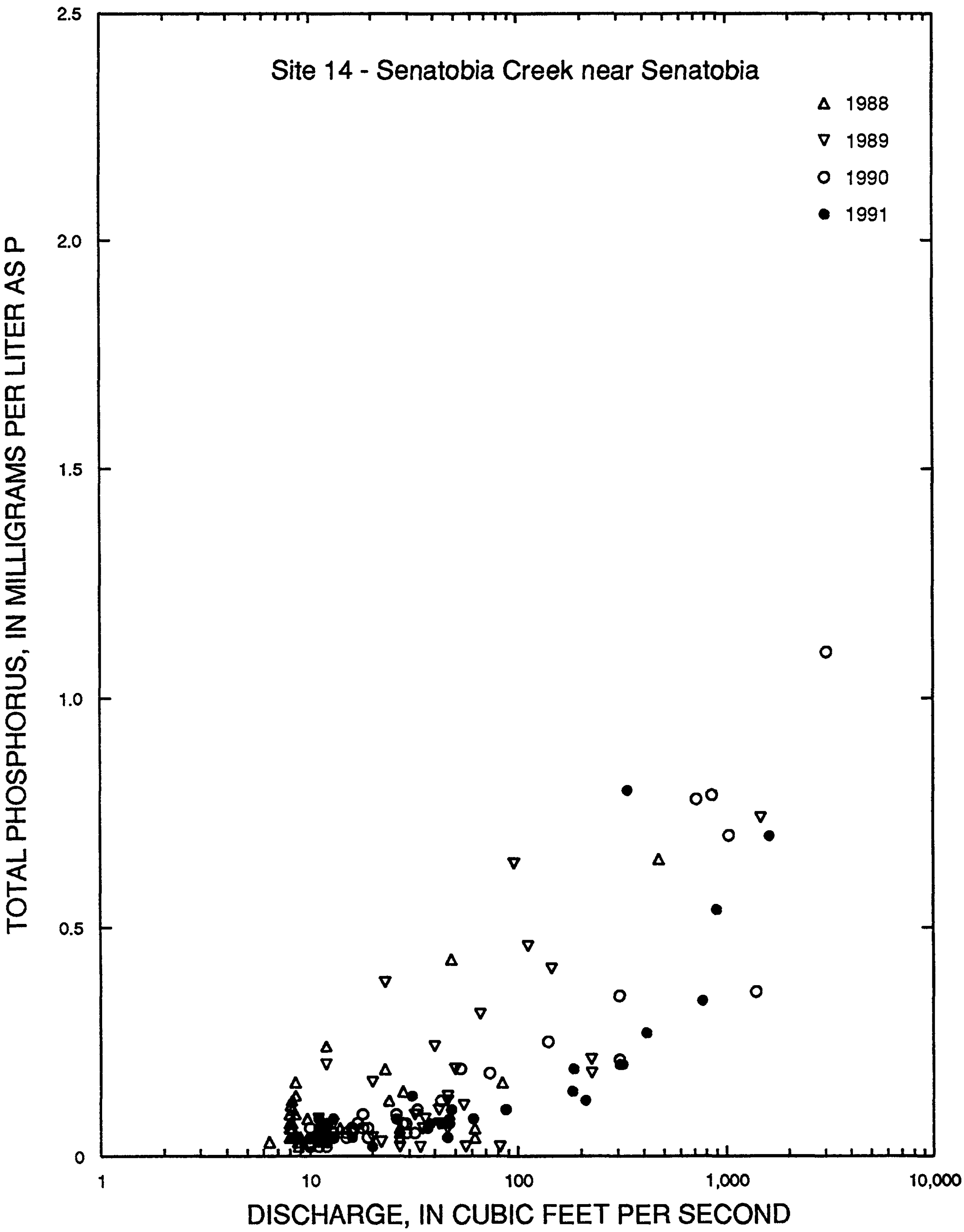

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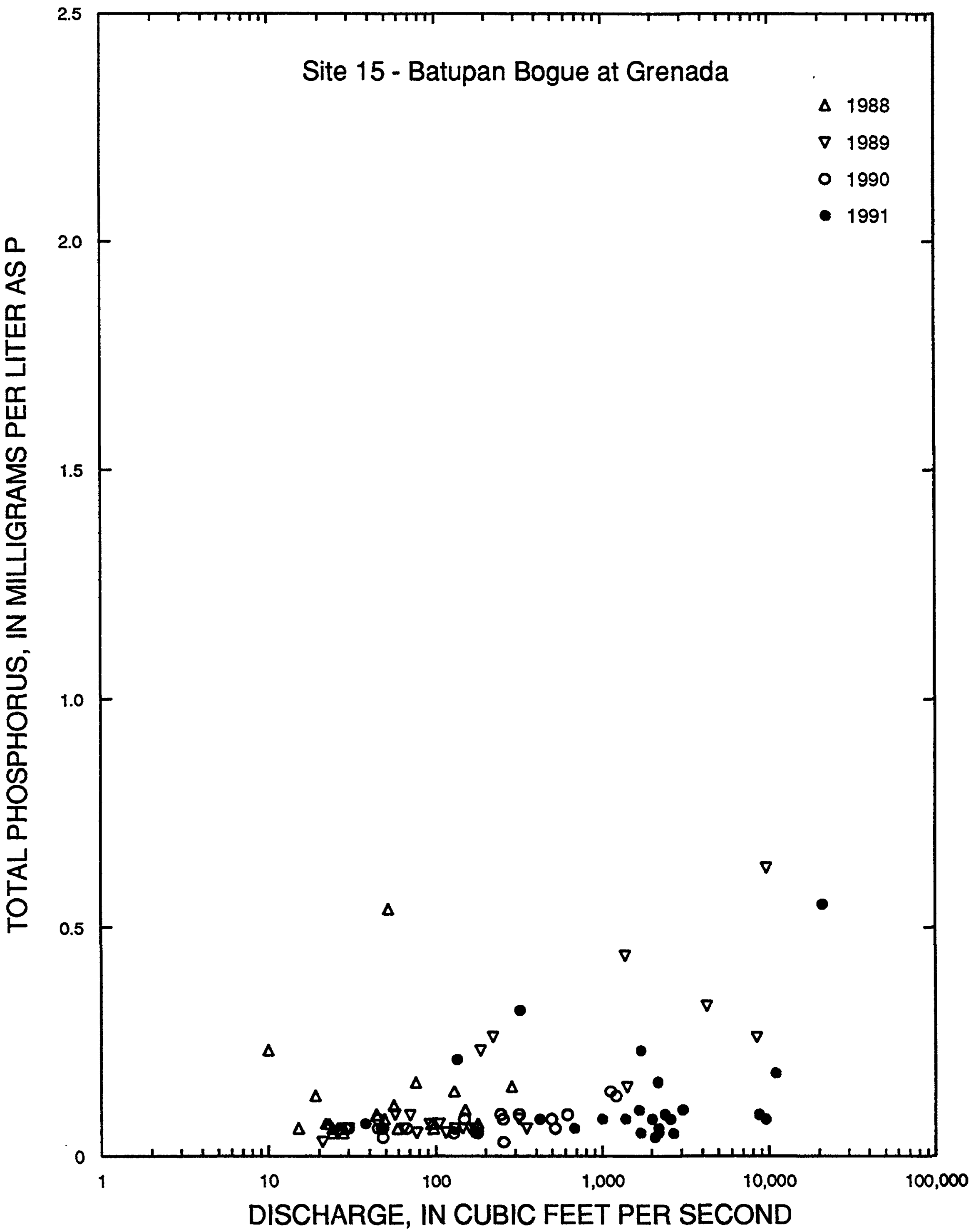
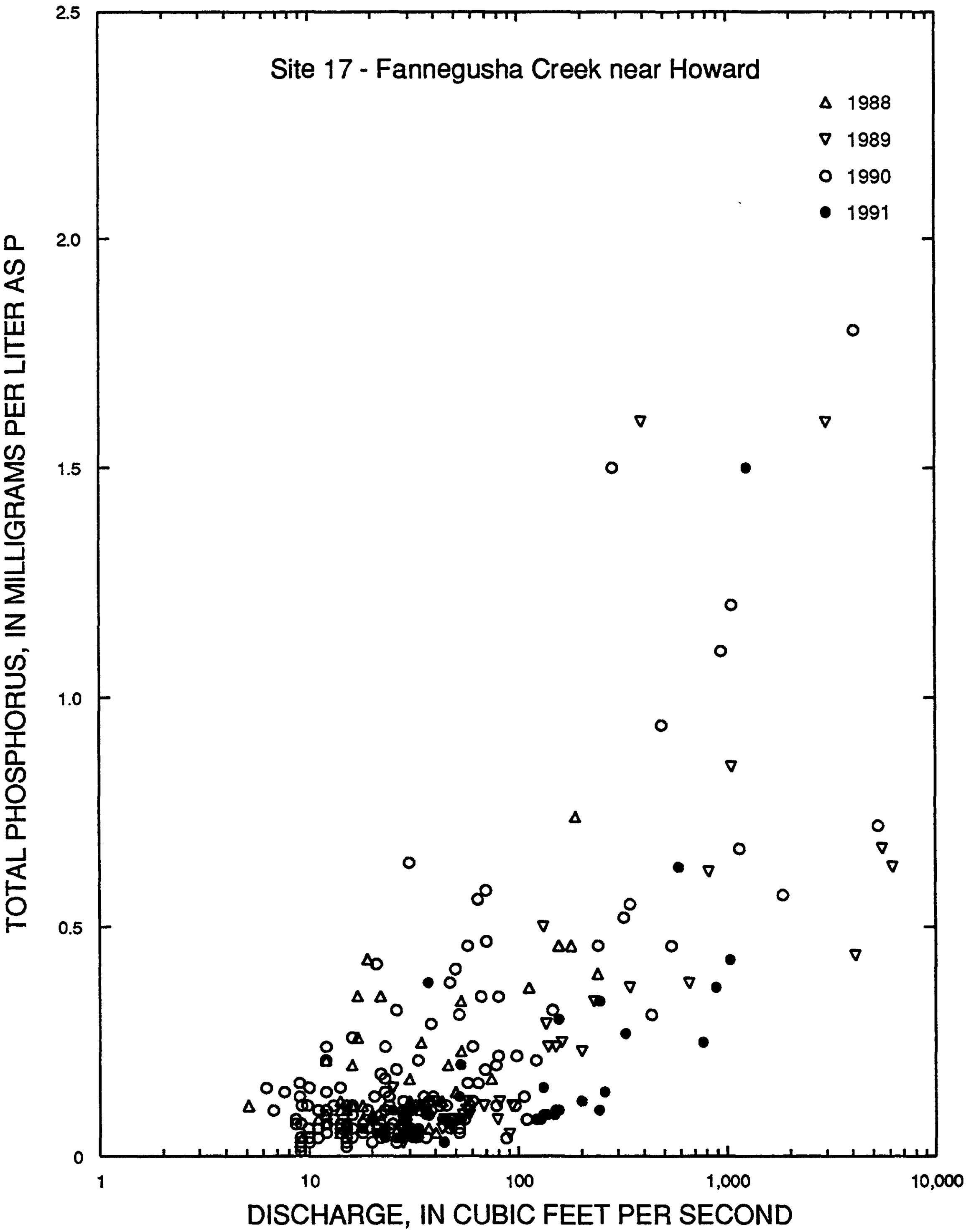


Figure 4F.--Relation of discharge and total phosphorus at biweekly sampling sites--Continued.



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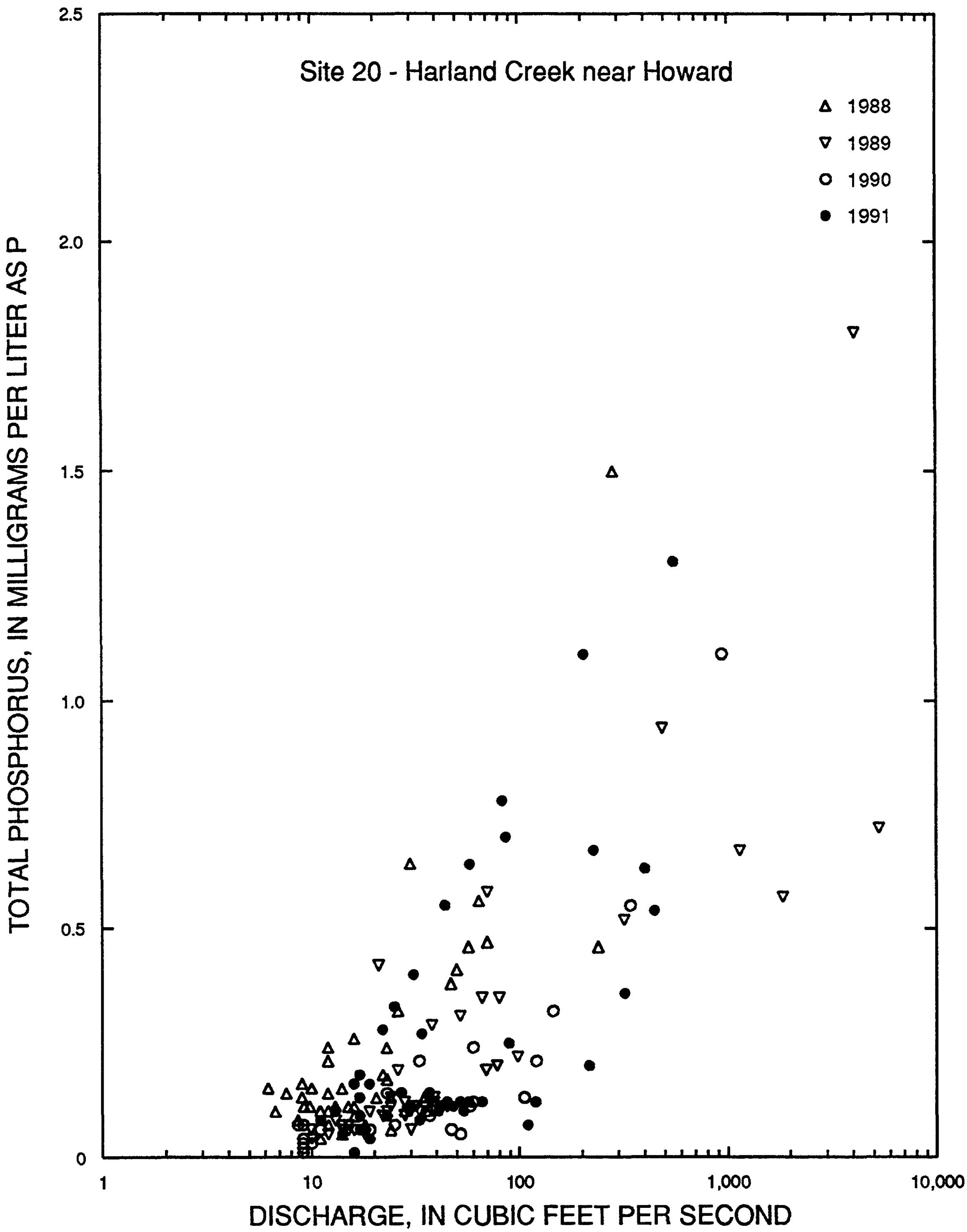

Figure 4F.--Relation of discharge and total phosphorus at biweekly sampling sites--Continued.

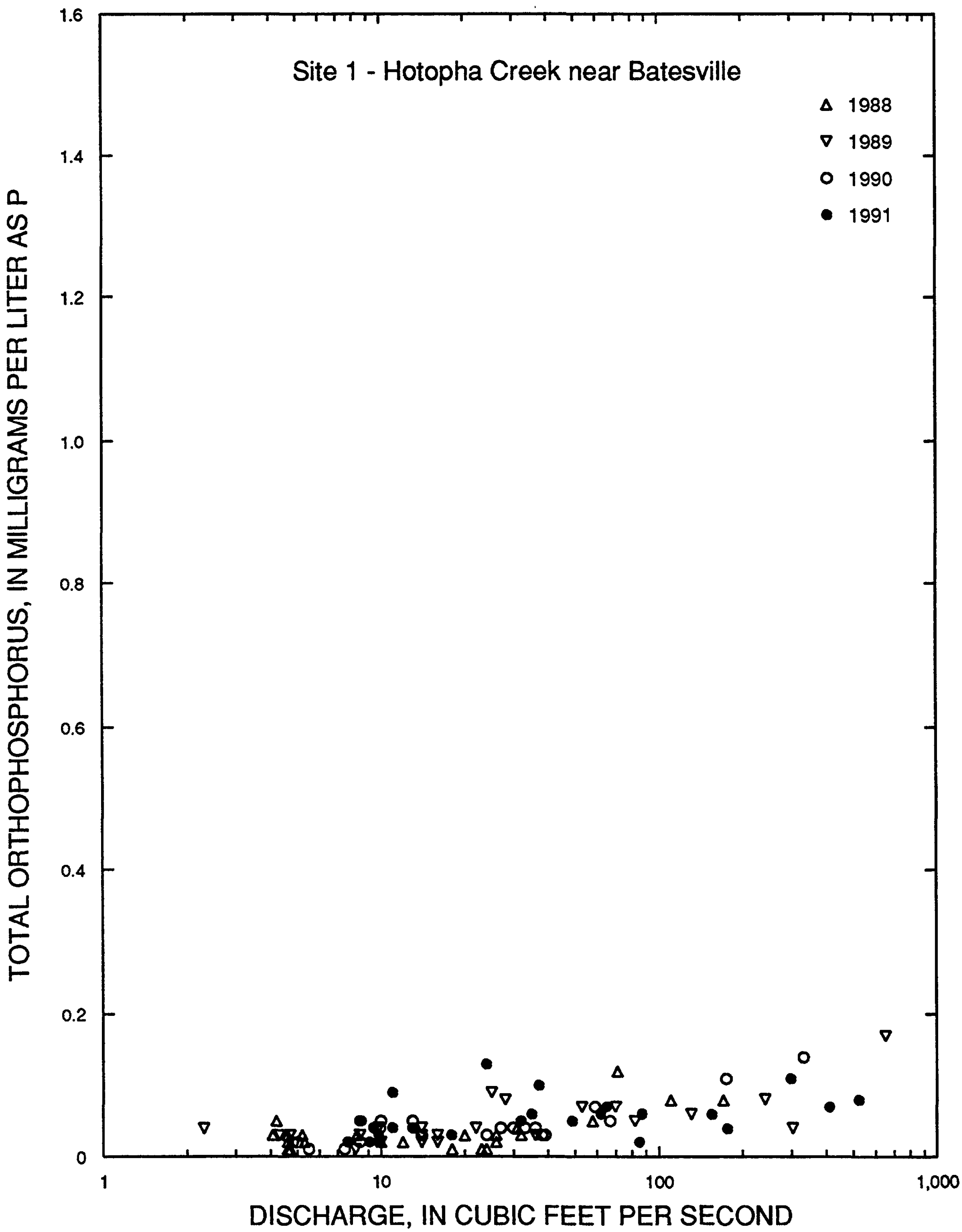

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites.

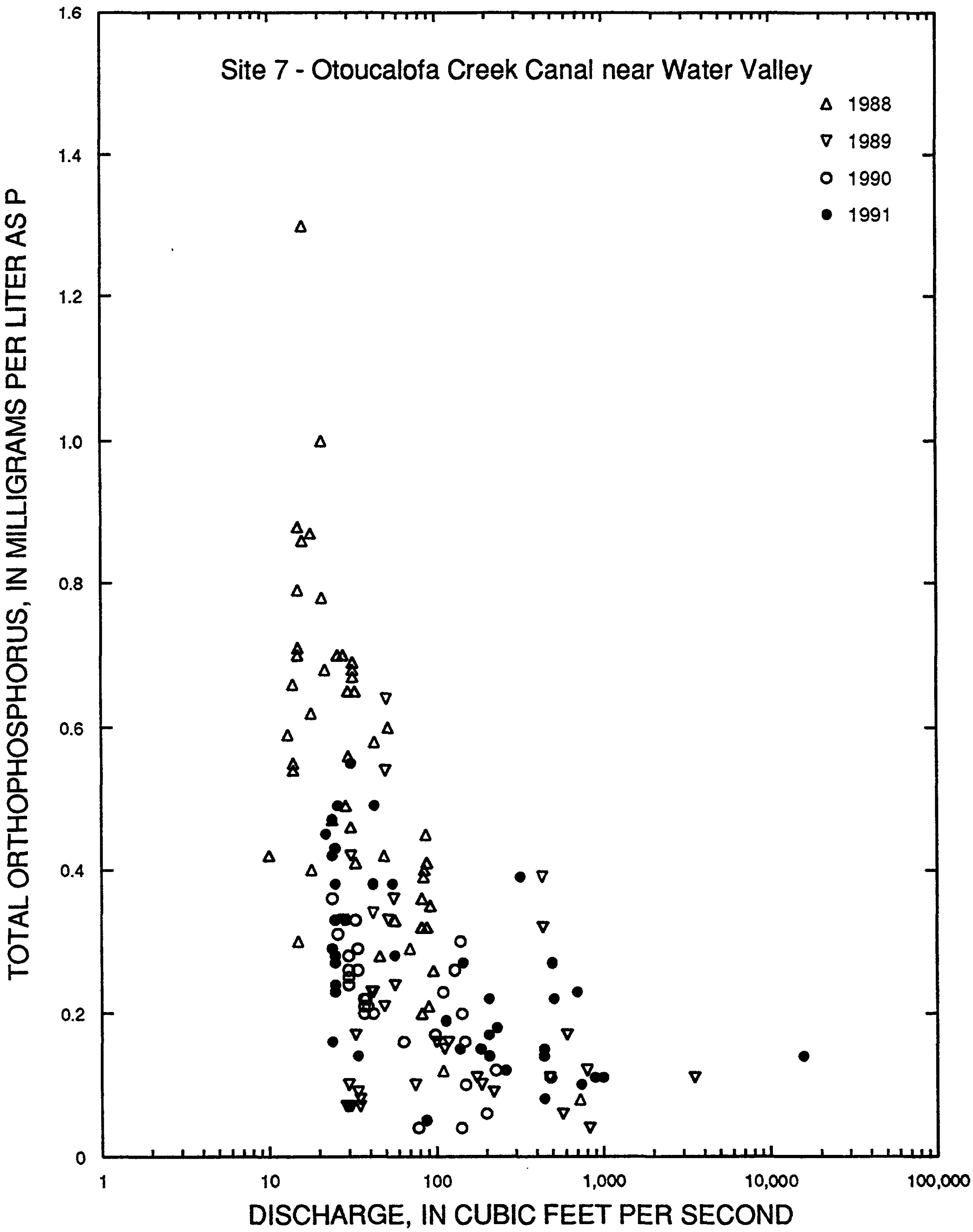

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

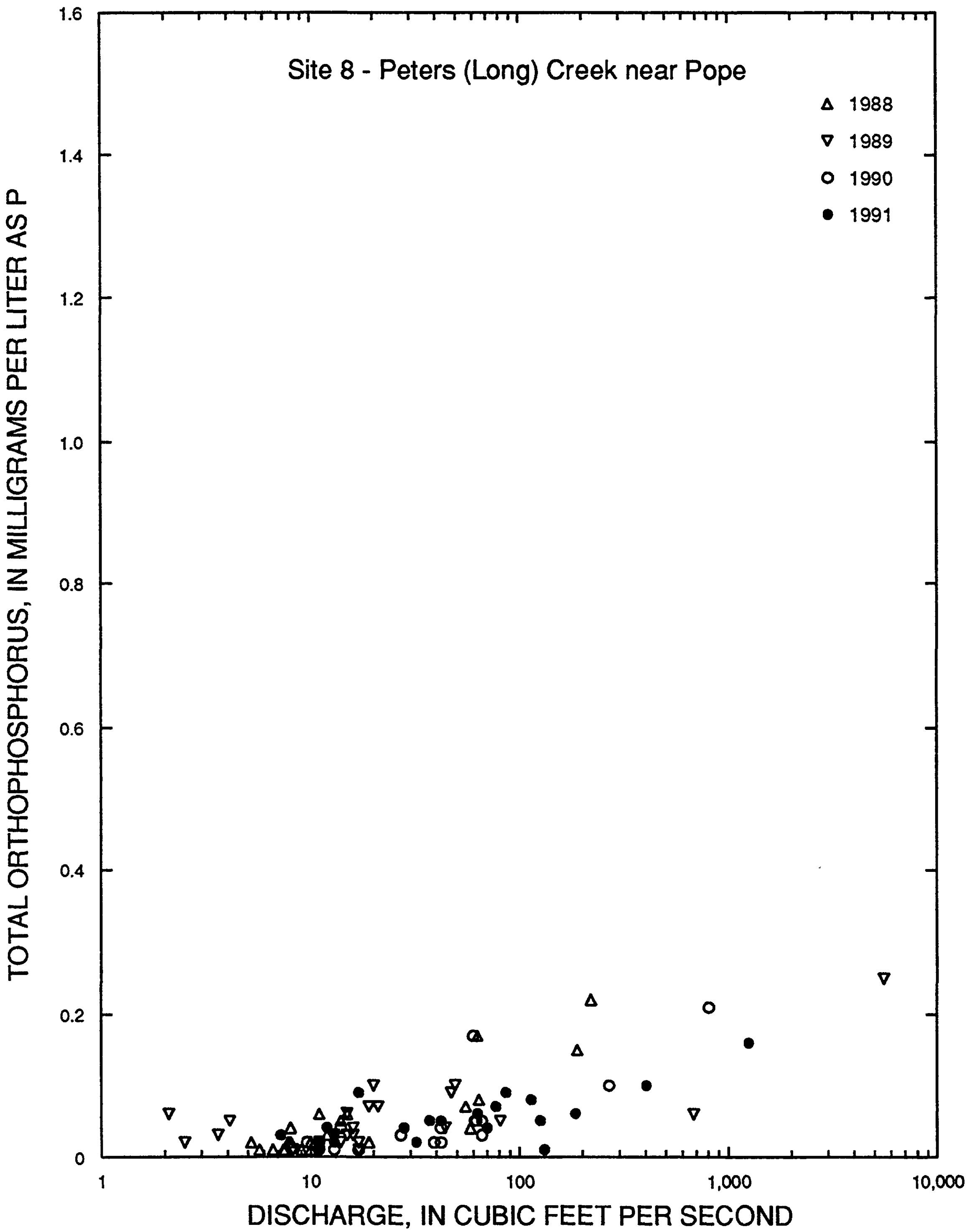

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

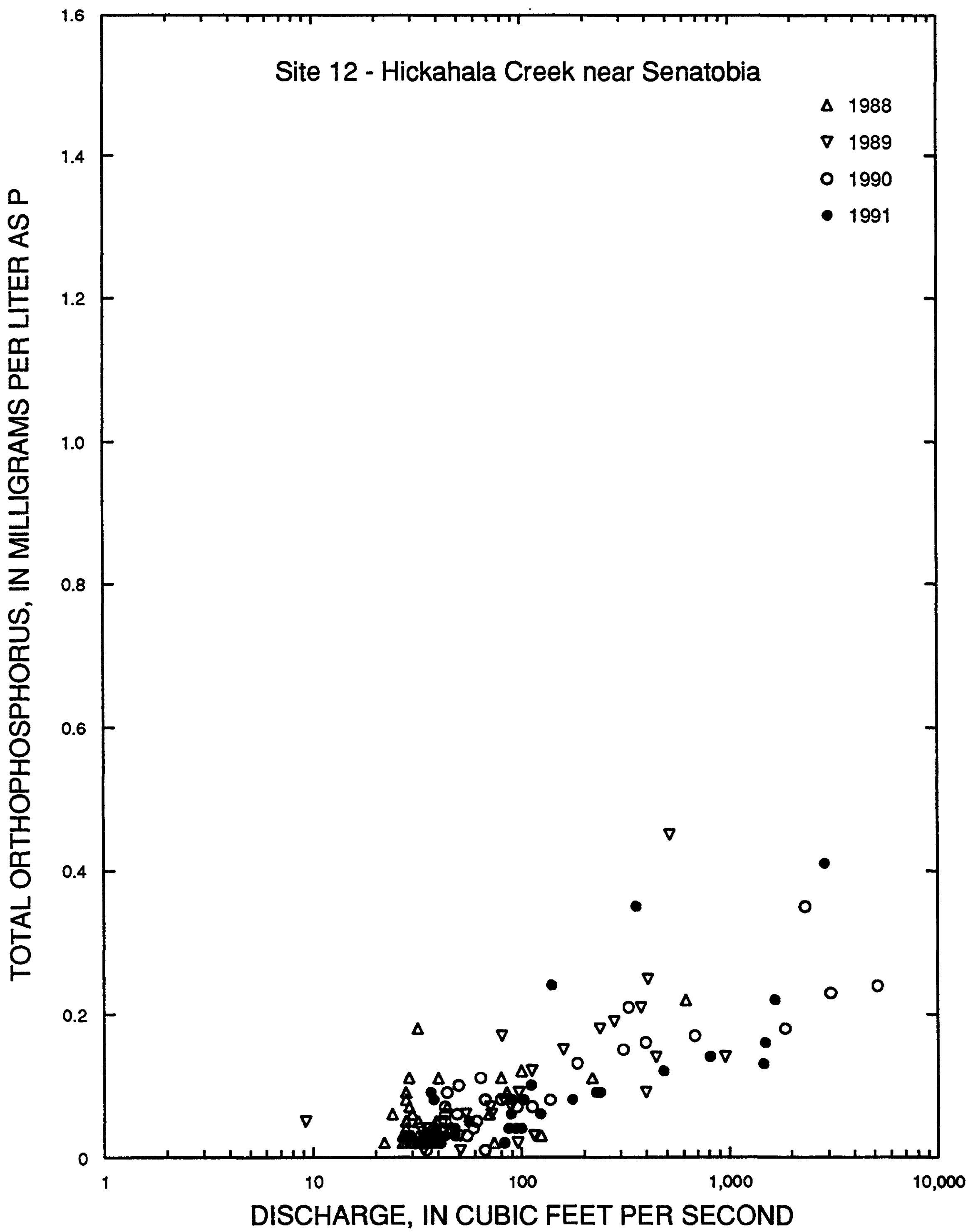

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

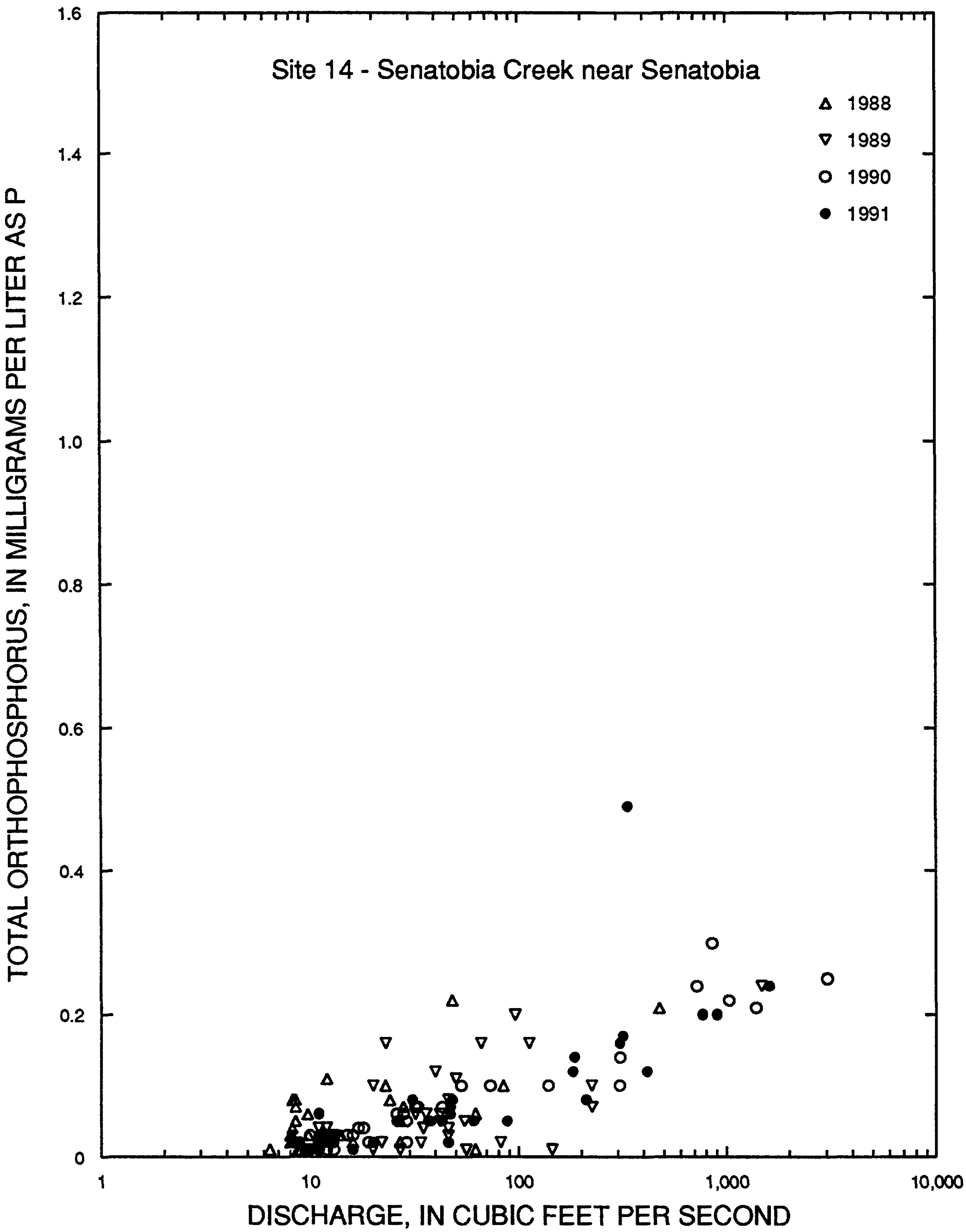

Figure 4G.--Relation of discharge and total orthophosphorus
at biweekly sampling sites--Continued.

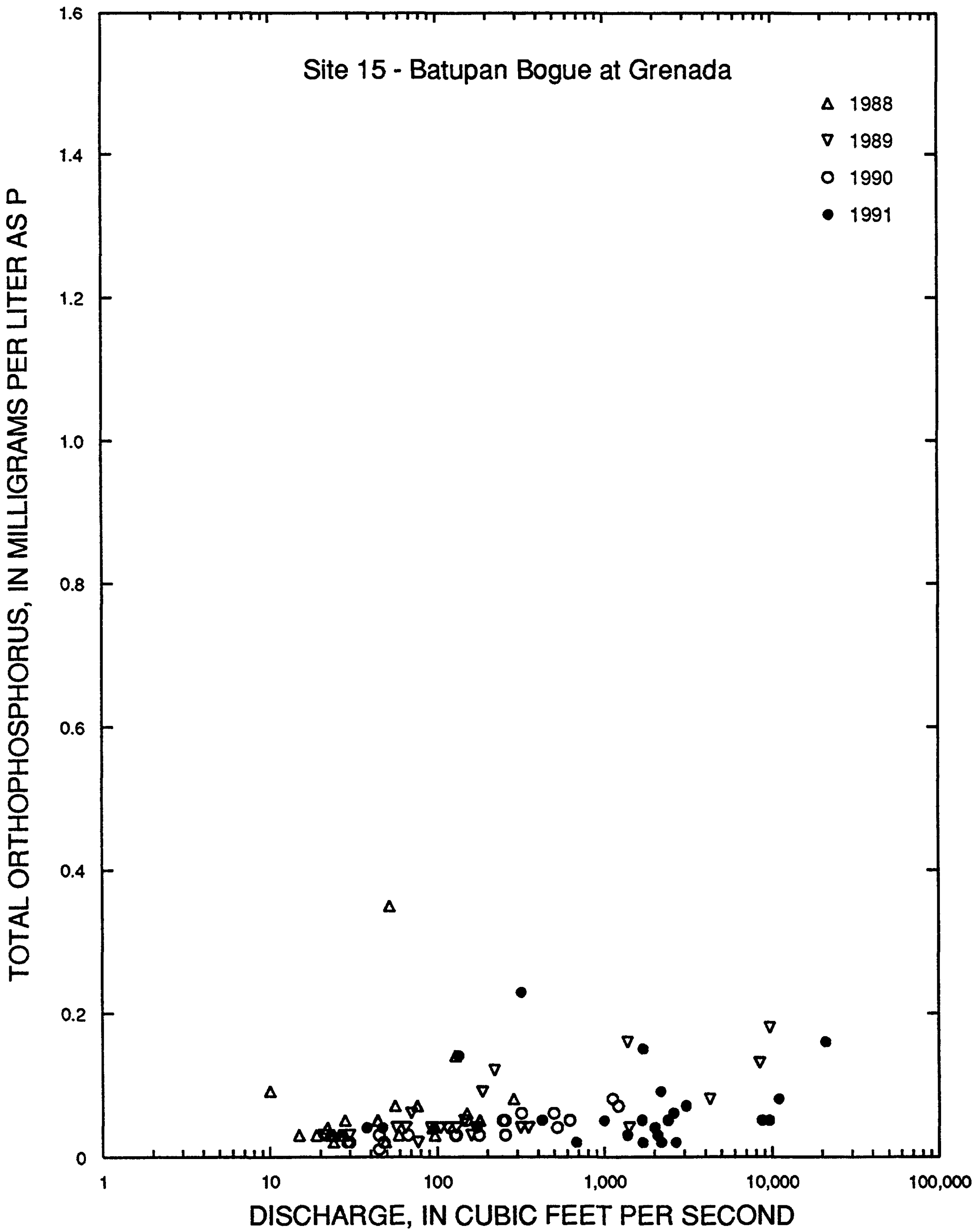

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

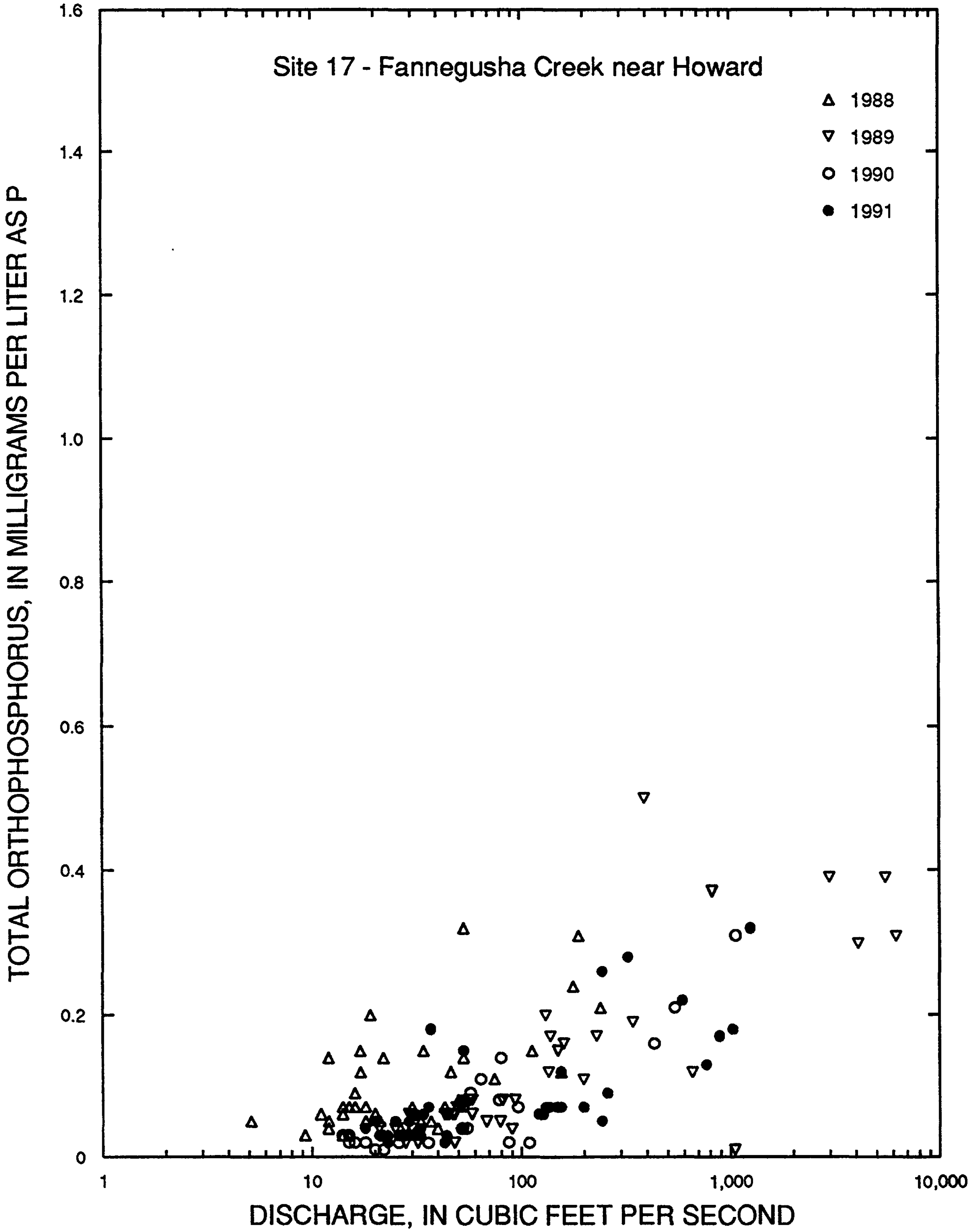

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

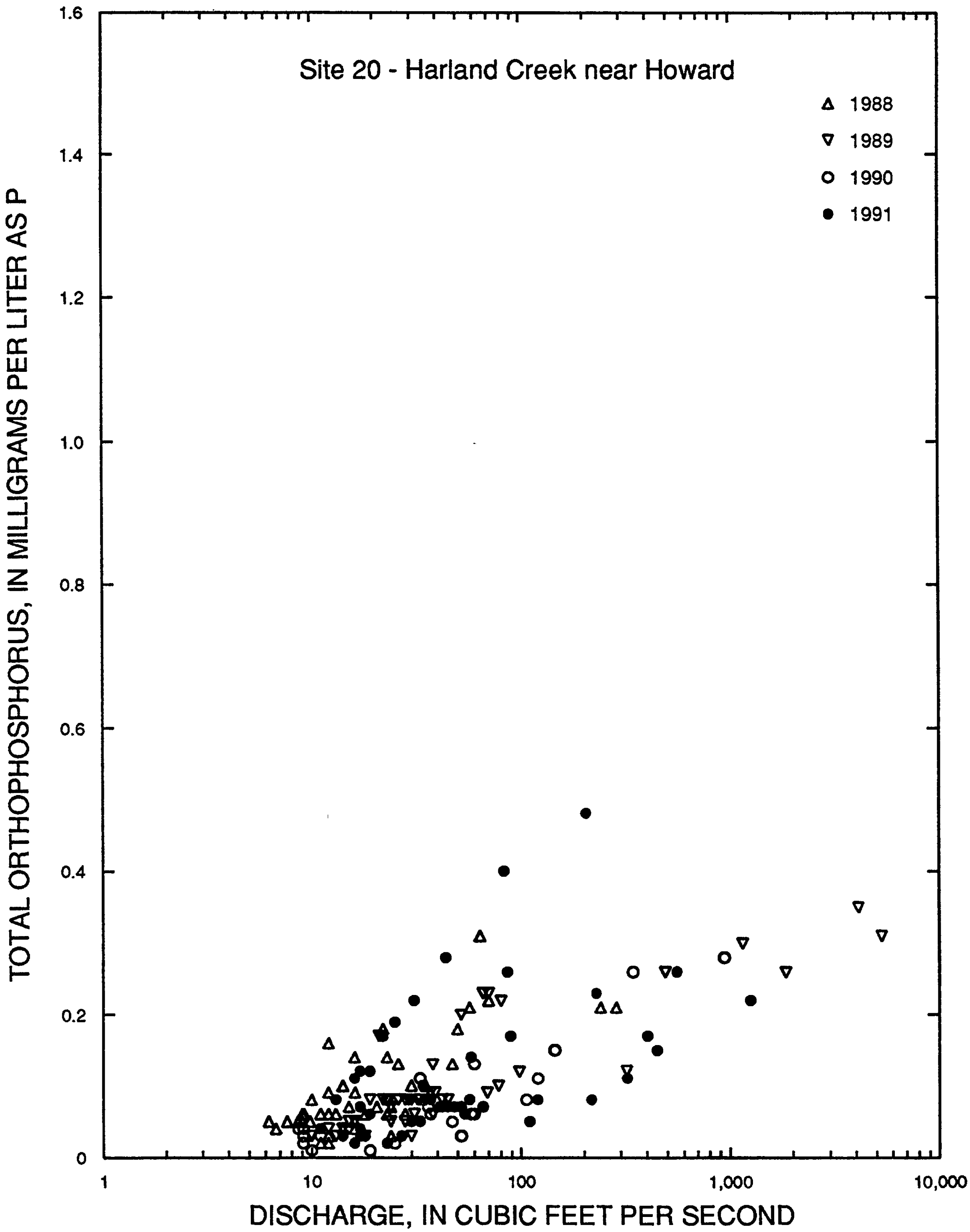

Figure 4G.--Relation of discharge and total orthophosphorus at biweekly sampling sites--Continued.

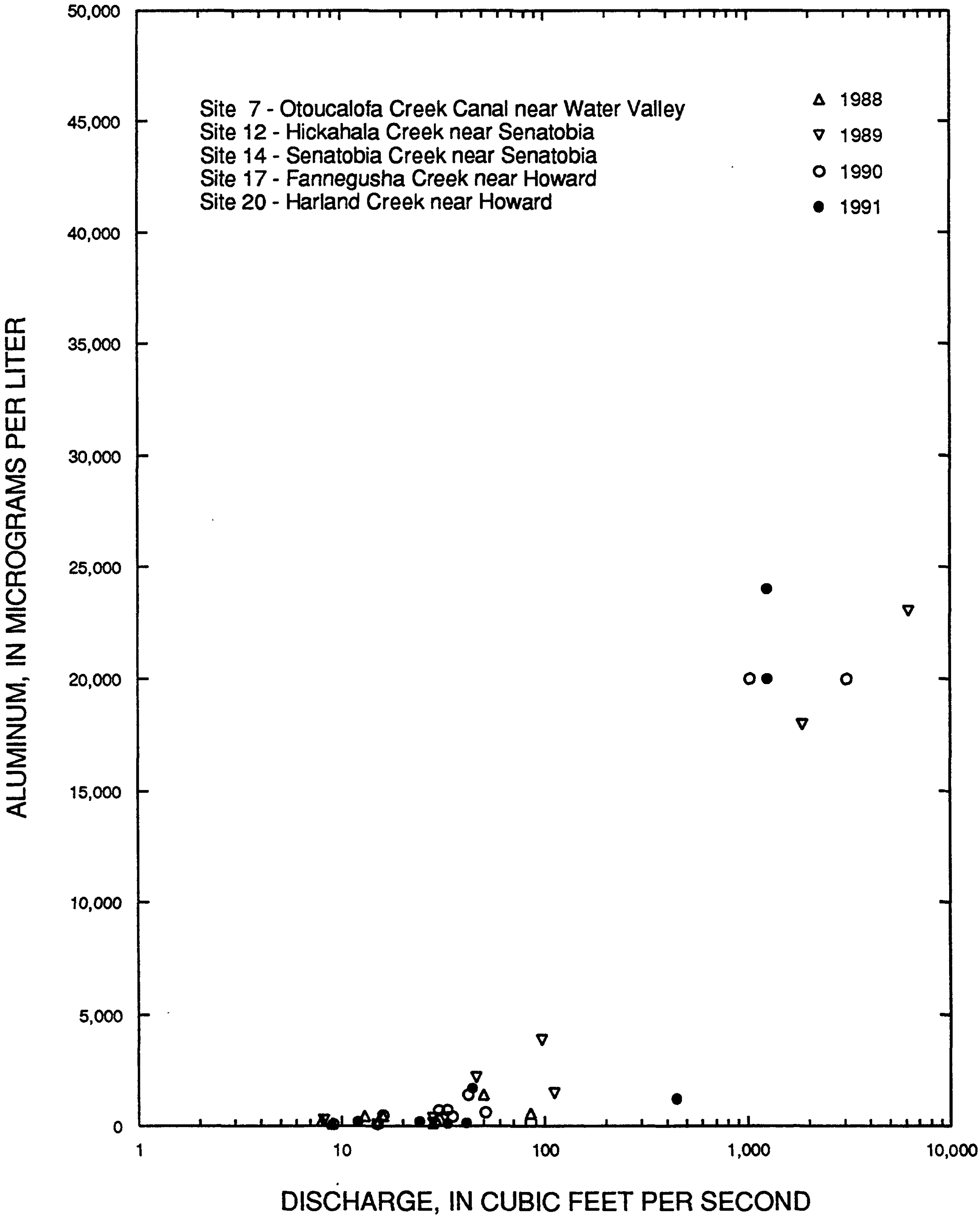

Figure 4H.--Relation of discharge and total recoverable aluminum at biweekly sampling sites.

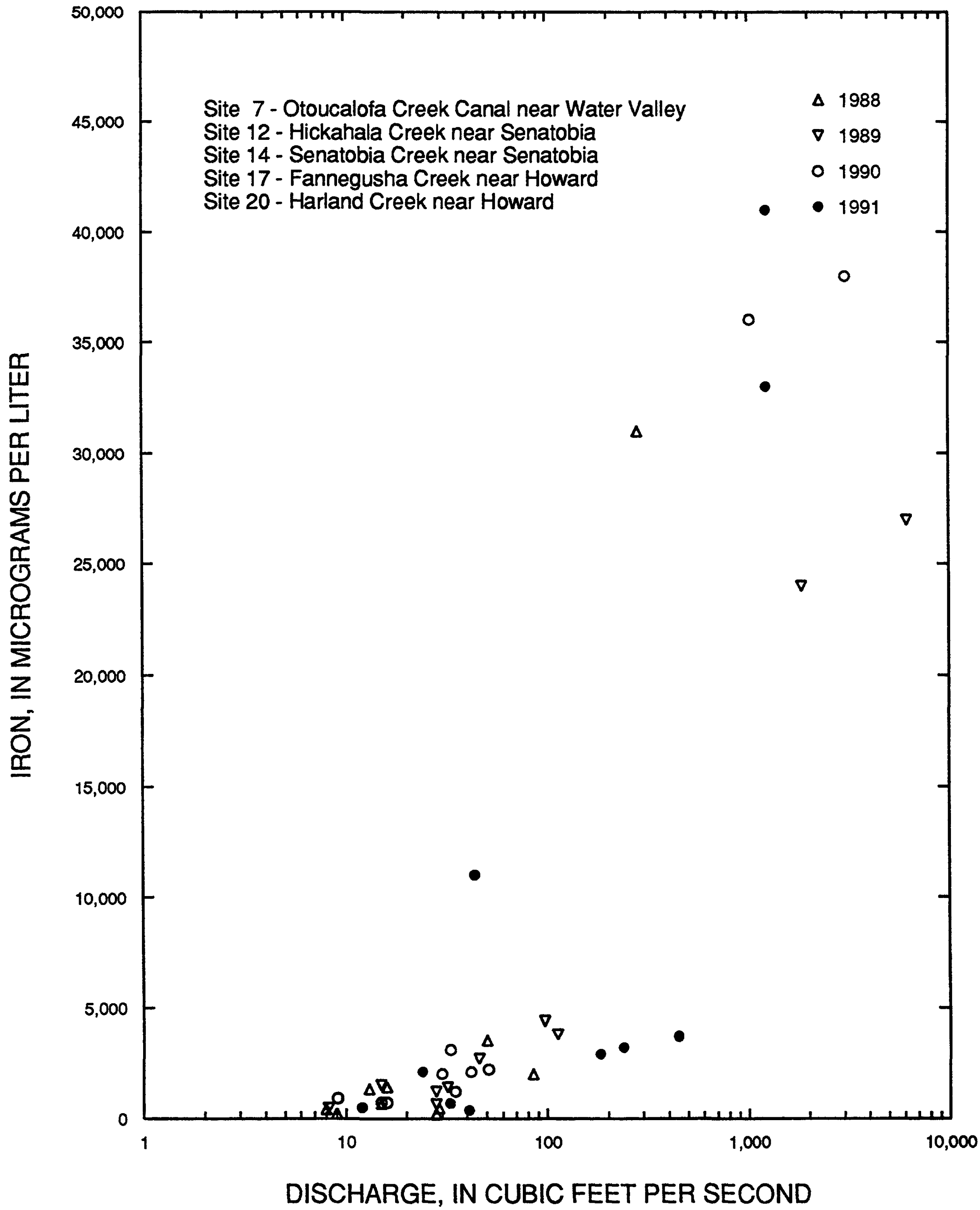

Figure 4I.--Relation of discharge and total recoverable iron at biweekly sampling sites.

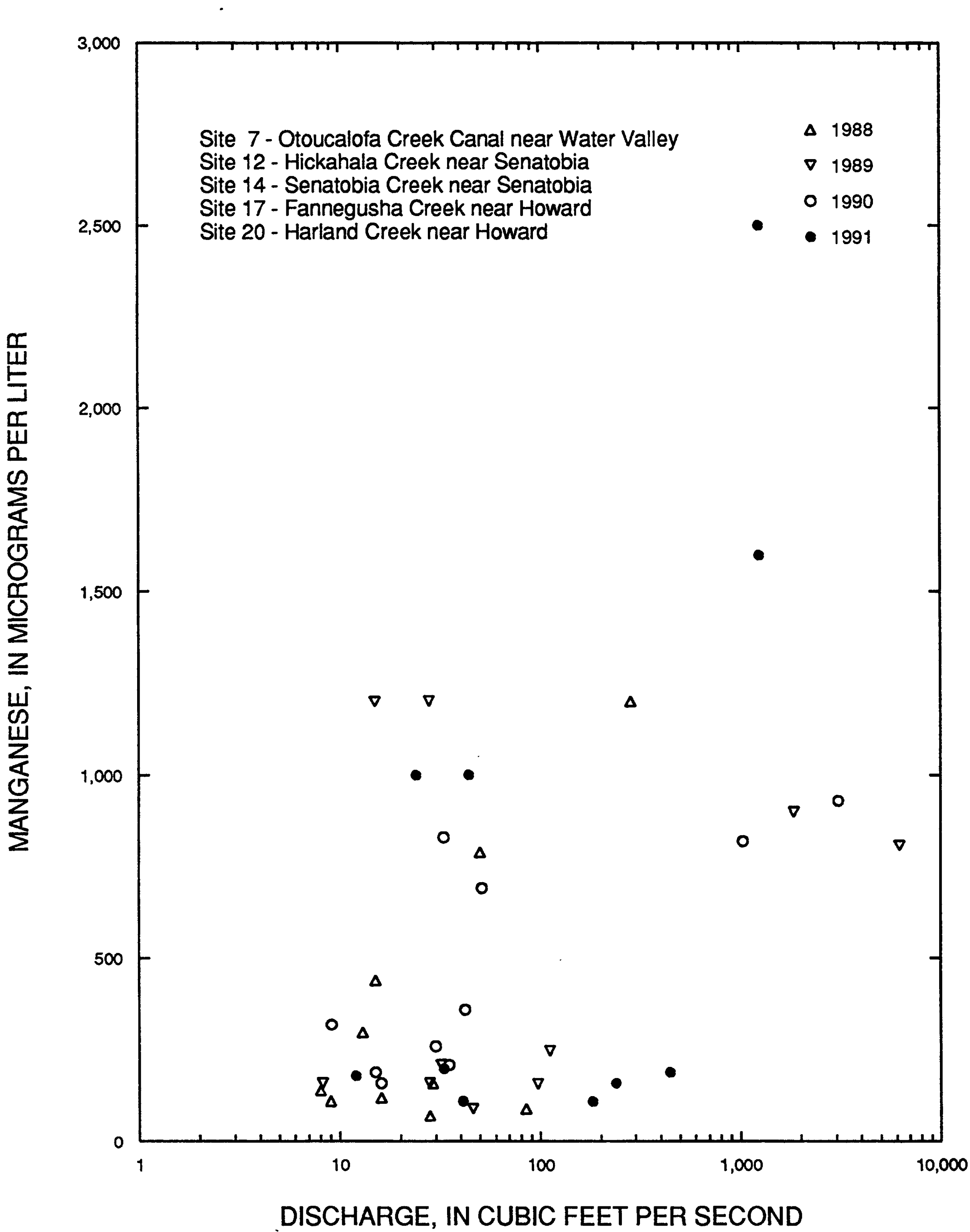

Figure 4J.--Relation of discharge and total recoverable manganese at biweekly sampling sites.

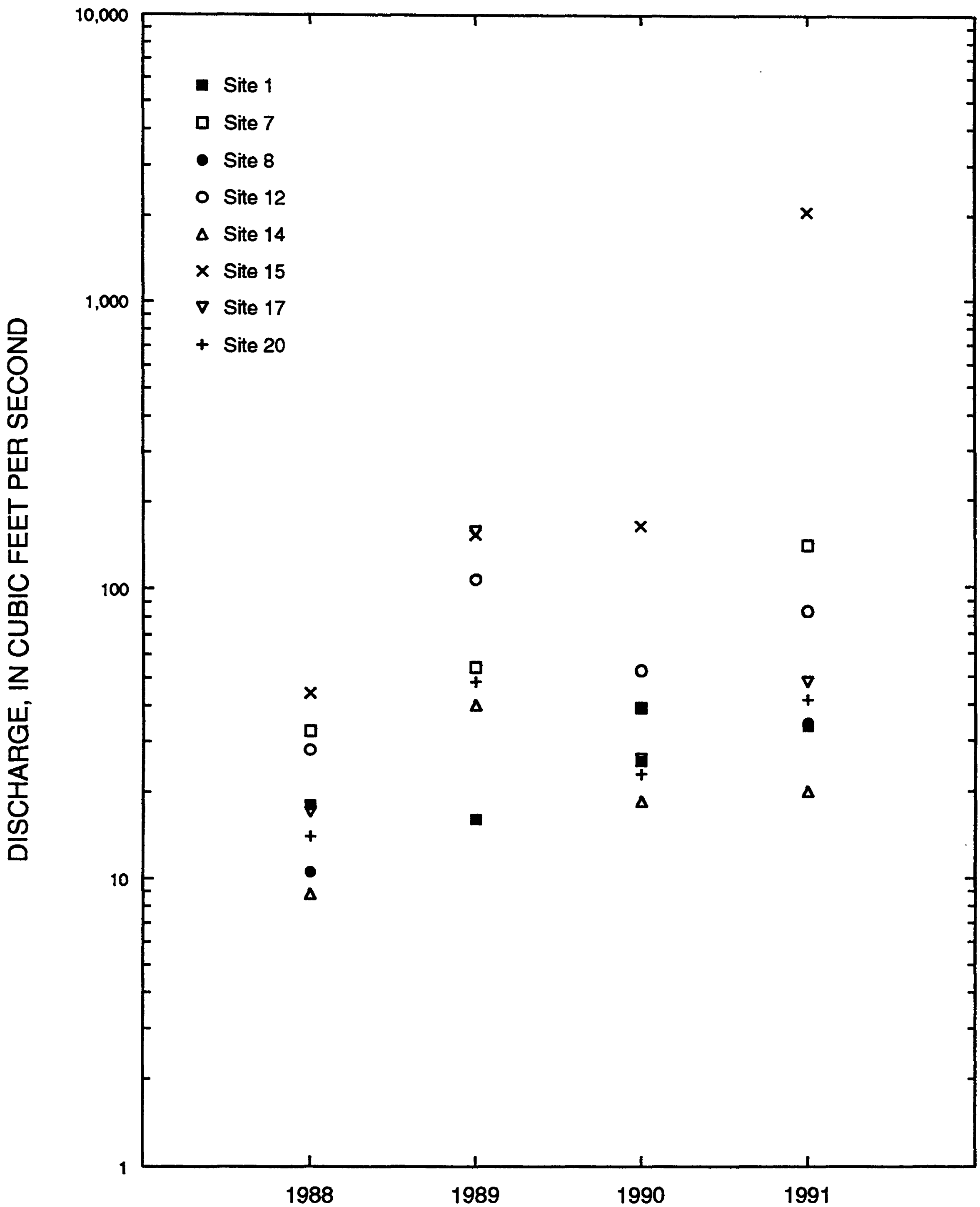

Figure 5A.--Annual median values of discharge at biweekly sampling sites.

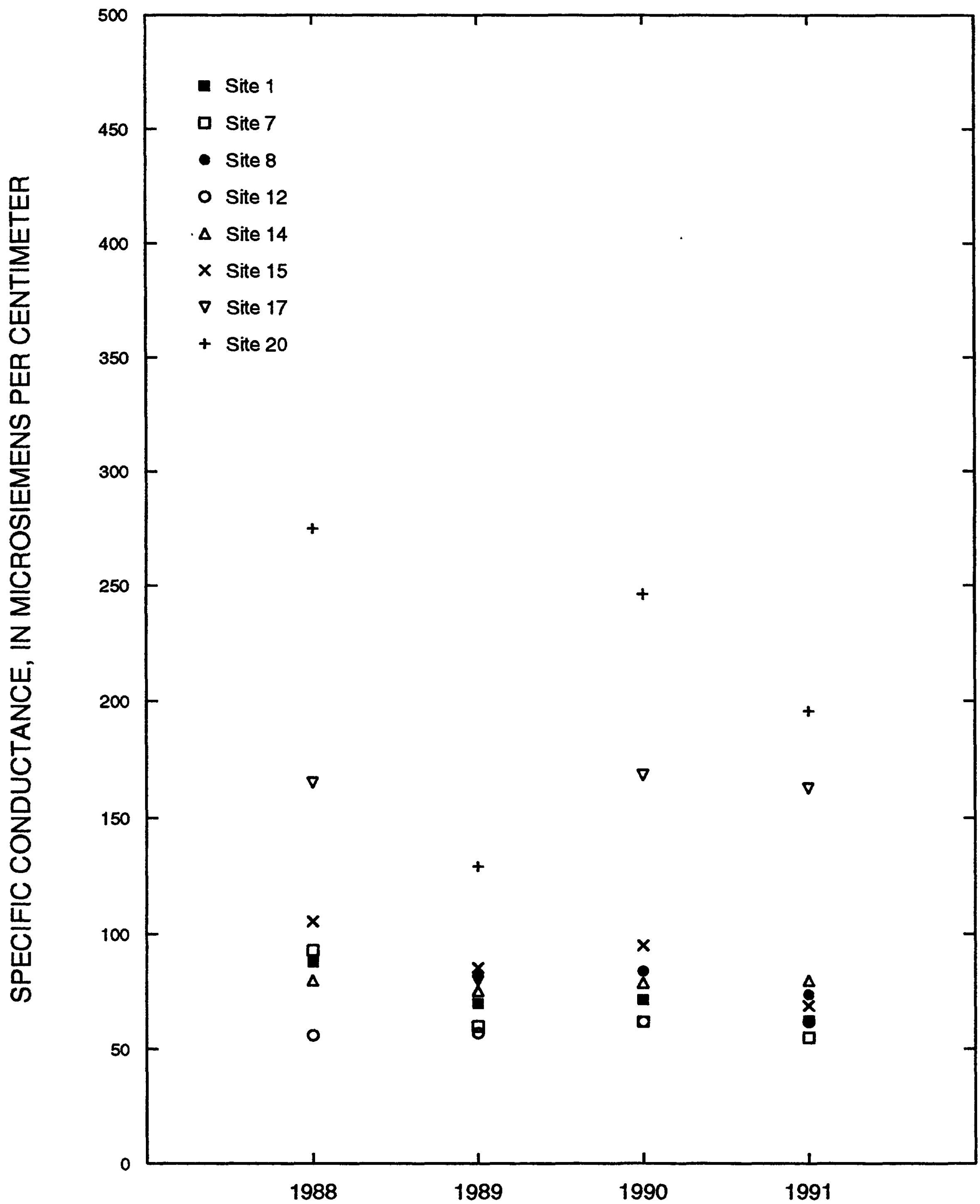

Figure 5B.--Annual median values of specific conductance at biweekly sampling sites.

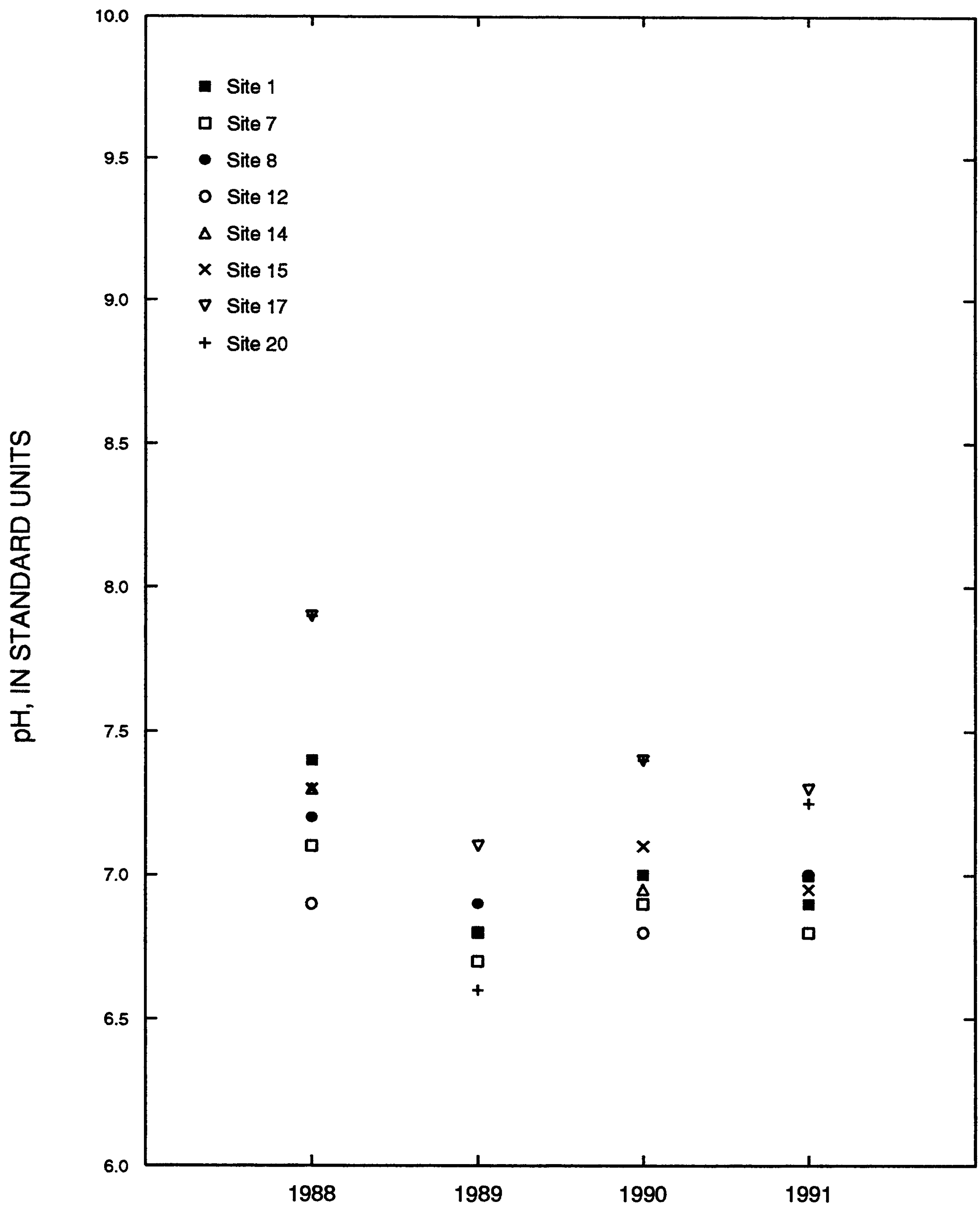

Figure 5C.--Annual median values of pH
at biweekly sampling sites.

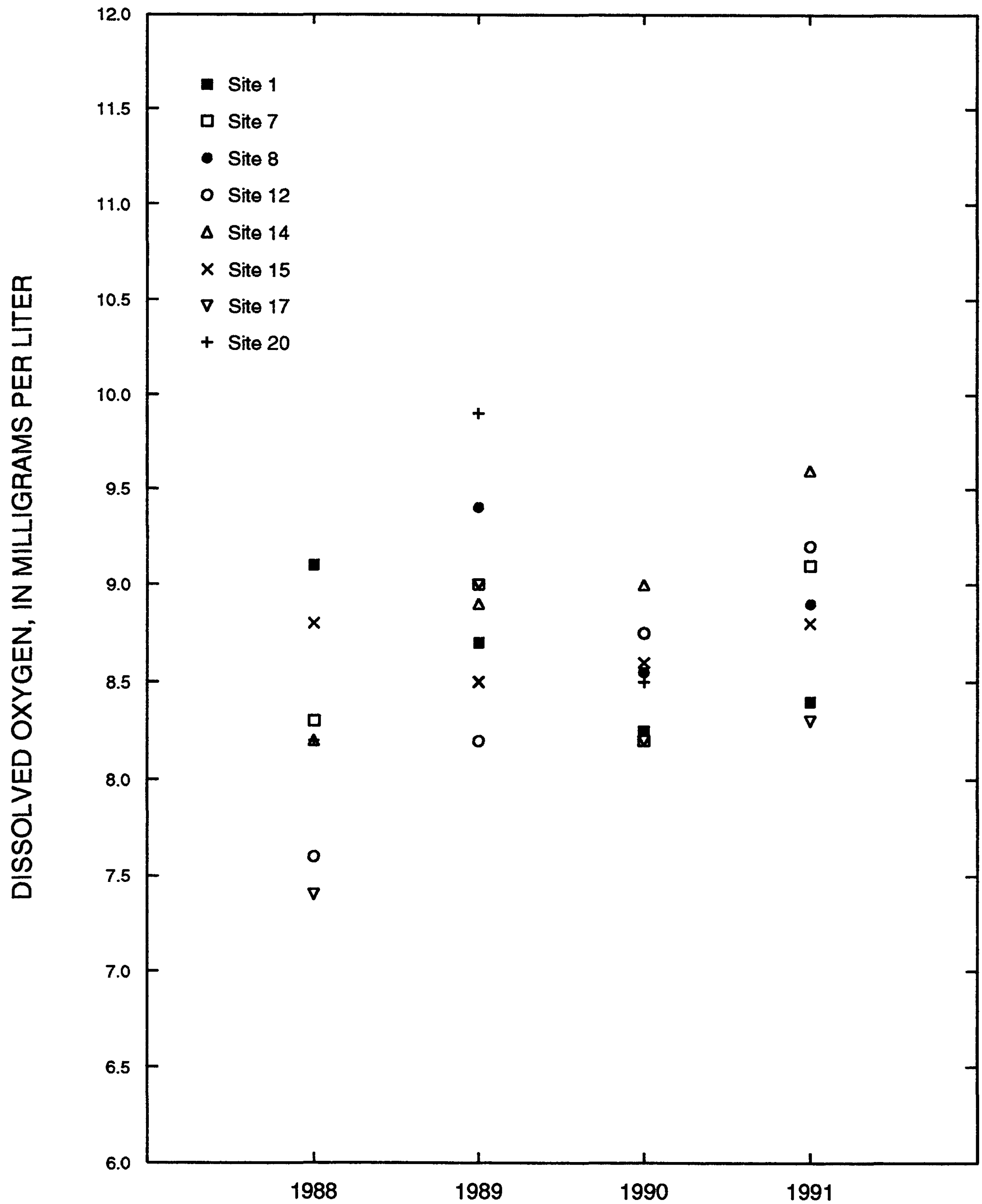

Figure 5D.--Annual median values of dissolved oxygen at biweekly sampling sites.

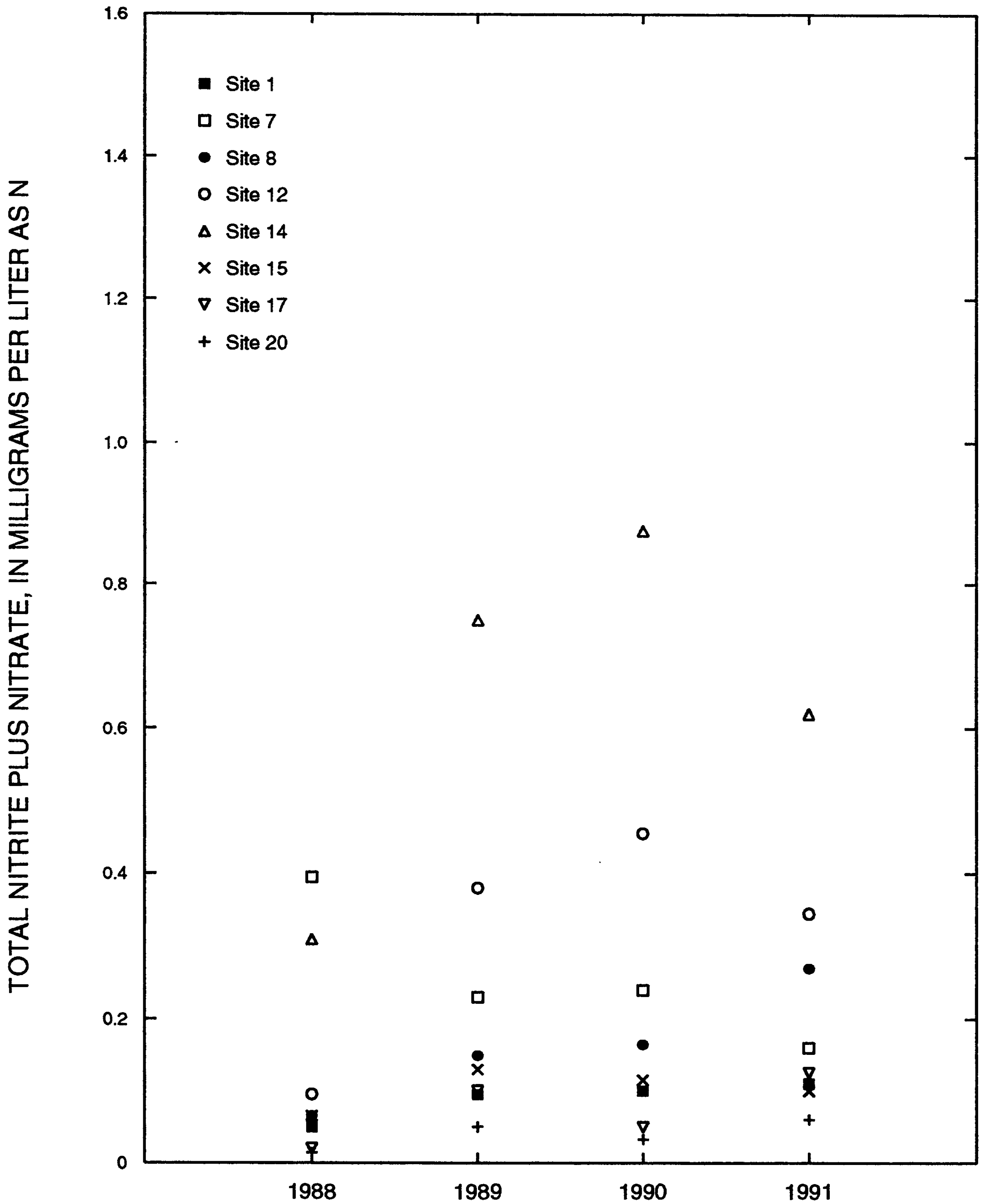

Figure 5E.--Annual median values of total nitrite plus nitrate at biweekly sampling sites.

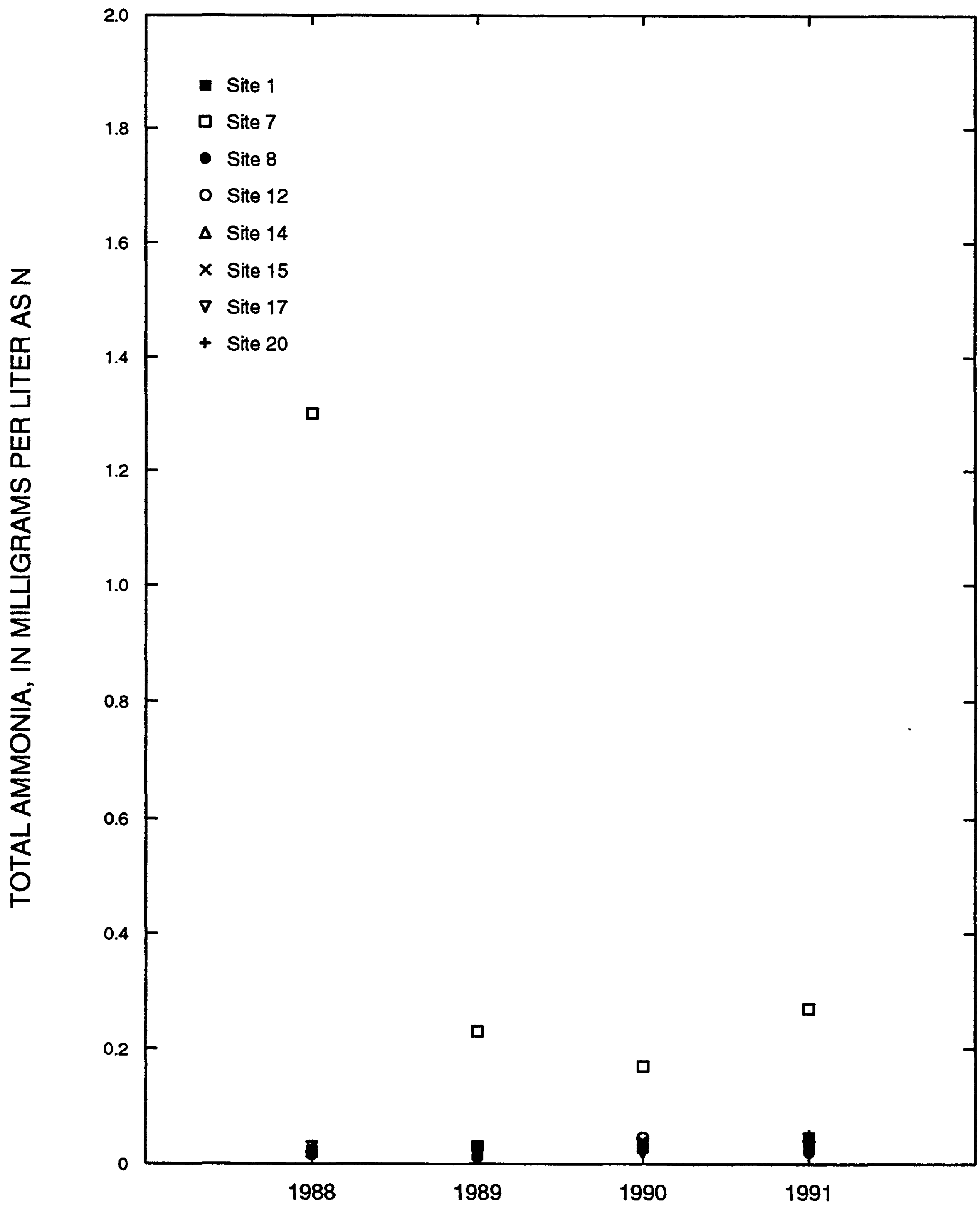

Figure 5F.--Annual median values of total ammonia at biweekly sampling sites.

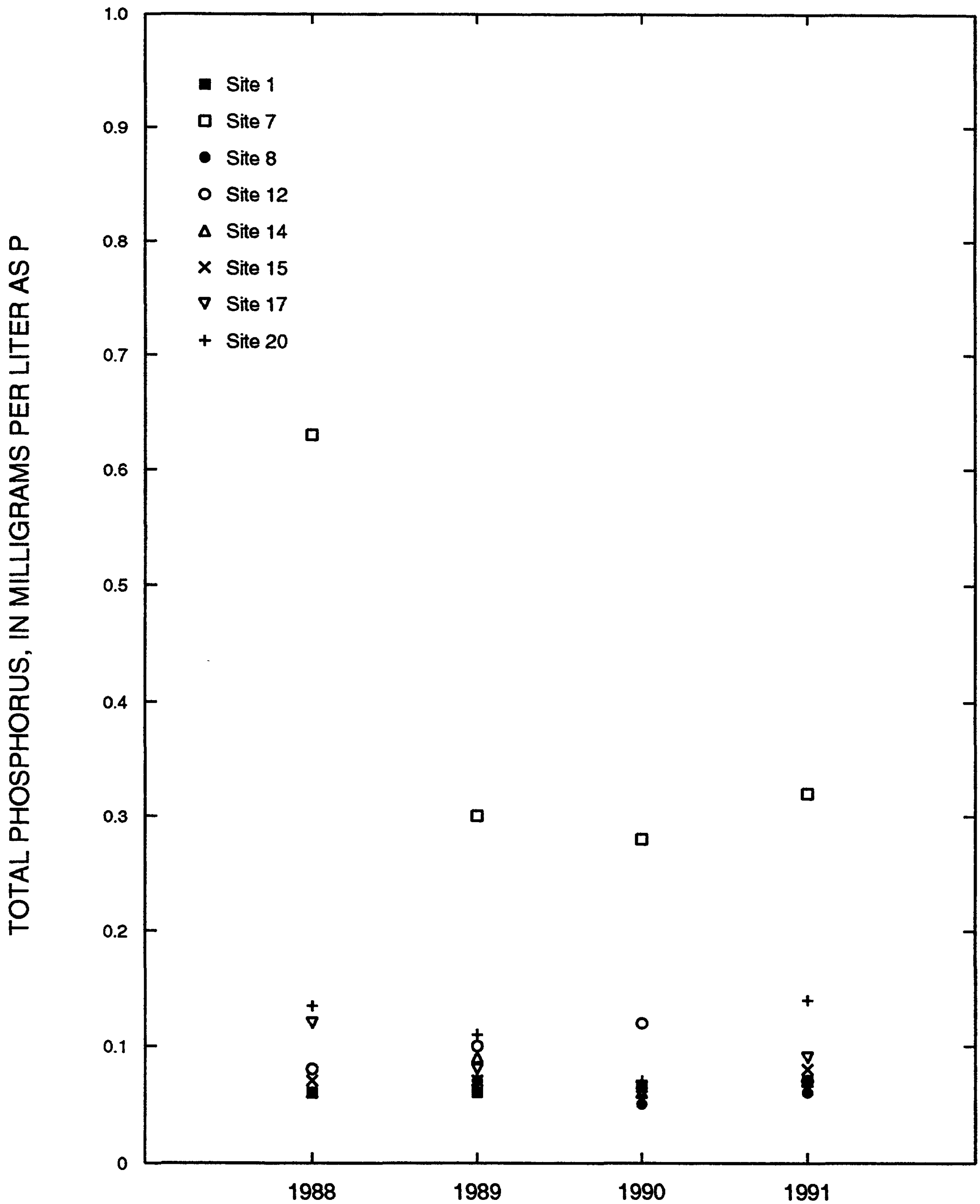

Figure 5G.--Annual median values of total phosphorus at biweekly sampling sites.

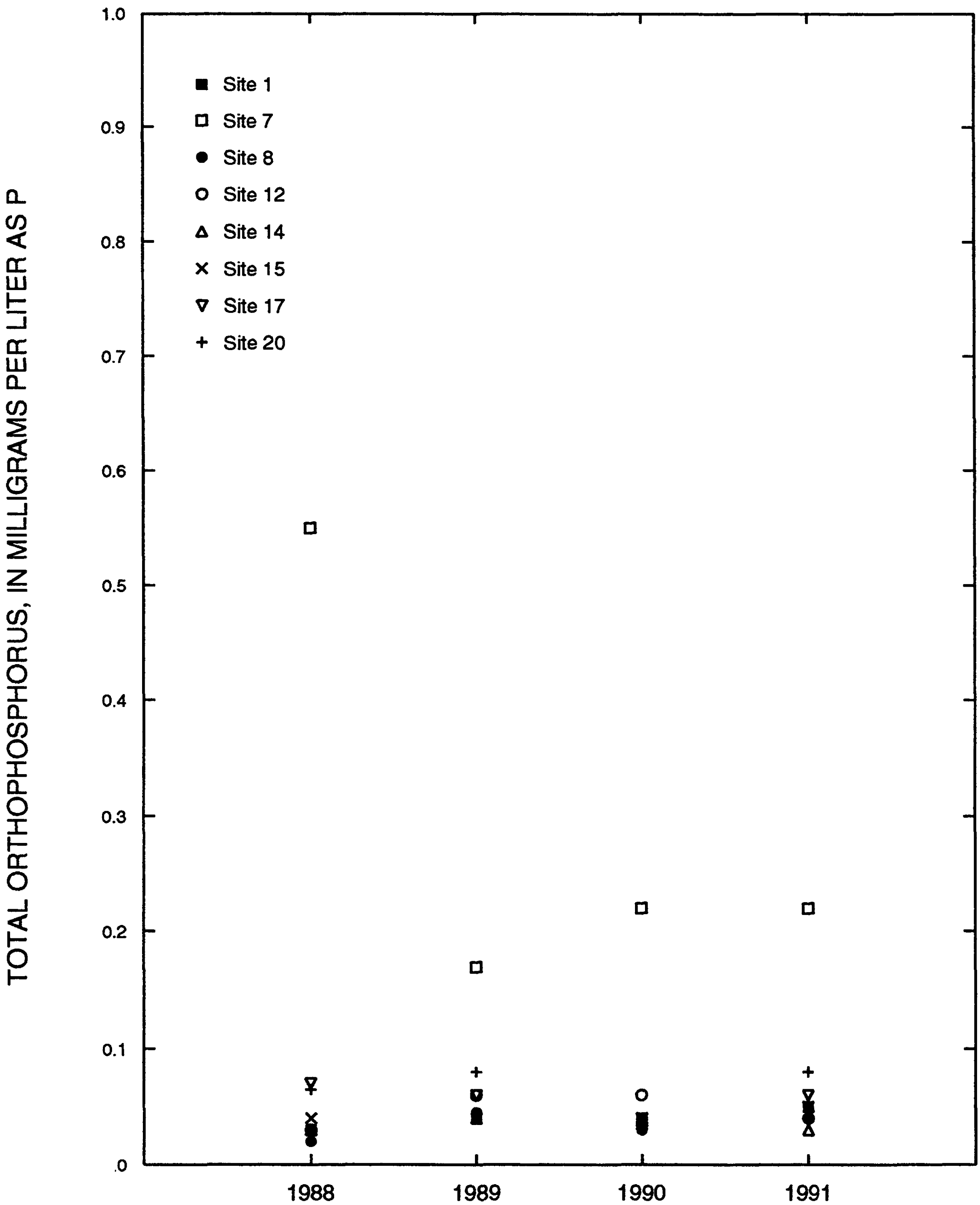

Figure 5H.--Annual median values of total orthophosphorus at biweekly sampling sites.

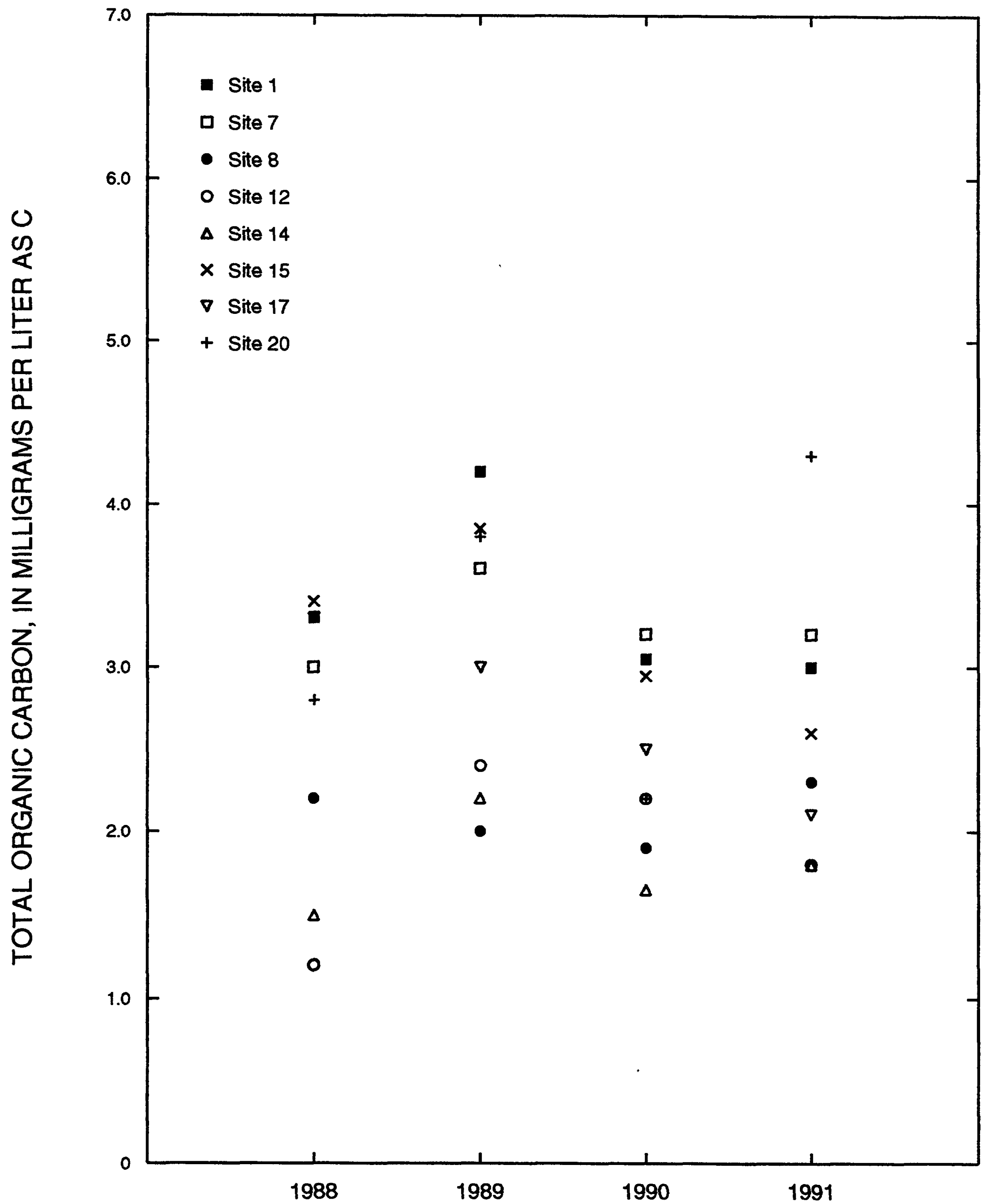

Figure 5I.--Annual median values of total organic carbon at biweekly sampling sites.

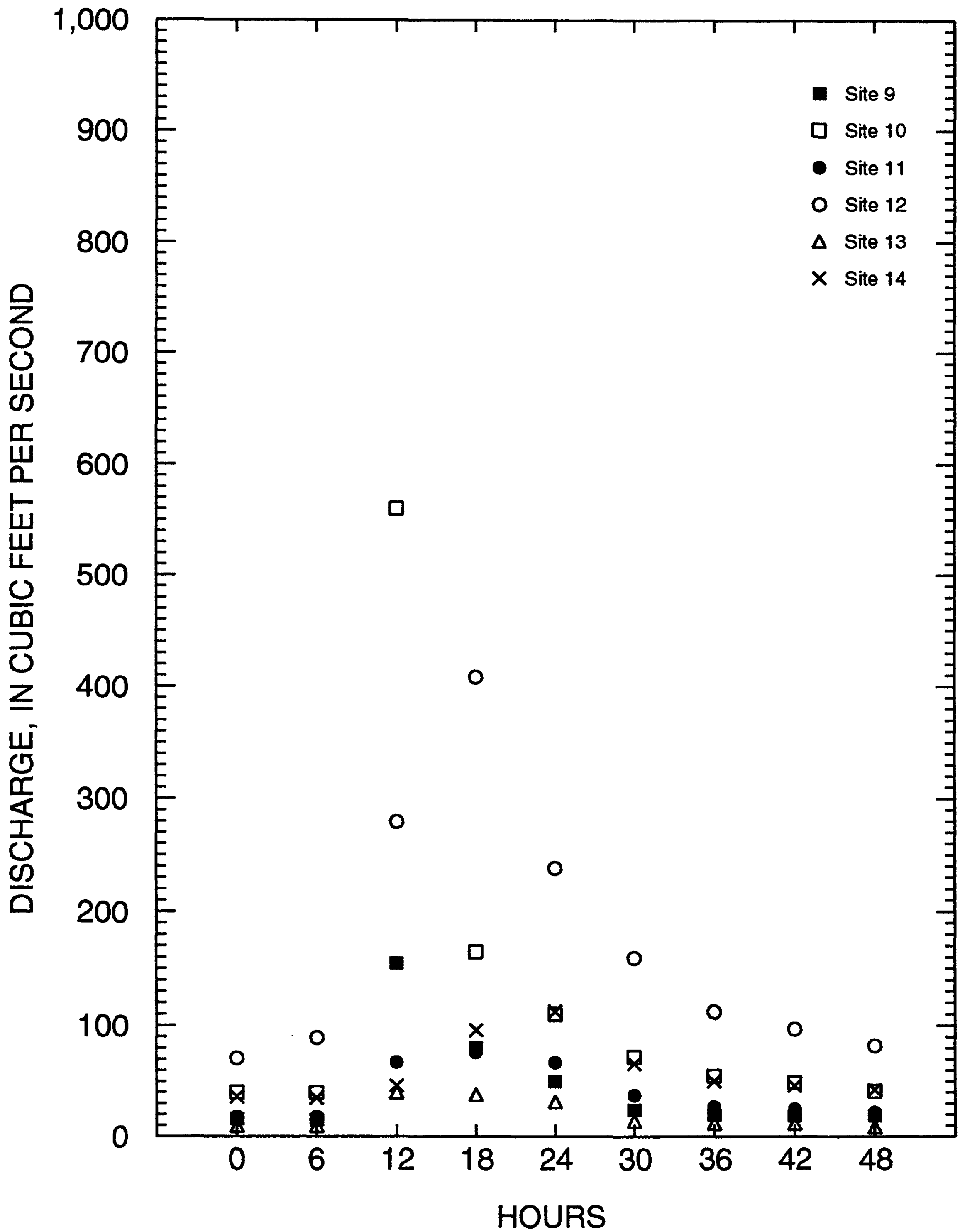

Figure 6A.--Hydrographs of discharge during intensive sampling, April 3-5, 1989.

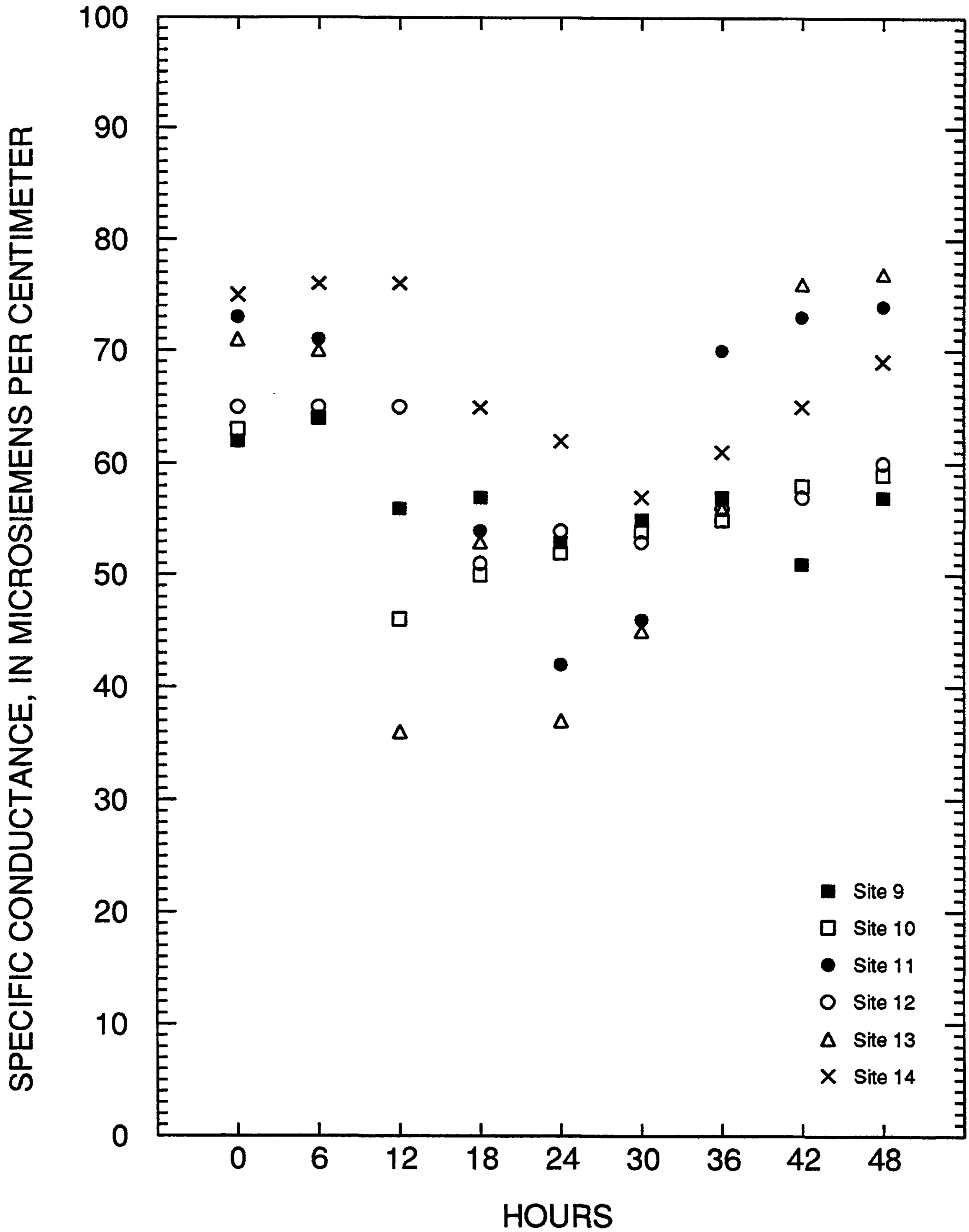

Figure 6B.--Hydrographs of specific conductance during intensive sampling, April 3-5, 1989.

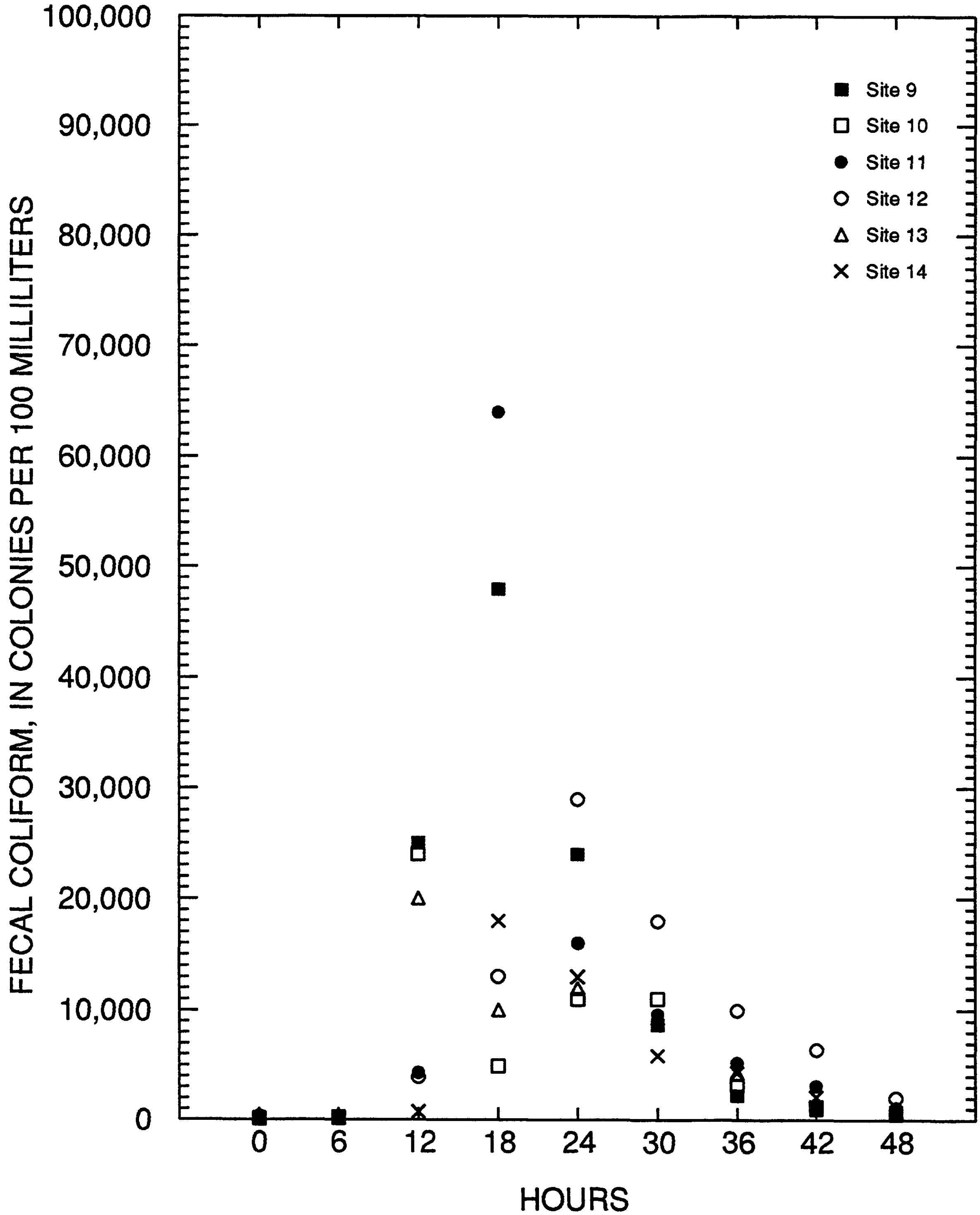

Figure 6C.--Hydrographs of fecal coliform during intensive sampling, April 3-5, 1989.

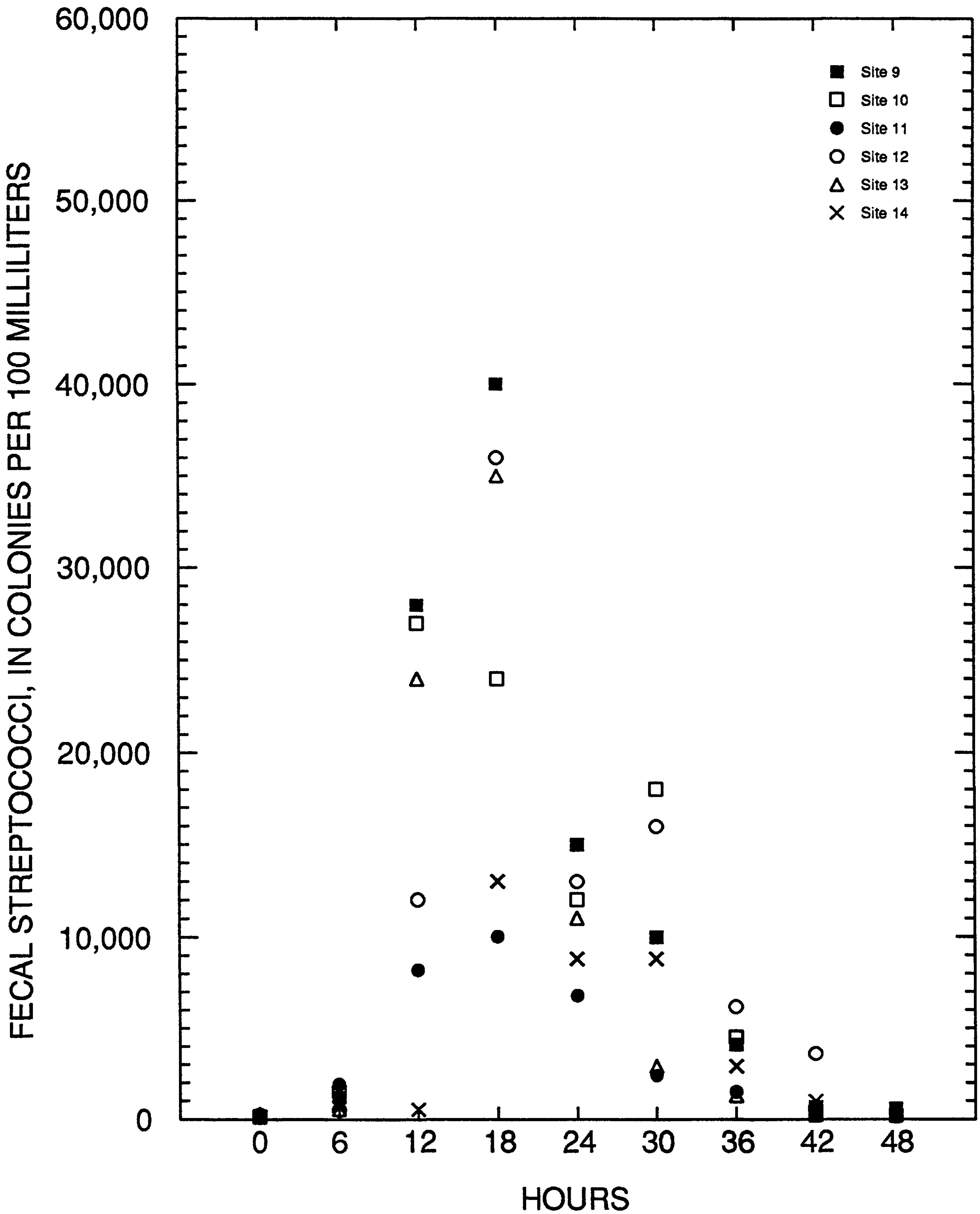

Figure 6D.--Hydrographs of fecal streptococci during intensive sampling, April 3-5, 1989.

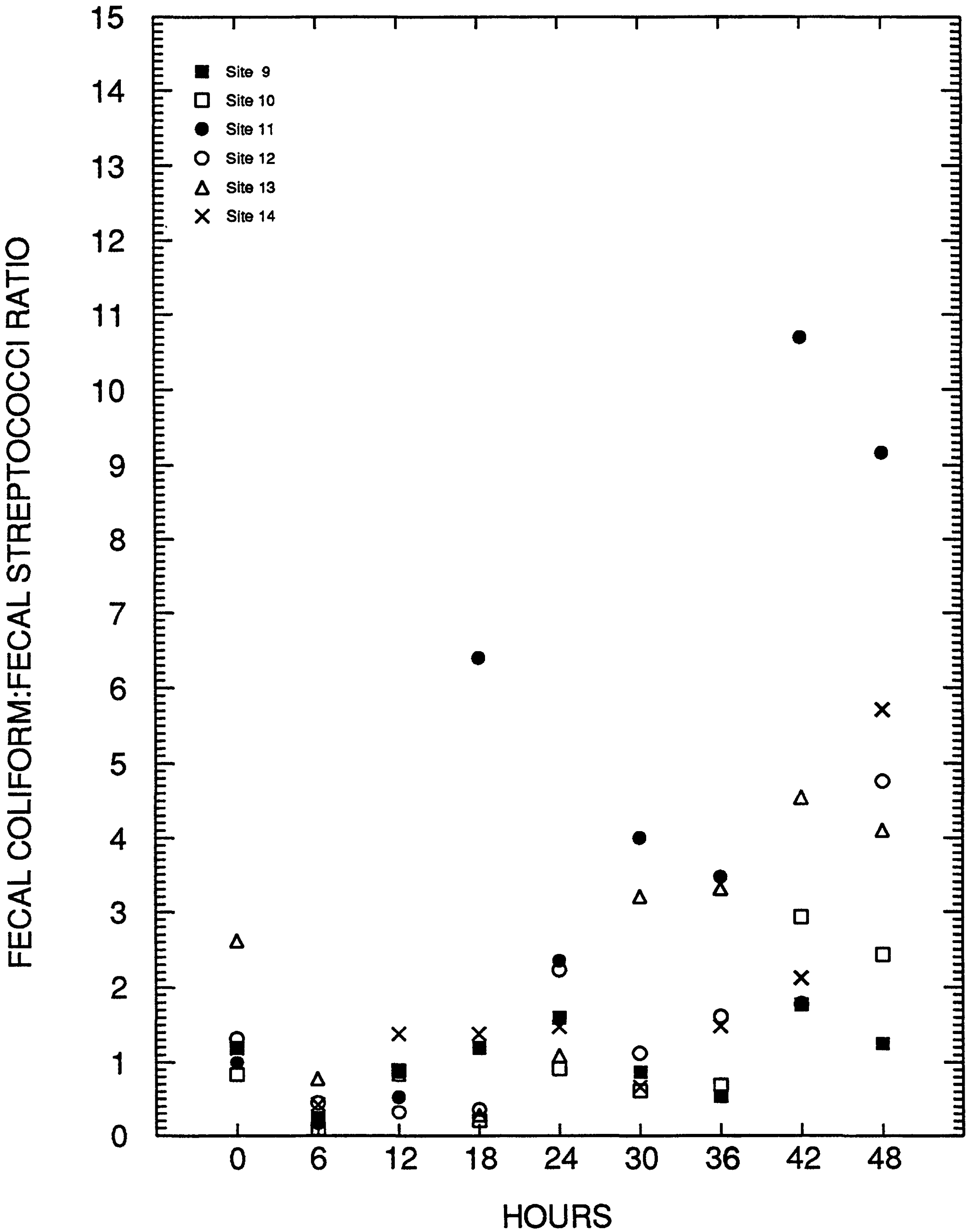

Figure 6E.--Hydrographs of fecal coliform:fecal streptocci ratio during intensive sampling, April 3-5, 1989.

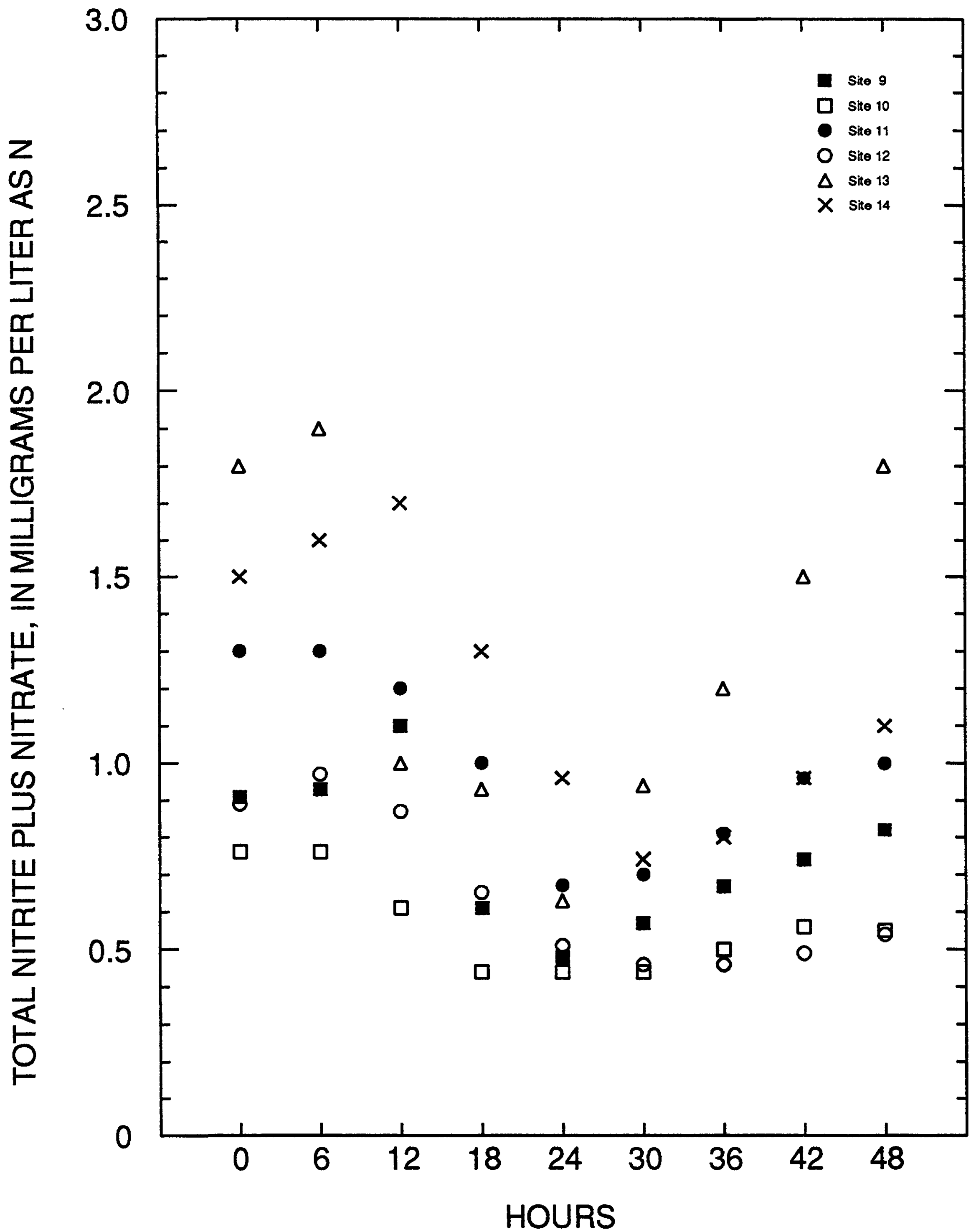

Figure 6F.--Hydrographs of total nitrite plus nitrate during intensive sampling, April 3-5, 1989.

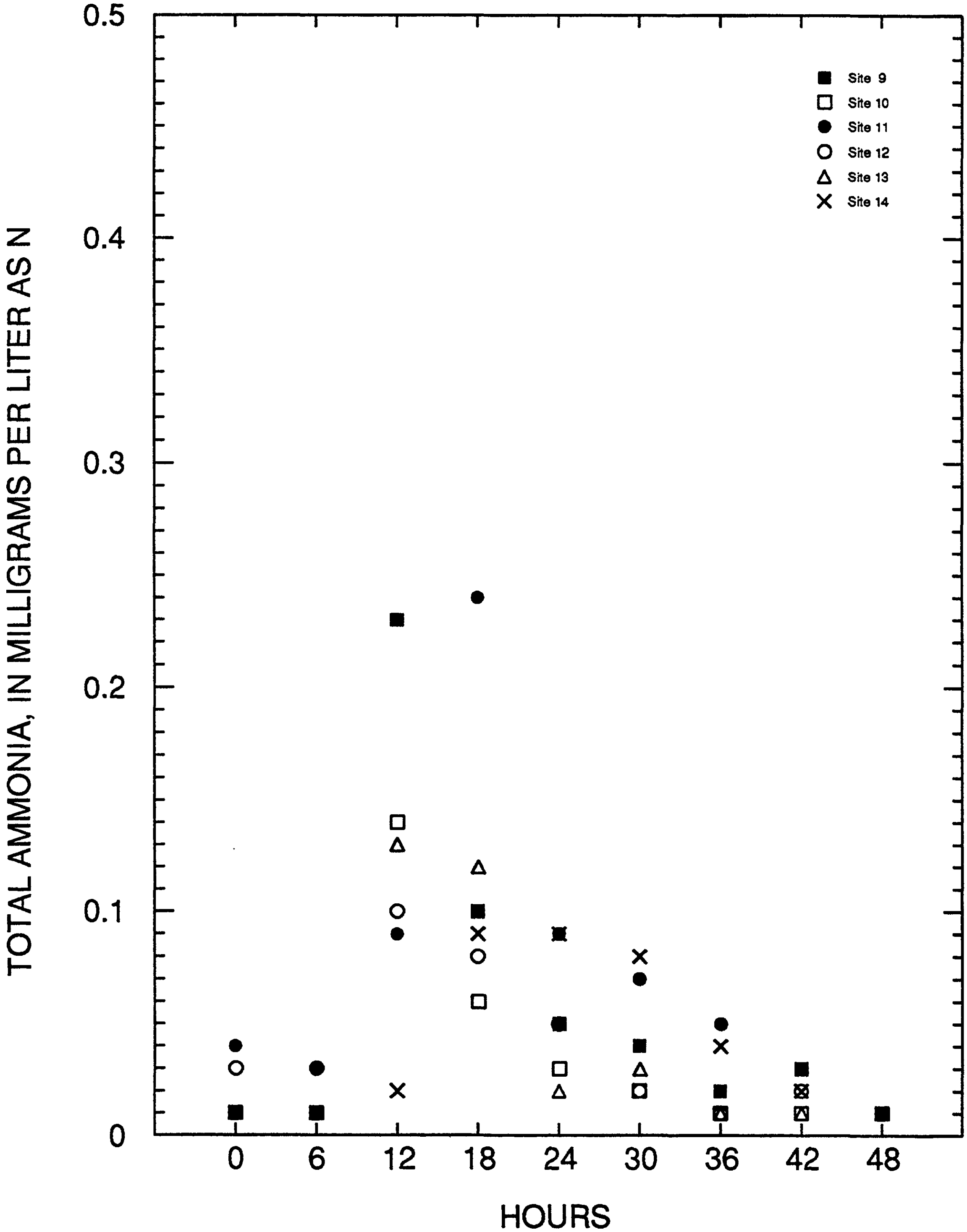

Figure 6G.--Hydrographs of total ammonia during intensive sampling, April 3-5, 1989.

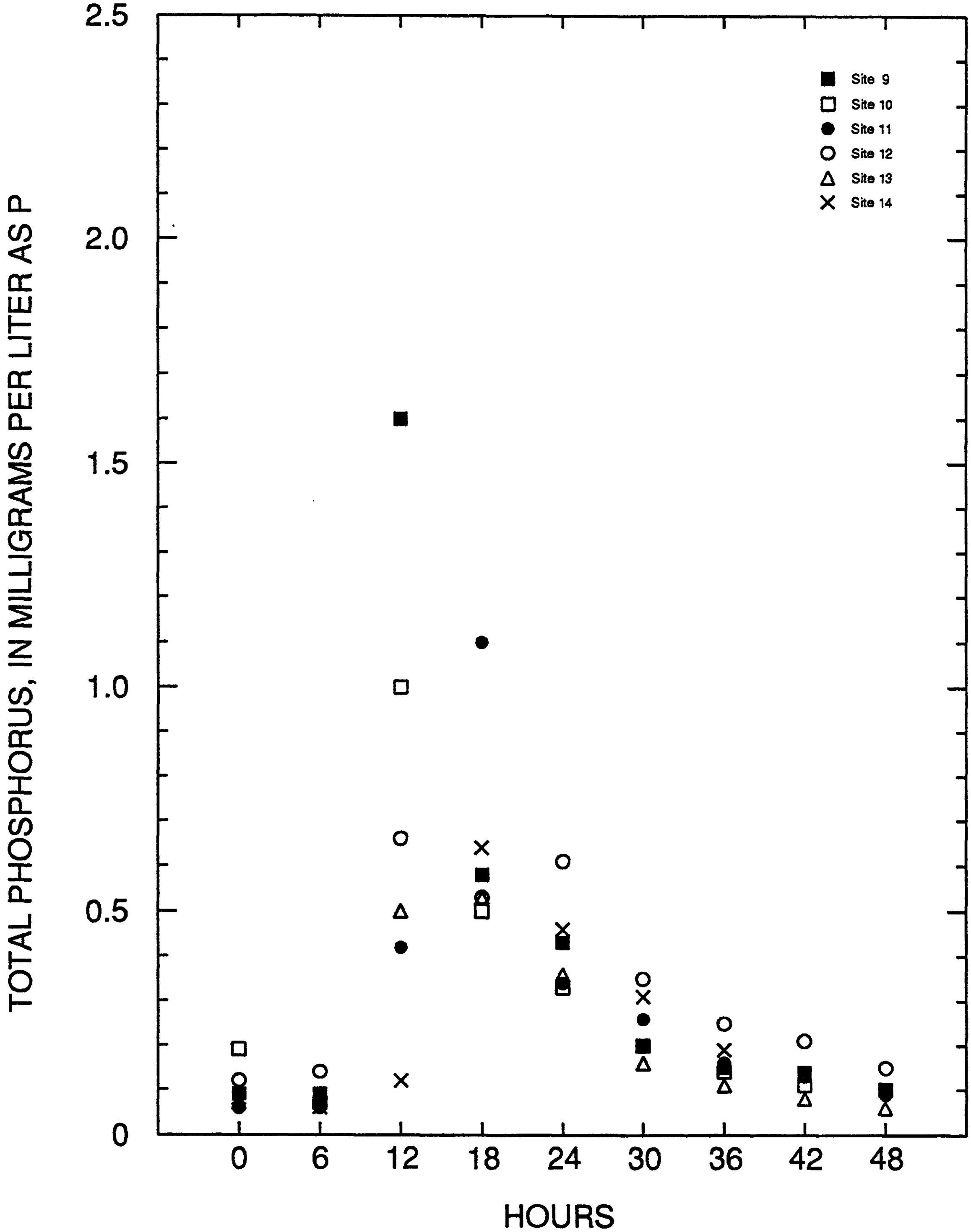

Figure 6H.--Hydrographs of total phosphorus during intensive sampling, April 3-5, 1989.

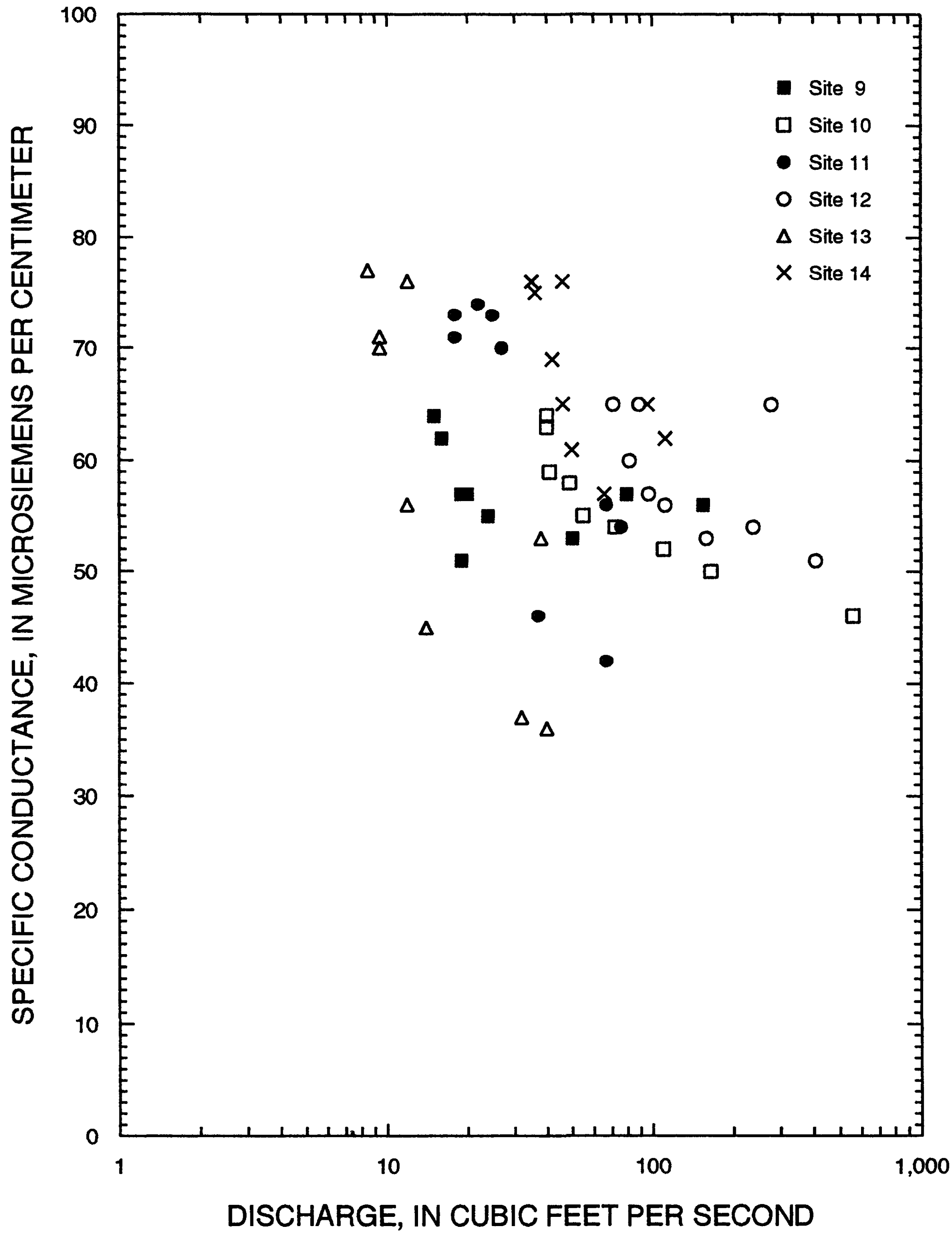

Figure 7A.--Relation of discharge and specific conductance within a basin during intensive sampling, April 3-5, 1989.

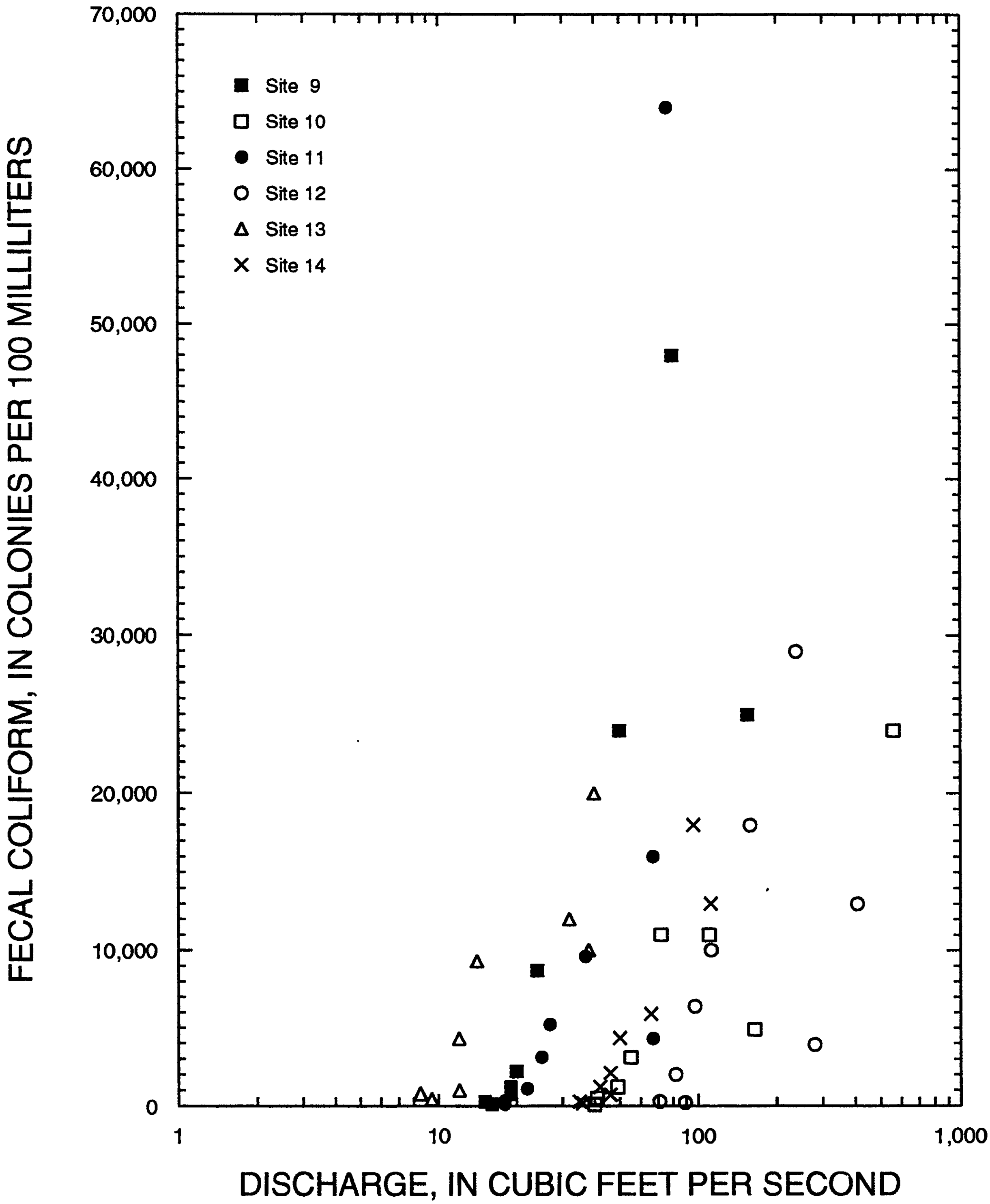

Figure 7B.--Relation of discharge and fecal coliform within a basin during intensive sampling, April 3-5, 1989.

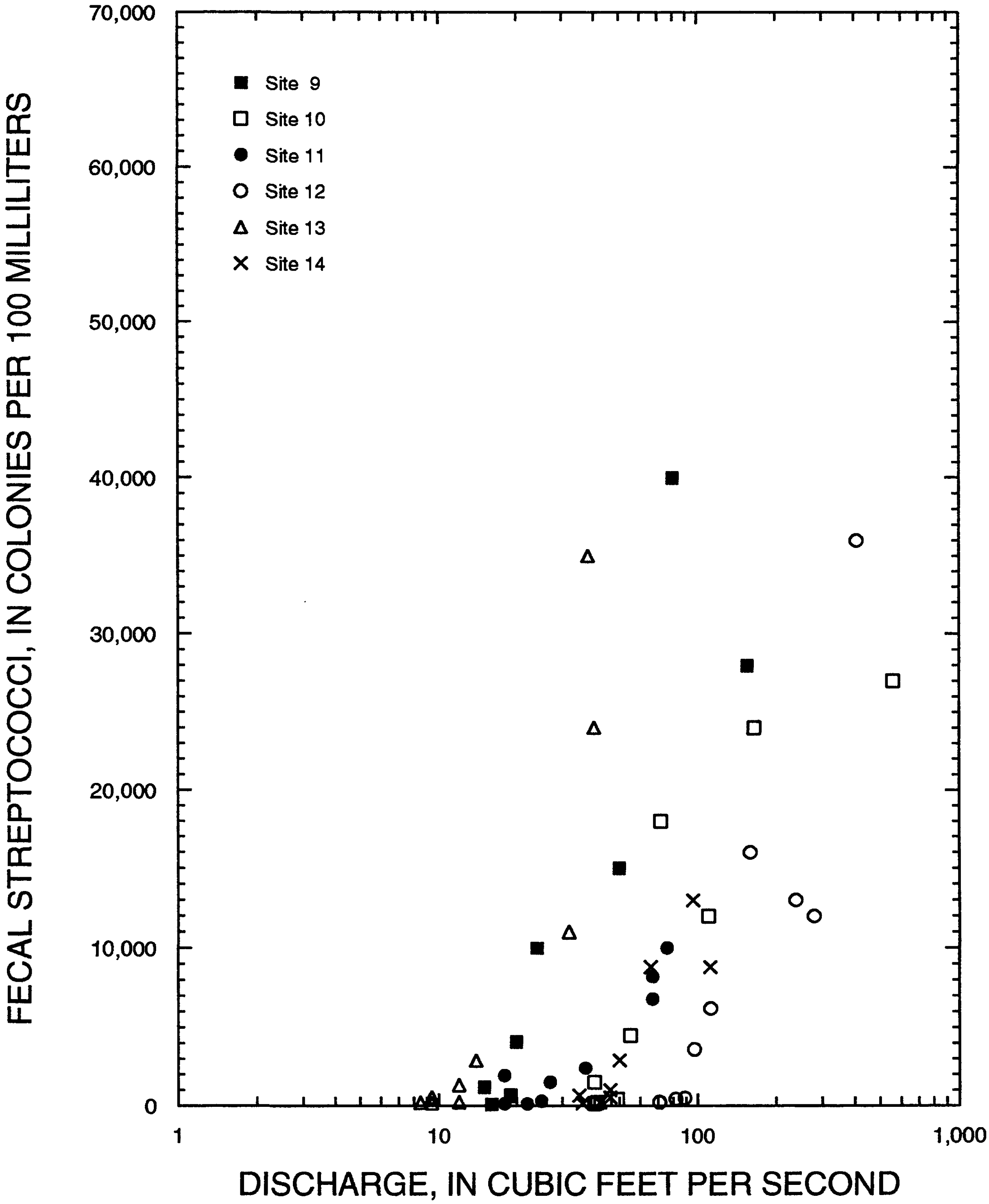

Figure 7C.--Relation of discharge and fecal streptococci within a basin during intensive sampling, April 3-5, 1989.

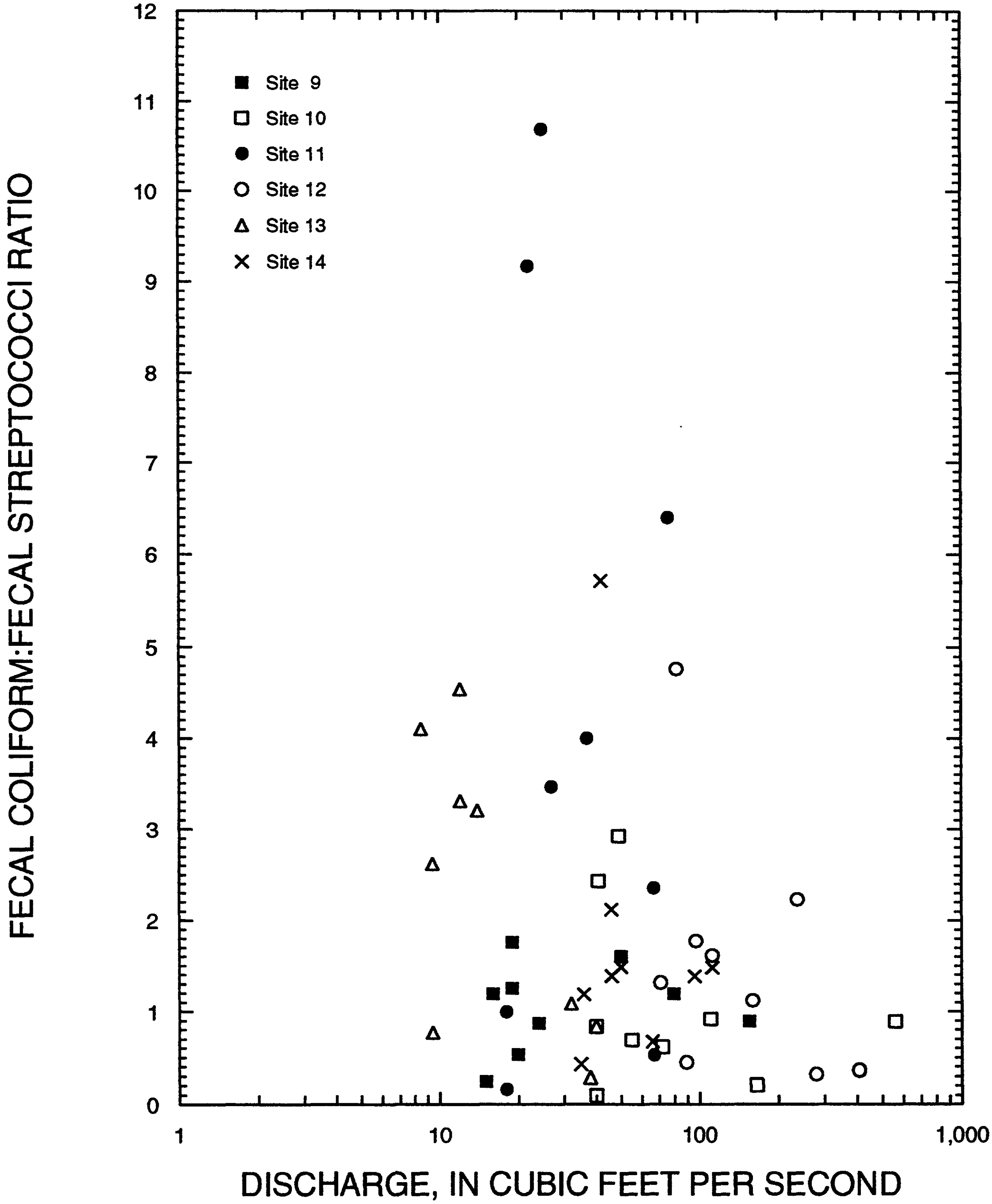

Figure 7D.--Relation of discharge and fecal coliform: fecal streptococci ratio within a basin during intensive sampling, April 3-5, 1989.

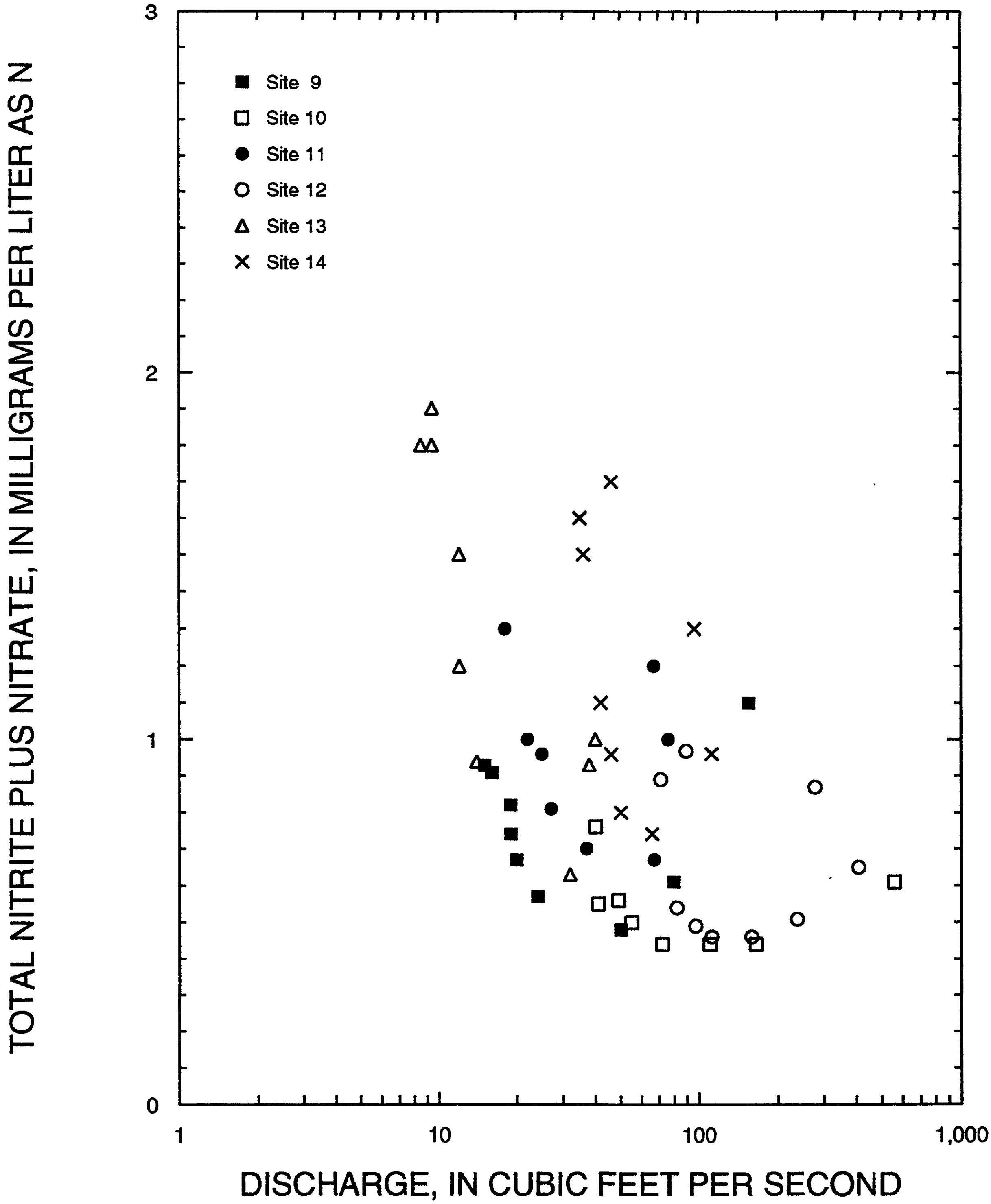

Figure 7E.--Relation of discharge and total nitrite plus nitrate within a basin during intensive sampling, April 3-5, 1989.

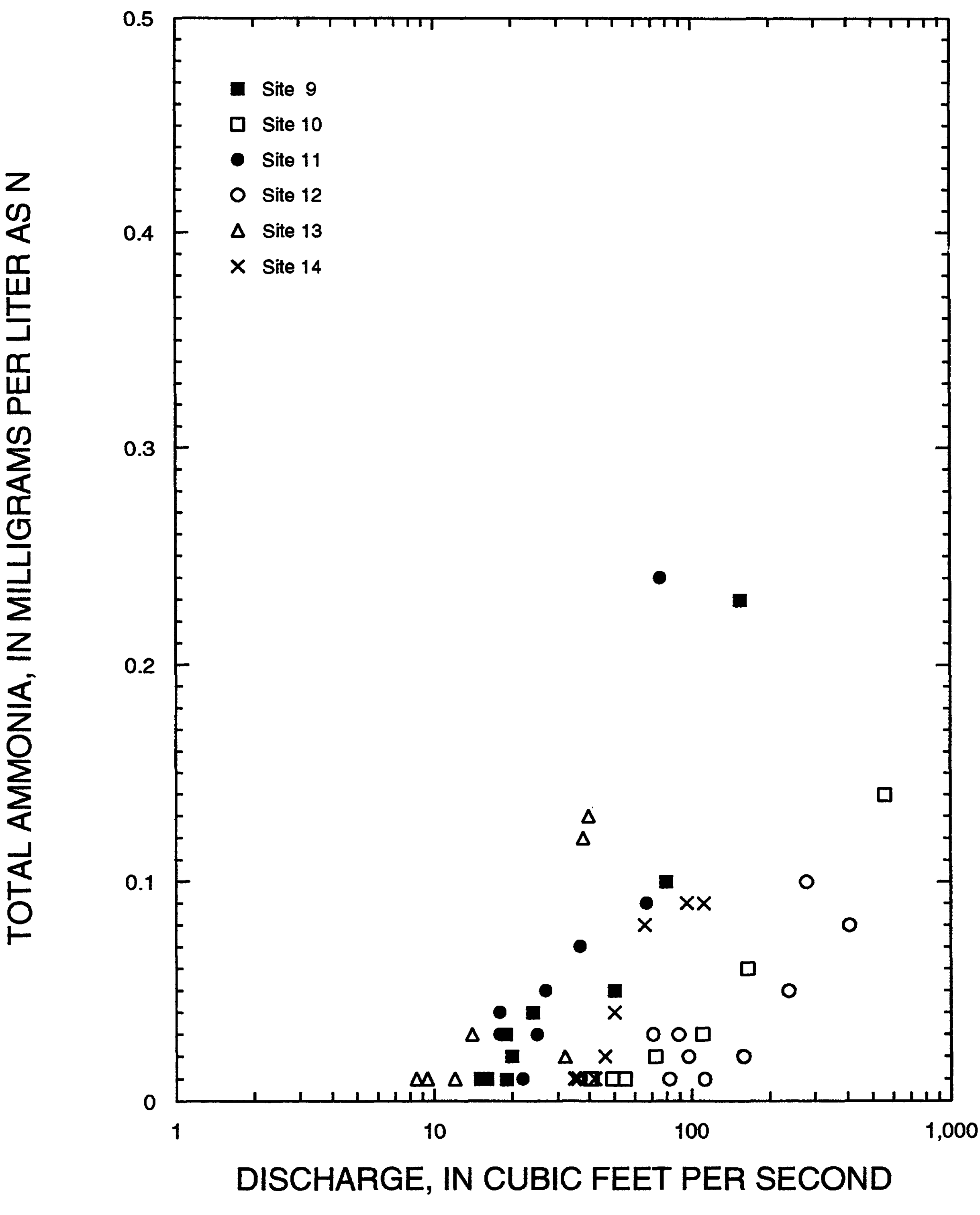

Figure 7F.--Relation of discharge and total ammonia within a basin during intensive sampling, April 3-5, 1989.

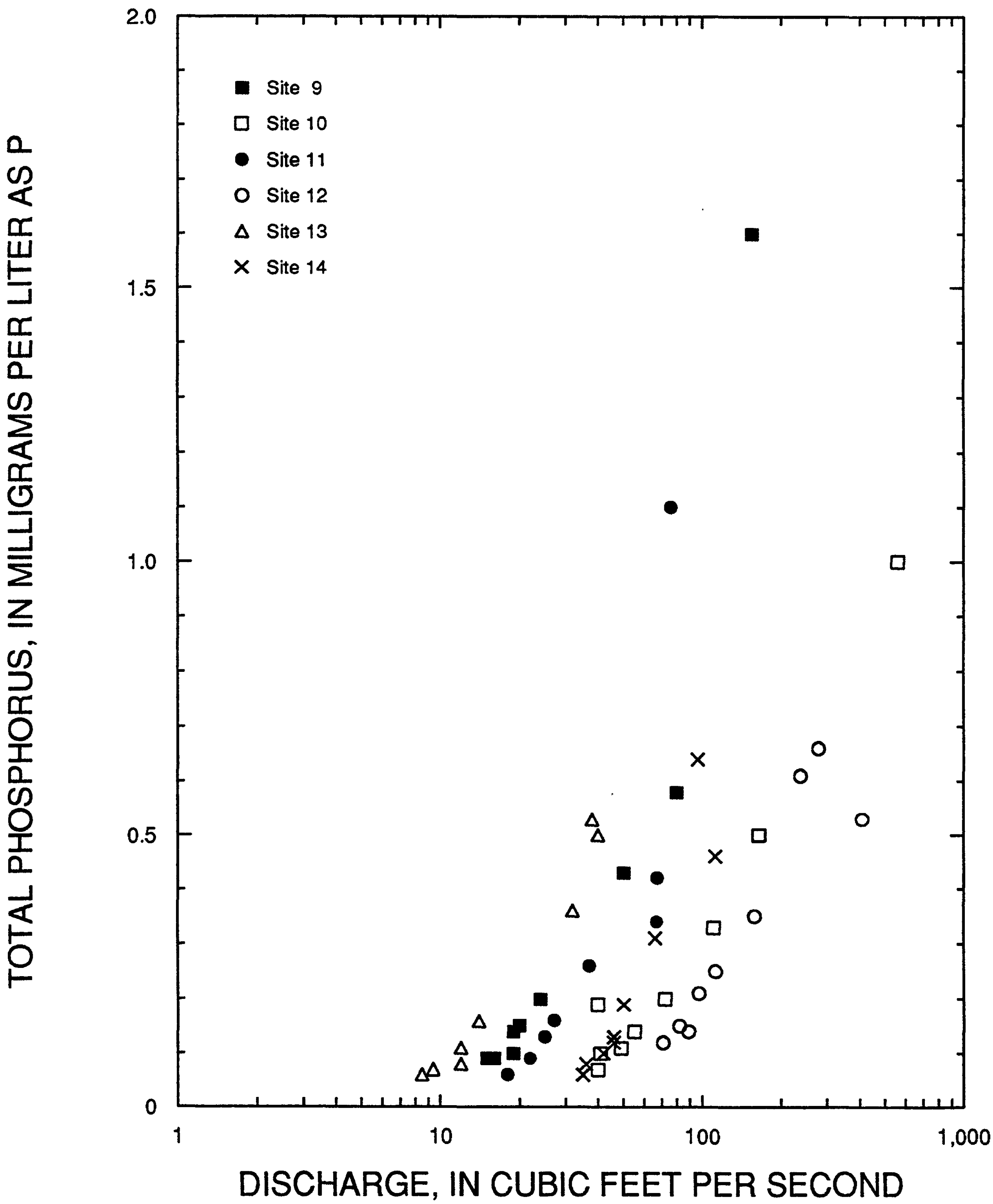

Figure 7G.--Relation of discharge and total phosphorus within a basin during intensive sampling, April 3-5, 1989.

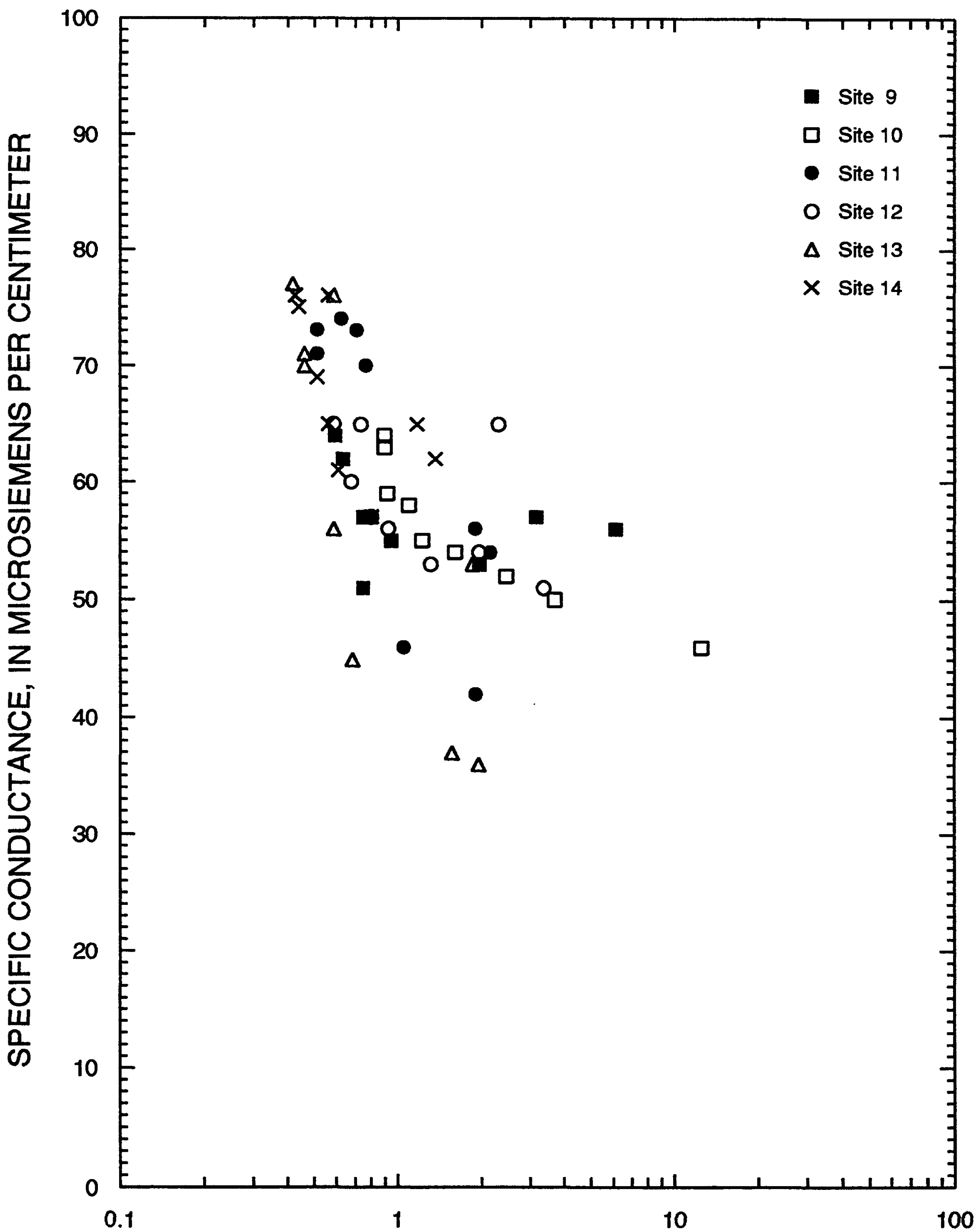

Figure 8A.--Relation of runoff and specific conductance within a basin during intensive sampling, April 3-5, 1989.

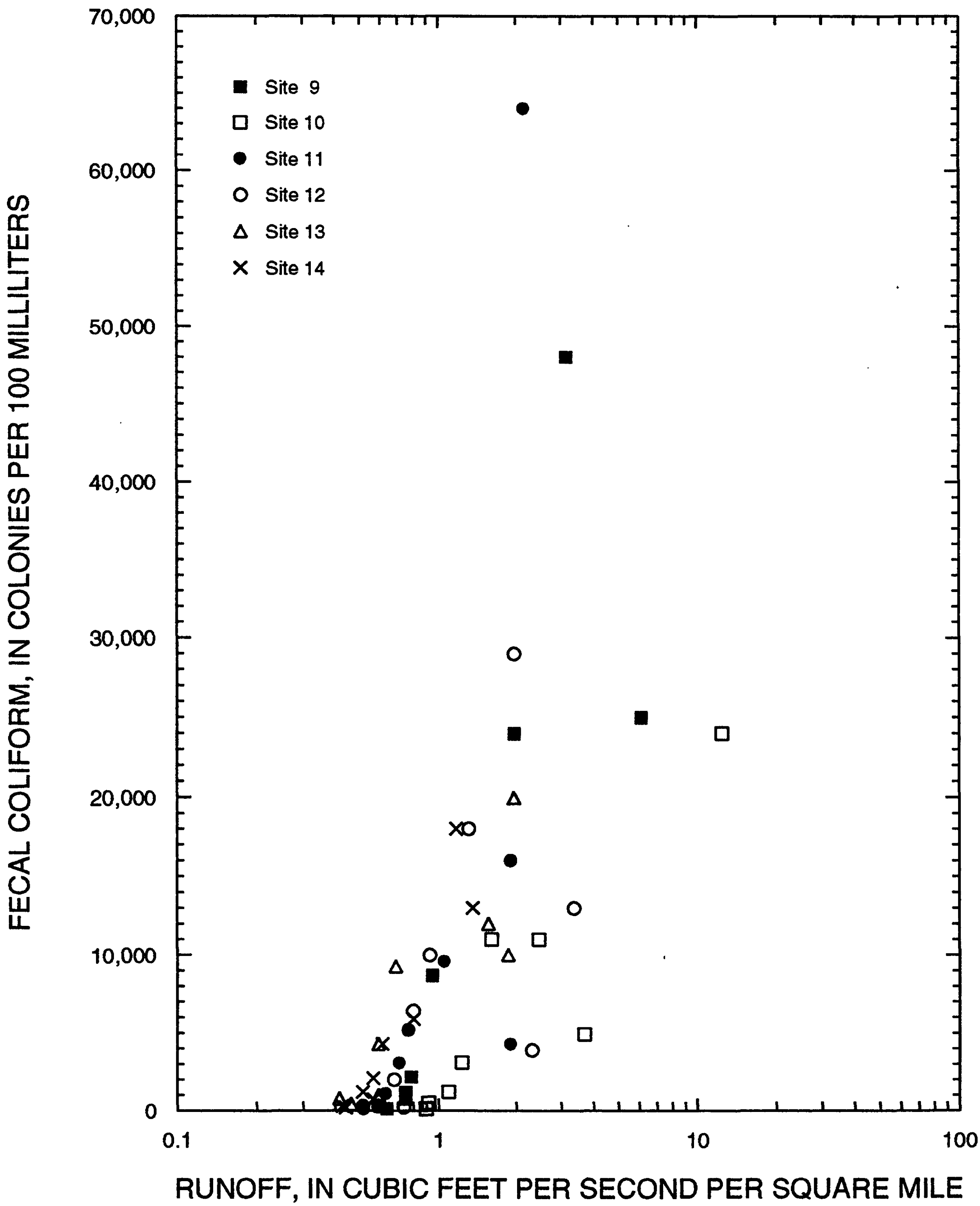

Figure 8B.--Relation of runoff and fecal coliform within a basin during intensive sampling, April 3-5, 1989.

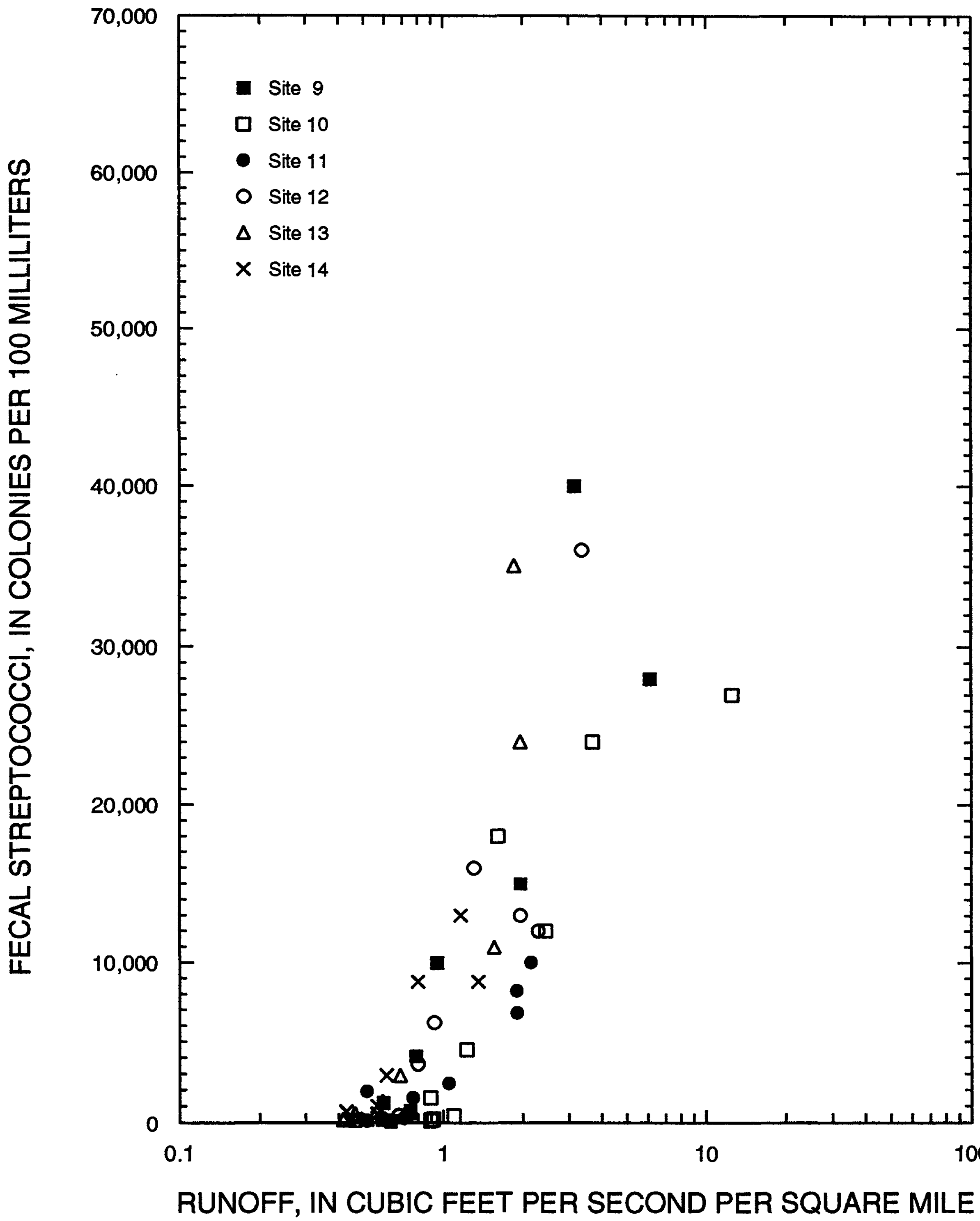

Figure 8C.--Relation of runoff and fecal streptococci within a basin during intensive sampling, April 3-5, 1989.

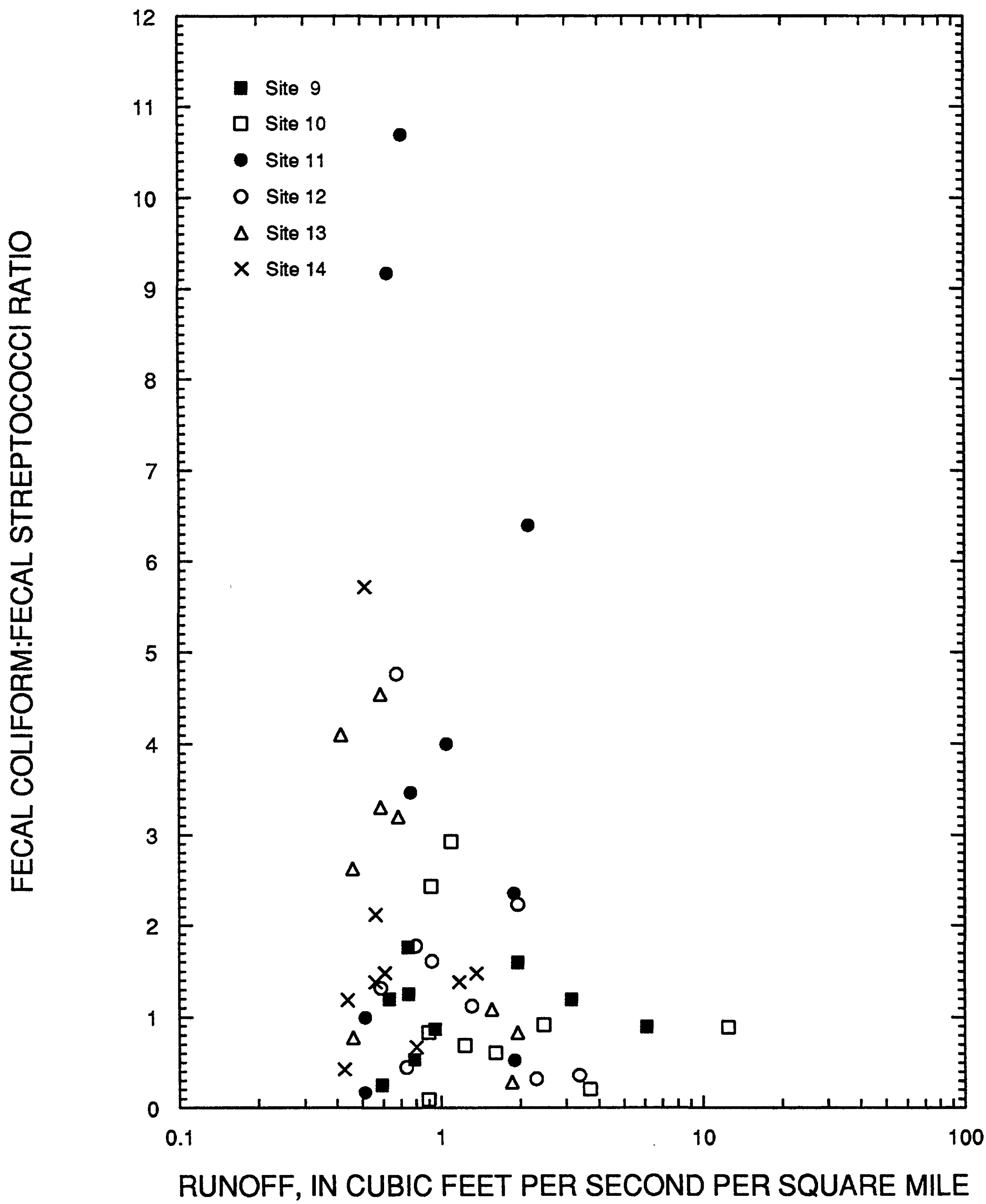

Figure 8D.--Relation of runoff and fecal coliform: fecal streptococci ratio within a basin during intensive sampling, April 3-5, 1989.

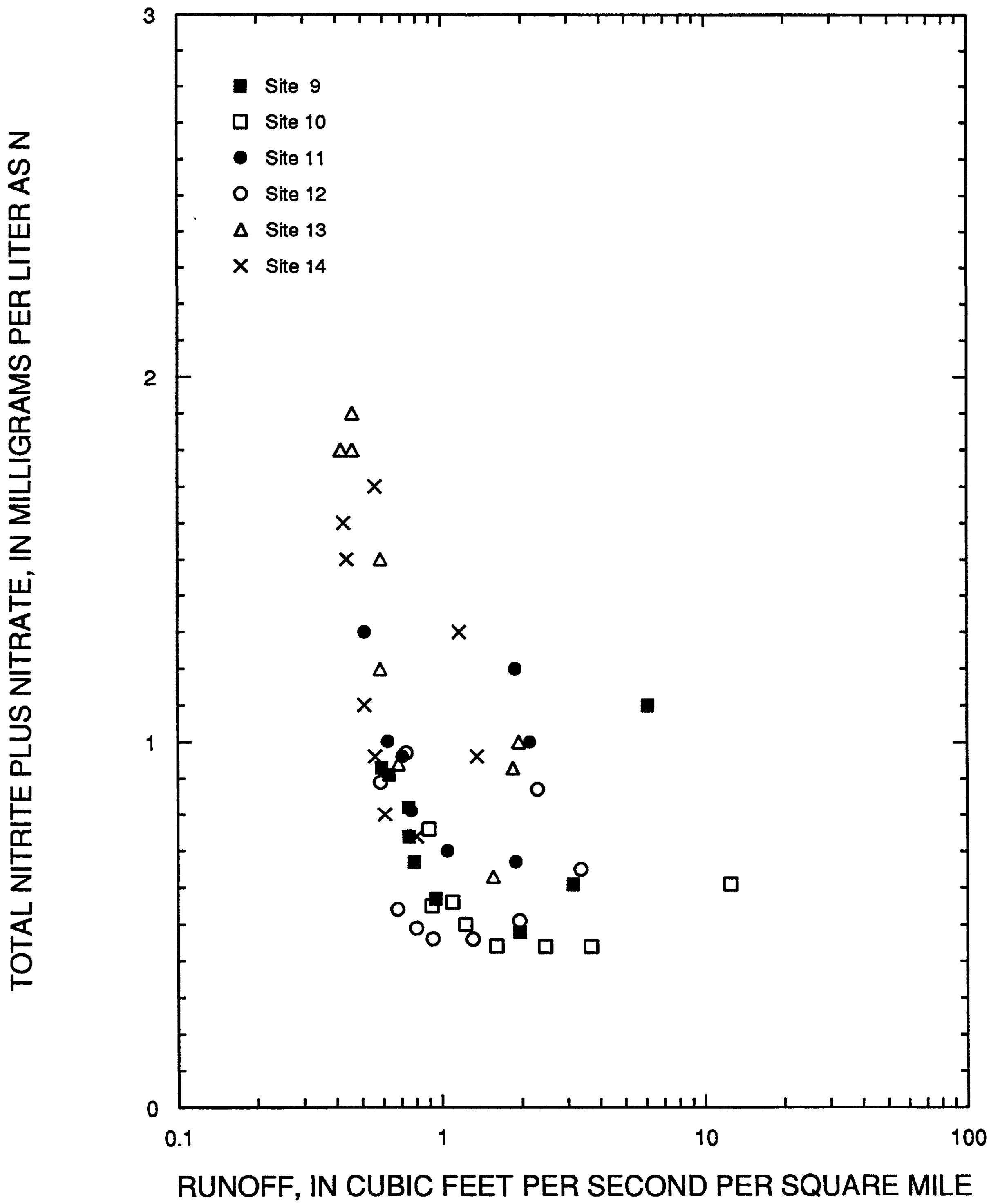

Figure 8E.--Relation of runoff and total nitrite plus nitrate within a basin during intensive sampling, April 3-5, 1989.

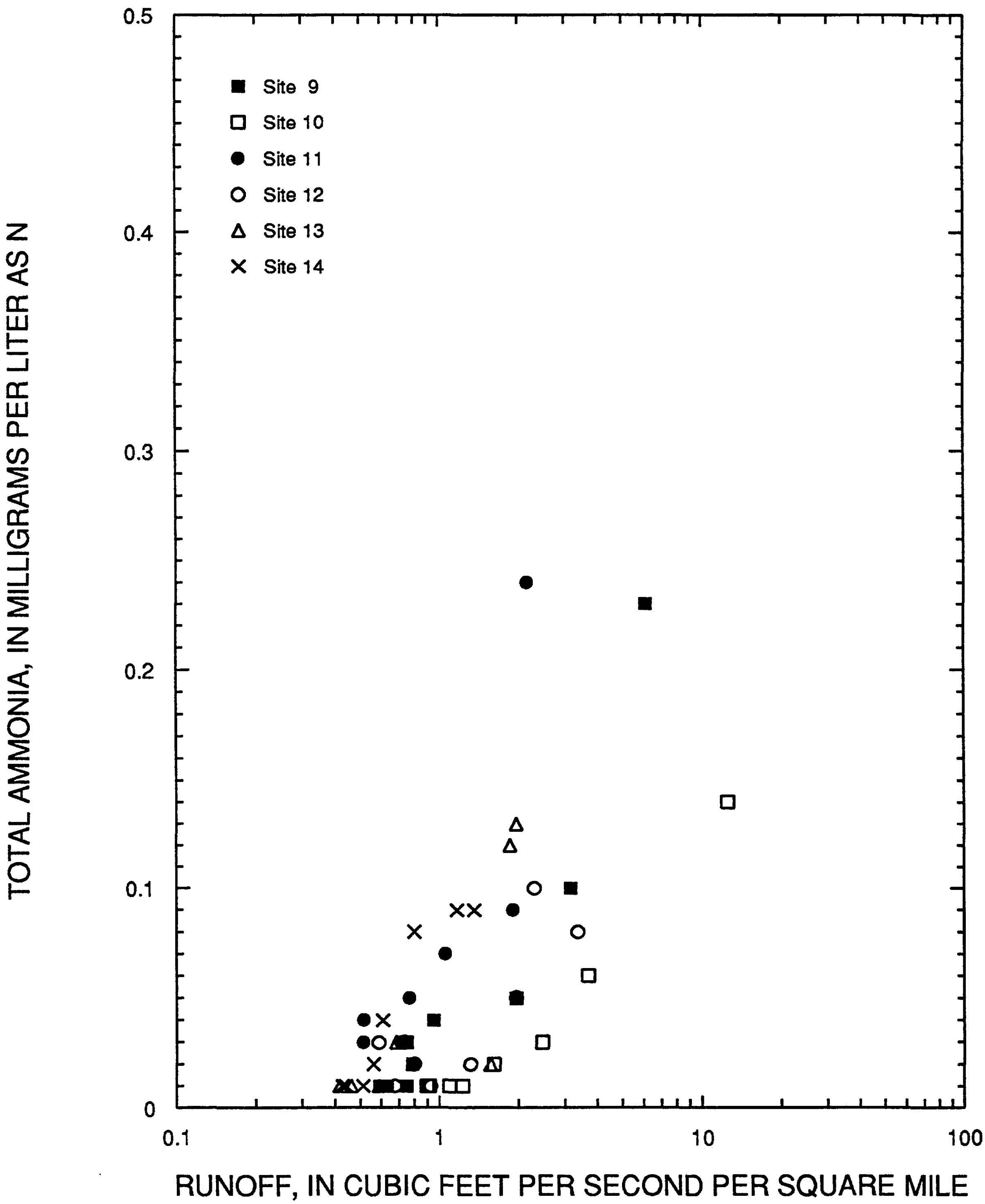

Figure 8F.--Relation of runoff and total ammonia within a basin during intensive sampling, April 3-5, 1989.

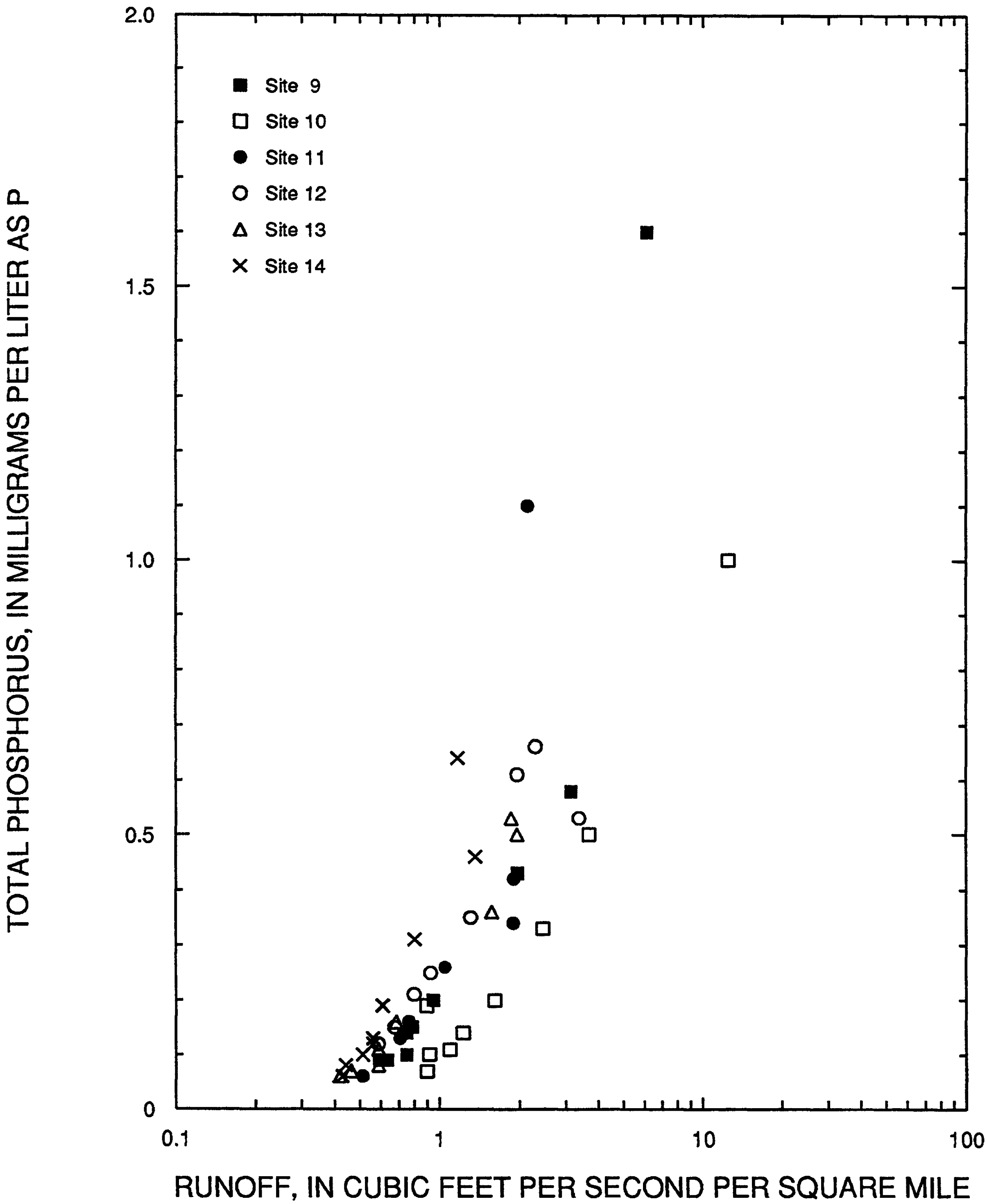

Figure 8G.--Relation of runoff and total phosphorus within a basin during intensive sampling, April 3-5, 1989.

Table 1. Water-quality and bottom-material sampling sites

[d, degrees; m, minutes; s, seconds]

Site number (see fig. 1)	USGS station number and name	Latitude (ddmmss)	Longitude (dddmmss)	Drainage area (square miles)
Hotopha Creek Watershed				
1	07273100 Hotopha Creek near Batesville	342149	0895241	35.1
Otoucalofa Creek Watershed				
2	07274235 Otoucalofa Creek near Paris	340856	0892620	8.28
3	07274237 Otoucalofa Creek at Paris	341011	0892724	21.0
4	07274245 Otoucalofa Creek east of Water Valley	340930	0893158	46.5
5	07274247 Otoucalofa Creek Canal E-SE of Water Valley	340749	0893536	74.0
6	07274251 Town Creek at Water Valley	340850	0893802	2.25
7	07274252 Otoucalofa Creek Canal near Water Valley	340836	0893859	97.1
Peters (Long) Creek Watershed				
8	07275530 Peters (Long) Creek near Pope	341250	0895854	79.2
Hickahala-Senatobia Creek Watershed				
9	07277520 Hickahala Creek near Independence	344030	0894527	25.3
10	07277530 Hickahala Creek near Looxahoma	343829	0894839	44.7
11	07277548 James Wolf Creek near Looxahoma	343700	0894917	35.2
12	07277700 Hickahala Creek near Senatobia	343752	0895530	121
13	07277715 Senatobia Creek near Como	343301	0895724	20.4
14	07277730 Senatobia Creek near Senatobia	343702	0895630	82
Batupan Bogue Watershed				
15	07285400 Batupan Bogue at Grenada	334626	0894715	240
Black Creek Watershed				
16	07287330 Fannegusha Creek near Ituma	331335	0900230	39.8
17	07287355 Fannegusha Creek near Howard	330813	0901140	103
18	07287375 Black Creek at Bowling Green	330937	0895724	28.2
19	07287400 Black Creek at Lexington	330619	0900312	88.1
20	07287404 Harland Creek near Howard	330605	0901023	62.1
21	07287405 Black Creek at Howard	330711	0901128	178

Table 2. Water-quality and bottom-material sampling frequency

[Sampling codes:
A--annual, herbicides and insecticides in water and insecticides in bottom material;
B--biweekly, field determinations and nutrients in water;
I--intensive (once every 6 hours for 48 hours, twice per year), field determinations, nutrients, and bacteria in water;
S--semi-annual, common constituents and trace elements in water and trace elements in bottom material]

Site number (see fig. 1)	USGS station number and name	Sampling frequency
Hotopha Creek Watershed		
1	07273100 Hotopha Creek near Batesville	A, B
Otoucalofa Creek Watershed		
2	07274235 Otoucalofa Creek near Paris	I
3	07274237 Otoucalofa Creek at Paris	I
4	07274245 Otoucalofa Creek east of Water Valley	I
5	07274247 Otoucalofa Creek Canal E-SE of Water Valley	I
6	07274251 Town Creek at Water Valley	I
7	07274252 Otoucalofa Creek Canal near Water Valley	A, B, I, S
Peters (Long) Creek Watershed		
8	07275530 Peters (Long) Creek near Pope	A, B
Hickahala-Senatobia Creek Watershed		
9	07277520 Hickahala Creek near Independence	I
10	07277530 Hickahala Creek near Looxahoma	I
11	07277548 James Wolf Creek near Looxahoma	I
12	07277700 Hickahala Creek near Senatobia	A, B, I, S
13	07277715 Senatobia Creek near Como	I
14	07277730 Senatobia Creek near Senatobia	A, B, I, S
Batupan Bogue Watershed		
15	07285400 Batupan Bogue at Grenada	A, B
Black Creek Watershed		
16	07287330 Fannegusha Creek near Ituma	I
17	07287355 Fannegusha Creek near Howard	A, B, I, S
18	07287375 Black Creek at Bowling Green	I
19	07287400 Black Creek at Lexington	I
20	07287404 Harland Creek near Howard	A, B, I, S
21	07287405 Black Creek at Howard	I

Table 3. Statistical summary (aggregate) of field determinations for water samples at biweekly sampling sites

[N, number of samples; MAX, maximum; MIN, minimum; Q3, 75th-percentile; MEDIAN, 50th-percentile; Q1, 25th-percentile; Q, discharge, in cubic feet per second; SC, specific conductance, in microsiemens per centimeter at 25 degrees Celsius; pH, in standard units; T, temperature, in degrees Celsius; DO, dissolved oxygen, in milligrams per liter; FC, fecal coliform, and FS, fecal streptococci, in colonies per 100 milliliters; FC/FS, fecal coliform:fecal streptococci ratio. Values with remarks are retained without the remark code (for example, less than)]

Property or constituent	N	MAX	MIN	MEAN	Q3	MEDIAN	Q1
Q	1,616	21,100	2.1	289.2	83.0	30.0	16.0
SC	1,578	409	13	102	119	78	59
pH	1,603	9.4	5.7	7.1	7.4	7.0	6.8
T	1,580	38.0	3.0	20.2	26.0	21.0	14.5
DO	1,611	13.4	4.3	8.6	9.6	8.5	7.6
FC	358	32,000	5	1,931	1,700	315	100
FS	359	39,000	12	3,404	2,200	400	180
FC/FS	357	17	0.012	1.2	1.3	0.59	0.29

Table 4. Statistical summary (aggregate) of common chemical properties or constituents for water samples at biweekly sampling sites

[N, number of samples; MAX, maximum; MIN, minimum; Q3, 75th-percentile; MEDIAN, 50th-percentile; Q1, 25th-percentile; CaCO3, calcium carbonate. All constituents are dissolved; units are milligrams per liter. Values with remarks are retained without the remark code (for example, less than)]

Property or constituent	N	MAX	MIN	MEAN	Q3	MEDIAN	Q1
Calcium	38	27	2.2	7.7	12	4.4	3.3
Magnesium	38	13	1.0	3.5	5.8	1.6	1.4
Sodium	38	11	0.9	6.1	8.4	6.6	3.8
Potassium	38	2.8	0.8	1.8	2.2	1.7	1.4
Alkalinity, as CaCO3	36	131	5.7	36	59	20	14
Sulfate	38	9.6	0.6	4.8	6.7	5.2	3.0
Chloride	38	12	1.0	5.2	7.1	5.1	3.6
Fluoride	37	4.0	0.1	0.3	0.2	0.1	0.1
Residue on evaporation	33	161	38	74	98	59	50
Dissolved solids, sum	36	167	27	66	94	51	39

Table 5. Statistical summary (aggregate) of nutrients plus color and silica for water samples at biweekly sampling sites

[N, number of samples; MAX, maximum; MIN, minimum; Q3, 75th-percentile; MEDIAN, 50th-percentile; Q1, 25th-percentile; NO2+NO3, nitrite plus nitrate; tot., total; dis., dissolved. Units are milligrams per liter except color (platinum-cobalt units). Values with remarks are retained without the remark code (for example, less than)]

Property or constituent	N	MAX	MIN	MEAN	Q3	MEDIAN	Q1
NO2+NO3, as N, tot.	1,099	2.1	0.02	0.27	0.34	0.15	0.06
Ammonia, as N, tot.	1,099	5.0	0.01	0.12	0.07	0.03	0.02
Phosphorus, tot.	1,098	2.3	0.01	0.19	0.24	0.09	0.06
Phosphorus, ortho, tot.	1,099	1.3	0.01	0.11	0.12	0.06	0.03
Carbon, organic, tot.	1,085	19	0.1	3.3	4.4	2.7	1.7
Color, tot.	37	400	5.0	61	90	20	5.0
Silica, dis.	38	24	4.4	13	17	14	9.5

Table 6. Determinations of trace elements in water

[UG/L, micrograms per liter; numbers in parentheses, parameter codes; <, less than; --, no data]

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR 1988												
23...	570	1	1	1	1	2	2000	<5	90	<0.10	<1	<10
AUG												
17...	140	1	1	1	<1	3	660	<5	440	0.20	<1	<10
NOV												
16...	380	1	<1	<1	<1	5	1400	<5	210	0.10	<1	<10
MAY 1989												
05...	1500	1	<1	3	3	5	3800	5	250	<0.10	<1	10
OCT												
25...	420	<1	<1	<1	2	2	1200	3	210	<0.10	<1	<10
JUL 1990												
14...	710	<1	<1	2	2	1	2000	2	260	<0.10	<1	<10
APR 1991												
13...	1200	2	<1	3	2	3	3700	4	190	<0.10	<1	10
AUG												
22...	200	1	<1	3	2	3	2100	7	1000	<0.10	<1	40

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
JUN 1988												
04...	260	<1	<1	10	2	4	440	<5	160	<0.10	<1	<10
SEP												
14...	130	<1	1	<1	3	2	200	<5	70	0.20	<1	<10
OCT												
26...	360	1	1	1	1	2	640	<5	160	0.20	<1	<10
APR 1989												
05...	3900	1	<1	4	<1	5	4400	<5	160	0.20	<1	50
APR 1990												
27...	1400	1	<1	3	2	3	2100	2	360	<0.10	<1	10
28...	20000	2	<1	23	8	21	38000	21	930	<0.10	<1	80
JAN 1991												
11...	--	2	<1	4	1	4	3200	3	160	<0.10	--	20
JUL												
17...	140	<1	<1	3	<1	2	360	<1	110	<0.10	<1	10

Table 6. Determinations of trace elements in water--Continued

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
JUN 1988												
04...	110	<1	<1	1	1	1	210	<5	110	0.20	<1	<10
SEP												
14...	230	1	2	<1	<1	1	400	<5	140	0.20	<1	<10
OCT												
26...	270	1	1	1	2	1	470	<5	160	0.10	<1	<10
APR 1989												
05...	2200	<1	<1	2	<1	<1	2700	<5	90	0.20	<1	20
APR 1990												
27...	480	<1	<1	1	5	2	710	1	160	<0.10	<1	<10
28...	20000	2	<1	23	8	22	36000	20	820	<0.10	<2	80
JAN 1991												
11...	--	2	<1	3	1	4	2900	4	110	<0.10	--	40
JUL												
17...	200	1	<1	3	<1	2	480	3	180	<0.10	<1	20

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
MAR 1988												
25...	1400	2	<1	12	3	4	3500	<5	790	<0.10	<1	<10
JUL												
27...	440	2	<1	<1	<1	3	1400	<5	120	0.20	<1	40
JAN 1989												
12...	23000	3	<1	28	8	26	27000	13	810	<0.10	<1	90
AUG												
15...	150	1	<1	3	1	1	1200	1	1200	<0.10	<1	<10
NOV												
28...	610	<1	<1	2	1	2	2200	2	690	<0.10	<1	10
AUG 1990												
30...	90	1	<1	<1	1	5	710	2	190	<0.10	<1	30
APR 1991												
27...	24000	31	<1	16	20	27	41000	31	2500	0.10	<1	160
AUG												
28...	110	1	<1	4	<1	<1	670	<1	200	0.10	<1	40

Table 6. Determinations of trace elements in water--Continued

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
MAR 1988												
25...	--	2	<1	25	10	27	31000	11	1200	<0.10	<1	100
JUL												
27...	450	2	<1	<1	<1	3	1300	5	300	0.40	<1	30
JAN 1989												
12...	18000	2	<1	21	10	22	24000	12	900	<0.10	<1	80
AUG												
15...	80	2	<1	2	1	1	1500	<1	1200	<0.10	<1	<10
NOV												
28...	720	1	<1	2	3	2	3100	2	830	<0.10	<1	20
AUG 1990												
30...	70	2	3	<1	<1	1	900	1	320	<0.10	<1	<10
APR 1991												
27...	20000	11	<1	16	20	28	33000	24	1600	0.20	<1	110

Table 7. Determinations of chlorophenoxy acid herbicides, dicamba, and picloram in water

[UG/L, micrograms per liter; numbers in parentheses, parameter codes; <, less than]

07273100 - HOTOPHA CREEK NR BATESVILLE - SITE 1

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	PICLO-RAM (TOR-DON) (AMDON) TOTAL (UG/L) (39720)
MAR 1989						
21...	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1990						
07...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
20...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	PICLO-RAM (TOR-DON) (AMDON) TOTAL (UG/L) (39720)
APR 1988						
05...	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
MAR 1989						
21...	4.0	<0.01	0.06	<0.01	2.0	<0.01
MAR 1990						
06...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
26...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

07275530 - PETERS (LONG) CREEK NR POPE - SITE 8

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	PICLO-RAM (TOR-DON) (AMDON) TOTAL (UG/L) (39720)
MAR 1989						
22...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1990						
07...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
26...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 7. Determinations of chlorophenoxy acid herbicides, dicamba, and picloram in water--Continued

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED- IBEN) (BAN- VEL D) TOTAL (UG/L) (82052)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)
APR 1988						
05...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1989						
22...	0.60	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1990						
07...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
20...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED- IBEN) (BAN- VEL D) TOTAL (UG/L) (82052)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)
APR 1988						
05...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1989						
22...	0.02	<0.01	<0.01	<0.01	0.01	<0.01
MAR 1990						
07...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
20...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

07285400 - BATUPAN BOGUE AT GRENADA - SITE 15

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED- IBEN) (BAN- VEL D) TOTAL (UG/L) (82052)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)
MAR 1989						
21...	0.35	<0.01	0.02	<0.01	0.02	<0.01
MAR 1990						
06...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1991						
20...	<0.01	<0.01	<0.01	<0.01	0.01	<0.01

Table 7. Determinations of chlorophenoxy acid herbicides, dicamba, and picloram in water--Continued

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED- IBEN) (BAN- VEL D) TOTAL (UG/L) (82052)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)
MAR 1988						
25...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1989						
21...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1990						
08...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
27...	0.02	<0.01	<0.01	<0.01	<0.01	<0.01

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA (MED- IBEN) (BAN- VEL D) TOTAL (UG/L) (82052)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)
MAR 1988						
25...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1989						
23...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAR 1990						
08...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FEB 1991						
27...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 8. Determinations of triazine herbicides in water

[UG/L, micrograms per liter; numbers in parentheses, parameter codes; <, less than; --, no data]

07273100 - HOTOPHA CREEK NR BATESVILLE - SITE 1

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
MAR 1989												
21...	0.10	<0.10	3.1	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
07...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
20...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
MAR 1989												
21...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
07...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
20...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
APR 1988												
05...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1989												
21...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
06...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
26...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
APR 1988												
05...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1989												
21...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
06...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
26...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07275530 - PETERS (LONG) CREEK NR POPE - SITE 8

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
MAR 1989												
22...	<0.10	<0.10	0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
07...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
26...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
MAR 1989												
22...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
07...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
26...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
APR 1988												
05...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1989												
22...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
07...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
20...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
APR 1988												
05...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1989												
22...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
07...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
20...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	ALACHLOR TOTAL RECOVER (UG/L) (77825)	AMETRYNE TOTAL (82184)	ATRAZINE, TOTAL (UG/L) (39630)	BROMACIL WATER WHLREC (UG/L) (30234)	BUTACHLOR WATER WHLREC (UG/L) (30235)	BUTYLATE WATER WHLREC (UG/L) (30236)	CARBOXIN WATER WHOLE RECOVERABLE (UG/L) (30245)	CYANAZINE TOTAL (UG/L) (81757)	CYCLOATE WATER WHOLE RECOVERABLE (UG/L) (30254)	DEETHYL ATRAZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHENAMID WATER WHOLE RECOVERABLE (UG/L) (30255)
APR 1988												
05...	<0.10	<0.10	0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1989												
22...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
07...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
20...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZINONE WATER WHOLE RECOVERABLE (UG/L) (30264)	METOLACHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRIBUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROMETONE TOTAL (UG/L) (39056)	PROMETRYNE TOTAL (UG/L) (39057)	PROPACHLOR WATER WHOLE RECOV. (UG/L) (30295)	PROPAZINE TOTAL (UG/L) (39024)	SIMAZINE TOTAL (UG/L) (39055)	SIMETRYNE TOTAL (UG/L) (39054)	TERBACIL WATER WHOLE RECOV. (UG/L) (30311)	TRIFLURALIN TOTAL RECOVER (UG/L) (39030)	VERNOLATE WATER WHOLE RECOV. (UG/L) (30324)
APR 1988												
05...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1989												
22...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
07...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
20...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07285400 - BATUPAN BOGUE AT GRENADA - SITE 15

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
MAR 1989												
21...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
06...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1991												
20...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
MAR 1989												
21...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
06...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1991												
20...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
MAR 1988												
25...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1989												
21...	0.60	<0.10	0.80	--	--	--	--	0.10	--	--	--	--
MAR 1990												
08...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
27...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
MAR 1988												
25...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1989												
21...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
08...	--	<0.1	<0.1	<0.1	0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
27...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 8. Determinations of triazine herbicides in water--Continued

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	AME-TRYNE TOTAL (82184)	ATRA-ZINE, TOTAL (UG/L) (39630)	BROM-ACIL WATER WHLREC (UG/L) (30234)	BUTA-CHLOR WATER WHLREC (UG/L) (30235)	BUTYL-ATE WATER WHLREC (UG/L) (30236)	CARBOX-IN WATER WHOLE RECOV-ERABLE (UG/L) (30245)	CYAN-AZINE TOTAL (UG/L) (81757)	CYCLO-ATE WATER WHOLE RECOV-ERABLE (UG/L) (30254)	DEETHYL ATRA-ZINE, WATER, WHOLE, TOTAL (UG/L) (75981)	DE-ISO PROPYL ATRAZIN WATER, WHOLE, TOTAL (UG/L) (75980)	DIPHEN-AMID WATER WHOLE RECOV-ERABLE (UG/L) (30255)
MAR 1988												
25...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1989												
23...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
MAR 1990												
08...	<0.10	<0.10	<0.10	--	--	--	--	<0.10	--	--	--	--
FEB 1991												
27...	<0.20	<0.10	<0.10	<0.2	<0.1	<0.1	<0.2	<0.20	<0.1	<0.1	<0.1	<0.1

DATE	HEXAZI-NONE WATER WHOLE RECOV-ERABLE (UG/L) (30264)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	PROPA-CHLOR WATER WHOLE RECOV. (UG/L) (30295)	PRO-PAZINE TOTAL (UG/L) (39024)	SIMA-ZINE TOTAL (UG/L) (39055)	SIME-TRYNE TOTAL (UG/L) (39054)	TER-BACIL WATER WHOLE RECOV. (UG/L) (30311)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	VER-NOLATE WATER WHOLE RECOV. (UG/L) (30324)
MAR 1988												
25...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1989												
23...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
MAR 1990												
08...	--	<0.1	<0.1	<0.1	<0.1	--	<0.10	<0.10	<0.1	--	<0.10	--
FEB 1991												
27...	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.10	<0.10	<0.1	<0.2	<0.10	<0.1

Table 9. Determinations of carbamate insecticides in water

[MG/L, milligrams per liter; UG/L, micrograms per liter; numbers in parentheses, parameter codes; <, less than; --, no data]

07273100 - HOTOPHA CREEK NR BATESVILLE - SITE 1

DATE	1-NAPH-THOL WATER WHOLE REC (MG/L) (77441)	ALDI-CARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDI-CARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULF-OXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIO-CARB WATER WHOLE RECOV. (UG/L) (30282)	METHO-MYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPO-ΨUR WATER WHOLE RECOV. (UG/L) (30296)
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
02...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	1-NAPH-THOL WATER WHOLE REC (MG/L) (77441)	ALDI-CARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDI-CARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULF-OXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIO-CARB WATER WHOLE RECOV. (UG/L) (30282)	METHO-MYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPO-ΨUR WATER WHOLE RECOV. (UG/L) (30296)
APR 1988												
23...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
MAY 1989												
18...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
03...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

07275530 - PETERS (LONG) CREEK NR POPE - SITE 8

DATE	1-NAPH-THOL WATER WHOLE REC (MG/L) (77441)	ALDI-CARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDI-CARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULF-OXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIO-CARB WATER WHOLE RECOV. (UG/L) (30282)	METHO-MYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPO-ΨUR WATER WHOLE RECOV. (UG/L) (30296)
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
02...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

Table 9. Determinations of carbamate insecticides in water--Continued

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	1-NAPHTHOL WATER WHOLE REC (MG/L) (77441)	ALDICARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDICARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULFOXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIOCARB WATER WHOLE RECOV. (UG/L) (30282)	METHOMYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPOyUR WATER WHOLE RECOV. (UG/L) (30296)
JUN 1988												
04...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
31...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
02...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	1-NAPHTHOL WATER WHOLE REC (MG/L) (77441)	ALDICARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDICARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULFOXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIOCARB WATER WHOLE RECOV. (UG/L) (30282)	METHOMYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPOyUR WATER WHOLE RECOV. (UG/L) (30296)
JUN 1988												
04...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
31...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
02...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

07285400 - BATUPAN BOGUE AT GRENADA - SITE 15

DATE	1-NAPHTHOL WATER WHOLE REC (MG/L) (77441)	ALDICARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDICARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULFOXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBOFURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIOCARB WATER WHOLE RECOV. (UG/L) (30282)	METHOMYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPOyUR WATER WHOLE RECOV. (UG/L) (30296)
MAY 1989												
18...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
MAY 1991												
01...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

Table 9. Determinations of carbamate insecticides in water--Continued

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	1-NAPH-THOL WATER WHOLE REC (MG/L) (77441)	ALDI-CARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDI-CARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULF-OXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIO-CARB WATER WHOLE RECOV. (UG/L) (30282)	METHO-MYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPO-YUR WATER WHOLE RECOV. (UG/L) (30296)
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
03...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	1-NAPH-THOL WATER WHOLE REC (MG/L) (77441)	ALDI-CARB WATER WHOLE TOT.REC (UG/L) (82619)	ALDI-CARB SULFONE WATER WHOLE TOT.REC (UG/L) (82587)	ALDICAR SULF-OXIDE WATER WHOLE TOT.REC (UG/L) (82586)	SEVIN, TOTAL (UG/L) (39750)	CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)	3-HYDRX CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82584)	METHIO-CARB WATER WHOLE RECOV. (UG/L) (30282)	METHO-MYL TOTAL (UG/L) (39051)	OXYAMYL WATER WHOLE TOT.REC (UG/L) (82613)	PROPHAM TOTAL (UG/L) (39052)	PROPO-YUR WATER WHOLE RECOV. (UG/L) (30296)
MAY 1989												
17...	--	--	--	--	<5.0	--	--	--	<5.0	--	<5.0	--
MAY 1990												
30...	--	--	--	--	<0.50	--	--	--	<0.5	--	<0.5	--
APR 1991												
03...	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	--	<0.5	<0.5	<0.5	--

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water

[UG/L, micrograms per liter; numbers in parentheses, parameter codes; <, less than; --, no data]

07273100 - HOTOPHA CREEK NR BATESVILLE - SITE 1

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
MAY 1990 30...	<0.010	<0.1	--	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01
APR 1991 02...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
MAY 1990 30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991 02...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
MAY 1990 30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991 02...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
APR 1988										
23...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1989										
18...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
30...	<0.010	<0.1	--	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01
APR 1991										
03...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
APR 1988									
23...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1989									
18...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1990									
30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
03...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
APR 1988									
23...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1989									
18...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
03...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07275530 - PETERS (LONG) CREEK NR POPE - SITE 8

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
MAY 1989										
17...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
30...	<0.010	<0.1	--	<0.010	<0.010	0.010	<0.01	<0.01	<0.010	<0.01
APR 1991										
02...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
MAY 1989									
17...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	0.010
MAY 1990									
30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
02...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
MAY 1989									
17...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
02...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
JUN 1988										
04...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1989										
17...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
31...	<0.010	<0.1	--	<0.010	<0.010	0.010	<0.01	<0.01	<0.010	<0.01
APR 1991										
02...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
JUN 1988									
04...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1989									
17...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1990									
31...	<0.010	0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
02...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
JUN 1988									
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1989									
17...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
31...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
02...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
JUN 1988										
04...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1989										
17...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
31...	<0.010	<0.1	--	<0.010	0.010	0.020	0.01	<0.01	<0.010	0.01
APR 1991										
02...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
JUN 1988									
04...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1989									
17...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1990									
31...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
02...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
JUN 1988									
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1989									
17...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
31...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
02...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07285400 - BATUPAN BOGUE AT GRENADA - SITE 15

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
MAY 1990 30...	<0.010	<0.1	--	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01
MAY 1991 01...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
MAY 1990 30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1991 01...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
MAY 1990 30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
MAY 1991 01...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
MAY 1989										
17...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
30...	<0.010	<0.1	--	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01
APR 1991										
03...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
MAY 1989									
17...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1990									
30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
03...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
MAY 1989									
17...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
03...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 10. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in water--Continued

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L) (38932)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DEF TOTAL (UG/L) (39040)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-SYSTON TOTAL (UG/L) (39011)
MAY 1989										
17...	<0.010	<0.1	--	<0.010	<0.010	<0.010	--	<0.01	<0.010	--
MAY 1990										
30...	<0.010	<0.1	--	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01
APR 1991										
03...	<0.010	<0.1	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01

DATE	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L (82614)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	LINDANE TOTAL (UG/L) (39340)
MAY 1989									
17...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
MAY 1990									
30...	<0.010	<0.010	<0.01	--	<0.1	<0.10	<0.010	<0.010	<0.010
APR 1991									
03...	<0.010	<0.010	<0.01	<0.1	<0.1	<0.10	<0.010	<0.010	<0.010

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
MAY 1989									
17...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	--	<1	<0.01
MAY 1990									
30...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01
APR 1991									
03...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01

Table 11. Determinations of trace elements in bottom material

[UG/G, micrograms per gram; numbers in parentheses, parameter codes; <, less than]

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB) (01052)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)
APR 1988											
23...	2	<10	3	<50	<1	3400	<100	5600	<0.01	<1	<1
NOV											
16...	1	<10	2	<50	1	1500	<100	37	0.01	<1	<10
MAY 1989											
05...	2	<1	1	<5	2	1800	<10	190	0.01	<1	4
OCT											
25...	<1	<1	3	<5	<1	1000	<10	36	<0.01	<1	2
JUL 1990											
14...	1	<1	2	<10	2	1200	<10	53	0.01	<1	2
APR 1991											
13...	1	<1	2	<5	2	3000	<10	140	<0.01	<1	7
AUG											
22...	<1	<1	3	<5	5	4500	<10	260	0.04	<1	10

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB) (01052)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)
JUN 1988											
04...	1	<10	2	<10	1	1500	<100	2100	<0.01	<1	<10
SEP											
14...	1	<10	2	<50	<1	8200	<100	29	<0.01	<1	<10
OCT											
26...	1	<10	2	<50	10	5600	<100	32	<0.01	<1	<10
APR 1989											
05...	2	<1	3	<5	<10	800	<10	110	<0.01	<1	2
APR 1990											
27...	4	<1	4	<50	<1	1000	<10	21	0.03	<1	1
28...	3	<1	3	<50	1	2200	<10	70	0.02	<1	2
JAN 1991											
11...	26	<1	5	<10	6	7100	<10	250	0.01	<1	20
JUL											
17...	1	<1	7	<5	<1	430	<10	39	0.17	<1	1

Table 11. Determinations of trace elements in bottom material--Continued

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)
JUN 1988											
04...	4	<10	1	<10	<1	780	<100	4200	<0.01	<1	<10
SEP											
14...	1	<10	2	<50	<1	7700	<100	52	0.01	<1	<10
OCT											
27...	1	<10	4	<50	1	820	<100	160	<0.01	<1	<10
APR 1989											
05...	3	<1	3	<5	2	3400	<10	350	0.02	<1	7
APR 1990											
27...	5	<1	4	<50	4	5200	<10	220	0.02	<1	10
28...	3	<1	4	<50	1	1300	<10	65	<0.01	<1	4
JAN 1991											
11...	20	<1	1	<10	<1	670	<10	49	<0.01	<1	<1
JUL											
17...	2	<1	20	<5	<1	950	<10	110	<0.01	<1	2

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)
MAR 1988											
25...	2	<10	<10	<50	<1	7000	<100	80	<0.01	<1	<1
JUL											
27...	4	<10	3	<50	<10	350	<100	85	<0.01	<1	<10
JAN 1989											
12...	2	<10	3	<10	<1	820	<100	65	<0.01	<1	2
AUG											
15...	1	<10	2	<50	10	720	<100	68	0.01	<1	2
NOV											
28...	1	<1	20	<5	3	690	<10	37	<0.01	<1	2
AUG 1990											
30...	2	<1	<10	<10	3	2300	<10	400	<0.01	<1	5
APR 1991											
27...	1	<1	1	<5	<1	960	10	3	<0.01	<1	<1
AUG											
28...	1	<1	<1	<5	<1	630	<10	48	<0.01	<1	<10

Table 11. Determinations of trace elements in bottom material--Continued

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)
MAR 1988											
25...	2	<10	<10	<50	<1	450	<100	48	<0.01	<1	<1
JUL											
27...	2	<10	3	<50	1	1800	<100	66	<0.01	<1	<10
JAN 1989											
12...	7	<10	7	<10	10	6900	<100	340	0.03	<1	30
AUG											
15...	1	<10	2	<50	<10	640	<100	87	<0.01	<1	4
NOV											
28...	2	<1	4	<5	1	880	<10	51	<0.01	<1	2
AUG 1990											
30...	2	<1	<10	<10	2	1400	<10	380	<0.01	<1	2
APR 1991											
27...	1	<1	1	<5	1	1100	<10	28	<0.01	<1	<1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material

[UG/KG, micrograms per kilogram; numbers in parentheses, parameter codes; <, less than]

07273100 - HOTOPHA CREEK NR BATESVILLE - SITE 1

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
AUG 1988												
31...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
27...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
22...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
25...	<0.1	<1.0	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE IN BOTTOM MATERIAL (UG/KG) (81886)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
AUG 1988												
31...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
22...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
25...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07274252 - OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
AUG 1988												
17...	<0.1	<1.0	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
27...	<0.1	<1.0	0.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
21...	<0.1	1.0	4.6	4.3	1.9	<0.1	0.4	0.3	0.1	<0.1	<1	<1.0
JUN 1991												
25...	<0.1	<1.0	6.8	8.3	6.0	<0.1	0.3	<0.1	<1.0	<0.1	<1	<1.0

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE IN BOTTOM MATERIAL (UG/KG) (81886)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
AUG 1988												
17...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
21...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	2.00	<10	<0.1
JUN 1991												
25...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	0.1	0.1	<1.00	60	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07275530 - PETERS (LONG) CREEK NR POPE - SITE 8

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39251)
AUG 1988												
31...	<0.1	<1.0	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
28...	<0.1	<1.0	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
22...	<0.1	<1.0	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
26...	<0.1	<1.0	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39758)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG) (81886)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)
AUG 1988												
31...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
28...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
22...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
26...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07277700 - HICKAHALA CREEK NR SENATOBIA - SITE 12

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39251)
SEP 1988												
14...	<0.1	<1.0	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
27...	<0.1	<1.0	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
21...	<0.1	<1.0	0.2	0.4	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
25...	<0.1	<1.0	0.1	0.3	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39758)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG) (81886)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)
SEP 1988												
14...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
21...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
25...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07277730 - SENATOBIA CREEK NR SENATOBIA - SITE 14

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
SEP 1988												
14...	<0.1	<1.0	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
27...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
21...	<0.1	<1.0	0.3	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
25...	<0.1	<1.0	0.5	0.7	2.2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE IN BOTTOM MATERIAL (UG/KG) (81886)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
SEP 1988												
14...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
21...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
25...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	20	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07285400 - BATUPAN BOGUE AT GRENADA - SITE 15

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
AUG 1988												
30...	<0.1	<1.0	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
27...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
21...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
25...	<0.1	<1.0	3.9	3.5	2.0	<0.1	0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE IN BOTTOM MATERIAL (UG/KG) (81886)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
AUG 1988												
30...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
21...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
25...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	0.4	<0.1	<1.00	20	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07287355 - FANNEGUSHA CREEK NR HOWARD - SITE 17

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39251)
JUL 1988												
27...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
28...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
22...	<0.1	<1.0	0.9	0.8	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
24...	<0.1	<1.0	2.0	3.2	1.2	<0.1	<0.1	0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39758)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG) (81886)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)
JUL 1988												
27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
28...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
22...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
24...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

Table 12. Determinations of organochlorine compounds, organophosphorus insecticides, gross PCB, gross PCN, and methoxychlor in bottom material--Continued

07287404 - HARLAND CREEK NR HOWARD - SITE 20

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
JUL 1988												
27...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1989												
28...	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
AUG 1990												
22...	<0.1	<1.0	0.3	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0
JUN 1991												
24...	<0.1	<1.0	1.0	1.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1.0

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE IN BOTTOM MATERIAL (UG/KG) (81886)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
JUL 1988												
27...	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989												
28...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
AUG 1990												
22...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1991												
24...	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991

[uS/cm, microsiemens per centimeter at 25 degrees Celsius; mg/L, milligrams per liter;
cols./100 mL, colonies per 100 milliliters; CaCO3, calcium carbonate;
ROE, residue on evaporation at 180 degrees Celsius;
TR, total or total recoverable; ug/L, micrograms per liter;
--, insufficient data to calculate value (if maximum value is less than detection limit,
"--" is reported for all descriptive statistics and percentages).
*, value of data below the detection limit is estimated by using a log-probability regression]

STATION NUMBER: 07273100 STATION NAME: HOTOPHA CREEK NR BATESVILLE - SITE 1

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS			PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
		MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	93	650.000	2.300	59.770	311.400	55.500	20.000	9.250	4.510
Specific conductance, uS/cm	91	136.000	20.000	73.870	115.150	89.500	73.000	60.000	33.300
pH, in standard units	91	8.400	6.000	7.037	7.840	7.300	7.000	6.700	6.260
Temperature, in degrees Celsius	93	38.000	4.000	20.828	35.000	28.000	20.500	13.000	7.850
Oxygen, dissolved, mg/L	92	12.300	6.100	8.904	11.870	10.150	8.600	7.600	6.830
Nitrite plus nitrate, total, as N, mg/L	93	0.250	--	0.100*	*0.210	*0.150	*0.090	*0.040	*0.020
Ammonia, total, as N, mg/L	93	0.130	--	0.028*	*0.064	*0.038	*0.030	*0.010	*0.007
Phosphorus, total, mg/L	93	0.600	0.010	0.088	0.281	0.100	0.060	0.050	0.020
Orthophosphorus, total, mg/L	93	0.170	0.010	0.044	0.110	0.058	0.040	0.020	0.010
Carbon, organic, total, mg/L	92	9.300	0.100	3.658	6.900	4.500	3.300	2.500	1.600

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07274252 STATION NAME: OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS: MAXIMUM	MINIMUM	MEAN	PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN: 95	75	50 (MEDIAN)	25	5
Discharge, in cubic feet per second	248	15800.000	10.000	184.194	545.199	82.000	49.500	24.000	16.000
Specific conductance, uS/cm	253	160.000	13.000	80.960	132.300	97.000	78.000	61.000	42.000
pH, in standard units	253	8.000	5.800	6.889	7.230	7.100	6.900	6.700	6.370
Temperature, in degrees Celsius	254	33.500	5.000	20.228	30.125	24.500	19.750	16.875	9.500
Oxygen, dissolved, mg/L	253	13.400	4.600	8.468	11.100	9.200	8.400	7.800	6.200
Fecal coliform, cols./100 mL	71	8400.000	5.000	1269.338	6000.000	1700.000	480.000	200.000	39.000
Fecal streptococci, cols./100 mL	72	19000.000	12.000	1770.583	8895.010	1625.000	360.000	180.000	31.250
Calcium, dissolved, mg/L	7	5.200	3.100	4.286	5.200	4.700	4.400	3.700	3.100
Magnesium, dissolved, mg/L	7	1.700	1.200	1.529	1.700	1.600	1.600	1.400	1.200
Sodium, dissolved, mg/L	7	8.800	3.600	5.757	8.800	7.200	5.100	4.600	3.600
Potassium, dissolved, mg/L	7	2.400	1.200	1.714	2.400	2.000	1.600	1.500	1.200
Alkalinity, as CaCO3, dissolved, mg/L	6	29.000	12.000	17.667	29.000	22.250	16.000	12.750	12.000
Sulfate, dissolved, mg/L	7	6.500	2.400	4.700	6.500	6.100	5.600	3.000	2.400
Chloride, dissolved, mg/L	7	12.000	3.000	5.743	12.000	7.300	4.400	4.100	3.000
Fluoride, dissolved, mg/L	6	--	--	--	--	--	--	--	--
ROE, dissolved, mg/L	6	72.000	38.000	56.167	72.000	66.750	55.500	47.750	38.000
Dissolved solids, sum, mg/L	6	65.000	37.000	47.500	65.000	55.250	46.000	38.500	37.000
Nitrite plus nitrate, total, as N, mg/L	163	1.300	0.020	0.315	1.100	0.373	0.220	0.170	0.100
Ammonia, total, as N, mg/L	163	5.000	0.030	0.601	2.170	0.737	0.300	0.148	0.050
Phosphorus, total, mg/L	164	2.300	0.060	0.428	0.868	0.570	0.360	0.240	0.110
Orthophosphorus, total, mg/L	164	1.300	0.040	0.329	0.710	0.430	0.280	0.160	0.070
Carbon, organic, total, mg/L	162	8.900	0.100	3.483	6.390	4.250	3.200	2.550	1.700
Color, total, in platinum-cobalt units	7	80.000	10.000	30.000	80.000	50.000	15.000	10.000	10.000
Silica, dissolved, mg/L	7	15.000	6.600	11.629	15.000	14.000	12.000	9.800	6.600
Aluminum, TR, ug/L	8	1500.000	140.000	640.000	1500.000	1077.500	495.000	245.000	140.000
Arsenic, TR, ug/L	8	2.000	--	1.039*	*2.000	*1.000	*1.000	*0.779	*0.610
Cadmium, TR, ug/L	8	--	--	--	--	--	--	--	--
Chromium, TR, ug/L	8	3.000	--	1.768*	*3.000	*3.000	*1.500	*0.749	*0.477
Cobalt, TR, ug/L	8	3.000	--	1.722*	*3.000	*2.000	*2.000	*0.985	*0.797
Copper, TR, ug/L	8	5.000	1.000	3.000	5.000	4.500	3.000	2.000	1.000
Iron, TR, ug/L	8	3800.000	660.000	2107.500	3800.000	3300.000	2000.000	1250.000	660.000
Lead, TR, ug/L	8	7.000	--	3.706*	*7.000	*4.750	*3.324	*2.320	*2.000
Manganese, TR, ug/L	8	1000.000	90.000	331.250	1000.000	395.000	230.000	195.000	90.000
Mercury, TR, ug/L	8	--	--	--	--	--	--	--	--
Selenium, TR, ug/L	8	--	--	--	--	--	--	--	--
Zinc, TR, ug/L	8	--	--	--	--	--	--	--	--

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07275530 STATION NAME: PETERS (LONG) CREEK NR POPE - SITE 8

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS			PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
		MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	92	5550.000	2.100	129.805	500.602	60.750	16.500	11.000	4.815
Specific conductance, uS/cm	93	142.000	20.000	79.828	103.300	93.000	83.000	69.500	38.200
pH, in standard units	90	7.800	6.000	6.997	7.545	7.200	7.000	6.800	6.400
Temperature, in degrees Celsius	93	37.000	4.500	20.452	34.450	26.500	21.000	13.000	7.000
Oxygen, dissolved, mg/L	91	13.200	4.300	9.238	12.080	10.400	8.900	8.000	7.100
Nitrite plus nitrate, total, as N, mg/L	93	0.550	--	0.182*	*0.447	*0.300	*0.150	*0.040	*0.016
Ammonia, total, as N, mg/L	93	0.210	--	0.027*	*0.064	*0.030	*0.020	*0.010	*0.005
Phosphorus, total, mg/L	92	0.800	0.020	0.099	0.386	0.090	0.060	0.040	0.020
Orthophosphorus, total, mg/L	93	0.250	0.010	0.050	0.170	0.060	0.030	0.020	0.010
Carbon, organic, total, mg/L	92	11.000	0.800	2.741	8.120	3.000	2.000	1.400	0.900

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07277700 STATION NAME: HICKAHALA CREEK NR SENATOBIA - SITE 12

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS			PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
		MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	326	5180.000	9.200	143.654	514.750	89.250	34.000	28.000	27.000
Specific conductance, uS/cm	326	78.000	28.000	57.880	71.000	62.000	57.000	54.000	47.000
pH, in standard units	323	7.700	6.000	6.867	7.300	7.000	6.900	6.700	6.400
Temperature, in degrees Celsius	281	32.000	4.000	19.463	28.000	25.000	19.500	15.000	8.000
Oxygen, dissolved, mg/L	323	12.700	5.600	8.230	10.800	9.000	8.100	7.300	6.300
Fecal coliform, cols./100 mL	71	32000.000	25.000	2797.887	20399.965	1800.000	260.000	120.000	43.600
Fecal streptococci, cols./100 mL	71	36000.000	67.000	3661.127	30799.988	2000.000	380.000	220.000	81.200
Calcium, dissolved, mg/L	8	7.300	2.600	3.787	7.300	3.925	3.350	3.000	2.600
Magnesium, dissolved, mg/L	8	1.700	1.000	1.350	1.700	1.650	1.300	1.125	1.000
Sodium, dissolved, mg/L	8	7.100	2.300	4.775	7.100	6.375	4.950	3.300	2.300
Potassium, dissolved, mg/L	8	2.800	0.800	1.675	2.800	2.550	1.400	1.100	0.800
Alkalinity, as CaCO3, dissolved, mg/L	8	20.000	7.600	15.825	20.000	19.750	18.000	11.000	7.600
Sulfate, dissolved, mg/L	8	6.000	0.600	2.762	6.000	4.950	2.250	0.900	0.600
Chloride, dissolved, mg/L	8	7.400	2.900	4.675	7.400	6.050	4.250	3.400	2.900
Fluoride, dissolved, mg/L	8	--	--	--	--	--	--	--	--
ROE, dissolved, mg/L	7	53.000	39.000	46.714	53.000	51.000	49.000	40.000	39.000
Dissolved solids, sum, mg/L	8	51.000	30.000	41.875	51.000	49.250	41.500	37.500	30.000
Nitrite plus nitrate, total, as N, mg/L	163	1.000	0.020	0.355	0.869	0.523	0.295	0.140	0.040
Ammonia, total, as N, mg/L	162	0.240	0.010	0.045	0.120	0.060	0.030	0.020	0.010
Phosphorus, total, mg/L	163	1.500	0.020	0.160	0.609	0.180	0.080	0.058	0.030
Orthophosphorus, total, mg/L	162	0.450	0.010	0.073	0.220	0.090	0.040	0.030	0.020
Carbon, organic, total, mg/L	160	12.000	0.300	2.789	7.500	4.200	1.500	1.000	0.700
Color, total, in platinum-cobalt units	8	160.000	--	53.621*	*160.000	*130.000	*12.500	*1.460	*0.362
Silica, dissolved, mg/L	8	16.000	4.400	12.450	16.000	15.750	14.500	8.900	4.400
Aluminum, TR, ug/L	7	20000.000	130.000	3741.429	20000.000	3900.000	360.000	140.000	130.000
Arsenic, TR, ug/L	8	2.000	--	1.069*	*2.000	*1.750	*1.000	*0.551	*0.395
Cadmium, TR, ug/L	8	--	--	--	--	--	--	--	--
Chromium, TR, ug/L	8	23.000	--	6.049*	*23.000	*8.500	*3.500	*1.500	*0.394
Cobalt, TR, ug/L	8	8.000	--	2.203*	*8.000	*2.750	*1.500	*0.543	*0.230
Copper, TR, ug/L	8	21.000	2.000	5.375	21.000	4.750	3.500	2.000	2.000
Iron, TR, ug/L	8	38000.000	200.000	6167.500	38000.000	4100.000	1370.000	380.000	200.000
Lead, TR, ug/L	8	--	--	--	--	--	--	--	--
Manganese, TR, ug/L	8	930.000	70.000	263.750	930.000	310.000	160.000	122.500	70.000
Mercury, TR, ug/L	8	--	--	--	--	--	--	--	--
Selenium, TR, ug/L	7	--	--	--	--	--	--	--	--
Zinc, TR, ug/L	8	80.000	--	21.994*	*80.000	*42.500	*10.000	*2.202	*0.861

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07277730 STATION NAME: SENATOBIA CREEK NR SENATOBIA - SITE 14

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS MAXIMUM	MINIMUM	MEAN	PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN 95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	263	3030.000	6.400	74.923	315.000	27.000	9.300	8.500	8.100
Specific conductance, uS/cm	262	106.000	24.000	76.469	93.000	86.000	79.000	73.750	43.000
pH, in standard units	260	9.400	5.900	7.301	9.200	7.400	7.100	6.800	6.500
Temperature, in degrees Celsius	260	31.500	3.000	21.627	29.000	27.000	23.500	18.000	8.500
Oxygen, dissolved, mg/L	261	13.200	5.100	8.702	11.400	10.000	8.700	7.500	6.300
Fecal coliform, cols./100 mL	71	26000.000	5.000	2272.338	14999.969	2100.000	520.000	250.000	65.600
Fecal streptococci, cols./100 mL	71	39000.000	60.000	3157.747	21599.883	2200.000	440.000	210.000	92.400
Calcium, dissolved, mg/L	8	4.700	2.900	3.600	4.700	4.275	3.300	2.975	2.900
Magnesium, dissolved, mg/L	8	2.000	1.100	1.563	2.000	1.825	1.550	1.350	1.100
Sodium, dissolved, mg/L	8	10.000	1.700	6.813	10.000	9.725	8.500	2.975	1.700
Potassium, dissolved, mg/L	8	2.600	0.900	1.700	2.600	2.425	1.500	1.150	0.900
Alkalinity, as CaCO3, dissolved, mg/L	8	24.000	5.700	17.925	24.000	24.000	21.500	9.525	5.700
Sulfate, dissolved, mg/L	8	7.600	1.400	4.075	7.600	5.675	4.450	1.650	1.400
Chloride, dissolved, mg/L	8	11.000	2.200	6.813	11.000	8.075	7.200	5.150	2.200
Fluoride, dissolved, mg/L	8	--	--	--	--	--	--	--	--
ROE, dissolved, mg/L	7	69.000	41.000	56.000	69.000	63.000	58.000	44.000	41.000
Dissolved solids, sum, mg/L	8	65.000	28.000	49.625	65.000	61.500	52.500	36.750	28.000
Nitrite plus nitrate, total, as N, mg/L	163	2.100	0.020	0.740	1.600	1.125	0.595	0.390	0.201
Ammonia, total, as N, mg/L	164	0.680	--	0.044*	*0.110	*0.050	*0.030	*0.010	*0.006
Phosphorus, total, mg/L	164	1.100	0.020	0.133	0.648	0.130	0.060	0.040	0.020
Orthophosphorus, total, mg/L	164	0.490	0.010	0.061	0.218	0.070	0.030	0.020	0.010
Carbon, organic, total, mg/L	160	19.000	0.100	2.688	7.400	3.600	1.600	1.100	0.900
Color, total, in platinum-cobalt units	8	200.000	--	52.146*	*200.000	*110.000	*7.500	*0.790	*0.161
Silica, dissolved, mg/L	8	18.000	4.500	13.013	18.000	16.000	14.500	9.450	4.500
Aluminum, TR, ug/L	7	20000.000	110.000	3355.714	20000.000	2200.000	270.000	200.000	110.000
Arsenic, TR, ug/L	8	2.000	--	1.069*	*2.000	*1.750	*1.000	*0.551	*0.395
Cadmium, TR, ug/L	8	--	--	--	--	--	--	--	--
Chromium, TR, ug/L	8	23.000	--	4.272*	*23.000	*3.000	*1.500	*1.000	*0.180
Cobalt, TR, ug/L	8	8.000	--	2.199*	*8.000	*4.250	*1.000	*0.220	*0.086
Copper, TR, ug/L	8	22.000	--	4.147*	*22.000	*3.500	*1.500	*1.000	*0.173
Iron, TR, ug/L	8	36000.000	210.000	5483.750	36000.000	2850.000	595.000	417.500	210.000
Lead, TR, ug/L	8	--	--	--	--	--	--	--	--
Manganese, TR, ug/L	8	820.000	90.000	221.250	820.000	175.000	150.000	110.000	90.000
Mercury, TR, ug/L	8	--	--	--	--	--	--	--	--
Selenium, TR, ug/L	7	--	--	--	--	--	--	--	--
Zinc, TR, ug/L	8	--	--	--	--	--	--	--	--

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07285400 STATION NAME: BATUPAN BOGUE AT GRENADA - SITE 15

PROPERTY OR CONSTITUENT	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	90	21100.000	10.000	1290.256	9126.998	1252.500	155.000	48.750	21.550
Specific conductance, uS/cm	93	167.000	19.000	97.194	157.600	129.500	94.000	68.000	41.400
pH, in standard units	88	8.600	5.800	7.015	7.900	7.300	7.000	6.700	6.300
Temperature, in degrees Celsius	93	33.500	3.000	19.935	31.500	27.000	20.000	13.250	7.700
Oxygen, dissolved, mg/L	89	12.400	4.800	8.979	11.850	10.150	8.800	7.900	7.050
Nitrite plus nitrate, total, as N, mg/L	93	0.500	--	0.111*	*0.237	*0.137	*0.105	*0.060	*0.020
Ammonia, total, as N, mg/L	93	0.220	--	0.039*	*0.100	*0.050	*0.030	*0.020	*0.008
Phosphorus, total, mg/L	93	0.630	0.030	0.112	0.369	0.100	0.070	0.060	0.046
Orthophosphorus, total, mg/L	93	0.350	0.010	0.056	0.160	0.060	0.040	0.030	0.020
Carbon, organic, total, mg/L	93	14.000	1.200	3.892	6.970	5.000	3.500	2.500	1.700

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07287355 STATION NAME: FANNEGUSHA CREEK NR HOWARD - SITE 17

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS MAXIMUM	MINIMUM	MEAN	PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN 95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	250	6220.000	5.100	533.502	4573.505	160.000	43.000	19.750	14.000
Specific conductance, uS/cm	209	322.000	28.000	125.818	193.000	174.500	141.000	76.500	34.000
pH, in standard units	248	8.300	6.000	7.355	8.200	7.800	7.400	7.100	6.200
Temperature, in degrees Celsius	252	33.000	6.000	19.815	30.675	25.500	20.500	13.500	10.000
Oxygen, dissolved, mg/L	251	12.800	5.700	8.635	11.640	9.500	8.400	7.400	6.760
Fecal coliform, cols./100 mL	73	12000.000	7.000	1171.151	6870.003	870.000	120.000	51.500	14.700
Fecal streptococci, cols./100 mL	73	36000.000	54.000	4159.123	28200.012	2500.000	450.000	190.000	77.700
Calcium, dissolved, mg/L	8	16.000	3.800	11.725	16.000	15.000	13.000	7.500	3.800
Magnesium, dissolved, mg/L	8	7.800	1.700	5.663	7.800	7.450	6.600	3.250	1.700
Sodium, dissolved, mg/L	8	10.000	1.700	6.837	10.000	8.850	7.450	4.625	1.700
Potassium, dissolved, mg/L	8	2.500	1.200	1.900	2.500	2.400	1.750	1.600	1.200
Alkalinity, as CaCO3, dissolved, mg/L	8	78.000	6.700	54.088	78.000	75.250	63.000	31.750	6.700
Sulfate, dissolved, mg/L	8	9.600	3.900	7.113	9.600	8.225	7.550	5.400	3.900
Chloride, dissolved, mg/L	8	8.000	1.700	4.625	8.000	5.775	4.700	2.950	1.700
Fluoride, dissolved, mg/L	8	4.000	--	0.614*	*4.000	*0.200	*0.150	*0.100	*0.015
ROE, dissolved, mg/L	7	113.000	49.000	95.571	113.000	111.000	104.000	92.000	49.000
Dissolved solids, sum, mg/L	8	114.000	27.000	87.000	114.000	111.750	95.500	60.750	27.000
Nitrite plus nitrate, total, as N, mg/L	165	0.700	--	0.096*	*0.275	*0.150	*0.060	*0.020	*0.008
Ammonia, total, as N, mg/L	165	0.150	--	0.039*	*0.097	*0.060	*0.030	*0.010	*0.006
Phosphorus, total, mg/L	164	1.600	0.020	0.184	0.630	0.210	0.090	0.060	0.030
Orthophosphorus, total, mg/L	164	0.500	0.010	0.090	0.310	0.120	0.060	0.030	0.020
Carbon, organic, total, mg/L	163	11.000	1.200	3.503	8.600	4.075	2.800	2.100	1.400
Color, total, in platinum-cobalt units	7	400.000	5.000	105.000	400.000	240.000	25.000	5.000	5.000
Silica, dissolved, mg/L	8	20.000	5.600	15.138	20.000	19.000	17.000	10.625	5.600
Aluminum, TR, ug/L	8	24000.000	90.000	6225.000	24000.000	17600.000	525.000	120.000	90.000
Arsenic, TR, ug/L	8	31.000	--	5.144*	*31.000	*2.750	*1.500	*1.000	*0.156
Cadmium, TR, ug/L	8	--	--	--	--	--	--	--	--
Chromium, TR, ug/L	8	28.000	--	8.253*	*28.000	*15.000	*3.500	*1.018	*0.335
Cobalt, TR, ug/L	8	20.000	--	4.281*	*20.000	*6.750	*1.000	*0.382	*0.075
Copper, TR, ug/L	8	27.000	--	8.530*	*27.000	*20.750	*3.500	*1.250	*0.238
Iron, TR, ug/L	8	41000.000	670.000	9710.000	41000.000	21125.000	1800.000	832.500	670.000
Lead, TR, ug/L	8	31.000	--	6.460*	*31.000	*10.250	*1.985	*0.661	*0.161
Manganese, TR, ug/L	8	2500.000	120.000	812.500	2500.000	1102.500	740.000	192.500	120.000
Mercury, TR, ug/L	8	--	--	--	--	--	--	--	--
Selenium, TR, ug/L	8	--	--	--	--	--	--	--	--
Zinc, TR, ug/L	8	160.000	--	47.285*	*160.000	*77.500	*35.000	*6.577	*2.846

Table 13. Statistical summary of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07287404 STATION NAME: HARLAND CREEK NR HOWARD - SITE 20

PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS			PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
		MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Discharge, in cubic feet per second	254	5300.000	6.200	346.702	3115.000	60.000	24.000	14.000	9.100
Specific conductance, uS/cm	251	409.000	32.000	206.980	374.600	262.000	212.000	130.000	38.000
pH, in standard units	250	8.700	5.700	7.279	8.200	7.800	7.300	6.900	5.900
Temperature, in degrees Celsius	254	31.000	7.000	20.807	31.000	25.500	21.000	12.500	8.500
Oxygen, dissolved, mg/L	251	12.700	5.200	8.848	12.300	9.900	8.700	7.600	6.060
Fecal coliform, cols./100 mL	72	16000.000	5.000	2164.708	10375.016	3450.000	200.000	50.500	5.000
Fecal streptococci, cols./100 mL	72	28000.000	28.000	4259.444	20350.008	7675.000	390.000	180.000	37.650
Calcium, dissolved, mg/L	7	27.000	2.200	16.186	27.000	27.000	20.000	4.700	2.200
Magnesium, dissolved, mg/L	7	13.000	1.000	7.643	13.000	13.000	9.000	2.200	1.000
Sodium, dissolved, mg/L	7	11.000	0.900	6.229	11.000	8.700	7.600	3.300	0.900
Potassium, dissolved, mg/L	7	2.500	1.400	1.914	2.500	2.000	1.900	1.800	1.400
Alkalinity, as CaCO3, dissolved, mg/L	6	131.000	15.000	83.333	131.000	129.500	103.000	18.000	15.000
Sulfate, dissolved, mg/L	7	8.400	2.800	5.586	8.400	7.300	5.400	4.700	2.800
Chloride, dissolved, mg/L	7	8.100	1.000	4.200	8.100	5.700	4.500	2.000	1.000
Fluoride, dissolved, mg/L	7	0.300	--	0.212*	*0.300	*0.300	*0.200	*0.100	*0.084
ROE, dissolved, mg/L	6	161.000	56.000	120.833	161.000	160.250	138.500	67.250	56.000
Dissolved solids, sum, mg/L	6	167.000	28.000	111.667	167.000	161.000	138.000	37.000	28.000
Nitrite plus nitrate, total, as N, mg/L	166	0.190	--	0.052*	*0.140	*0.070	*0.040	*0.020	*0.009
Ammonia, total, as N, mg/L	166	0.180	--	0.037*	*0.090	*0.050	*0.030	*0.010	*0.006
Phosphorus, total, mg/L	165	1.800	0.010	0.221	0.717	0.240	0.115	0.070	0.021
Orthophosphorus, total, mg/L	166	0.480	0.010	0.098	0.260	0.120	0.070	0.050	0.020
Carbon, organic, total, mg/L	163	13.000	0.800	3.966	9.270	4.975	3.300	2.200	1.500
Color, total, in platinum-cobalt units	7	200.000	5.000	63.143	200.000	120.000	22.000	5.000	5.000
Silica, dissolved, mg/L	7	24.000	5.000	14.814	24.000	21.000	18.000	7.300	5.000
Aluminum, TR, ug/L	6	20000.000	70.000	6553.333	20000.000	18500.000	585.000	77.500	70.000
Arsenic, TR, ug/L	7	11.000	1.000	3.143	11.000	2.000	2.000	2.000	1.000
Cadmium, TR, ug/L	7	--	--	--	--	--	--	--	--
Chromium, TR, ug/L	7	25.000	--	9.543*	*25.000	*21.000	*2.000	*0.569	*0.234
Cobalt, TR, ug/L	7	20.000	--	6.373*	*20.000	*10.000	*3.000	*0.428	*0.180
Copper, TR, ug/L	7	28.000	1.000	12.000	28.000	27.000	3.000	1.000	1.000
Iron, TR, ug/L	7	33000.000	900.000	13542.857	33000.000	31000.000	3100.000	1300.000	900.000
Lead, TR, ug/L	7	24.000	--	7.897*	*24.000	*12.000	*5.000	*1.000	*0.279
Manganese, TR, ug/L	7	1600.000	300.000	907.143	1600.000	1200.000	900.000	320.000	300.000
Mercury, TR, ug/L	7	--	--	--	--	--	--	--	--
Selenium, TR, ug/L	7	--	--	--	--	--	--	--	--
Zinc, TR, ug/L	7	110.000	--	50.987*	*110.000	*100.000	*30.000	*10.729	*6.183

Table 14. Statistical summary of trace-element bottom-material-chemistry data collected from February 1988 to September 1991

[All constituents, total or total recoverable; units, micrograms per gram.
--, insufficient data to calculate value (if maximum value is less than detection limit, "--" is reported for all descriptive statistics and percentages).
*, value of data below the detection limit is estimated by using a log-probability regression]

STATION NUMBER: 07274252 STATION NAME: OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
WATER-QUALITY CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Arsenic	7	2.000	--	1.155*	*2.000	*2.000	*1.000	*0.610	*0.471
Cadmium	7	--	--	--	--	--	--	--	--
Chromium	7	3.000	1.000	2.286	3.000	3.000	2.000	2.000	1.000
Cobalt	7	--	--	--	--	--	--	--	--
Copper	7	5.000	--	1.863*	*5.000	*2.000	*2.000	*0.623	*0.415
Iron	7	4500.000	1000.000	2342.857	4500.000	3400.000	1800.000	1200.000	1000.000
Lead	7	--	--	--	--	--	--	--	--
Manganese	7	5600.000	36.000	902.286	5600.000	260.000	140.000	37.000	36.000
Mercury	7	--	--	--	--	--	--	--	--
Selenium	7	--	--	--	--	--	--	--	--
Zinc	7	10.000	--	4.062*	*10.000	*7.000	*2.567	*2.000	*0.866

STATION NUMBER: 07277700 STATION NAME: HICKAHALA CREEK NR SENATOBIA - SITE 12

	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
WATER-QUALITY CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Arsenic	8	26.000	1.000	4.875	26.000	3.750	1.500	1.000	1.000
Cadmium	8	--	--	--	--	--	--	--	--
Chromium	8	7.000	2.000	3.500	7.000	4.750	3.000	2.000	2.000
Cobalt	8	--	--	--	--	--	--	--	--
Copper	8	--	--	--	--	--	--	--	--
Iron	8	8200.000	430.000	3353.750	8200.000	6725.000	1850.000	850.000	430.000
Lead	8	--	--	--	--	--	--	--	--
Manganese	8	2100.000	21.000	331.375	2100.000	215.000	54.500	29.750	21.000
Mercury	8	--	--	--	--	--	--	--	--
Selenium	8	--	--	--	--	--	--	--	--
Zinc	8	20.000	--	3.953*	*20.000	*2.920	*1.815	*1.000	*0.766

Table 14. Statistical summary of trace-element bottom-material-chemistry data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07277730 STATION NAME: SENATOBIA CREEK NR SENATOBIA - SITE 14

	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
WATER-QUALITY CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Arsenic	8	20.000	1.000	4.875	20.000	4.750	3.000	1.250	1.000
Cadmium	8	--	--	--	--	--	--	--	--
Chromium	8	20.000	1.000	4.875	20.000	4.000	3.500	1.250	1.000
Cobalt	8	--	--	--	--	--	--	--	--
Copper	8	4.000	--	1.241*	*4.000	*1.750	*1.000	*0.337	*0.189
Iron	8	7700.000	670.000	2602.500	7700.000	4750.000	1125.000	790.000	670.000
Lead	8	--	--	--	--	--	--	--	--
Manganese	8	4200.000	49.000	650.750	4200.000	317.500	135.000	55.250	49.000
Mercury	8	--	--	--	--	--	--	--	--
Selenium	8	--	--	--	--	--	--	--	--
Zinc	8	--	--	--	--	--	--	--	--

STATION NUMBER: 07287355 STATION NAME: FANNEGUSHA CREEK NR HOWARD - SITE 17

	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
WATER-QUALITY CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Arsenic	8	4.000	1.000	1.750	4.000	2.000	1.500	1.000	1.000
Cadmium	8	--	--	--	--	--	--	--	--
Chromium	8	20.000	--	4.104*	*20.000	*3.000	*2.314	*0.934	*0.296
Cobalt	8	--	--	--	--	--	--	--	--
Copper	8	--	--	--	--	--	--	--	--
Iron	8	7000.000	350.000	1683.750	7000.000	1965.000	770.000	645.000	350.000
Lead	8	--	--	--	--	--	--	--	--
Manganese	8	400.000	3.000	98.250	400.000	83.750	66.500	39.750	3.000
Mercury	8	--	--	--	--	--	--	--	--
Selenium	8	--	--	--	--	--	--	--	--
Zinc	8	--	--	--	--	--	--	--	--

Table 14. Statistical summary of trace-element bottom-material-chemistry data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07287404 STATION NAME: HARLAND CREEK NR HOWARD - SITE 20

WATER-QUALITY CONSTITUENT	DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
Arsenic	7	7.000	1.000	2.429	7.000	2.000	2.000	1.000	1.000
Cadmium	7	--	--	--	--	--	--	--	--
Chromium	7	7.000	--	3.296*	*7.000	*4.236	*3.000	*1.833	*1.000
Cobalt	7	--	--	--	--	--	--	--	--
Copper	7	10.000	--	2.315*	*10.000	*2.000	*1.000	*0.977	*0.225
Iron	7	6900.000	450.000	1881.428	6900.000	1800.000	1100.000	640.000	450.000
Lead	7	--	--	--	--	--	--	--	--
Manganese	7	380.000	28.000	142.857	380.000	340.000	66.000	48.000	28.000
Mercury	7	--	--	--	--	--	--	--	--
Selenium	7	--	--	--	--	--	--	--	--
Zinc	7	--	--	--	--	--	--	--	--

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991

[YEAR, partial or complete calendar year; ft3/s, cubic feet per second; uS/cm, microsiemens per centimeter at 25 degrees Celsius; mg/L, milligrams per liter; --, insufficient data to calculate value (if maximum value is less than detection limit, "--" is reported for all descriptive statistics and percentages). *, value of data below the detection limit is estimated by using a log-probability regression]

STATION NUMBER: 07273100 STATION NAME: HOTOPHA CREEK NR BATESVILLE - SITE 1

		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	24	170.000	4.100	28.938	155.000	29.750	18.000	4.825	4.125
1989	Discharge, ft3/s	24	650.000	2.300	73.854	563.250	65.750	16.000	9.825	2.800
1990	Discharge, ft3/s	24	523.000	4.800	62.142	475.000	38.750	19.000	8.775	4.850
1991	Discharge, ft3/s	21	412.000	7.600	76.200	400.600	86.000	35.000	9.800	7.690
1988	Specific conductance, uS/cm	23	136.000	42.000	89.087	135.200	100.000	88.000	75.000	44.200
1989	Specific conductance, uS/cm	24	121.000	27.000	67.208	112.500	77.750	70.000	59.250	29.000
1990	Specific conductance, uS/cm	24	130.000	29.000	74.208	125.500	89.250	71.500	61.000	30.250
1991	Specific conductance, uS/cm	20	103.000	32.000	66.650	102.900	89.750	62.500	44.250	32.100
1988	pH, in standard units	23	8.400	6.500	7.365	8.360	7.800	7.400	6.900	6.560
1989	pH, in standard units	23	7.700	6.000	6.861	7.680	7.000	6.800	6.700	6.040
1990	pH, in standard units	24	8.300	6.200	7.025	8.125	7.300	7.000	6.625	6.225
1991	pH, in standard units	21	7.500	6.100	6.886	7.490	7.250	6.900	6.550	6.120
1988	Oxygen, dissolved, mg/L	23	11.400	6.900	9.135	11.360	10.200	9.100	7.900	6.980
1989	Oxygen, dissolved, mg/L	24	12.300	6.200	8.938	12.250	10.000	8.700	7.425	6.400
1990	Oxygen, dissolved, mg/L	24	12.000	6.100	8.738	11.775	10.400	8.250	7.425	6.200
1991	Oxygen, dissolved, mg/L	21	12.100	7.000	8.805	12.070	10.250	8.400	7.550	7.000
1988	Nitrite plus nitrate, as N, mg/L	24	0.210	--	0.072*	*0.208	*0.113	*0.050	*0.020	*0.007
1989	Nitrite plus nitrate, as N, mg/L	24	0.180	0.020	0.098	0.180	0.145	0.095	0.063	0.020
1990	Nitrite plus nitrate, as N, mg/L	24	0.250	--	0.119*	*0.245	*0.200	*0.100	*0.043	*0.020
1991	Nitrite plus nitrate, as N, mg/L	21	0.190	0.030	0.110	0.188	0.155	0.110	0.065	0.031
1988	Ammonia, as N, mg/L	24	0.130	--	0.028*	*0.108	*0.040	*0.020	*0.010	*0.005
1989	Ammonia, as N, mg/L	24	0.050	--	0.021*	*0.047	*0.030	*0.015	*0.010	*0.004
1990	Ammonia, as N, mg/L	24	0.100	0.010	0.032	0.095	0.038	0.030	0.020	0.010
1991	Ammonia, as N, mg/L	21	0.070	0.010	0.029	0.068	0.030	0.030	0.020	0.011
1988	Phosphorus, total, mg/L	24	0.360	0.020	0.080	0.350	0.078	0.060	0.040	0.020
1989	Phosphorus, total, mg/L	24	0.600	0.010	0.095	0.493	0.118	0.060	0.040	0.012
1990	Phosphorus, total, mg/L	24	0.390	0.030	0.091	0.357	0.078	0.065	0.050	0.032
1991	Phosphorus, total, mg/L	21	0.250	0.020	0.089	0.241	0.110	0.070	0.060	0.021
1988	Orthophosphorus, total, mg/L	24	0.120	0.010	0.033	0.110	0.038	0.030	0.012	0.010
1989	Orthophosphorus, total, mg/L	24	0.170	0.010	0.048	0.150	0.067	0.040	0.030	0.012
1990	Orthophosphorus, total, mg/L	24	0.140	0.010	0.045	0.132	0.050	0.040	0.030	0.010
1991	Orthophosphorus, total, mg/L	21	0.130	0.020	0.056	0.128	0.070	0.050	0.030	0.020
1988	Carbon, organic, total, mg/L	23	9.200	1.800	3.696	8.680	4.500	3.300	2.500	1.900
1989	Carbon, organic, total, mg/L	24	8.300	0.100	4.121	7.850	5.575	4.200	2.525	0.575
1990	Carbon, organic, total, mg/L	24	9.300	1.300	3.567	8.700	3.975	3.050	2.550	1.325
1991	Carbon, organic, total, mg/L	21	6.900	1.600	3.310	6.820	4.350	3.000	2.000	1.600

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07274252 STATION NAME: OTOUCALOFA CREEK CANAL NR WATER VALLEY - SITE 7

YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
1988	Discharge, ft3/s	140	728.000	10.000	52.079	88.950	78.000	32.500	16.000	15.000
1989	Discharge, ft3/s	36	3510.000	28.000	302.583	1742.003	379.750	54.000	35.000	28.850
1990	Discharge, ft3/s	33	890.000	22.000	110.152	606.501	140.500	39.000	32.000	23.400
1991	Discharge, ft3/s	39	15800.000	24.000	611.821	1000.000	446.000	139.000	25.000	24.000
1988	Specific conductance, uS/cm	140	160.000	42.000	96.450	138.850	114.750	93.000	78.000	61.050
1989	Specific conductance, uS/cm	42	88.000	25.000	61.905	87.000	78.000	60.000	52.000	30.150
1990	Specific conductance, uS/cm	32	85.000	25.000	61.688	84.350	70.000	62.000	54.750	36.050
1991	Specific conductance, uS/cm	39	94.000	13.000	61.692	92.000	78.000	55.000	52.000	23.000
1988	pH, in standard units	140	8.000	6.400	7.006	7.300	7.200	7.100	6.825	6.600
1989	pH, in standard units	41	7.200	6.000	6.639	7.080	6.800	6.700	6.450	6.100
1990	pH, in standard units	33	7.400	6.300	6.842	7.260	7.000	6.900	6.750	6.300
1991	pH, in standard units	39	7.400	5.800	6.772	7.300	7.000	6.800	6.600	5.900
1988	Oxygen, dissolved, mg/L	139	13.400	4.600	8.132	9.600	8.700	8.300	7.800	6.000
1989	Oxygen, dissolved, mg/L	42	12.500	5.800	8.924	11.770	9.600	9.000	7.975	6.245
1990	Oxygen, dissolved, mg/L	33	11.800	6.500	8.718	11.380	10.000	8.200	7.350	6.780
1991	Oxygen, dissolved, mg/L	39	13.400	6.200	8.962	11.600	9.700	9.100	7.800	6.700
1988	Nitrite plus nitrate, as N, mg/L	50	1.300	0.100	0.493	1.200	0.538	0.395	0.188	0.121
1989	Nitrite plus nitrate, as N, mg/L	41	0.530	0.110	0.258	0.478	0.315	0.230	0.180	0.130
1990	Nitrite plus nitrate, as N, mg/L	33	0.670	0.150	0.282	0.579	0.325	0.240	0.200	0.157
1991	Nitrite plus nitrate, as N, mg/L	39	0.580	0.020	0.170	0.370	0.200	0.160	0.120	0.040
1988	Ammonia, as N, mg/L	50	5.000	0.030	1.412	3.335	1.725	1.300	0.727	0.365
1989	Ammonia, as N, mg/L	41	1.100	0.040	0.268	0.758	0.435	0.230	0.080	0.050
1990	Ammonia, as N, mg/L	33	0.300	0.030	0.148	0.293	0.190	0.170	0.085	0.030
1991	Ammonia, as N, mg/L	39	0.820	0.030	0.282	0.580	0.380	0.270	0.170	0.070
1988	Phosphorus, total, mg/L	51	2.300	0.140	0.672	1.200	0.800	0.630	0.440	0.264
1989	Phosphorus, total, mg/L	41	0.730	0.100	0.322	0.718	0.430	0.300	0.165	0.110
1990	Phosphorus, total, mg/L	33	0.650	0.060	0.284	0.552	0.335	0.280	0.245	0.067
1991	Phosphorus, total, mg/L	39	0.680	0.080	0.343	0.640	0.470	0.320	0.220	0.110
1988	Orthophosphorus, total, mg/L	51	1.300	0.080	0.540	0.928	0.690	0.550	0.360	0.168
1989	Orthophosphorus, total, mg/L	41	0.640	0.040	0.230	0.621	0.330	0.170	0.100	0.061
1990	Orthophosphorus, total, mg/L	33	0.550	0.040	0.227	0.480	0.285	0.220	0.160	0.040
1991	Orthophosphorus, total, mg/L	39	0.490	0.050	0.240	0.490	0.330	0.220	0.140	0.080
1988	Carbon, organic, total, mg/L	49	6.700	1.800	3.247	5.700	4.200	3.000	2.500	1.850
1989	Carbon, organic, total, mg/L	41	8.900	0.100	3.871	8.700	4.850	3.600	2.150	1.600
1990	Carbon, organic, total, mg/L	33	7.200	1.200	3.394	5.590	4.200	3.200	2.750	1.340
1991	Carbon, organic, total, mg/L	39	6.800	2.000	3.533	5.900	4.100	3.200	2.700	2.000

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07275530 STATION NAME: PETERS (LONG) CREEK NR POPE - SITE 8

		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	24	220.000	5.200	34.325	212.500	46.000	10.500	7.575	5.325
1989	Discharge, ft3/s	23	5550.000	2.100	289.804	4575.996	44.000	16.000	11.000	2.180
1990	Discharge, ft3/s	24	1250.000	7.200	123.242	1138.750	61.750	33.000	11.500	7.800
1991	Discharge, ft3/s	21	404.000	11.000	71.190	382.200	99.500	37.000	13.000	11.000
1988	Specific conductance, uS/cm	24	142.000	26.000	86.833	138.500	100.000	88.500	73.500	34.250
1989	Specific conductance, uS/cm	24	101.000	20.000	76.917	100.500	89.000	82.000	75.250	23.500
1990	Specific conductance, uS/cm	24	102.000	41.000	77.875	101.500	88.750	84.000	63.750	42.250
1991	Specific conductance, uS/cm	21	105.000	26.000	77.381	104.900	96.500	74.000	62.500	28.800
1988	pH, in standard units	24	7.800	6.200	7.158	7.775	7.500	7.200	6.900	6.275
1989	pH, in standard units	23	7.300	6.000	6.843	7.300	7.100	6.900	6.600	6.060
1990	pH, in standard units	24	7.400	6.400	6.992	7.400	7.175	7.000	6.900	6.450
1991	pH, in standard units	19	7.500	6.400	6.984	7.500	7.300	7.000	6.700	6.400
1988	Oxygen, dissolved, mg/L	22	13.200	7.300	9.391	13.140	9.950	9.100	8.375	7.345
1989	Oxygen, dissolved, mg/L	24	12.700	4.300	9.442	12.575	11.150	9.400	8.225	4.900
1990	Oxygen, dissolved, mg/L	24	11.300	7.300	9.000	11.250	10.300	8.550	7.900	7.350
1991	Oxygen, dissolved, mg/L	21	11.700	6.600	9.119	11.660	9.700	8.900	8.500	6.620
1988	Nitrite plus nitrate, as N, mg/L	24	0.400	--	0.132*	*0.400	*0.225	*0.065	*0.020	*0.005
1989	Nitrite plus nitrate, as N, mg/L	24	0.420	0.020	0.159	0.418	0.197	0.150	0.052	0.020
1990	Nitrite plus nitrate, as N, mg/L	24	0.550	--	0.228*	*0.543	*0.415	*0.165	*0.069	*0.024
1991	Nitrite plus nitrate, as N, mg/L	21	0.440	--	0.211*	*0.436	*0.300	*0.270	*0.040	*0.019
1988	Ammonia, as N, mg/L	24	0.130	--	0.029*	*0.115	*0.047	*0.015	*0.010	*0.003
1989	Ammonia, as N, mg/L	24	0.080	--	0.020*	*0.075	*0.030	*0.010	*0.010	*0.003
1990	Ammonia, as N, mg/L	24	0.210	--	0.034*	*0.173	*0.040	*0.025	*0.012	*0.005
1991	Ammonia, as N, mg/L	21	0.040	0.010	0.024	0.040	0.030	0.020	0.015	0.010
1988	Phosphorus, total, mg/L	23	0.580	0.020	0.110	0.538	0.110	0.060	0.040	0.022
1989	Phosphorus, total, mg/L	24	0.800	0.020	0.124	0.683	0.157	0.070	0.040	0.020
1990	Phosphorus, total, mg/L	24	0.410	0.020	0.094	0.410	0.067	0.050	0.040	0.020
1991	Phosphorus, total, mg/L	21	0.180	0.020	0.063	0.173	0.080	0.060	0.040	0.021
1988	Orthophosphorus, total, mg/L	24	0.220	0.010	0.048	0.207	0.060	0.020	0.010	0.010
1989	Orthophosphorus, total, mg/L	24	0.250	0.010	0.057	0.215	0.070	0.045	0.023	0.010
1990	Orthophosphorus, total, mg/L	24	0.210	--	0.048*	*0.200	*0.050	*0.030	*0.020	*0.004
1991	Orthophosphorus, total, mg/L	21	0.100	0.010	0.046	0.099	0.065	0.040	0.020	0.010
1988	Carbon, organic, total, mg/L	23	8.600	0.800	2.874	8.440	3.500	2.200	1.400	0.880
1989	Carbon, organic, total, mg/L	24	8.900	1.000	2.904	8.500	3.725	2.000	1.600	1.000
1990	Carbon, organic, total, mg/L	24	11.000	0.800	2.900	10.575	2.675	1.900	1.350	0.825
1991	Carbon, organic, total, mg/L	21	4.300	0.900	2.267	4.280	2.950	2.300	1.400	0.910

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07277700 STATION NAME: HICKAHALA CREEK NR SENATOBIA - SITE 12

YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	DESCRIPTIVE STATISTICS: MAXIMUM	MINIMUM	MEAN	PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN: 95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	172	616.000	22.000	34.959	53.100	29.000	28.000	27.000	27.000
1989	Discharge, ft3/s	73	957.000	9.200	179.373	572.700	234.500	107.000	75.500	32.700
1990	Discharge, ft3/s	42	5180.000	33.000	429.214	2967.499	217.000	52.500	40.500	34.150
1991	Discharge, ft3/s	39	2890.000	34.000	248.641	1490.000	123.000	56.000	40.000	34.000
1988	Specific conductance, uS/cm	172	74.000	47.000	56.942	64.350	58.000	56.000	54.000	52.000
1989	Specific conductance, uS/cm	73	74.000	32.000	58.000	70.300	65.000	57.000	54.000	46.000
1990	Specific conductance, uS/cm	42	78.000	35.000	61.571	75.700	69.500	62.000	55.500	43.300
1991	Specific conductance, uS/cm	39	74.000	28.000	57.821	70.000	64.000	62.000	55.000	31.000
1988	pH, in standard units	172	7.500	6.300	6.882	7.300	7.100	6.900	6.700	6.500
1989	pH, in standard units	72	7.700	6.100	6.769	7.205	6.900	6.800	6.600	6.365
1990	pH, in standard units	41	7.400	6.300	6.859	7.290	7.000	6.800	6.650	6.400
1991	pH, in standard units	38	7.700	6.000	6.995	7.605	7.200	7.000	6.775	6.190
1988	Oxygen, dissolved, mg/L	169	11.600	5.600	7.770	9.800	8.600	7.600	6.900	6.000
1989	Oxygen, dissolved, mg/L	73	11.600	6.400	8.449	10.950	8.900	8.200	7.850	7.000
1990	Oxygen, dissolved, mg/L	42	12.200	6.300	8.855	11.225	9.525	8.750	7.950	6.515
1991	Oxygen, dissolved, mg/L	39	12.700	6.700	9.138	12.100	10.000	9.200	8.000	6.900
1988	Nitrite plus nitrate, as N, mg/L	50	0.830	0.020	0.200	0.792	0.217	0.095	0.050	0.030
1989	Nitrite plus nitrate, as N, mg/L	33	0.970	0.100	0.415	0.914	0.565	0.380	0.180	0.107
1990	Nitrite plus nitrate, as N, mg/L	42	1.000	0.090	0.439	0.888	0.523	0.455	0.300	0.100
1991	Nitrite plus nitrate, as N, mg/L	38	1.000	0.140	0.416	0.972	0.672	0.345	0.178	0.140
1988	Ammonia, as N, mg/L	49	0.170	0.010	0.033	0.100	0.040	0.020	0.020	0.010
1989	Ammonia, as N, mg/L	33	0.120	--	0.036*	*0.106	*0.050	*0.030	*0.015	*0.006
1990	Ammonia, as N, mg/L	42	0.240	0.010	0.057	0.181	0.070	0.045	0.030	0.010
1991	Ammonia, as N, mg/L	38	0.190	0.010	0.054	0.143	0.080	0.040	0.020	0.010
1988	Phosphorus, total, mg/L	50	0.590	0.040	0.115	0.300	0.147	0.080	0.060	0.050
1989	Phosphorus, total, mg/L	33	0.720	0.020	0.195	0.678	0.300	0.100	0.060	0.020
1990	Phosphorus, total, mg/L	42	1.500	0.020	0.217	0.845	0.237	0.120	0.060	0.040
1991	Phosphorus, total, mg/L	38	0.630	0.030	0.129	0.554	0.140	0.070	0.040	0.030
1988	Orthophosphorus, total, mg/L	49	0.220	0.020	0.052	0.150	0.065	0.030	0.030	0.020
1989	Orthophosphorus, total, mg/L	33	0.450	0.010	0.090	0.310	0.140	0.060	0.030	0.010
1990	Orthophosphorus, total, mg/L	42	0.350	0.010	0.093	0.333	0.135	0.060	0.038	0.010
1991	Orthophosphorus, total, mg/L	38	0.410	0.020	0.069	0.249	0.090	0.040	0.020	0.020
1988	Carbon, organic, total, mg/L	47	7.500	0.700	1.943	6.600	2.200	1.200	0.900	0.800
1989	Carbon, organic, total, mg/L	33	12.000	0.300	3.639	11.300	6.000	2.400	1.150	0.370
1990	Carbon, organic, total, mg/L	41	11.000	0.500	3.529	8.450	5.900	2.200	1.400	0.630
1991	Carbon, organic, total, mg/L	39	7.200	0.700	2.395	6.100	3.000	1.800	0.900	0.700

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07277730 STATION NAME: SENATOBIA CREEK NR SENATOBIA - SITE 14

		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	149	474.000	6.400	14.093	27.000	9.300	8.800	8.200	8.000
1989	Discharge, ft3/s	33	1470.000	10.000	96.182	598.504	61.000	40.000	20.000	10.700
1990	Discharge, ft3/s	42	3030.000	10.000	230.476	1327.500	89.500	18.500	14.500	10.000
1991	Discharge, ft3/s	39	1610.000	11.000	121.821	766.000	61.000	20.000	12.000	11.000
1988	Specific conductance, uS/cm	149	106.000	24.000	79.698	90.500	85.000	80.000	76.000	70.000
1989	Specific conductance, uS/cm	32	95.000	28.000	71.781	91.100	83.750	75.500	65.000	37.750
1990	Specific conductance, uS/cm	42	96.000	32.000	72.667	93.850	90.250	79.000	56.000	33.050
1991	Specific conductance, uS/cm	39	98.000	33.000	72.077	94.000	91.000	80.000	62.000	35.000
1988	pH, in standard units	149	9.400	6.600	7.538	9.300	7.600	7.300	7.000	6.700
1989	pH, in standard units	31	8.000	5.900	6.884	7.880	7.000	6.800	6.600	6.200
1990	pH, in standard units	42	8.200	6.200	6.962	8.155	7.225	6.950	6.600	6.200
1991	pH, in standard units	38	7.900	6.200	7.087	7.900	7.500	7.000	6.775	6.200
1988	Oxygen, dissolved, mg/L	147	11.600	5.100	8.226	11.000	9.400	8.200	6.900	6.200
1989	Oxygen, dissolved, mg/L	33	13.200	5.900	9.255	12.850	10.300	8.900	8.050	6.600
1990	Oxygen, dissolved, mg/L	42	11.500	6.100	9.183	11.270	10.250	9.000	8.250	6.760
1991	Oxygen, dissolved, mg/L	39	12.300	6.000	9.513	12.100	10.600	9.600	8.400	6.600
1988	Nitrite plus nitrate, as N, mg/L	49	1.600	0.030	0.441	1.500	0.430	0.310	0.250	0.065
1989	Nitrite plus nitrate, as N, mg/L	33	1.700	0.020	0.831	1.630	1.050	0.750	0.545	0.146
1990	Nitrite plus nitrate, as N, mg/L	42	2.100	0.330	0.953	1.785	1.300	0.875	0.510	0.386
1991	Nitrite plus nitrate, as N, mg/L	39	1.600	0.310	0.813	1.600	1.200	0.620	0.510	0.320
1988	Ammonia, as N, mg/L	50	0.680	0.010	0.048	0.113	0.052	0.020	0.017	0.010
1989	Ammonia, as N, mg/L	33	0.090	--	0.032*	*0.090	*0.050	*0.030	*0.010	*0.004
1990	Ammonia, as N, mg/L	42	0.240	--	0.049*	*0.191	*0.060	*0.030	*0.010	*0.005
1991	Ammonia, as N, mg/L	39	0.130	0.010	0.043	0.110	0.060	0.030	0.020	0.010
1988	Phosphorus, total, mg/L	50	0.650	0.020	0.090	0.325	0.093	0.060	0.040	0.030
1989	Phosphorus, total, mg/L	33	0.740	0.020	0.163	0.670	0.205	0.090	0.040	0.020
1990	Phosphorus, total, mg/L	42	1.100	0.020	0.188	0.798	0.195	0.060	0.050	0.020
1991	Phosphorus, total, mg/L	39	0.700	0.020	0.104	0.340	0.100	0.070	0.050	0.030
1988	Orthophosphorus, total, mg/L	50	0.220	0.010	0.043	0.155	0.052	0.030	0.020	0.010
1989	Orthophosphorus, total, mg/L	33	0.240	0.010	0.067	0.212	0.100	0.040	0.020	0.010
1990	Orthophosphorus, total, mg/L	42	0.490	--	0.081*	*0.292	*0.100	*0.035	*0.027	*0.006
1991	Orthophosphorus, total, mg/L	39	0.240	0.010	0.059	0.200	0.080	0.030	0.020	0.010
1988	Carbon, organic, total, mg/L	48	9.100	0.500	1.962	6.580	1.875	1.500	1.100	0.790
1989	Carbon, organic, total, mg/L	33	12.000	0.100	3.333	8.360	5.100	2.200	1.500	0.520
1990	Carbon, organic, total, mg/L	42	19.000	0.700	3.362	8.100	5.000	1.650	1.100	0.830
1991	Carbon, organic, total, mg/L	37	5.800	0.900	2.284	5.620	3.000	1.800	1.150	0.900

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07285400 STATION NAME: BATUPAN BOGUE AT GRENADA - SITE 15

			DESCRIPTIVE STATISTICS			PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	23	285.000	10.000	65.913	263.800	94.000	44.000	24.000	11.000
1989	Discharge, ft3/s	22	9700.000	21.000	1250.364	9513.998	607.500	152.500	75.250	22.350
1990	Discharge, ft3/s	24	1210.000	29.000	269.458	1187.500	319.000	141.000	47.250	29.250
1991	Discharge, ft3/s	21	21100.000	173.000	3839.619	20090.016	2875.000	2190.000	1530.000	197.700
1988	Specific conductance, uS/cm	24	164.000	66.000	111.917	163.000	137.750	105.500	90.000	67.500
1989	Specific conductance, uS/cm	24	167.000	30.000	90.875	164.500	109.500	85.500	66.500	31.750
1990	Specific conductance, uS/cm	24	151.000	43.000	97.875	151.000	129.250	95.000	68.000	43.500
1991	Specific conductance, uS/cm	21	146.000	19.000	86.810	145.700	125.500	69.000	54.500	21.100
1988	pH, in standard units	23	8.600	6.500	7.396	8.500	7.800	7.300	7.000	6.560
1989	pH, in standard units	23	7.400	6.200	6.752	7.380	7.000	6.800	6.500	6.220
1990	pH, in standard units	24	7.600	6.300	7.012	7.575	7.200	7.100	6.825	6.325
1991	pH, in standard units	18	7.600	5.800	6.867	7.600	7.225	6.950	6.475	5.800
1988	Oxygen, dissolved, mg/L	22	12.400	4.800	9.027	12.355	9.750	8.800	8.175	5.190
1989	Oxygen, dissolved, mg/L	23	12.200	6.500	9.057	12.140	10.400	8.500	7.900	6.620
1990	Oxygen, dissolved, mg/L	23	11.300	7.000	9.000	11.260	10.300	8.600	7.800	7.040
1991	Oxygen, dissolved, mg/L	21	11.800	6.400	8.819	11.760	9.900	8.800	7.300	6.470
1988	Nitrite plus nitrate, as N, mg/L	24	0.250	0.020	0.078	0.245	0.115	0.065	0.020	0.020
1989	Nitrite plus nitrate, as N, mg/L	24	0.500	0.030	0.152	0.455	0.170	0.130	0.095	0.038
1990	Nitrite plus nitrate, as N, mg/L	24	0.200	--	0.120*	*0.200	*0.148	*0.115	*0.078	*0.052
1991	Nitrite plus nitrate, as N, mg/L	21	0.150	0.020	0.095	0.150	0.120	0.100	0.065	0.021
1988	Ammonia, as N, mg/L	24	0.060	0.010	0.025	0.058	0.040	0.020	0.010	0.010
1989	Ammonia, as N, mg/L	24	0.220	--	0.049*	*0.202	*0.060	*0.030	*0.020	*0.006
1990	Ammonia, as N, mg/L	24	0.210	0.010	0.042	0.173	0.047	0.040	0.020	0.012
1991	Ammonia, as N, mg/L	21	0.110	0.010	0.044	0.109	0.060	0.040	0.020	0.010
1988	Phosphorus, total, mg/L	24	0.540	0.050	0.112	0.462	0.137	0.070	0.060	0.050
1989	Phosphorus, total, mg/L	24	0.630	0.030	0.140	0.582	0.210	0.070	0.060	0.035
1990	Phosphorus, total, mg/L	24	0.320	0.030	0.088	0.293	0.090	0.065	0.060	0.032
1991	Phosphorus, total, mg/L	21	0.550	0.040	0.111	0.518	0.100	0.080	0.055	0.041
1988	Orthophosphorus, total, mg/L	24	0.350	0.020	0.063	0.298	0.070	0.040	0.030	0.020
1989	Orthophosphorus, total, mg/L	24	0.180	0.020	0.060	0.175	0.075	0.040	0.040	0.020
1990	Orthophosphorus, total, mg/L	24	0.230	0.010	0.051	0.207	0.058	0.040	0.030	0.012
1991	Orthophosphorus, total, mg/L	21	0.160	0.020	0.055	0.159	0.065	0.050	0.025	0.020
1988	Carbon, organic, total, mg/L	24	6.900	1.700	4.054	6.800	5.575	3.400	2.725	1.800
1989	Carbon, organic, total, mg/L	24	14.000	2.300	4.567	12.350	5.000	3.850	3.150	2.300
1990	Carbon, organic, total, mg/L	24	7.300	1.200	3.521	7.025	4.500	2.950	2.400	1.325
1991	Carbon, organic, total, mg/L	21	6.600	1.200	3.490	6.550	5.250	2.600	2.250	1.210

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07287355 STATION NAME: FANNEGUSHA CREEK NR HOWARD - SITE 17

		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	82	240.000	5.100	30.505	148.550	22.000	17.000	14.750	12.000
1989	Discharge, ft3/s	95	6220.000	21.000	1258.189	5972.000	1440.000	156.000	51.000	28.000
1990	Discharge, ft3/s	33	1060.000	14.000	109.788	698.102	79.000	26.000	15.000	14.700
1991	Discharge, ft3/s	40	1250.000	21.000	193.075	1022.800	188.750	52.500	29.500	22.050
1988	Specific conductance, uS/cm	42	322.000	52.000	159.357	314.800	178.500	165.000	128.250	58.900
1989	Specific conductance, uS/cm	96	202.000	28.000	92.750	188.000	136.250	80.000	42.750	31.850
1990	Specific conductance, uS/cm	33	194.000	44.000	152.485	193.300	183.500	168.000	128.000	53.800
1991	Specific conductance, uS/cm	38	194.000	37.000	149.132	193.050	179.000	162.500	141.750	53.150;
1988	pH, in standard units	82	8.300	6.300	7.823	8.200	8.000	7.900	7.700	7.115
1989	pH, in standard units	94	8.000	6.000	6.932	7.600	7.400	7.100	6.375	6.100
1990	pH, in standard units	33	8.200	6.400	7.476	8.200	7.850	7.400	7.250	6.400
1991	pH, in standard units	39	7.900	6.300	7.287	7.700	7.500	7.300	7.100	6.300
1988	Oxygen, dissolved, mg/L	82	12.200	6.700	7.932	10.200	8.500	7.400	7.000	6.700
1989	Oxygen, dissolved, mg/L	97	12.800	6.200	9.387	12.400	10.350	9.000	8.400	7.190
1990	Oxygen, dissolved, mg/L	33	12.000	5.700	8.418	11.300	9.650	8.200	7.450	5.840
1991	Oxygen, dissolved, mg/L	39	12.000	6.600	8.426	11.100	8.700	8.300	7.800	6.800
1988	Nitrite plus nitrate, as N, mg/L	41	0.620	--	0.067*	*0.269	*0.100	*0.020	*0.009	*0.002
1989	Nitrite plus nitrate, as N, mg/L	51	0.510	--	0.104*	*0.304	*0.130	*0.100	*0.034	*0.017
1990	Nitrite plus nitrate, as N, mg/L	33	0.700	--	0.103*	*0.385	*0.175	*0.050	*0.024	*0.008
1991	Nitrite plus nitrate, as N, mg/L	40	0.850	--	0.134*	*0.423	*0.167	*0.125	*0.030	*0.013
1988	Ammonia, as N, mg/L	41	0.130	0.010	0.037	0.106	0.050	0.030	0.020	0.010
1989	Ammonia, as N, mg/L	51	0.150	--	0.036*	*0.090	*0.050	*0.030	*0.012	*0.006
1990	Ammonia, as N, mg/L	33	0.140	--	0.040*	*0.133	*0.060	*0.020	*0.010	*0.004
1991	Ammonia, as N, mg/L	40	0.300	0.010	0.052	0.109	0.070	0.045	0.012	0.010
1988	Phosphorus, total, mg/L	41	0.740	0.040	0.187	0.460	0.255	0.120	0.080	0.050
1989	Phosphorus, total, mg/L	51	1.600	0.030	0.231	1.150	0.250	0.080	0.060	0.040
1990	Phosphorus, total, mg/L	32	1.200	0.020	0.125	0.719	0.110	0.060	0.030	0.020
1991	Phosphorus, total, mg/L	40	1.500	0.030	0.173	0.620	0.148	0.090	0.052	0.040
1988	Orthophosphorus, total, mg/L	41	0.320	0.030	0.099	0.303	0.140	0.070	0.050	0.030
1989	Orthophosphorus, total, mg/L	51	0.500	0.010	0.107	0.390	0.120	0.060	0.040	0.020
1990	Orthophosphorus, total, mg/L	32	0.310	0.010	0.060	0.245	0.078	0.030	0.020	0.010
1991	Orthophosphorus, total, mg/L	40	0.320	0.020	0.084	0.279	0.088	0.060	0.030	0.021
1988	Carbon, organic, total, mg/L	39	11.000	1.300	3.946	10.000	4.400	3.300	2.300	1.400
1989	Carbon, organic, total, mg/L	51	9.100	1.200	3.975	8.940	5.800	3.000	2.300	1.520
1990	Carbon, organic, total, mg/L	33	7.700	1.300	3.133	6.510	3.700	2.500	2.150	1.370
1991	Carbon, organic, total, mg/L	40	7.200	1.200	2.765	6.200	3.275	2.100	1.600	1.305

Table 15. Statistical summary by year of selected water-quality data collected from February 1988 to September 1991--Continued

STATION NUMBER: 07287404 STATION NAME: HARLAND CREEK NR HOWARD - SITE 20

		DESCRIPTIVE STATISTICS				PERCENT OF SAMPLES IN WHICH VALUES WERE LESS THAN OR EQUAL TO THOSE SHOWN				
YEAR	PROPERTY OR CONSTITUENT	SAMPLE SIZE	MAXIMUM	MINIMUM	MEAN	95	75	(MEDIAN) 50	25	5
1988	Discharge, ft3/s	90	285.000	6.200	22.963	[illegible]60.150	20.000	14.000	12.000	8.820
1989	Discharge, ft3/s	91	5300.000	9.900	864.724	4668.000	1030.000	48.000	28.000	13.600
1990	Discharge, ft3/s	33	940.000	8.600	69.897	522.102	55.000	19.000	9.100	8.950
1991	Discharge, ft3/s	40	1250.000	13.000	124.975	550.600	104.750	44.500	22.250	14.100
1988	Specific conductance, uS/cm	90	409.000	90.000	280.189	404.000	347.500	275.000	230.000	124.650
1989	Specific conductance, uS/cm	90	263.000	32.000	136.300	258.450	201.750	129.000	47.500	37.000
1990	Specific conductance, uS/cm	33	281.000	71.000	221.152	278.200	266.000	246.000	189.500	97.600
1991	Specific conductance, uS/cm	38	280.000	57.000	188.684	269.550	224.750	195.500	156.000	77.900
1988	pH, in standard units	89	8.700	6.900	7.830	8.600	8.100	7.900	7.500	7.000
1989	pH, in standard units	88	8.000	5.700	6.707	7.600	7.200	6.600	6.400	5.800
1990	pH, in standard units	33	8.100	6.600	7.409	8.100	7.700	7.400	7.200	6.670
1991	pH, in standard units	40	7.700	6.400	7.205	7.600	7.400	7.250	7.025	6.605
1988	Oxygen, dissolved, mg/L	90	12.600	5.500	8.159	10.945	9.125	8.200	6.800	5.710
1989	Oxygen, dissolved, mg/L	91	12.700	6.400	9.869	12.400	11.100	9.900	8.500	7.320
1990	Oxygen, dissolved, mg/L	33	11.800	5.600	8.576	10.960	9.800	8.500	7.750	5.600
1991	Oxygen, dissolved, mg/L	37	11.800	5.200	8.254	11.170	8.750	8.400	7.750	5.920
1988	Nitrite plus nitrate, as N, mg/L	42	0.140	--	0.030*	*0.127	*0.032	*0.014	*0.006	*0.002
1989	Nitrite plus nitrate, as N, mg/L	51	0.190	--	0.050*	*0.134	*0.060	*0.050	*0.020	*0.012
1990	Nitrite plus nitrate, as N, mg/L	33	0.170	--	0.054*	*0.163	*0.095	*0.033	*0.020	*0.007
1991	Nitrite plus nitrate, as N, mg/L	40	0.160	--	0.077*	*0.159	*0.120	*0.060	*0.040	*0.024
1988	Ammonia, as N, mg/L	42	0.180	0.010	0.034	0.088	0.040	0.030	0.010	0.010
1989	Ammonia, as N, mg/L	51	0.130	--	0.033*	*0.106	*0.040	*0.030	*0.010	*0.005
1990	Ammonia, as N, mg/L	33	0.090	--	0.029*	*0.069	*0.045	*0.020	*0.010	*0.004
1991	Ammonia, as N, mg/L	40	0.140	0.010	0.050	0.109	0.070	0.050	0.020	0.010
1988	Phosphorus, total, mg/L	42	1.500	0.040	0.225	0.628	0.245	0.135	0.100	0.052
1989	Phosphorus, total, mg/L	51	1.800	0.040	0.223	0.808	0.220	0.110	0.070	0.050
1990	Phosphorus, total, mg/L	33	1.100	--	0.130*	*0.715	*0.135	*0.070	*0.025	*0.007
1991	Phosphorus, total, mg/L	39	1.300	0.040	0.294	1.100	0.400	0.140	0.100	0.050
1988	Orthophosphorus, total, mg/L	42	0.310	0.020	0.095	0.218	0.132	0.065	0.050	0.022
1989	Orthophosphorus, total, mg/L	51	0.350	0.030	0.103	0.304	0.120	0.080	0.050	0.030
1990	Orthophosphorus, total, mg/L	33	0.280	--	0.064*	*0.266	*0.080	*0.040	*0.020	*0.009
1991	Orthophosphorus, total, mg/L	40	0.480	0.020	0.127	0.394	0.170	0.080	0.060	0.030
1988	Carbon, organic, total, mg/L	41	13.000	1.100	3.895	11.900	4.400	2.800	2.200	1.110
1989	Carbon, organic, total, mg/L	51	9.800	1.400	4.441	9.700	6.200	3.800	2.500	1.900
1990	Carbon, organic, total, mg/L	31	7.100	0.800	2.897	6.980	4.000	2.200	1.800	0.860
1991	Carbon, organic, total, mg/L	40	8.700	1.500	4.253	8.395	5.300	4.300	2.225	1.505